



Prepared for

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**2019 FIRST SEMIANNUAL  
GROUNDWATER MONITORING &  
CORRECTIVE ACTION REPORT  
GEORGIA POWER COMPANY  
PLANT BOWEN  
ASH POND 1 (AP-1)**

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### CERTIFICATION STATEMENT

This 2019 First Semiannual Groundwater Monitoring & Corrective Action Report, Georgia Power Company - Plant Bowen – Ash Pond 1 (AP-1) has been prepared in compliance with the United States Environmental Protection Agency coal combustion residual rule [40 Code of Federal Regulations (CFR) 257 Subpart D] and the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10 by a qualified groundwater scientist or engineer with Geosyntec Consultants.



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Date

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## LIST OF ACRONYMS

ACM	Assessment of Corrective Measures
AP	Ash Pond
ASD	Alternate Source Demonstration
CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
cm/sec	Centimeters per Second
DO	Dissolved Oxygen
ft AMSL	Feet Above Mean Sea Level
ft/d	Feet per Day
ft/ft	Feet per Foot
GA EPD	Georgia Environmental Protection Division
GPC	Georgia Power Company
GWPS	Groundwater Protection Standard
HAR	Hydrogeologic Assessment Report
K <sub>h</sub>	Horizontal Hydraulic Conductivity
MCL	Maximum Contaminant Level
mg/L	Milligrams per Liter
NELAP	National Environmental Laboratory Accreditation Program
NTU	Nephelometric Turbidity Units
PE	Professional Engineer
QA/QC	Quality Assurance/Quality Control
SCS	Southern Company Services
SSI	Statistically Significant Increase
SSL	Statistically Significant Level
s.u.	Standard Unit
USEPA	United States Environmental Protection Agency

## 1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule [40 Code of Federal Regulations (CFR) Part 257, Subpart D] and the Georgia Environmental Protection Division (GA EPD) Rules for Solid Waste Management 391-3-4-.10, Geosyntec Consultants (Geosyntec) has prepared this *2019 First Semiannual Groundwater Monitoring & Corrective Action Report* to document groundwater monitoring activities conducted at Georgia Power Company (GPC) Plant Bowen (Site) Ash Pond 1 (AP-1). GA EPD Rules for Solid Waste Management 391-3-4-.10(6)(a) adopt Federal CCR rule by reference. For ease of reference, the USEPA CCR rules are cited within this report. This report documents groundwater monitoring activities completed during January through July 2019.

Due to statistically significant levels (SSLs) of cobalt and molybdenum identified in the *2018 Annual Groundwater Monitoring and Corrective Action Report* (Geosyntec, 2019a), GPC initiated an assessment of corrective measures (ACM) for AP-1 on February 12, 2019. Pursuant to 40 CFR 257.96(b), GPC continues to monitor groundwater associated with AP-1 in accordance with the assessment monitoring program established for the unit in 2018, including semiannual monitoring and reporting pursuant to 40 CFR 257.90 through 40 CFR 257.95 of the Federal CCR rule, and GA EPD Rules for Solid Waste Management 391-3-4-.10(6)(a). The current 2019 data indicate that cobalt and molybdenum concentrations associated with AP-1 are horizontally delineated and contained within the property boundary of Plant Bowen.

### 1.1 Site Description and Background

Plant Bowen is a four-unit, coal-fired, electric-generating facility located nine miles southwest of Cartersville in Bartow County, Georgia. The plant is bordered by the Etowah River to the north and east, and Euharlee Creek to the northwest and west (**Figure 1**). Plant Bowen commenced operations in the 1970s.

Operation of AP-1 commenced in 1971 with receipt of sluiced CCR material from Plant Bowen. GPC is currently in the permitting process to close AP-1 by consolidating the excavated CCR material into a fully-contained engineered structure complete with foundation improvements, geo-composite cover system, liner and leachate collection system. In preparation for AP-1 closure, the plant is engaged in construction work associated with the conversion to dry handling of CCR. Additionally, active projects are ongoing at the plant to remove all waste streams from AP-1.

## **1.2 Regional Geology & Hydrogeologic Setting**

The following section summarizes the geologic and hydrogeologic conditions at the Site as described in the *Hydrogeologic Assessment Report – AP-1* (HAR) submitted to GA EPD as supporting documents for the closure permit application.

### **1.2.1 Regional and Site Geology**

The Site is located in the Valley and Ridge Physiographic Province of northwest Georgia, which is characterized by Paleozoic sedimentary rocks that have been folded and faulted into the ridges and valleys that gave this region its name. The floor of the valley is underlain by shales, dolomites, and limestones of Cambrian and Ordovician age. Geologic mapping performed by Lawton et al. (1976) indicates that the Site is underlain by the Ordovician-Cambrian age Knox Dolomite and the Ordovician age Newala Limestone. Based on review of subsurface investigations at the Site, the bedrock is described as predominantly dolomite. The Site is underlain primarily by residuum and competent dolomite/limestone bedrock.

Based on subsurface investigations, the residuum at the Site is the result of in-place weathering of the underlying dolomite/limestone bedrock. The residuum consists mainly of mottled light brown to red to yellow, low to high plasticity, stiff to very stiff clay, silt, and silty clay. Most soils contain varying amounts of black chert nodules and chert gravel. The bedrock beneath the Site is described as light to dark gray, fine to medium-grained, thinly-bedded to massive, dense, and hard dolomite, limestone, and dolomitic limestone. Some evidence of weathering along fracture or bedding surfaces is observed, with some manganese or iron oxide staining. Abundant calcite veins and occasional zones of healed dolomite breccia are observed throughout the bedrock. Solution cavities or voids in the underlying limestone/dolomite bedrock form over geological timeframes along pre-existing discontinuities such as joints and bedding planes. Underlying the Site, these cavities are typically filled with sediment from the in-place weathering of the bedrock or the downward migration of the overlying residuum, but they may also be open, or water filled. When hydraulically interconnected they may create preferential groundwater flow paths underneath the Site.

### **1.2.2 Hydrogeologic Setting**

The uppermost aquifer at the Site is a regional groundwater aquifer that occurs in the residuum and fractured and solutioned bedrock. Groundwater recharge is by precipitation falling onto outcrop areas and percolating through the residuum to bedrock. Groundwater

flow in bedrock is under unconfined to semi-confined conditions from the mantle of overlying lower-permeability residuum and is controlled by secondary porosity along fractures and solution-enhanced features. Based on observations of residuum soil types and horizontal hydraulic conductivity values, the movement of groundwater in the residuum and highly-weathered upper surface of the bedrock is slow and more characteristic of porous media flow than secondary porosity (fracture) flow. Groundwater flow in the underlying dolomite/limestone bedrock is likely controlled by preferential flow pathways associated with fractures and solution-enhanced joints and fissures.

### **1.3 Groundwater Monitoring Well Network**

In accordance with 40 CFR 257.91, a groundwater monitoring system was installed at AP-1 that (1) consists of a sufficient number of wells, (2) is installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer, and (3) represents the groundwater quality both upgradient of the unit (i.e., background conditions) and passing the waste boundary of the unit. The number, spacing, and depths of the groundwater monitoring wells were selected based on the characterization of site-specific hydrogeologic conditions. The certified compliance monitoring well network for AP-1 consists of 19 monitoring wells. The well network was certified by a professional engineer (PE) on October 17, 2017; the certification is maintained in the AP-1 Operating Record.

Six additional groundwater monitoring wells were installed in 2018 to provide additional data to characterize flow conditions downgradient of AP-1 and to horizontally and vertically delineate groundwater quality conditions at AP-1. Wells BGWC-31 and BGWC-32 were installed for horizontal delineation and wells BGWC-34D, BGWC-35D, and BGWC-36D were installed for vertical delineation. Well BGWA-33 was installed as a characterization well to assess conditions and groundwater levels downgradient of the delineation wells and approaching the Site property boundary.

At the time of the above well installation efforts, piezometer BGWA-6 was suitably located downgradient of detection well BGWC-30 and was therefore selected as a delineation well. Since August 2017, BGWA-6 has only been used for gauging groundwater levels.

A network of piezometers has been installed at the Site that are used to gauge water levels to define groundwater flow direction and gradients. There are 14 piezometers used to gauge groundwater levels in vicinity of AP-1.



The locations of the compliance monitoring wells, delineation and characterization wells, and secondary groundwater level monitoring piezometers are shown on **Figure 2**; well construction details are listed in **Table 1**.

## 2.0 GROUNDWATER MONITORING ACTIVITIES

In accordance with 40 CFR 257.90(e), the following describes monitoring-related activities performed during January through July 2019 and discusses any change in status of the monitoring program. All groundwater sampling was performed in accordance with 40 CFR 257.93.

### 2.1 Monitoring Well Installation and Maintenance

Two additional groundwater monitoring wells (BGWC-37D and BGWC-38D) were installed in April 2019 to provide additional data to characterize flow conditions downgradient of AP-1 and to vertically delineate groundwater quality conditions adjacent to wells BGWC-35D and BGWC-36D. Detailed boring and well construction logs for the new wells are provided in **Appendix A**. The locations of wells BGWC-37D and BGWC-38D are shown on **Figure 2**; well construction details are also provided in **Table 1**.

The well and piezometer networks are inspected during each groundwater monitoring event using GA EPD-based inspection criteria. Any issues identified with the wells (e.g., clogged weep holes within the outer protective casing, faded well identification signage, rusted locks and/or latches, etc.) are addressed before the following groundwater sampling event.

### 2.2 Assessment Monitoring

GPC initiated an assessment monitoring program for groundwater at AP-1 in January 2018. Pursuant to 40 CFR 257.95, the compliance monitoring well network was sampled for Appendix IV parameters in March 2018, and again in June and October 2018 for Appendix III parameters and the Appendix IV parameters detected during the March 2018 event. Groundwater data collected during the June and October 2018 semiannual monitoring events were statistically analyzed in accordance with the PE-certified statistical method described in Section 4.1. SSLs of cobalt were identified in well BGWC-22 in excess of the federal and state groundwater protection standard (GWPS), with SSLs of molybdenum identified in wells BGWC-20, BGWC-22, BGWC-23, and BGWC-30 in excess of the state GWPS. A notification identifying the SSLs was prepared for AP-1 and placed in the AP-1 Operating Record on November 14, 2018. Additional groundwater monitoring details are provided in the *2018 Annual Groundwater and Corrective Action Monitoring Report* (Geosyntec, 2019a).

Pursuant to 40 CFR 257.96, an assessment of corrective measures was initiated for AP-1 on February 12, 2019. An *Assessment of Corrective Measures (ACM) Report* was subsequently prepared for AP-1 (Geosyntec, 2019b) and was submitted to GA EPD. In accordance with 40 CFR 257.96(b), groundwater continues to be monitored at AP-1 under the assessment monitoring program while the ACM phase is implemented. Assessment monitoring events at AP-1 were conducted in February/March and April 2019 during this semiannual reporting period. The number of groundwater samples collected for analysis and the dates the samples were collected at AP-1 during this reporting period is summarized in **Table 2**. The analytical results are discussed in Section 3, while the statistical results are discussed in Section 4.

### **2.3 Alternate Source Demonstration**

A demonstration document was prepared to present an evaluation of groundwater detections of arsenic in delineation well BGWC-34D. The well was originally installed to vertically delineate SSLs of molybdenum in well BGWC-22. While well BGWC-34D did vertically delineate molybdenum, arsenic was detected in groundwater samples from well BGWC-34D above the GWPS of 0.010 milligram per liter (mg/L). Because SSLs of arsenic have not been identified in AP-1 compliance wells, the arsenic demonstration for BGWC-34D is not subject to the formal Alternative Source Demonstration (ASD) requirements of the CCR Rule. Instead, the demonstration documents GPC's evaluation of the source of arsenic detections in the delineation well BGWC-34D. The document presents multiple lines of evidence that illustrate the groundwater arsenic detections are associated with naturally occurring arsenic within the localized rock formation. The completed demonstration is provided in **Appendix B**.

### **2.4 Additional Groundwater Sampling**

A supplementary groundwater sampling event was conducted May 2-3, 2019. Newly installed vertical delineation wells BGWC-37D and BGWC-38D were sampled to assess groundwater molybdenum concentrations relative to the concentrations reported in wells BGWC-35D and BGWC-36D, respectively. Groundwater samples were also collected from wells BGWA-2, BGWC-22, and BGWC-32 to evaluate the distribution of cobalt in groundwater. The data from this and other prior field investigations are being evaluated in support of preparing an ASD in accordance with 40 CFR 257.95(g)(3)(ii) to address the SSLs of cobalt reported in well BGWC-22. The current dataset supports multiple lines of evidence that indicate the cobalt SSLs are not associated with a release from AP-

1 but instead associated with naturally-occurring cobalt within the site-specific rock formation.

A second supplementary groundwater sampling event was conducted July 9, 2019, to collect a groundwater sample from characterization well BGWA-33. The groundwater sample was analyzed for boron and molybdenum to confirm the April 2019 results reported for BGWA-33 and evaluate preparing a molybdenum ASD for this well. The lack of historical molybdenum detections above estimated trace concentrations in the upgradient and near vicinity wells and piezometers relative to BGWA-33 suggest an isolated molybdenum source other than AP-1.

The finalized ASDs for cobalt and molybdenum will be included with the annual groundwater monitoring report issued in January 2020. The field logs and laboratory reports associated with the May and July 2019 events are included in **Appendix C**.

### 3.0 SAMPLING METHODOLOGY & ANALYSES

The following section presents a summary of the field sampling procedures that were implemented and the groundwater sampling results that were obtained in connection with the assessment monitoring program conducted at AP-1 during this reporting period.

#### 3.1 Groundwater Level Measurement

A synoptic round of depth-to-groundwater-level measurements were recorded from the AP-1 wells and piezometers during the February/March and April 2019 monitoring events and used to calculate the corresponding groundwater elevations, which are presented in **Table 3**. The synoptic groundwater elevations observed for the February/March 2019 event (as recorded on March 5) ranged from 697.39 feet above mean sea level (ft AMSL) in well BGWA-2 to 651.80 ft AMSL in well BGWC-14. For the April 2019 event, the groundwater elevations ranged from 689.33 ft AMSL in well BGWC-24 to 637.96 ft AMSL in well BGWC-14.

The groundwater elevation data were used to prepare potentiometric surface maps for March and April 2019, which are presented on **Figures 3** and **4**, respectively. Groundwater flow pathways at the Site are expected to be influenced by solution features, fractures, and weathered zones in the upper bedrock. Interpretation of the potentiometric surface contours indicates that groundwater generally flows to the north and northwest. A component of flow in the southernmost portion of AP-1 is to the south and west, likely due to groundwater mounding related to historical free water storage at the recycle pond (now decommissioned).

#### 3.2 Groundwater Gradient and Flow Velocity

The groundwater hydraulic gradients within the residuum and fractured and solutioned bedrock of the uppermost aquifer beneath AP-1 were calculated using groundwater elevation data recorded in March and April 2019, and along three main interpreted groundwater flow paths to account for changing flow directions underlying AP-1, as discussed in Section 3.1 (i.e., northwest, west, south/southwest). The supporting calculations are presented in **Table 4**; the locations of the flow paths used in the calculations and associated potentiometric contour lines are shown on **Figures 3** and **4**.

The calculated hydraulic gradient along the northwest, west, and south/southwest flow paths are 0.013 feet per foot (ft/ft), 0.020 ft/ft, and 0.008 ft/ft, respectively. These hydraulic gradients represent the calculated average of the March and April 2019 events.

The approximate horizontal flow velocities along the northwest, west, and south/southwest flow paths were calculated using the following derivative of Darcy's Law. The calculations are presented on **Table 4**.

$$V = \frac{K * i}{n_e}$$

Where:

$$V = \text{Groundwater flow velocity} \left( \frac{\text{feet}}{\text{day}} \right)$$

$$K = \text{Hydraulic Conductivity} \left( \frac{\text{feet}}{\text{day}} \right)$$

$$i = \text{Horizontal hydraulic gradient} \left( \frac{\text{feet}}{\text{feet}} \right)$$

$$n_e = \text{Effective porosity}$$

Because the geologic conditions at AP-1 are not homogenous or isotropic, and that the flow pathways are influenced by solution features, fractures, and weathered zones in the upper bedrock, groundwater flow velocities are variable. Horizontal hydraulic conductivity ( $K_h$ ) values for the residuum were reported by Southern Company Services (SCS) (SCS, 2002) to range from  $1 \times 10^{-6}$  to  $1 \times 10^{-8}$  centimeters per second (cm/sec). Horizontal hydraulic conductivity values measured for bedrock ranged from  $2.1 \times 10^{-5}$  cm/sec to  $1.0 \times 10^{-2}$  cm/sec, with a geometric mean of  $8.6 \times 10^{-4}$  cm/sec [2.44 feet per day (ft/d)]. To be conservative, the flow velocities were calculated using the geometric mean  $K_h$  for weathered/fractured bedrock. Also, an estimated effective porosity of 0.30 for the fractured and solutioned dolomite/limestone bedrock was also applied.

The calculated flow velocities along the northwest, west, and south/southwest flow paths are 0.11 ft/d, 0.17 ft/d, and 0.06 ft/d, respectively. These velocities were derived using the average hydraulic gradients presented above. Due to the hydrogeologic conditions affected by karst processes at the Site, the use of groundwater flow velocity calculations such as these may not be applicable; therefore, the above estimates should be considered a rough approximation.

### **3.3 Groundwater Sampling Procedures**

Groundwater samples were collected from the compliance monitoring and delineation well networks using low-flow sampling procedures in accordance with 40 CFR

§257.93(a). Compliance wells were purged and sampled using an installed bladder pump with dedicated tubing; the delineation wells were sampled using a portable bladder pump equipped with new disposable polyethylene tubing. All non-disposable equipment was decontaminated before use and between well locations.

A SmarTroll (In-Situ field instrument) was used to monitor and record field water quality parameters listed below during purging to verify stabilization prior to sampling. Turbidity was measured using a LaMotte 2020we (or similar) portable turbidimeter. Groundwater samples were collected when the following stabilization criteria were met:

- pH  $\pm$  0.1 Standard Units (s.u.).
- Conductivity  $\pm$  5%.
- $\pm$ 10% for dissolved oxygen (DO) > 0.5 mg/L. No criterion applies if DO < 0.5 mg/L, record only.
- Turbidity measured less than 10 nephelometric turbidity units (NTU).

Once stabilization was achieved, samples were collected into appropriately-preserved laboratory-supplied sample containers. Sample bottles were placed in ice-packed coolers and submitted to Pace Analytical Services, LLC. in Norcross, Georgia following chain-of-custody protocol. The field sampling forms generated during the monitoring events conducted in February/March, April, May, and July 2019 are provided in **Appendix C**.

### **3.4 Laboratory Analyses**

Laboratory analyses were performed by Pace Analytical Services, LLC. (Pace Analytical), which is accredited by the National Environmental Laboratory Accreditation Program (NELAP). Pace Analytical maintains a NELAP certification for the Appendix III and Appendix IV parameters analyzed for this project. Analytical methods used for groundwater sample analysis are listed in the analytical laboratory reports included in **Appendix C**.

The groundwater analytical results from the February/March, April, May, and July 2019 monitoring events are summarized in **Table 5**. The Pace Analytical laboratory reports associated with the results presented in Table 5 are provided in **Appendix C**.

### **3.5 Quality Assurance & Quality Control Summary**

Quality assurance/quality control (QA/QC) samples were collected during the groundwater monitoring events at the rate of one QA/QC sample per 10 groundwater samples and included the following: field duplicates, equipment blanks, and field blank samples. QA/QC samples were collected in laboratory-provided bottles and submitted under the same chain of custody as the primary samples for analysis of the same parameters by Pace Analytical.

In addition to collecting QA/QC samples, the data were validated based on the pertinent methods referenced in the laboratory reports, professional and technical judgment and applicable federal and site-specific guidance documents (USEPA, 2011; USEPA, 2017). Where necessary, the data were qualified with supporting documentation and justifications. The associated data validation reports are provided in **Appendix C** with the laboratory reports.



## 4.0 STATISTICAL ANALYSIS

The following section presents a summary of the statistical approach applied to assess the 2019 groundwater analytical data in downgradient compliance wells relative to the available historical dataset. Groundwater monitoring data collected during the semiannual monitoring event in April 2019 were statically analyzed pursuant to 40 CFR 257.95 following the PE-certified statistical method. Appendix III detection monitoring parameters were statistically analyzed to determine if constituents have returned to background levels. Appendix IV assessment monitoring parameters were analyzed to determine if concentrations statistically exceeded the established GWPS. The following subsections provide an overview of the statistical methods used to evaluate Appendix III and IV parameters and statistical analyses results.

### 4.1 Statistical Methods

The Sanitas<sup>™</sup> groundwater statistical software was used to perform the statistical analyses. Sanitas<sup>™</sup> is a decision-support software package, that incorporates the statistical tests required of Subtitle C and D facilities by USEPA regulations and guidance as recommended in the USEPA document *Statistical Analysis of Groundwater Data at RCRA Facilities Unified Guidance* (Unified Guidance) (USEPA, 2009).

Time series plots generated by Sanitas<sup>™</sup> are used to identify suspected outliers, or extreme values that would result in limits that are not representative of the current background data population. Suspected outliers at all wells for Appendix III and Appendix IV parameters are formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits. Background well data were updated following the Unified Guidance recommendation, evaluating recent background data using Tukey's box plot method for outliers and Sen's Slope/Mann-Kendall methods for potential trends.

#### 4.1.1 Appendix III Statistical Methods

Statistical tests used to evaluate the groundwater monitoring data consist of interwell prediction limits combined with a 1-of-2 verification resample plan for each of the Appendix III parameters. Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent, and the most recent sample from each downgradient well is compared to the same limit for each parameter. If the most recent sample exceeds its respective background statistical limit, an initial

statistically significant increase (SSI) is identified. The results are discussed in Section 4.2 and tabulated in **Table D-1, Appendix D**.

#### **4.1.2 Appendix IV Statistical Methods**

Appendix IV constituents detected during the February/March 2019 assessment monitoring event are added to the list of parameters sampled during the April 2019 semiannual sampling event. To statistically compare groundwater data to GWPS, confidence intervals are constructed for each of the detected Appendix IV parameters in each downgradient well. Those confidence intervals are compared to both the state and federal GWPS. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its GWPS. If there is an exceedance of the established standard, an SSL exceedance is identified.

Background limits were used when determining the GWPS under USEPA rule 40 CFR 257.95(h) and GA EPD CCR Rule 391-3-4-.10(6)(a). Parametric tolerance limits were used to calculate background limits from pooled upgradient well data for Appendix IV parameters with a target of 95% confidence and 95% coverage. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples.

USEPA revised the federal CCR Rule on July 30, 2018, updating GWPS for cobalt, lead, lithium, and molybdenum. As described in 40 CFR 257.95(h)(1-3), the GWPS is:

- (1) The maximum contaminant level (MCL) established under 40 CFR 141.62 and 141.66 of this title.
- (2) Where an MCL has not been established:
  - (i) Cobalt 0.006 mg/l;
  - (ii) Lead 0.015 mg/l;
  - (iii) Lithium 0.040 mg/l; and
  - (iv) Molybdenum 0.10 mg/l.
- (3) Background levels for constituents where the background level is higher than the MCL or rule-specified GWPS.

USEPA's updated GWPS have not yet been incorporated under GA EPD's CCR Rule. GA EPD CCR Rule GWPS are:

- (1) The federally established MCL.
- (2) Where an MCL has not been established, the background concentration.
- (3) Background levels for constituents where the background level is higher than the MCL.

Following the above federal and state rule requirements, GWPS have been established for statistical comparison of Appendix IV constituents and are presented in **Table 6**. Additional details are presented in the statistical analysis packages provided in **Appendix D**.

#### **4.2 Statistical Analyses Results**

Analytical data from the April 2019 semiannual monitoring event were statistically analyzed in accordance with the Statistical Analysis Method Certification (October 2017). Appendix III statistical analysis was performed to determine if constituents have returned to background levels. Appendix IV assessment monitoring parameters were evaluated to determine if concentrations statistically exceeded the established GWPS.

Using the Tukey box plot method, three outliers were identified with the data set for the background wells. A summary of the findings is included in **Appendix D**. Of the outliers identified by Tukey's method, only one outlier was flagged for TDS in upgradient well BGWA-29. All other values are the most recent recorded value or similar to remaining measurements within a given well or neighboring wells. Marginal decreasing concentration trends were identified for arsenic, barium, and boron in the data for the background wells.

Based on review of the Appendix III statistical analysis presented in **Table D-1**, Appendix III constituents have not returned to background levels and assessment monitoring should continue pursuant to 40 CFR 257.95(f).

A summary of the Sanitas<sup>™</sup> outputs for the April 2019 assessment event is provided in **Appendix D**. Based on the statistical analysis of Appendix IV parameters as described in Section 4.1.2, the following parameters were found to exceed the GWPS:

AP-1 (Federal CCR Rule):

- Cobalt: BGWC-22

AP-1 (GA EPD CCR Rule):

- Cobalt: BGWC-22
- Molybdenum: BGWC-20, BGWC-22, BGWC-23, and BGWC-30

The April 2019 statistical evaluation results are consistent with the 2018 reporting year statistical results. However, as discussed in Section 2.4, an ASD will be prepared that attributes cobalt concentrations in well BGWC-22 to naturally-occurring cobalt within the site-specific rock formation. Assessment monitoring will continue to be implemented at AP-1 for molybdenum.

## **5.0 MONITORING PROGRAM STATUS**

Pursuant to 40 CFR 257.96(b), GPC will continue to monitor the groundwater at AP-1 in accordance with the assessment monitoring program regulations of 40 CFR 257.95 while ACM efforts are implemented to evaluate SSL concentrations of molybdenum in select AP-1 wells with reference to the current GA EPD GWPS.

## 6.0 CONCLUSIONS & FUTURE ACTIONS

This 2019 *First Semiannual Groundwater Monitoring & Corrective Action Report* for Plant Bowen AP-1 was prepared to fulfill the requirements of USEPA's CCR Rule and GA EPD Rules for Solid Waste Management 391-3-4-.10. Statistical evaluations of the April 2019 groundwater monitoring data for AP-1 confirmed the continued presence of SSLs of cobalt and molybdenum in AP-1 compliance monitoring wells BGWC-20, BGWC-22, BGWC-23, and BGWC-30. The current data indicate cobalt and molybdenum exceedances are horizontally delineated by BGWA-6, BGWC-31, and BGWC-32 and contained within the property boundary of Plant Bowen. However, the current data are being evaluated in support of preparing an ASD to address the cobalt SSLs reported in well BGWC-22. Because of the molybdenum SSLs, groundwater in the vicinity of AP-1 will continue to be monitored under the current assessment monitoring program. Concurrently, GPC will continue efforts to assess corrective measures related to molybdenum as presented in the ACM Report (Geosyntec, 2019b).

The second semiannual groundwater assessment sampling event is scheduled to occur in October 2019. Additional groundwater monitoring and delineation activities in support of the ACM efforts may occur in the interim.

## 7.0 REFERENCES

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# TABLES



**Table 1**  
Monitoring Well Network Summary  
Plant Bowen AP-1, Bartow County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing <sup>(1)</sup>	Easting <sup>(1)</sup>	Top of Casing Elevation (ft AMSL)	Top of Screen Elevation (ft AMSL)	Bottom of Screen Elevation (ft AMSL)	Well Depth (ft BTOC) <sup>(2)</sup>	Screen Interval Length
<i>Compliance Monitoring Wells</i>									
BGWA-2	Upgradient	10/29/2015	1499375.65	2068599.23	729.81	650.90	640.90	89.17	10
BGWA-29	Upgradient	8/7/2016	1498283.38	2066363.43	721.39	632.70	622.70	99.03	10
BGWC-7	Downgradient	10/1/2015	1504713.10	2066801.85	705.60	625.50	615.50	90.40	10
BGWC-8	Downgradient	11/18/2015	1504672.07	2066928.29	706.65	637.20	627.20	79.73	10
BGWC-9	Downgradient	11/13/2015	1504910.51	2066144.11	692.11	638.70	628.70	63.74	10
BGWC-10	Downgradient	10/7/2015	1505032.56	2066080.17	686.26	634.20	624.20	62.37	10
BGWC-12	Downgradient	10/21/2015	1505280.77	2065909.74	694.60	626.60	616.60	78.28	10
BGWC-14	Downgradient	11/10/2015	1505406.14	2065043.82	718.77	640.20	630.20	88.84	10
BGWC-16	Downgradient	11/12/2015	1504656.54	2064248.97	674.34	635.80	625.80	48.87	10
BGWC-17	Downgradient	10/22/2015	1504432.14	2064260.75	673.71	615.60	605.60	68.39	10
BGWC-18	Downgradient	10/13/2015	1504118.94	2064258.25	672.89	645.20	635.20	37.95	10
BGWC-19	Downgradient	10/12/2015	1503742.31	2064245.92	673.65	629.40	619.40	54.58	10
BGWC-20	Downgradient	10/9/2015	1503367.84	2064260.88	675.17	635.70	625.70	49.73	10
BGWC-21	Downgradient	3/2/2016	1501627.60	2064348.78	691.41	648.70	638.70	52.99	10
BGWC-22	Downgradient	10/8/2015	1501324.02	2064359.44	695.49	662.70	652.70	43.05	10
BGWC-23	Downgradient	10/15/2015	1501000.87	2064351.45	695.57	654.90	644.90	50.95	10
BGWC-24	Downgradient	10/27/2015	1500620.18	2065032.39	702.30	646.50	636.50	66.11	10
BGWC-25	Downgradient	3/3/2016	1502292.88	2064244.72	680.51	632.90	622.90	57.87	10
BGWC-30	Downgradient	1/4/2017	1499816.75	2066394.31	701.18	651.50	641.50	59.98	10
<i>Groundwater Level Monitoring Piezometer</i>									
BGWA-1	Downgradient	11/17/2015	1499099.83	2067205.55	720.95	672.30	662.30	58.97	10
BGWA-3	Downgradient	11/5/2015	1499419.93	2065186.44	724.33	645.70	635.70	88.97	10
BGWA-4	Downgradient	3/4/2016	1499484.76	2064697.83	728.70	660.40	650.40	78.61	10
BGWA-5	Downgradient	11/3/2015	1499435.96	2065421.03	720.94	662.10	652.10	69.10	10
BGWC-11	Downgradient	10/16/2015	1504998.34	2066092.86	686.69	619.80	609.80	77.18	10
BGWC-13	Downgradient	10/21/2015	1505436.84	2065250.98	717.54	654.40	644.40	73.45	10
BGWC-15	Downgradient	10/20/2015	1505279.56	2064731.57	717.98	655.10	645.10	73.21	10
BGWA-26	Downgradient	8/5/2016	1498696.48	2064190.20	728.66	663.40	653.40	75.56	10
BGWA-27	Downgradient	8/6/2016	1498718.03	2064387.85	735.29	651.90	641.90	93.74	10
BGWA-28	Downgradient	8/7/2016	1498748.11	2064577.77	737.49	661.20	651.20	86.58	10
PZ-1	Downgradient	6/23/2016	1505600.31	2066843.00	677.83	630.60	620.60	57.54	10
PZ-2	Downgradient	6/24/2016	1503857.59	2062937.95	668.32	649.30	639.30	29.33	10
PZ-3	Downgradient	6/22/2016	1505722.73	2066070.72	707.90	658.60	648.60	59.62	10
PZ-4	Downgradient	6/23/2016	1505788.40	2064315.36	718.71	669.20	659.20	59.78	10

**Table 1**  
Monitoring Well Network Summary  
Plant Bowen AP-1, Bartow County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing <sup>(1)</sup>	Easting <sup>(1)</sup>	Top of Casing Elevation (ft AMSL)	Top of Screen Elevation (ft AMSL)	Bottom of Screen Elevation (ft AMSL)	Well Depth (ft BTOC) <sup>(2)</sup>	Screen Interval Length
<i>Delineation or Characterization Monitoring Wells</i>									
BGWA-6	Downgradient	11/6/2015	1499260.85	2065797.45	716.98	664.50	654.50	62.74	10
BGWC-31	Downgradient	7/17/2018	1503498.68	2064022.78	670.99	631.59	621.59	49.70	10
BGWC-32	Downgradient	7/18/2018	1501251.18	2064184.43	699.52	658.60	648.60	51.22	10
BGWC-34D	Downgradient	7/13/2018	1503356.62	2064259.26	675.52	606.11	596.11	79.75	10
BGWC-35D	Downgradient	7/12/2018	1501312.30	2064359.89	695.93	625.32	615.32	80.94	10
BGWC-36D	Downgradient	7/2/2018	1499808.60	2066415.39	701.17	615.22	605.22	96.35	10
BGWC-37D	Downgradient	4/25/2019	1501293.46	2064363.99	696.12	595.56	585.56	112.56	10
BGWC-38D	Downgradient	4/18/2019	1499803.60	2066430.57	700.47	584.66	574.66	129.81	10
BGWA-33 <sup>(3)</sup>	Downgradient	7/10/2018	1497973.36	2064876.50	743.34	672.80	662.80	80.84	10

Notes:

ft AMSL = feet above mean sea level

ft BTOC = feet below top of casing

(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet.

(2) Total well depth accounts for sump if data provided on well construction logs.

(3) Well BGWA-33 serves as a characterization well unassociated with the delineation monitoring well network.

**Table 2**  
**Groundwater Sampling Event Summary**  
**Plant Bowen AP-1, Bartow County, Georgia**

Well ID	Hydraulic Location	Feb 25, 27, 28 and Mar 1 - 6, 2019	Apr 1 - 5, 2019	May 2 - 3, 2019	July 9, 2019	Status of Monitoring Well
Purpose of Sampling Event:		App. IV Scan	Assessment	Supplemental Delineation	Supplemental Delineation	
<b><i>Compliance Monitoring Well Network</i></b>						
BGWA-2	Upgradient	S01	A01	SDE01	--	Assessment
BGWA-29	Upgradient	S01	A01	--	--	Assessment
BGWC-7	Downgradient	S01	A01	--	--	Assessment
BGWC-8	Downgradient	S01	A01	--	--	Assessment
BGWC-9	Downgradient	S01	A01	--	--	Assessment
BGWC-10	Downgradient	S01	A01	--	--	Assessment
BGWC-12	Downgradient	S01	A01	--	--	Assessment
BGWC-14	Downgradient	S01	A01	--	--	Assessment
BGWC-16	Downgradient	S01	A01	--	--	Assessment
BGWC-17	Downgradient	S01	A01	--	--	Assessment
BGWC-18	Downgradient	S01	A01	--	--	Assessment
BGWC-19	Downgradient	S01	A01	--	--	Assessment
BGWC-20	Downgradient	S01	A01	--	--	Assessment
BGWC-21	Downgradient	S01	A01	--	--	Assessment
BGWC-22	Downgradient	S01	A01	SDE01	--	Assessment
BGWC-23	Downgradient	S01	A01	--	--	Assessment
BGWC-24	Downgradient	S01	A01	--	--	Assessment
BGWC-25	Downgradient	S01	A01	--	--	Assessment
BGWC-30	Downgradient	S01	A01	--	--	Assessment
<b><i>Delineation or Characterization Monitoring Wells</i></b>						
BGWA-6	Downgradient	--	A01	--	--	Assessment
BGWC-31	Downgradient	--	A01	--	--	Assessment
BGWC-32	Downgradient	--	A01	SDE01	--	Assessment
BGWC-34D	Downgradient	--	A01	--	--	Assessment
BGWC-35D	Downgradient	--	A01	--	--	Assessment
BGWC-36D	Downgradient	--	A01	--	--	Assessment
BGWC-37D	Downgradient	--	--	SDE01	--	Assessment
BGWC-38D	Downgradient	--	--	SDE01	--	Assessment
BGWA-33 <sup>(1)</sup>	Downgradient	--	A01	--	SDE02	Assessment

Notes:

S## = Full Appendix IV parameters scan event number

A## = Assessment monitoring event number

SDE##= Supplemental delineation event number

(1) Well BGWA-33 serves as a characterization well unassociated with the delineation monitoring well network.

**Table 3**  
 Summary of Groundwater Elevations  
 Plant Bowen AP-1, Bartow County, Georgia

Well ID	Top of Casing Elevation (ft AMSL)	Mar 5, 2019		Apr 1, 2019	
		Depth to Water (ft BTOC)	Groundwater Elevations (ft AMSL)	Depth to Water (ft BTOC)	Groundwater Elevations (ft AMSL)
<i>Compliance Monitoring Well Network</i>					
BGWA-2	729.81	32.42	697.39	43.46	686.35
BGWA-29	721.39	30.47	690.92	37.01	684.38
BGWC-7	705.60	35.77	669.83	41.72	663.88
BGWC-8	706.65	37.36	669.29	43.31	663.34
BGWC-9	692.11	17.35	674.76	26.24	665.87
BGWC-10	686.26	13.53	672.73	23.86	662.40
BGWC-12	694.60	27.37	667.23	35.06	659.54
BGWC-14	718.77	66.97	651.80	80.81	637.96
BGWC-16	674.34	8.60	665.74	15.42	658.92
BGWC-17	673.71	7.70	666.01	14.37	659.34
BGWC-18	672.89	5.02	667.87	13.32	659.57
BGWC-19	673.65	8.87	664.78	14.98	658.67
BGWC-20	675.17	9.98	665.19	14.64	660.53
BGWC-21	691.41	9.98	681.43	16.73	674.68
BGWC-22	695.49	18.31	677.18	24.00	671.49
BGWC-23	695.57	25.62	669.95	29.78	665.79
BGWC-24	702.30	7.09	695.21	12.97	689.33
BGWC-25	680.51	11.24	669.27	15.53	664.98
BGWC-30	701.18	9.85	691.33	17.58	683.60
<i>Groundwater Level Monitoring Piezometer</i>					
BGWA-1	720.95	27.49	693.46	37.15	683.80
BGWA-3	724.33	35.26	689.07	42.74	681.59
BGWA-4	728.70	39.79	688.91	47.50	681.20
BGWA-5	720.94	31.34	689.60	39.21	681.73
BGWC-11	686.69	12.24	674.45	20.73	665.96
BGWC-13	717.54	62.88	654.66	65.40	652.14
BGWC-15	717.98	56.47	661.51	60.05	657.93
BGWA-26	728.66	42.42	686.24	51.01	677.65
BGWA-27	735.29	48.85	686.44	57.32	677.97
BGWA-28	737.49	50.86	686.63	58.95	678.54
PZ-1	677.83	25.85	651.98	28.68	649.15
PZ-2	668.32	11.13	657.19	13.15	655.17
PZ-3	707.90	53.33	654.57	56.74	651.16
PZ-4	718.71	52.52	666.19	59.15	659.56
<i>Delineation or Characterization Monitoring Wells</i>					
BGWA-6	716.98	25.23	691.75	32.72	684.26
BGWC-31	670.99	11.30	659.69	14.24	656.75
BGWC-32	699.52	30.82	668.70	33.93	665.59
BGWC-34D	675.52	9.90	665.62	14.84	660.68
BGWC-35D	695.93	21.27	674.66	25.20	670.73
BGWC-36D	701.17	9.95	691.22	17.60	683.57
BGWC-37D	696.12	--	--	--	--
BGWC-38D	700.47	--	--	--	--
BGWA-33 <sup>(1)</sup>	743.34	53.59	689.75	60.95	682.39

Notes:

-- = Well not installed at the time of the event.

ft AMSL = above mean sea level

ft BTOC = feet below top of casing

(1) Well BGWA-33 serves as a characterization well unassociated with the delineation monitoring well network.

**Table 4**  
 Groundwater Gradient and Flow Velocity Calculations  
 Plant Bowen AP-1, Bartow County, Georgia

Flow Path Direction <sup>(1)</sup>	Mar 5, 2019				Apr 1, 2019				Average $\Delta h/\Delta l$ (ft/ft)
	$h_1$ (ft)	$h_2$ (ft)	$\Delta l$ (ft)	$\Delta h/\Delta l$ (ft/ft)	$h_1$ (ft)	$h_2$ (ft)	$\Delta l$ (ft)	$\Delta h/\Delta l$ (ft/ft)	
Northwest Flow Path	695	665.74	2,850	0.010	695	658.92	2,250	0.016	0.013
West Flow Path	700	681.43	1,400	0.013	700	664.98	1,275	0.027	0.020
South/Southwest Flow Path	700	691.75	1,875	0.004	700	681.73	1,675	0.011	0.008

Flow Path Direction <sup>(1)</sup>	Averaged for 2019			
	K (ft/d)	n	$\Delta h/\Delta l$ (ft/ft)	V (ft/d) <sup>(2)</sup>
Northwest Flow Path	2.44	0.3	0.013	0.11
West Flow Path	2.44	0.3	0.020	0.17
South/Southwest Flow Path	2.44	0.3	0.008	0.06

Notes:

ft = feet

ft/d = feet per day

ft/ft = feet per foot

$h_1, h_2$  = point of interpreted groundwater elevation

$\Delta h/\Delta l$  = hydraulic gradient

K = hydraulic conductivity

$\Delta l$  = distance between location 1 and 2

n = effective porosity

V = groundwater flow velocity

(1) Flow path direction relative to the orientation of AP-1 and illustrated on Figures 3 and 4 of associated report.

(2) Groundwater flow velocity equation:  $V = [K * (\Delta h/\Delta l)] / n$

**Table 5**  
**Summary of Groundwater Analytical Data**  
**Plant Bowen AP-1, Bartow County, Georgia**

Well ID:	BGWA-2	BGWA-2	BGWA-2	BGWA-29	BGWA-29	BGWC-7	BGWC-7	BGWC-8	BGWC-8	BGWC-9 <sup>(4)</sup>	BGWC-10	BGWC-10	BGWC-12	BGWC-12	
Sample Date:	2/25/2019	4/1/2019	5/2/2019	2/27/2019	4/1/2019	2/28/2019	4/2/2019	2/25/2019	4/1/2019	4/1/2019	2/28/2019	4/2/2019	2/28/2019	4/1/2019	
Parameter <sup>(1,2,3)</sup>															
<b>APPENDIX III</b>	<b>Boron*</b>	--	ND (0.0076 J)	ND (0.015 J)	--	ND (0.0048 J)	--	1.4	--	ND (0.046 J)	0.50	--	0.51 J <sup>(5)</sup>	--	0.86 J <sup>(5)</sup>
	<b>Calcium*</b>	--	48.2	44.8	--	24.6	--	140	--	47.2	59.3	--	57.8	--	94.8
	<b>Chloride*</b>	--	4.2	4.3	--	1.6	--	9.4	--	1.8	13.4	--	24.1	--	24.1
	<b>Fluoride*</b>	ND	ND (0.047 J)	ND	ND	ND	ND (0.23 J)	ND (0.22 J)	ND	ND	0.33	ND (0.14 J)	ND (0.044 J)	ND (0.18 J)	ND (0.065 J)
	<b>pH*</b>	7.78	7.70	7.71	8.00	7.85	7.05	6.99	7.75	7.57	7.03	7.55	7.54	7.28	7.23
	<b>Sulfate*</b>	--	10.8	11.2	--	5.2	--	334	--	30.5	81.4	--	105	--	239
	<b>TDS*</b>	--	226	--	--	114	--	728	--	191	326	--	355	--	191
<b>APPENDIX IV</b>	<b>Antimony</b>	ND	--	--	ND	--	ND	--	ND	--	ND	--	ND	--	
	<b>Arsenic</b>	ND	ND (0.00049 J)	--	ND (0.0011 J)	ND (0.00019 J)	ND (0.0011 J)	ND (0.0016 J)	ND	ND (0.00041 J)	ND (0.0026 J)	0.0058	0.0057	ND	ND (0.00028 J)
	<b>Barium</b>	0.16	0.16	--	0.013	0.014	0.041	0.031	0.03	0.025	0.027	0.053	0.045	0.033	0.023
	<b>Beryllium</b>	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.000076 J)	ND
	<b>Cadmium</b>	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	<b>Chromium</b>	ND	ND	--	ND	ND	ND	ND	ND	ND (0.00091 J)	ND	ND	ND	ND	ND
	<b>Cobalt<sup>†</sup></b>	ND	ND (0.00014 J)	ND	ND	ND	ND (0.00067 J)	ND (0.00094 J)	ND	ND (0.000056 J)	ND (0.00024 J)	ND	ND (0.00027 J)	ND	ND (0.00034 J)
	<b>Fluoride</b>	ND	ND (0.047 J)	ND	ND	ND	ND (0.23 J)	ND (0.22 J)	ND	ND	0.33	ND (0.14 J)	ND (0.044 J)	ND (0.18 J)	ND (0.065 J)
	<b>Lead</b>	ND	ND	--	ND	ND	ND	ND	ND	ND	ND (0.000092 J)	ND	ND	ND	ND
	<b>Lithium</b>	ND	ND	--	ND	ND (0.00059 J)	ND (0.0086 J)	ND (0.0073 J)	ND	ND	ND (0.0012 J)	ND (0.0017 J)	ND (0.0012 J)	ND (0.0011 J)	ND (0.00078 J)
	<b>Mercury</b>	ND	ND	--	ND (0.000065 J)	ND	ND (0.000053 J)	ND	ND	ND	ND	ND (0.000048 J)	ND	ND (0.000058 J)	ND
	<b>Molybdenum<sup>+</sup></b>	ND	ND (0.0014 J)	ND	ND	ND (0.00053 J)	0.016	0.011	ND	ND (0.00054 J)	ND (0.0027 J)	ND (0.0035 J)	ND (0.0032 J)	ND	ND
	<b>Comb. Radium 226/228</b>	1.43	1.44 U	--	0.941 U	0.660 U	1.38	1.57	1.03 U	0.474 U	0.225 U	1.88	1.21 U	1.04	0.328 U
	<b>Selenium</b>	ND	ND (0.00011 J)	--	ND	ND	ND	ND	ND	ND (0.00015 J)	ND (0.00040 J)	ND	ND	ND	ND (0.00040 J)
<b>Thallium</b>	ND	ND (0.00011 J)	--	ND	ND	ND	ND (0.000070 J)	ND	ND	ND (0.000065 J)	ND	ND	ND	ND	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

ND = Indicates the parameter was not detected above the analytical MDL

TDS = total dissolved solids

U = Indicates the parameter was not detected above the analytical minimum detectable concentration (MDC) (Specific to combined radium 226/228)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium 226/228 by EPA Methods 9315/9320. The pH value presented was recorded at the time of sample collection in the field.

(3) Appendix III parameters with a "\*" exhibited statistically significant increases (SSIs) over background concentrations during the October 2017 detection monitoring event. Similarly, Appendix IV parameters with a "+" exhibited statistically significant levels (SSLs) over established Groundwater Protection Standards (GWPS) during the April 2019 assessment monitoring event.

(4) Well was not sampled during the February/March 2019 sampling event due to elevated turbidity.

(5) Value J-flagged by laboratory due to an elevated dilution factor required to process the sample. The result is above the RL of 0.1 mg/L for a dilution factor of 1.

(6) Well serves as a delineation monitoring well.

(7) Well BGWA-33 serves as a characterization well unassociated with the delineation monitoring well network.

(8) The value exceeds the Maximum Contaminant Level (MCL) for arsenic (0.010 mg/L). A demonstration documenting a naturally occurring source is included in Appendix C of this report.

**Table 5**  
**Summary of Groundwater Analytical Data**  
**Plant Bowen AP-1, Bartow County, Georgia**

Well ID:		BGWC-14	BGWC-14	BGWC-16	BGWC-16	BGWC-17	BGWC-17	BGWC-18	BGWC-18	BGWC-19	BGWC-19	BGWC-20	BGWC-20	BGWC-21 <sup>(4)</sup>
Sample Date:		3/6/2019	4/4/2019	2/25/2019	4/2/2019	2/27/2019	4/2/2019	2/27/2019	4/2/2019	3/1/2019	4/3/2019	2/27/2019	4/3/2019	4/3/2019
Parameter <sup>(1,2,3)</sup>														
APPENDIX III	Boron*	--	0.79 J <sup>(5)</sup>	--	1.1	--	0.95 J <sup>(5)</sup>	--	0.56 J <sup>(5)</sup>	--	0.51	--	2.6	0.12
	Calcium*	--	98.0	--	117	--	63.9	--	53.3	--	51.3	--	220	43.4
	Chloride*	--	33.7	--	20.3	--	18.7	--	4.5	--	9.7	--	144	5.0
	Fluoride*	0.88	0.44	ND (0.13 J)	ND (0.23 J)	ND (0.26 J)	ND (0.14 J)	ND	ND (0.044 J)	ND (0.14 J)	ND (0.051 J)	ND (0.13 J)	ND (0.072 J)	ND (0.032 J)
	pH*	7.33	7.33	6.74	6.75	7.38	7.22	6.58	6.48	6.70	6.58	7.26	7.14	7.69
	Sulfate*	--	255	--	272	--	86.9	--	70.1	--	90.6	--	593	61.9
	TDS*	--	617	--	604	--	321	--	258	--	259	--	1090	244
APPENDIX IV	Antimony	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	--
	Arsenic	ND (0.0015 J)	ND (0.00041 J)	ND	ND (0.00030 J)	ND (0.0010 J)	ND (0.00024 J)	ND (0.00083 J)	ND (0.00015 J)	ND	ND (0.00017 J)	ND (0.0014 J)	ND (0.00027 J)	ND (0.00038 J)
	Barium	0.065	0.049	0.028	0.025	0.014	0.015	0.027	0.028	0.028	0.033	0.032	0.029	0.033
	Beryllium	ND	ND	ND (0.000087 J)	ND (0.000063 J)	ND	ND	ND (0.00011 J)	ND (0.000052 J)	ND	ND	ND	ND	ND
	Cadmium	ND	ND	0.0016	0.0014	ND	ND	ND	ND (0.000073 J)	ND	ND	ND	ND	ND
	Chromium	ND	ND (0.00057 J)	ND	ND	ND	ND (0.00044 J)	ND	ND	ND	ND	ND (0.0048 J)	ND (0.00088 J)	ND
	Cobalt <sup>+</sup>	ND	ND (0.00015 J)	ND (0.0071 J)	ND (0.0056 J)	ND	ND (0.00015 J)	ND	ND (0.00012 J)	ND	ND (0.000072 J)	ND	ND (0.00024 J)	ND (0.00064 J)
	Fluoride	0.88	0.44	ND (0.13 J)	ND (0.23 J)	ND (0.26 J)	ND (0.14 J)	ND	ND (0.044 J)	ND (0.14 J)	ND (0.051 J)	ND (0.13 J)	ND (0.072 J)	ND (0.032 J)
	Lead	ND	ND	ND	ND	ND	ND	ND	ND (0.000081 J)	ND	ND	ND	ND	ND (0.000068 J)
	Lithium	ND	ND	ND	ND (0.00049 J)	ND	ND (0.00069 J)	ND	ND	ND	ND	ND (0.015 J)	ND (0.012 J)	ND
	Mercury	ND	ND	ND	ND	ND (0.00029 J)	ND (0.00040 J)	ND (0.000079 J)	ND	ND (0.00005 J)	ND	ND (0.000066 J)	ND	ND
	Molybdenum <sup>+</sup>	0.013	ND (0.0088 J)	ND	ND	ND	ND	ND	ND	ND	ND (0.00023 J)	0.013	0.012	ND (0.0019 J)
	Comb. Radium 226/228	9.46	8.48	1.08	1.73	1.57	0.710 U	1.12	0.814 U	0.989 U	0.980 U	1.24	0.567 U	0.532 U
	Selenium	ND	ND (0.00014 J)	ND	ND (0.00060 J)	ND	ND (0.00077 J)	ND	ND (0.0010 J)	ND	ND (0.00058 J)	ND	ND	ND (0.00012 J)
Thallium	ND	ND	ND (0.00023 J)	ND (0.00020 J)	ND	ND (0.000075 J)	ND	ND	ND	ND	ND	ND	ND	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

ND = Indicates the parameter was not detected above the analytical MDL

TDS = total dissolved solids

U = Indicates the parameter was not detected above the analytical minimum detectable concentration (MDC) (Specific to combined radium 226/228)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium 226/228 by EPA Methods 9315/9320. The pH value presented was recorded at the time of sample collection in the field.

(3) Appendix III parameters with a "\*" exhibited statistically significant increases (SSIs) over background concentrations during the October 2017 detection monitoring event. Similarly, Appendix IV parameters with a "+" exhibited statistically significant levels (SSLs) over established Groundwater Protection Standards (GWPS) during the April 2019 assessment monitoring event.

(4) Well was not sampled during the February/March 2019 sampling event due to elevated turbidity.

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(6) Well serves as a delineation monitoring well.

(7) Well BGWA-33 serves as a characterization well unassociated with the delineation monitoring well network.

(8) The value exceeds the Maximum Contaminant Level (MCL) for arsenic (0.010 mg/L). A demonstration documenting a naturally occurring source is included in Appendix C of this report.

**Table 5**  
**Summary of Groundwater Analytical Data**  
**Plant Bowen AP-1, Bartow County, Georgia**

Well ID:		BGWC-22	BGWC-22	BGWC-22	BGWC-23	BGWC-23	BGWC-24	BGWC-24	BGWC-25	BGWC-25	BGWC-30	BGWC-30	BGWA-6 <sup>(6)</sup>	BGWA-33 <sup>(7)</sup>	BGWA-33
Sample Date:		3/1/2019	4/3/2019	5/2/2019	3/1/2019	4/3/2019	3/1/2019	4/3/2019	3/1/2019	4/4/2019	3/1/2019	4/2/2019	4/2/2019	4/3/2019	7/9/2019
Parameter <sup>(1,2,3)</sup>															
APPENDIX III	Boron*	--	7.9	10.1	--	6.5	--	23.3	--	ND (0.020 J)	--	6.1 J <sup>(5)</sup>	ND (0.037 J)	0.66	ND (0.027 J)
	Calcium*	--	458	647	--	396	--	945	--	54.8	--	181	64.1	44.9	--
	Chloride*	--	856	999	--	679	--	1890	--	3.8	--	333	9	5.2	--
	Fluoride*	0.34	ND (0.23 J)	1.4	0.38	ND (0.10 J)	1.0	3.0	ND (0.12 J)	ND	ND (0.24 J)	0.68	ND	ND (0.085 J)	--
	pH*	6.90	6.77	6.92	7.16	7.00	6.57	6.57	7.50	7.38	7.32	7.22	7.24	7.67	--
	Sulfate*	--	720	827	--	603	--	648	--	11.4	--	153	29.8	26.2	--
	TDS*	--	2180	--	--	1990	--	ND (13 J)	--	196	--	773	295	235	--
APPENDIX IV	Antimony	ND	--	--	ND	--	ND	--	ND	--	ND	--	--	--	--
	Arsenic	ND (0.0011 J)	ND (0.0021 J)	--	ND (0.0023 J)	ND (0.00093 J)	ND (0.0032 J)	ND (0.0019 J)	ND (0.0022 J)	ND (0.0016 J)	ND	ND (0.00024 J)	ND (0.00032 J)	ND (0.0020 J)	--
	Barium	0.087	0.082	--	0.097	0.087	0.12	0.095	0.021	0.016	0.078	0.075	0.011	0.025	--
	Beryllium	ND (0.00012 J)	ND (0.000067 J)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
	Cadmium	ND (0.00013 J)	ND	--	ND (0.00019 J)	ND	0.0058	0.0053	ND	ND	ND	ND (0.000079 J)	ND	ND	--
	Chromium	ND	ND	--	ND (0.0033 J)	ND (0.00057 J)	ND	ND	ND	ND	ND	ND (0.00095 J)	ND	ND	--
	Cobalt <sup>+</sup>	0.017	0.019	ND (0.023 J)	ND	ND (0.00058 J)	ND (0.0055 J)	ND (0.0048 J)	ND	ND (0.00022 J)	ND	ND (0.00022 J)	ND (0.00016 J)	ND (0.00011 J)	--
	Fluoride	0.34	ND (0.23 J)	1.4	0.38	ND (0.10 J)	1.0	3.0	ND (0.12 J)	ND	ND (0.24 J)	0.68	ND	ND (0.085 J)	--
	Lead	ND (0.00033 J)	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND (0.000070 J)	ND	--
	Lithium	ND (0.022 J)	ND (0.024 J)	--	ND (0.017 J)	ND (0.013 J)	ND (0.0068 J)	ND (0.0048 J)	ND	ND	ND (0.0044 J)	ND (0.0041 J)	ND	ND	--
	Mercury	ND (0.000042 J)	ND	--	ND (0.000044 J)	ND	0.00093	0.0013	ND (0.000047 J)	ND	ND (0.0001 J)	ND	ND	ND	--
	Molybdenum <sup>+</sup>	0.039	0.039	0.043	0.013	0.012	ND	ND (0.00095 J)	ND	ND (0.00096 J)	0.011	0.01	ND (0.00026 J)	0.034	0.034
	Comb. Radium 226/228	3.32	2.48	--	2.24	2.86	3.37	3.6	0.634 U	0.346 U	2.47	2.29	0.640 U	0.690 U	--
	Selenium	ND	ND	--	ND	ND	ND	ND (0.0038 J)	ND	ND	ND (0.010 J)	ND (0.0092 J)	ND (0.00031 J)	ND (0.00013 J)	--
Thallium	ND (0.00074 J)	ND (0.00070 J)	--	ND	ND	ND (0.00070 J)	ND (0.00064 J)	ND	ND	ND (0.00024 J)	ND (0.00024 J)	ND (0.000062 J)	ND	--	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

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TDS = total dissolved solids

U = Indicates the parameter was not detected above the analytical minimum detectable concentration (MDC) (Specific to combined radium 226/228)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium 226/228 by EPA Methods 9315/9320. The pH value presented was recorded at the time of sample collection in the field.

(3) Appendix III parameters with a "\*" exhibited statistically significant increases (SSIs) over background concentrations during the October 2017 detection monitoring event. Similarly, Appendix IV parameters with a "+" exhibited statistically significant levels (SSLs) over established Groundwater Protection Standards (GWPS) during the April 2019 assessment monitoring event.

(4) Well was not sampled during the February/March 2019 sampling event due to elevated turbidity.

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(7) Well BGWA-33 serves as a characterization well unassociated with the delineation monitoring well network.

(8) The value exceeds the Maximum Contaminant Level (MCL) for arsenic (0.010 mg/L). A demonstration documenting a naturally occurring source is included in Appendix C of this report.



**Table 5**  
**Summary of Groundwater Analytical Data**  
**Plant Bowen AP-1, Bartow County, Georgia**

Well ID:		BGWC-31 <sup>(6)</sup>	BGWC-32 <sup>(6)</sup>	BGWC-32	BGWC-34D <sup>(6)</sup>	BGWC-35D <sup>(6)</sup>	BGWC-36D <sup>(6)</sup>	BGWC-37D <sup>(6)</sup>	BGWC-38D <sup>(6)</sup>
Sample Date:		4/4/2019	4/5/2019	5/3/2019	4/4/2019	4/4/2019	4/2/2019	5/3/2019	5/2/2019
Parameter <sup>(1,2,3)</sup>									
APPENDIX III	Boron*	0.59 J <sup>(5)</sup>	4.6 J <sup>(5)</sup>	3.4	0.15	8.3	6.7 J <sup>(5)</sup>	--	--
	Calcium*	69.3	265	203	104	442	200	--	--
	Chloride*	32.7	270	257	28.4	605	378	--	--
	Fluoride*	ND	0.66	1.3	ND (0.035 J)	ND (0.26 J)	0.44	--	--
	pH*	7.19	7.28	7.18	7.32	7.20	6.48	7.51	7.32
	Sulfate*	105	312	304	88.0	643	192	--	--
	TDS*	350	1160	--	419	1930	976	--	--
APPENDIX IV	Antimony	--	--	--	--	--	--	--	--
	Arsenic	ND (0.0036 J)	ND (0.00093 J)	--	0.015 <sup>(8)</sup>	ND (0.0018 J)	ND (0.00039 J)	--	--
	Barium	0.032	0.085	--	0.031	0.071	0.074	--	--
	Beryllium	ND	ND	--	ND	ND	ND (0.000070 J)	--	--
	Cadmium	ND	ND	--	ND	ND	ND	--	--
	Chromium	ND	ND	--	ND	ND (0.0011 J)	ND (0.0010 J)	--	--
	Cobalt <sup>+</sup>	ND (0.00051 J)	0.011	ND (0.0078 J)	ND (0.00042 J)	ND (0.0011 J)	ND (0.0011 J)	--	--
	Fluoride	ND	0.66	1.3	ND (0.035 J)	ND (0.26 J)	0.44	--	--
	Lead	ND (0.00065 J)	ND	--	ND (0.000054 J)	ND (0.00023 J)	ND (0.00067 J)	--	--
	Lithium	ND	ND	--	ND (0.00068 J)	ND (0.0096 J)	ND (0.0021 J)	--	--
	Mercury	ND	ND	--	ND	ND	ND	--	--
	Molybdenum <sup>+</sup>	ND (0.00033 J)	ND (0.0035 J)	ND (0.0048 J)	ND (0.0011 J)	0.030	0.011	0.040	0.11
	Comb. Radium 226/228	1.49	2.2	--	1.89	2.37	2.81	--	--
	Selenium	ND (0.000080 J)	ND (0.00015 J)	--	ND (0.00010 J)	ND	0.014	--	--
Thallium	ND	ND (0.00046 J)	--	ND	ND	ND (0.00022 J)	--	--	

Notes:

-- = Parameter was not analyzed

J = Indicates the parameter was estimated and detected between the method detection limit (MDL) and the reporting limit (RL)

ND = Indicates the parameter was not detected above the analytical MDL

TDS = total dissolved solids

U = Indicates the parameter was not detected above the analytical minimum detectable concentration (MDC) (Specific to combined radium 226/228)

(1) Appendix III/IV parameter per 40 CFR 257 Subpart D. Parameters are reported in units of milligrams per liter (mg/L), except for pH reported as s.u. (standard units) and combined radium reported as picocuries per liter (pCi/L).

(2) Metals were analyzed by EPA Method 6020B, anions were analyzed by EPA Method 300.0, TDS was analyzed by SM2540C, and combined radium 226/228 by EPA Methods 9315/9320. The pH value presented was recorded at the time of sample collection in the field.

(3) Appendix III parameters with a "\*" exhibited statistically significant increases (SSIs) over background concentrations during the October 2017 detection monitoring event. Similarly, Appendix IV parameters with a "+" exhibited statistically significant levels (SSLs) over established Groundwater Protection Standards (GWPS) during the April 2019 assessment monitoring event.

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(7) Well BGWA-33 serves as a characterization well unassociated with the delineation monitoring well network.

(8) The value exceeds the Maximum Contaminant Level (MCL) for arsenic (0.010 mg/L). A demonstration documenting a naturally occurring source is included in Appendix C of this report.

**Table 6**  
**Summary of Background Concentrations and Groundwater Protection Standards**  
**Plant Bowen AP-1, Bartow County, Georgia**

Analyte	Units	Background <sup>(1)</sup>	Federal GWPS <sup>(2)</sup>	State GWPS <sup>(3)</sup>
Antimony	mg/L	0.003	0.006	0.006
Arsenic	mg/L	0.005	0.01	0.01
Barium	mg/L	0.218	2	2
Beryllium	mg/L	0.003	0.004	0.004
Cadmium	mg/L	0.001	0.005	0.005
Chromium	mg/L	0.01	0.1	0.1
Cobalt	mg/L	Federal: 0.005 <sup>(4)</sup> State: 0.01	0.006	0.01
Fluoride	mg/L	0.207	4	4
Lead	mg/L	0.005	0.015 <sup>(5)</sup>	0.005
Lithium	mg/L	Federal: 0.025 <sup>(4)</sup> State: 0.05	0.04	0.05
Mercury	mg/L	0.0002	0.002	0.002
Molybdenum	mg/L	0.01	0.1	0.01
Selenium	mg/L	0.01	0.05	0.05
Thallium	mg/L	0.001	0.002	0.002
Combined Radium-226/228	pCi/L	1.76	5	5

Notes:

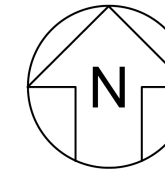
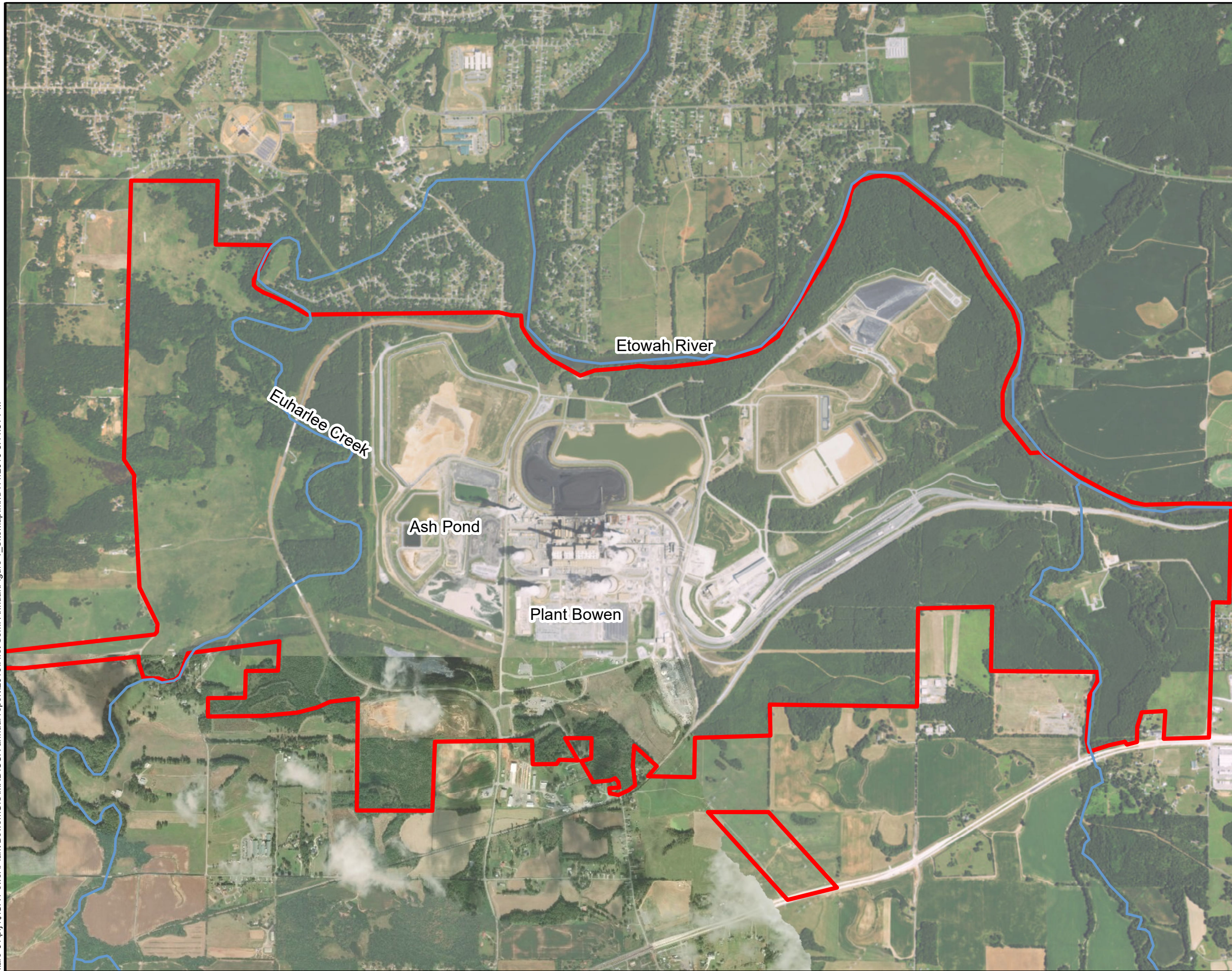
"mg/L" = milligrams per liter

"pCi/L" = picocuries per liter

1. The background limits were used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia Environmental Protection Division (EPD) Rule 391-3-4-.10(6)(a).
2. Under 40 CFR §257.95(h)(1-3) the GWPS is: (i) the maximum contaminant level (MCL) established under §§141.62 and 141.66 of this title; (ii) where an MCL has not been established a rule-specific GWPS or regional screen level (RSL) is used; or (iii) background levels for constituents where the background level is higher than the MCL or rule-specified GWPS.
3. Under the existing EPD rules, the GWPS is: (i) the MCL; (ii) where the MCL is not established, the background concentration; or (iii) background concentrations for constituents where the background concentration is higher than the MCL.
4. The background tolerance limit (TL) used to evaluate GWPS for this analyte equals half the laboratory specified reporting limit (RL). Per the Statistical Analysis Plan (SAP), and in accordance with the Unified Guidance, a non-parametric TL approach was used since the data set contained greater than 50% non-detect (ND) results for this analyte. Under this approach, the TL equals the highest value reported, for which is the laboratory RL. Since a RL may be influenced due to sample matrix interference at the time of analysis, half the RL was applied in this select case.
5. Currently, there is no Environmental Protection Agency (EPA) MCL established for lead. The value listed as GWPS is the established EPA Action Level for drinking water.

# FIGURES

\\laro-01\proj\GA Power\Plant Bowen\GIS\MXD\CCR annual report\2019\First Semi-Annual\Figure 1\_SiteMap.mxd 7/1/2019 3:44:51 PM

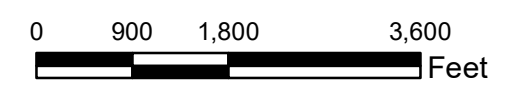


**LEGEND**

- Approximate Site Boundary
- River or Stream



Notes:  
1. Aerial photograph source: USDA FSA, 2015.



**SITE LOCATION MAP**

GEORGIA POWER COMPANY  
PLANT BOWEN AP-1  
BARTOW COUNTY, GEORGIA

Prepared For: Georgia Power

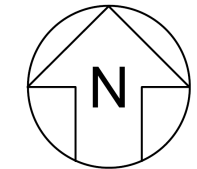
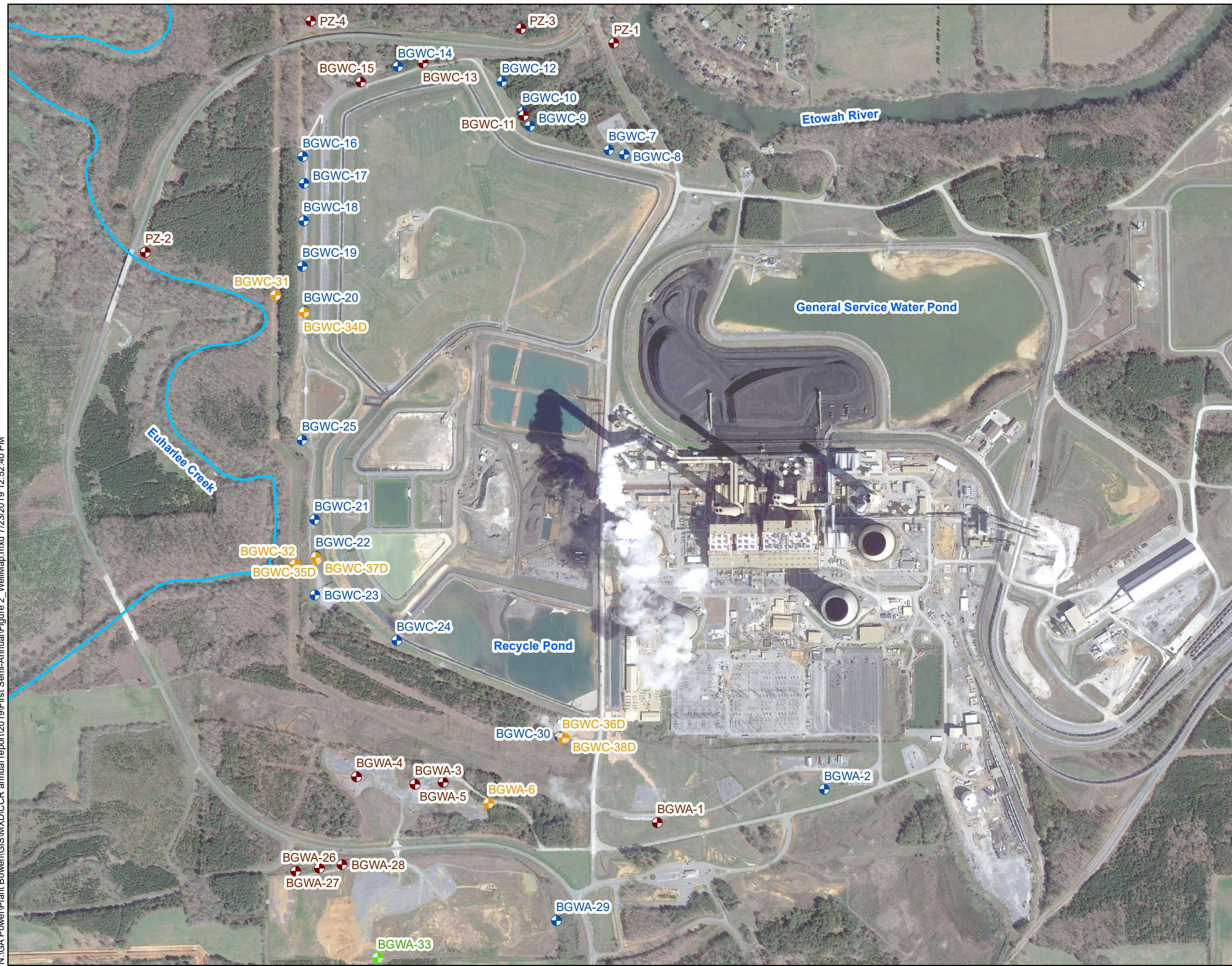
Prepared By: Geosyntec  
consultants

KENNESAW, GA




JULY 2019

**FIGURE**  
**1**

N:\GA Power\Plant Bowen\GIS\MXD\CRCR annual report\2019\First Semi-Annual\Figure 2\_WellMap.mxd 7/23/2019 12:52:40 PM

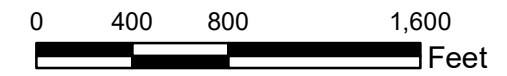


**LEGEND**

-  Compliance Monitoring Well
-  Delineation Monitoring Well
-  Characterization Monitoring Well
-  Groundwater Level Monitoring Piezometer



- Notes:
1. All wells and piezometers presented are screened within the weathered fractured bedrock.
  2. Aerial photograph source: Google Earth Pro, February 2018.



**MONITORING WELL NETWORK MAP**

GEORGIA POWER COMPANY  
PLANT BOWEN AP-1  
BARTOW COUNTY, GEORGIA

Prepared For:  Georgia Power

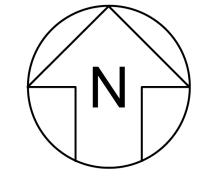
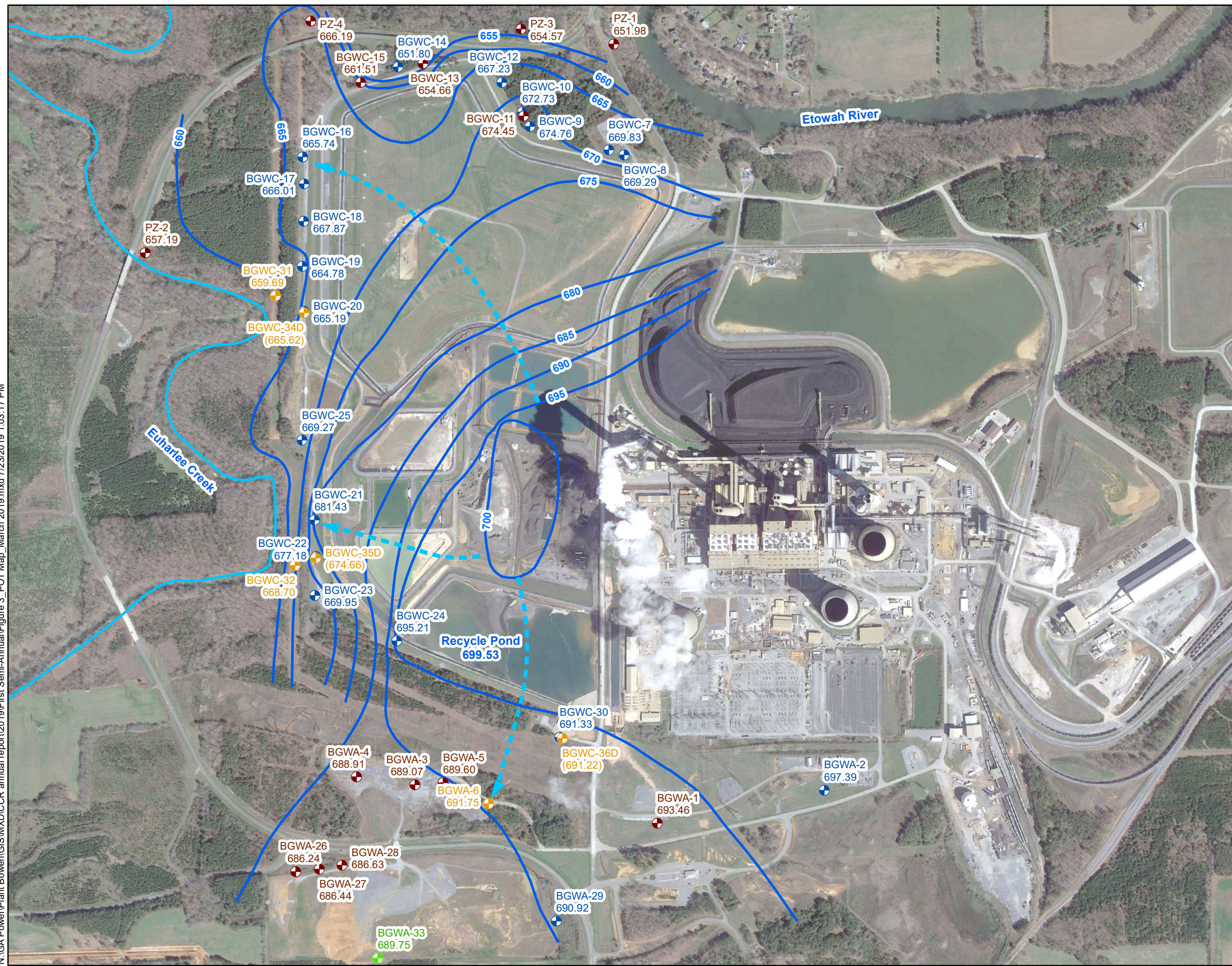
Prepared By:  Geosyntec  
consultants

**FIGURE**  
**2**

KENNESAW, GA

JULY 2019

N:\GA Power\Plant\Bowen\GIS\MXD\CRCR annual report\2019\1st Semi-Annual\Figure 3\_POT Map\_March 2019.mxd 7/23/2019 1:03:17 PM

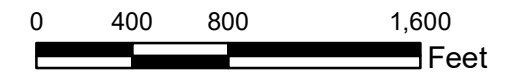


- LEGEND**
- Compliance Monitoring Well
  - Delineation Monitoring Well
  - Characterization Monitoring Well
  - ⊗ Groundwater Level Monitoring Piezometer
  - Groundwater Elevation Iso-Contour
  - Approximate Groundwater Flow Direction



**Notes:**

1. Water level elevations recorded on March 5, 2019. Elevation provided in feet above mean sea level (ft AMSL) in North American Vertical Datum (NAVD) 88.
2. Water elevation in parentheses is not used in development of groundwater contours due to well being screened at a different elevation in the formation/aquifer.
3. Aerial photograph source: Google Earth Pro, 2017.



**POTENTIOMETRIC SURFACE CONTOUR MAP - MARCH 2019**

GEORGIA POWER COMPANY  
PLANT BOWEN AP-1  
BARTOW COUNTY, GEORGIA

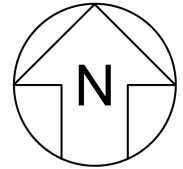
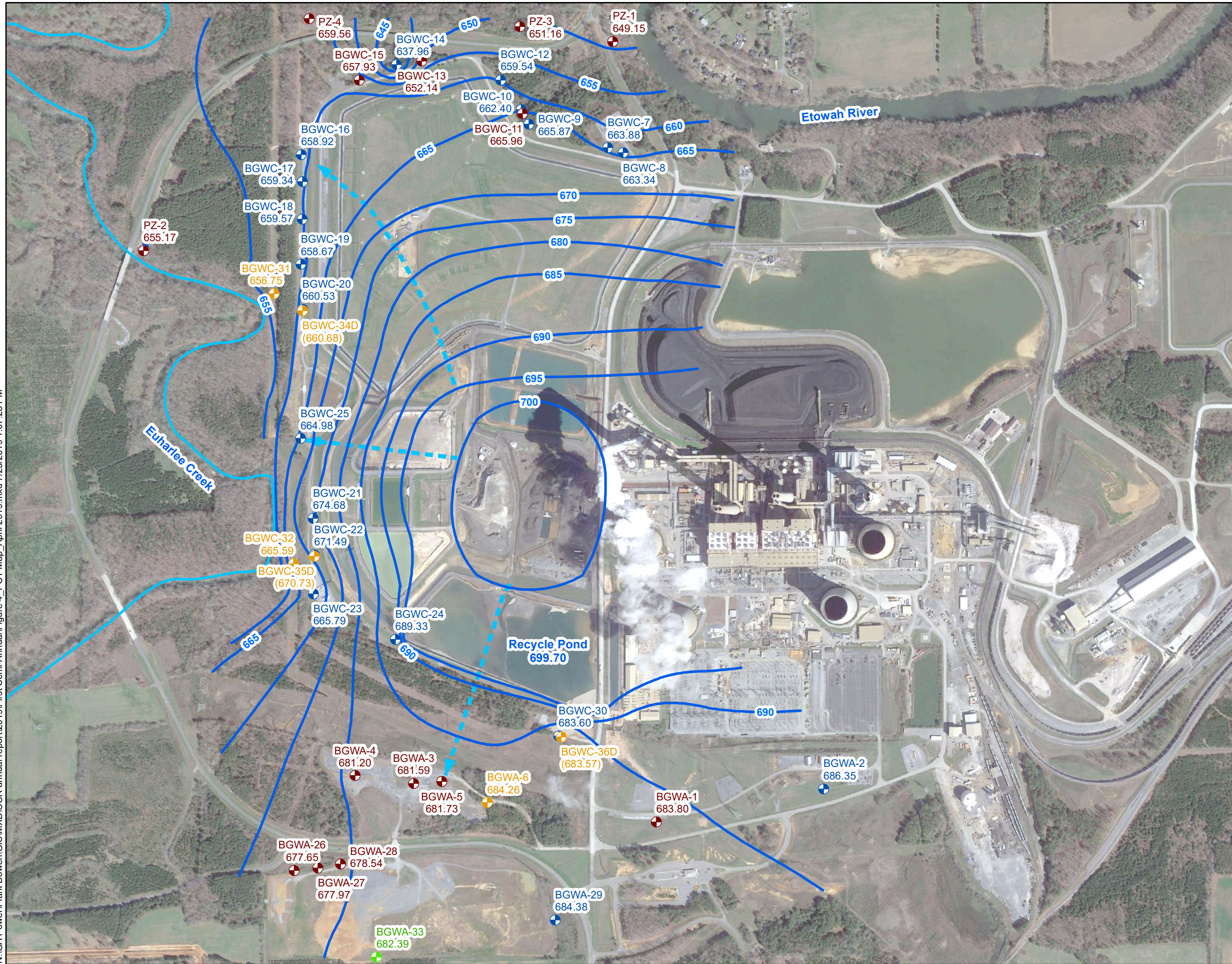
Prepared For: Georgia Power

Prepared By: Geosyntec consultants

KENNESAW, GA      JULY 2019

**FIGURE 3**

N:\GA Power\Plant Bowen\GIS\MXD\ICCR annual report\2019\1st Semi-Annual\Figure 4\_POT Map\_April\_2019.mxd 7/23/2019 1:07:28 PM

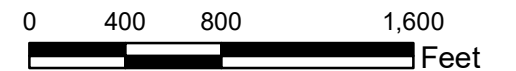


**LEGEND**

- Compliance Monitoring Well
- Delineation Monitoring Well
- Characterization Monitoring Well
- Groundwater Level Monitoring Piezometer
- Groundwater Elevation Iso-Contour
- Approximate Groundwater Flow Direction



- Notes:**
1. Water level elevations recorded on April 1, 2019.  
Elevation provided in feet above mean sea level (ft AMSL) in North American Vertical Datum (NAVD) 88.
  2. Water elevation in parentheses is not used in development of groundwater contours due to well being screened at a different elevation in the formation/aquifer.
  3. Aerial photograph source: Google Earth Pro, 2017.



**POTENTIOMETRIC SURFACE CONTOUR MAP - APRIL 2019**

GEORGIA POWER COMPANY  
PLANT BOWEN AP-1  
BARTOW COUNTY, GEORGIA

Prepared For: Georgia Power

Prepared By: Geosyntec consultants

**FIGURE**  
**4**

KENNESAW, GA

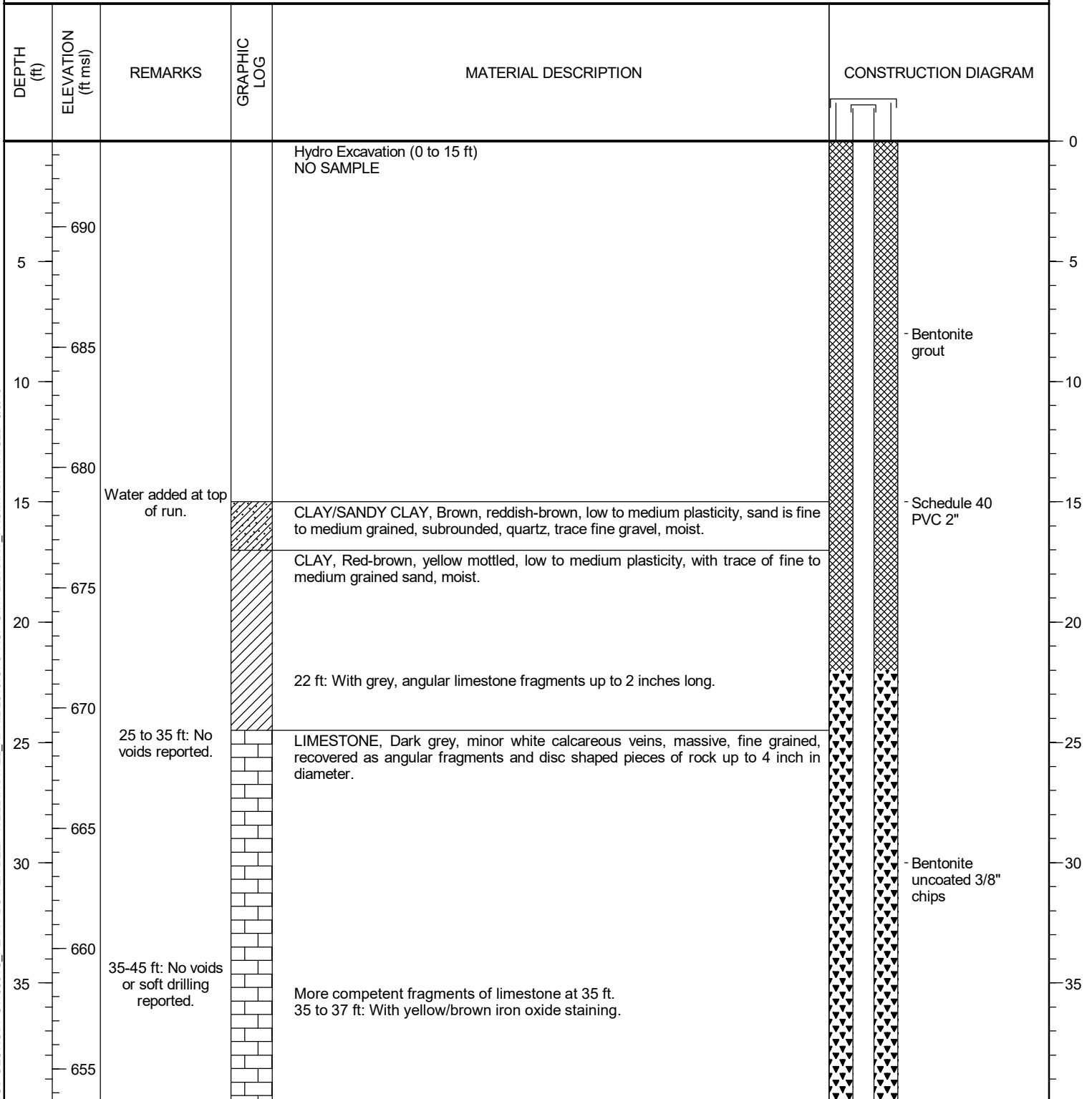
JULY 2019

## APPENDIX A

### Boring and Well Construction Logs



**CLIENT** Southern Company Services **PROJECT NAME** Groundwater SRV-AP1  
**PROJECT NUMBER** GW6581C **PROJECT LOCATION** Euharlee, GA  
**DATE STARTED** 4/24/19 **COMPLETED** 4/25/19 **NORTHING** 1501293.457 ft **EASTING** 2064363.994 ft  
**DRILLER** Cascade Drilling **GROUND ELEVATION** 693.564 ft **BORING DIAMETER** 6 in  
**DRILLING METHOD** Sonic **TOP OF CASING ELEVATION** 696.12 ft  
**SAMPLING METHOD** 4" core 6" override **GEOPHYSICAL CONTRACTOR** ---  
**RIG TYPE** Terrasonic 11-38212 **LOGGED BY** C. Hug **CHECKED BY** J. Ivanowski



SCS GEORGIA GW6581C\_PLANT BOWEN DEEP WELL INSTALL\_APRIL 2019.GPJ ACP GINT LIBRARY FROM ASHWIN.GLB 5/8/19

CLIENT Southern Company Services

PROJECT NAME Groundwater SRV-AP1

PROJECT NUMBER GW6581C

PROJECT LOCATION Euharlee, GA

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40					
45	650	25 to 35 ft: No voids reported.		LIMESTONE, Dark grey, minor white calcareous veins, massive, fine grained, recovered as angular fragments and disc shaped pieces of rock up to 4 inch in diameter. <i>(continued)</i> 41 ft: With white, calcareous mineralization along healed fracture planes.	
50	645				
55	640	No recovery, run was not lost in hole. Very soft drilling with some resistance.		54 ft: Dark grey, some calcareous veins and secondary mineralization along fracture planes, fresh, moderate strength. NO RECOVERY (55 to 65 ft)	
60	635				
65	630	65 to 75 ft: No voids reported.		LIMESTONE, Dark grey, some black, massive, fine grained, minor white calcareous veins, recovered as subrounded gravel sized core fragments and cobbles. Recovered with pale grey, silty coating. Minor yellowish-brown iron oxide staining at 65 ft.	
70	625				
75	620	75 to 85 ft: No voids reported.		With pale grey, silty coating and some secondary calcite mineralization along fracture planes.	Bentonite uncoated 3/8" chips
80	615				
85	610	85 to 95 ft: No voids reported.			

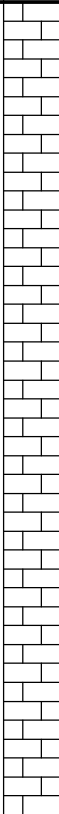
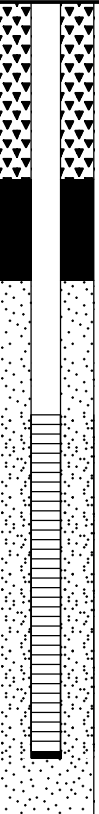
SCS GEORGIA GW6581C PLANT BOWEN DEEP WELL INSTALL APRIL 2019.GPJ ACP GINT LIBRARY FROM ASHWIN.GLB 5/8/19

CLIENT Southern Company Services

PROJECT NAME Groundwater SRV-AP1

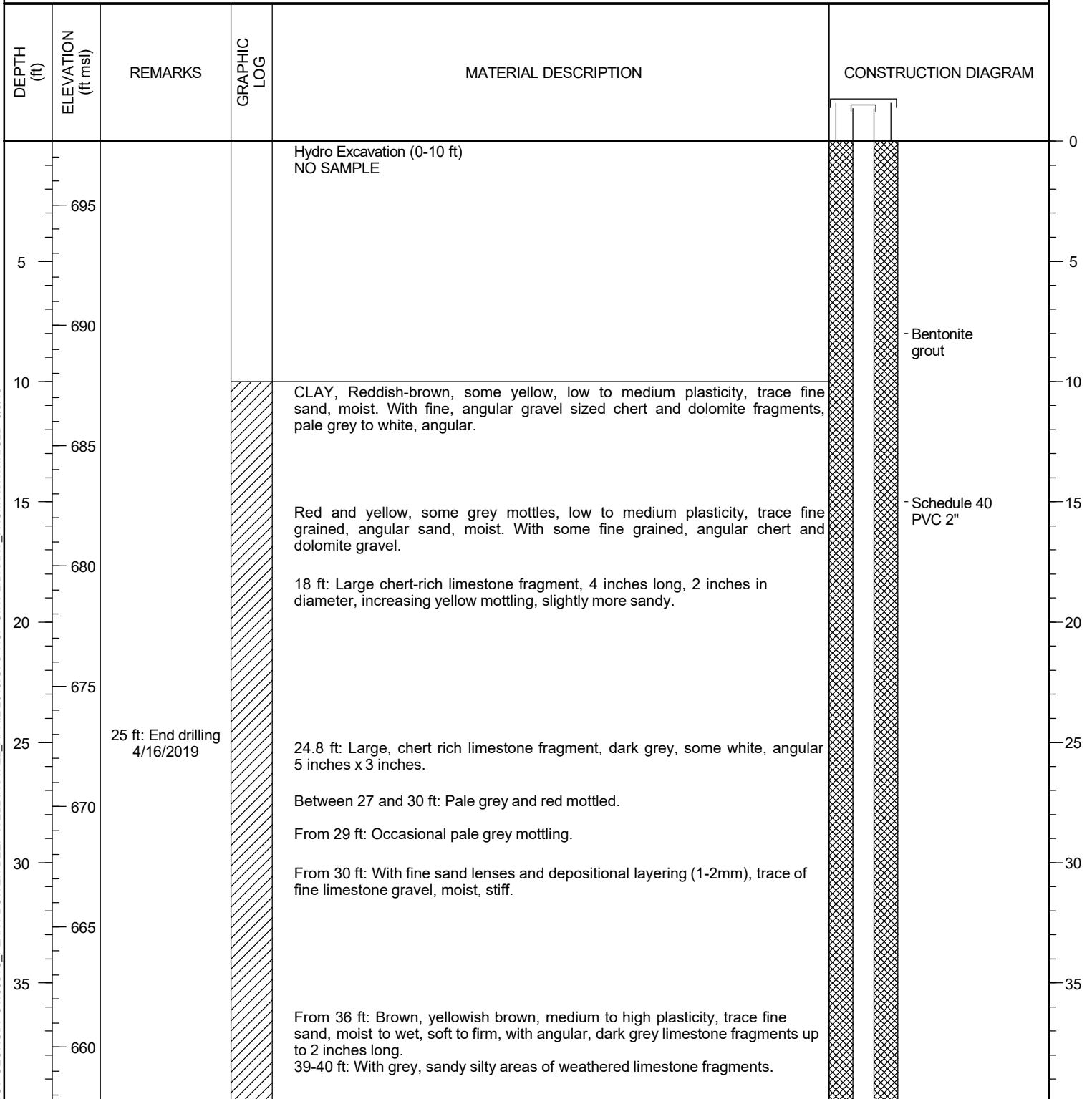
PROJECT NUMBER GW6581C

PROJECT LOCATION Euharlee, GA

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
<p>90</p> <p>605</p> <p>600</p> <p>95</p> <p>595</p> <p>100</p> <p>590</p> <p>105</p> <p>585</p> <p>110</p>	<p>95 to 110 ft: No voids reported.</p>		<p>LIMESTONE, Dark grey, some black, massive, fine grained, minor white calcareous veins, recovered as subrounded gravel sized core fragments and cobbles. Recovered with pale grey, silty coating. <i>(continued)</i></p>	 <p>- Bentonite 3/8" chips</p> <p>- 20/40 Silica Sand</p> <p>- 0.010 slot size 2" Pre Pack, U-Pack Screen</p>	<p>90</p> <p>95</p> <p>100</p> <p>105</p> <p>110</p>
<p>Bottom of borehole at 110.0 feet.</p>					
<p>580</p> <p>115</p> <p>575</p> <p>120</p> <p>570</p> <p>125</p> <p>565</p> <p>130</p>					

SCS GEORGIA GW6581C\_PLANT BOWEN DEEP WELL INSTALL\_APRIL 2019.GPJ ACP GINT LIBRARY\_FROM ASHWIN.GLB 5/8/19

**CLIENT** Southern Company Services **PROJECT NAME** Groundwater SRV-AP1  
**PROJECT NUMBER** GW6581C **PROJECT LOCATION** Euharlee, GA  
**DATE STARTED** 4/16/19 **COMPLETED** 4/18/19 **NORTHING** 1499803.595 ft **EASTING** 2066430.571 ft  
**DRILLER** Cascade Drilling **GROUND ELEVATION** 697.662 ft **BORING DIAMETER** 6 in  
**DRILLING METHOD** Sonic **TOP OF CASING ELEVATION** 700.47 ft  
**SAMPLING METHOD** 4" core 6" override **GEOPHYSICAL CONTRACTOR** ---  
**RIG TYPE** Terrasonic 11-38212 **LOGGED BY** C. Hug **CHECKED BY** J. Ivanowski



SCS GEORGIA GW6581C\_PLANT BOWEN DEEP WELL INSTALL\_ APRIL 2019.GPJ ACP GINT LIBRARY FROM ASHWIN.GLB 5/8/19

CLIENT Southern Company Services

PROJECT NAME Groundwater SRV-AP1

PROJECT NUMBER GW6581C

PROJECT LOCATION Euharlee, GA

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
40				CLAY, Reddish-brown, some yellow, low to medium plasticity, trace fine sand, moist. With fine, angular gravel sized chert and dolomite fragments, pale grey to white, angular. <i>(continued)</i>	
45				43 ft: Dark grey, angular limestone fragments up to 5 inches long.	
				45 ft: Angular limestone fragment, 5 inches x 3 inches.	
50				48-49 ft: With fine to coarse grained gravel sized limestone fragments, angular, grey, up to 5 inches in diameter.	
				51 ft: Large, angular chert fragment, white to pale grey, 5 inches in diameter.	
				53 ft: Angular limestone fragment, 4 inches long.	
55				56 ft: With dark brown SANDY CLAY, sand is fine to coarse grained, subangular, quartz.	
				From 57 ft: CLAY with SAND, Brown red and yellow, medium to high plasticity, sand is fine to medium grained, subangular, trace of fine limestone gravel.	
60				63 to 64 ft: Lens of fine to coarse gravel sized limestone fragments in sandy, silty clay matrix.	
65		67 to 77 ft: Driller reports general 'easy' drilling, with softer and harder patches.		LIMESTONE, Dark grey, grey, white, massive, with calcareous veins, minor yellowish-brown iron oxide staining, drilled as angular fragments of rock and disc shaped core fragments, with some chert rich fragments.	Bentonite grout
70				Potential VOID (74 to 76 ft)	
75		Driller reports rods dropping between 74 and 76 ft, no resistance.		LIMESTONE, Dark grey, grey, white, massive, with calcareous veins, minor yellowish-brown iron oxide staining, drilled as angular fragments of rock and disc shaped core fragments, with some chert rich fragments.	
80		Softer and harder drilling, but no rod dropping.			Bentonite uncoated 3/8" chips
85					

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CLIENT Southern Company Services

PROJECT NAME Groundwater SRV-AP1

PROJECT NUMBER GW6581C

PROJECT LOCATION Euharlee, GA

DEPTH (ft)	ELEVATION (ft msl)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	CONSTRUCTION DIAGRAM
610				LIMESTONE, Dark grey, grey, white, massive, with calcareous veins, minor yellowish-brown iron oxide staining, drilled as angular fragments of rock and disc shaped core fragments, with some chert rich fragments. (continued)	
90					
605					
95					
600		From 97': Harder drilling, slow progress.		From 97': Larger, competent pieces of limestone up to 4 inches in length, grey, white, massive, fresh.	
100					
595					
105		107 to 117 ft: Fast drilling throughout run, no voids reported.		From 105 to 107 ft: Drilled as three competent pieces of intact limestone core up to 12 inches long, fresh, no fractures to slightly fractured.	
590					
110				Between 109 and 113 ft: Some brown and yellow iron oxide staining along fracture planes. Rock is generally recovered as grey, angular fragments of rock up to 4 inches long, with white calcareous veins and discs of core up to 1 inch length. No staining between 115 and 117 ft.	Bentonite 3/8" chips
585					
115					0.010 slot size 2" Pre Pack, U-Pack Screen
580					20/40 Silica Sand
120					
575					
125					
570				Bottom of borehole at 127.0 feet.	
130					

SCS GEORGIA GW6581C\_PLANT BOWEN DEEP WELL INSTALL\_APRIL 2019.GPJ ACP GINT LIBRARY FROM ASHWIN.GLB 5/8/19

## APPENDIX B

### Memorandum: Delineation of Naturally Occurring Arsenic



*Prepared for*

**Georgia Power Company**  
241 Ralph McGill Blvd NE  
Atlanta, Georgia 30308

**DEMONSTRATION OF  
NATURALLY-OCCURRING ARSENIC  
GEORGIA POWER COMPANY  
PLANT BOWEN – ASH POND 1 (AP-1)**

*Prepared by*

**Geosyntec**   
consultants

**engineers | scientists | innovators**

1255 Roberts Boulevard, Suite 200  
Kennesaw, Georgia 30144

Project Number GW6581C

July 2019





## DEMONSTRATION OF NATURALLY-OCCURRING ARSENIC

Plant Bowen  
Ash Pond 1 (AP-1)

July 30, 2019

A handwritten signature in black ink that reads "Herwig Goldmund".

---

Herwig Goldmund, Ph.D.  
*Senior Scientist*

A handwritten signature in black ink that reads "Whitney B. Law".

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Whitney Law, P.E.  
*Project Manager*

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## LIST OF ACRONYMS

AP	ash pond
As	arsenic
B	boron
CCR	Coal Combustion Residual
CFR	Code of Federal Regulations
Cl	chloride
Co	cobalt
GPC	Georgia Power Company
GWPS	groundwater protection standard
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
Mo	molybdenum
PE	professional engineer
SSL	statistically significant level
SO <sub>4</sub>	sulfate
USEPA	United States Environmental Protection Agency

## **1. INTRODUCTION**

### **1.1 Purpose**

This document presents a demonstration for concentrations of arsenic (As) above the groundwater protection standard (GWPS) detected in delineation well BGWC-34D located at the Georgia Power Company (GPC) Plant Bowen (Site) Ash Pond 1 (AP-1). Based on review of available data, the As detected in BGWC-34D is not associated with a release from AP-1 but is from a naturally-occurring source within the rock formation. Arsenic has not been identified at a statistically significant level (SSL) for AP-1 groundwater pursuant to the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule [40 Code of Federal Regulations (CFR) Part 257, Subpart D]. While the As concentrations found in BGWC-34D do not currently trigger a response pursuant to the CCR Rule, this demonstration has been prepared to explain the origin of observed groundwater concentrations of As in support of GPC's groundwater monitoring at AP-1.

### **1.2 Summary of Findings**

Since January 2018, groundwater associated with AP-1 has been monitored under an assessment monitoring program pursuant to 40 CFR 257.95. Cobalt (Co) and molybdenum (Mo) were identified at SSL concentrations in select compliance wells at AP-1. Well BGWC-34D was initially installed to vertically delineate SSLs of Mo in well BGWC-20. While Mo has been vertically delineated to below the GWPS in BGWC-34D, As was detected above the GWPS of 0.010 milligram per liter (mg/L) in that well.

Based on review of available Site data, the As detected in well BGWC-34D is not associated with a release from AP-1 but is instead caused by a natural source of As in the site-specific rock formation. This report provides the following information supporting this conclusion:

- The As detection above the GWPS in well BGWC-34D is an isolated occurrence in a deeper flow zone that has a distinctly different geochemistry from the shallower groundwater; none of the shallow wells (or other deep wells) have As at a concentration above the GWPS; and

- Samples of rock cores contain As at concentrations higher than average crustal abundance; samples collected from the core for BGWC-34D at the screened depth interval of BGWC-34D have the highest As concentrations [i.e., up to 13 milligrams per kilogram (mg/kg)] relative to the other rock core samples collected from depth intervals coinciding with the screened intervals of various compliance and detection monitoring wells. Other solid samples had As detections between 0.8 mg/kg and 3.5 mg/kg. Elevated, naturally-occurring As within North Georgia has been well documented in the literature and is most likely associated with As-bearing minerals such as pyrite. Similarly, the occurrence of arsenic in well BGWC-34D is related to its natural occurrence and distribution in the subsurface geologic media.

### **1.3 Site Setting and Operational History**

#### **1.3.1 Site Description**

Plant Bowen is a four-unit, coal-fired, electric-generating facility located nine miles southwest of Cartersville in Bartow County, Georgia. The plant is bordered by the Etowah River to the north and east, and Euharlee Creek to the northwest and west (**Figure 1**). Plant Bowen commenced operations in the 1970s.

Operation of AP-1 commenced in 1971 with receipt of sluiced CCR material from Plant Bowen. GPC is currently in the permitting process to close AP-1 by consolidating the excavated CCR material into a fully-contained engineered structure using advanced engineering methods. In preparation for AP-1 closure, the plant completed the conversion to dry ash handling in early 2019 and AP-1 no longer receives ash.

#### **1.3.2 Site Geology and Hydrogeology**

The Site is located in the Valley and Ridge Physiographic Province of northwest Georgia, which is characterized by Paleozoic sedimentary rocks that have been folded and faulted into the ridges and valleys that gave this region its name. The floor of the valley is underlain by shales, dolomites, and limestones of Cambrian and Ordovician age. Geologic mapping performed by Lawton et al. (1976) indicates that the Site is underlain by the Ordovician-Cambrian age Knox Dolomite and the Ordovician age Newala Limestone. Based on review of subsurface investigations at the Site, the bedrock is described as predominantly dolomite. The Site is underlain primarily by three lithologic

units: (i) fill material consisting of earthen embankments and CCR material, (ii) residuum, and (iii) competent dolomite/limestone bedrock.

The residuum at the Site is the result of in-place weathering of the underlying dolomite/limestone bedrock. The residuum consists mainly of mottled light brown to red to yellow, low to high plasticity, stiff to very stiff clay, silt, and silty clay. Most soils contain varying amounts of black chert nodules and chert gravel. The bedrock at the Site is described as light to dark gray, fine to medium-grained, thinly-bedded to massive, dense, and hard dolomite, limestone, and dolomitic limestone. Some evidence of weathering along fracture or bedding surfaces was observed, with some manganese or iron oxide staining. Abundant calcite veins and occasional zones of healed dolomite breccia were observed throughout the bedrock. Solution features in the underlying limestone/dolomite bedrock formed over geological timeframes along pre-existing discontinuities such as joints and bedding planes. At the Site, these solution features are typically filled with sediment from the in-place weathering of the bedrock or the downward migration of the overlying residuum, but they may also be fully or partially open, or water filled.

The uppermost aquifer at the Site is a regional groundwater aquifer that occurs in the residuum and fractured and solutioned bedrock. Groundwater flow in bedrock is under unconfined to semi-confined conditions from the mantle of overlying lower-permeability residuum and is controlled by secondary porosity along fractures and solution-enhanced features.

#### **1.4 Groundwater Monitoring and Statistical Analysis**

A groundwater monitoring system was installed at AP-1 in accordance with 40 CFR 257.91 and certified by a professional engineer (PE) on October 10, 2017. The certified compliance monitoring well network for AP-1 consists of a total of 19 monitoring wells: two upgradient wells and 17 downgradient wells. The locations of the wells for the compliance monitoring well network are shown on **Figure 2**.

GPC initiated an assessment monitoring program for groundwater at AP-1 in January 2018. Pursuant to 40 CFR 257.95, the compliance monitoring well network was sampled for Appendix IV parameters in March 2018, and again in June and October 2018 for Appendix III parameters and the Appendix IV parameters detected during the April event. Groundwater data collected during the June and October 2018 semiannual monitoring

events were statically analyzed in accordance with the PE-certified statistical method established for the Site. SSLs of Co were identified in well BGWC-22, with SSLs of Mo identified in wells BGWC-20, BGWC-22, BGWC-23, and BGWC-30. Additional details regarding groundwater monitoring and statistical analyses are provided in the *2018 Annual Groundwater and Corrective Action Monitoring Report* (Geosyntec, 2019a).

As a consequence of detecting the SSLs listed above, eight additional monitoring wells (BGWC-31, BGWC-32, BGWA-33, BGWC-34D, BGWC-35D, BGWC-36D, BGWC-37D, BGWC-38D) were installed between July 2018 and April 2019 to characterize flow conditions and assess the nature and extent of Co and Mo in groundwater downgradient of AP-1. Well BGWC-34D was installed to vertically delineate Mo detected at well BGWC-20. These eight delineation wells are also depicted on **Figure 2**. Well construction details for the compliance and delineation wells are provided in **Table 1**.

## 2. DEMONSTRATION OF NATURALLY-OCCURRING ARSENIC

Based on review of Site information, the As detected above the GWPS in well BGWC-34D is not associated with a release from AP-1 but is instead caused by a natural source of As in the site-specific rock formation. This report provides the following information supporting this conclusion.

### 2.1 Isolated Occurrence of Elevated Arsenic in BGWC-34D

The concentration of As detected in monitoring well BGWC-34D is an isolated occurrence across the monitoring well network at the Site. No other well, either shallow or deep, within the compliance and/or delineation network has reported an As concentration above the GWPS with the exception of well BGWC-24. A single isolated detection of As at 12.1 ug/L was reported in well BGWC-24 during the December 2016 baseline sampling event. However, As was reported in BGWC-24 at near trace concentrations below the GWPS prior to and following the December 2016 event. Well BGWC-34D was installed as a deep well to vertically delineate Mo at compliance well BGWC-20. It was located within 20 feet of and adjacent to BGWC-20.

The top of the screen of BGWC-34D was installed approximately 20 feet below the bottom of the screen of well BGWC-20 (**Table 1**). BGWC-34D has intercepted a flow zone in this area which exhibits a geochemistry that is different from the shallow well. This geochemical difference is demonstrated by molar ionic ratios summarized in **Table 2**. These ratios were calculated on a molar basis (mmol) for results from sampling events conducted in October 2018 and April 2019. The table summarizes results from the background wells (BGWA-2, BGWA-29) together with monitoring well pairs that have a shallow and deep well nested together [BGWC-20/BGWC-34D (highlighted yellow); BGWC-22/BGWC-35D; BGWC-30/BGWC-36D]. As can be seen, ionic ratios for the conservative ions boron (B), chloride (Cl) and sulfate (SO<sub>4</sub>) as well as ion ratios involving As indicate that the geochemistry of samples from BGWC-34D is different from the geochemistry of the shallow well BGWC-20, while the other well pairs show a similar geochemistry between the shallow and the deep wells. This is especially evident when comparing the ion ratios involving As. Furthermore, the ion ratios from BGWC-34D are more similar to background conditions of BGWA-2 and BGWA-29 than to conditions in other wells. This indicates a background-like signature in BGWC-34D and a source of As that is not related to a release from AP-1.



## 2.2 Arsenic in Rock Cores

Samples of rock cores were collected from depth intervals that coincided with the screened intervals of various monitoring wells and submitted for laboratory analysis of As. **Table 3** summarizes the results together with corresponding groundwater concentrations from these wells, and **Appendix A** provides the laboratory analytical reports of the rock samples. Laboratory reports for the groundwater samples have been submitted under separate groundwater monitoring reports (Geosyntec, 2019a, 2019b).

The As concentrations in the two rock core samples from the screened interval of BGWC-34D had the highest concentrations of As of the nine locations sampled. The concentration of As at BGWC-34D of up to 13 mg/kg is significantly higher than all other sampled locations which had As detections between 0.8 mg/kg and 3.5 mg/kg. Arsenic concentration at BGWC-34D is also an order of magnitude higher than the average crustal abundance of 2 mg/kg (Cocker, 1996). These results indicate a natural source of As in the site-specific lithology with higher concentrations at this particular location. The higher rock core concentrations coincide with higher groundwater concentrations at BGWC-34D. While the specific source and/or form of this naturally-occurring As has not been determined, the presence of As-containing pyritic minerals has been documented in North Georgia.

For example, in a study conducted by the Georgia Geologic Survey (Cocker, 1996), 38 samples of rock, soil and saprolite from North Georgia were analyzed for As. Eighty percent of these samples contained As in excess of 100 mg/kg. While the sources of As were not further evaluated in that study, both agricultural sources as well as As-bearing pyrite minerals were suspected as likely sources for this elevated As. In a later study conducted by Schroeder (2010), elevated As concentrations in excess of 100 mg/kg were detected in saprolite and bedrock samples collected from the Brevard Zone of North Georgia. The study concluded that the As was naturally occurring in pyrite and arsenopyrite minerals associated with the hydrothermal fluid migration along the geologic fault zone.

Small grains of pyrite can also occur in limestones and dolomites, and/or other iron minerals could serve to “concentrate” As through sorption of naturally-occurring As from groundwater (Lazareva and Pichler, 2007). Iron staining in the rock cores indicate fluid flow along fractures and potential formation of iron-oxides/hydroxides that could host arsenic liberated from the pyritic minerals. Quantitative mineralogical data are not

available for this demonstration. Field evidence of pyrites in the rock matrix and iron hydroxides along fractures together with rock chemistry and groundwater ionic ratio data, strongly supports a natural occurrence of arsenic in the rock matrix and a natural occurrence of arsenic in groundwater in well BGWC-34D.

### 3. CONCLUSIONS

Monitoring well BGWC-34D was installed as a deep well to vertically delineate SSLs of Mo in compliance well BGWC-20. While this well vertically delineated Mo to below the respective GWPS, As was detected at a concentration in excess of the GWPS. This report documents that As at this location is derived from a natural source and is not the result of a release from AP-1. The following lines of evidence are presented:

- Isolated Occurrence and Geochemical Fingerprint:
  - Monitoring well BGWC-34D is the only well within the compliance and/or delineation monitoring well network across the Site, either shallow or deep, that exhibited an As concentration above the GWPS; geochemical fingerprinting using ion ratios indicates this well has a distinctly different geochemistry that is not consistent with a potential release of As from AP-1; in fact, the geochemistry is more similar to background conditions than to other compliance wells.
- Naturally-Occurring As in Rock Cores:
  - Rock samples from well location BGWC-34D show significantly higher arsenic concentrations than other rock samples at the Site. The occurrence of arsenic in the rock matrix at well location BGWC-34D, which is screened 30 to 40-ft deeper than the compliance well BGWC-20 lacking any arsenic detection in groundwater, strongly supports a natural occurrence of arsenic in well BGWC-34D. Natural occurrence of arsenic in regional rocks and groundwater are well-documented in the literature. Field evidence also demonstrates the potential mechanism of arsenic mobilization into groundwater.

#### 4. REFERENCES

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# TABLES

**Table 1**  
Monitoring Well Network Summary  
Plant Bowen AP-1, Bartow County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing <sup>(1)</sup>	Easting <sup>(1)</sup>	Top of Casing Elevation (ft AMSL)	Top of Screen Elevation (ft AMSL)	Bottom of Screen Elevation (ft AMSL)	Well Depth (ft BTOC) <sup>(2)</sup>	Screen Interval Length
<i>Compliance Monitoring Wells</i>									
BGWA-2	Upgradient	10/29/2015	1499375.65	2068599.23	729.81	650.90	640.90	89.17	10
BGWA-29	Upgradient	8/7/2016	1498283.38	2066363.43	721.39	632.70	622.70	99.03	10
BGWC-7	Downgradient	10/1/2015	1504713.10	2066801.85	705.60	625.50	615.50	90.40	10
BGWC-8	Downgradient	11/18/2015	1504672.07	2066928.29	706.65	637.20	627.20	79.73	10
BGWC-9	Downgradient	11/13/2015	1504910.51	2066144.11	692.11	638.70	628.70	63.74	10
BGWC-10	Downgradient	10/7/2015	1505032.56	2066080.17	686.26	634.20	624.20	62.37	10
BGWC-12	Downgradient	10/21/2015	1505280.77	2065909.74	694.60	626.60	616.60	78.28	10
BGWC-14	Downgradient	11/10/2015	1505406.14	2065043.82	718.77	640.20	630.20	88.84	10
BGWC-16	Downgradient	11/12/2015	1504656.54	2064248.97	674.34	635.80	625.80	48.87	10
BGWC-17	Downgradient	10/22/2015	1504432.14	2064260.75	673.71	615.60	605.60	68.39	10
BGWC-18	Downgradient	10/13/2015	1504118.94	2064258.25	672.89	645.20	635.20	37.95	10
BGWC-19	Downgradient	10/12/2015	1503742.31	2064245.92	673.65	629.40	619.40	54.58	10
BGWC-20	Downgradient	10/9/2015	1503367.84	2064260.88	675.17	635.70	625.70	49.73	10
BGWC-21	Downgradient	3/2/2016	1501627.60	2064348.78	691.41	648.70	638.70	52.99	10
BGWC-22	Downgradient	10/8/2015	1501324.02	2064359.44	695.49	662.70	652.70	43.05	10
BGWC-23	Downgradient	10/15/2015	1501000.87	2064351.45	695.57	654.90	644.90	50.95	10
BGWC-24	Downgradient	10/27/2015	1500620.18	2065032.39	702.30	646.50	636.50	66.11	10
BGWC-25	Downgradient	3/3/2016	1502292.88	2064244.72	680.51	632.90	622.90	57.87	10
BGWC-30	Downgradient	1/4/2017	1499816.75	2066394.31	701.18	651.50	641.50	59.98	10
<i>Groundwater Level Monitoring Piezometer</i>									
BGWA-1	Downgradient	11/17/2015	1499099.83	2067205.55	720.95	672.30	662.30	58.97	10
BGWA-3	Downgradient	11/5/2015	1499419.93	2065186.44	724.33	645.70	635.70	88.97	10
BGWA-4	Downgradient	3/4/2016	1499484.76	2064697.83	728.70	660.40	650.40	78.61	10
BGWA-5	Downgradient	11/3/2015	1499435.96	2065421.03	720.94	662.10	652.10	69.10	10
BGWC-11	Downgradient	10/16/2015	1504998.34	2066092.86	686.69	619.80	609.80	77.18	10
BGWC-13	Downgradient	10/21/2015	1505436.84	2065250.98	717.54	654.40	644.40	73.45	10
BGWC-15	Downgradient	10/20/2015	1505279.56	2064731.57	717.98	655.10	645.10	73.21	10
BGWA-26	Downgradient	8/5/2016	1498696.48	2064190.20	728.66	663.40	653.40	75.56	10
BGWA-27	Downgradient	8/6/2016	1498718.03	2064387.85	735.29	651.90	641.90	93.74	10
BGWA-28	Downgradient	8/7/2016	1498748.11	2064577.77	737.49	661.20	651.20	86.58	10
PZ-1	Downgradient	6/23/2016	1505600.31	2066843.00	677.83	630.60	620.60	57.54	10
PZ-2	Downgradient	6/24/2016	1503857.59	2062937.95	668.32	649.30	639.30	29.33	10
PZ-3	Downgradient	6/22/2016	1505722.73	2066070.72	707.90	658.60	648.60	59.62	10
PZ-4	Downgradient	6/23/2016	1505788.40	2064315.36	718.71	669.20	659.20	59.78	10

**Table 1**  
Monitoring Well Network Summary  
Plant Bowen AP-1, Bartow County, Georgia

Well ID	Hydraulic Location	Installation Date	Northing <sup>(1)</sup>	Easting <sup>(1)</sup>	Top of Casing Elevation (ft AMSL)	Top of Screen Elevation (ft AMSL)	Bottom of Screen Elevation (ft AMSL)	Well Depth (ft BTOC) <sup>(2)</sup>	Screen Interval Length
<i>Delineation or Characterization Monitoring Wells</i>									
BGWA-6	Downgradient	11/6/2015	1499260.85	2065797.45	716.98	664.50	654.50	62.74	10
BGWC-31	Downgradient	7/17/2018	1503498.68	2064022.78	670.99	631.59	621.59	49.70	10
BGWC-32	Downgradient	7/18/2018	1501251.18	2064184.43	699.52	658.60	648.60	51.22	10
BGWC-34D	Downgradient	7/13/2018	1503356.62	2064259.26	675.52	606.11	596.11	79.75	10
BGWC-35D	Downgradient	7/12/2018	1501312.30	2064359.89	695.93	625.32	615.32	80.94	10
BGWC-36D	Downgradient	7/2/2018	1499808.60	2066415.39	701.17	615.22	605.22	96.35	10
BGWC-37D	Downgradient	4/25/2019	1501293.46	2064363.99	696.12	595.56	585.56	112.56	10
BGWC-38D	Downgradient	4/18/2019	1499803.60	2066430.57	700.47	584.66	574.66	129.81	10
BGWA-33 <sup>(3)</sup>	Downgradient	7/10/2018	1497973.36	2064876.50	743.34	672.80	662.80	80.84	10

Notes:

ft AMSL = feet above mean sea level

ft BTOC = feet below top of casing

(1) Coordinates in North American Datum (NAD) 1983, State Plane, Georgia-West, feet.

(2) Total well depth accounts for sump if data provided on well construction logs.

(3) Well BGWA-33 serves as a characterization well unassociated with the delineation monitoring well network.

**Table 2**  
**Summary of Groundwater Molar Ionic Ratios in Select Wells**  
**Plant Bowen AP-1, Bartow County, Georgia**

	Parameter	Background Wells				Well Pair BGWC-20 / BGWC-34D				Well Pair BGWC-22 / BGWC-35D				Well Pair BGWC-30 / BGWC-36D			
		BGWA-2	BGWA-2	BGWA-29	BGWA-29	BGWC-20	BGWC-34D	BGWC-20	BGWC-34D	BGWC-22	BGWC-35D	BGWC-22	BGWC-35D	BGWC-30	BGWC-36D	BGWC-30	BGWC-36D
		10/16/2018	4/1/2019	10/16/2018	4/1/2019	10/22/2018	10/19/2018	4/3/2019	4/4/2019	10/22/2018	10/22/2018	4/3/2019	4/4/2019	10/22/2018	10/17/2018	4/2/2019	4/2/2019
Analytical Results and Molar Conversion	<b>Boron (mg/L)</b>	0.0066 J	0.0076 J*	0.0071 J	0.0048 J*	3.6	0.19	2.6 J*	0.15 J*	16.1	8.8	7.9 J	8.3 J	9.5	9.7	6.1 J	6.7 J
	<i>Boron (mmol)</i>	0.0006105	0.0007031	0.0006568	0.0004440	0.3330250	0.0175763	0.2405180	0.0138760	1.4893617	0.8140611	0.7308048	0.7678076	0.8788159	0.8973173	0.5642923	0.6197965
	<b>Chloride (mg/L)</b>	3.3	4.2 J	1.5	1.6 J	149	28	144	28.4 J	827	573	856	605 J	400	492	333	378
	<i>Chloride (mmol)</i>	0.0930889	0.1184767	0.0423131	0.0451340	4.2031030	0.7898449	4.0620592	0.8011283	23.3286319	16.1636107	24.1466855	17.0662906	11.2834979	13.8787024	9.3935120	10.6629055
	<b>Sulfate (mg/L)</b>	8.9	10.8 J	7.6	5.2	604	106	593	88.0	846	626.0	720	643	204	277	153	192
	<i>Sulfate (mmol)</i>	0.0926504	0.1124297	0.0791172	0.0541328	6.2877368	1.1034770	6.1732251	0.9160941	8.8069956	6.5167604	7.4953154	6.6937331	2.1236727	2.8836144	1.5927545	1.9987508
	<b>Arsenic (mg/L)</b>	0.00075 J	0.00049 J	<0.00057	0.00019 J*	<0.00057	0.013	0.00027 J	0.015	0.0016 J	0.0019 J	0.0021 J	0.0018 J	0.00064 J	0.00082 J	0.00024 J	0.00039 J
	<i>Arsenic (mmol)</i>	1.00134E-05	6.54206E-06	7.61015E-06	2.53672E-06	7.61015E-06	0.000173565	3.60481E-06	0.000200267	2.13618E-05	2.53672E-05	2.80374E-05	2.4032E-05	8.54473E-06	1.09479E-05	3.20427E-06	5.20694E-06
Molar Ionic Ratios	<b>Boron/Chloride</b>	0.0066	0.0059	0.0155	0.0098	0.0792	0.0223	0.0592	0.0173	0.0638	0.0504	0.0303	0.0450	0.0779	0.0647	0.0601	0.0581
	<b>Boron/Sulfate</b>	0.0066	0.0063	0.0083	0.0082	0.0530	0.0159	0.0390	0.0151	0.1691	0.1249	0.0975	0.1147	0.4138	0.3112	0.3543	0.3101
	<b>Sulfate/Chloride</b>	0.9953	0.9490	1.8698	1.1994	1.4960	1.3971	1.5197	1.1435	0.3775	0.4032	0.3104	0.3922	0.1882	0.2078	0.1696	0.1874
	<b>Boron/Arsenic</b>	61.0	107.5	86.3	175.0	43,761	101	66,721	69.3	69,721	32,091	26,065	31,949	102,849	81,962	176,106	119,033
	<b>Chloride/Arsenic</b>	9,296	18,110	5,560	17,792	552,302	4,551	1,126,845	4,000	1,092,072	637,187	861,232	710,147	1,320,522	1,267,701	2,931,559	2,047,825
	<b>Sulfate/Arsenic</b>	9,253	17,186	10,396	21,340	826,231	6,358	1,712,498	4,574	412,277	256,898	267,333	278,534	248,536	263,394	497,072	383,863

Notes:  
 < = Parameter was not detected above the indicated method detection limit (MDL). The indicated MDL was used for the molar ionic ratio calculations.  
 J = Parameter was estimated and detected between the MDL and the reporting limit.  
 J\* = Parameter was qualified at the reported concentration for being also detected in the corresponding field, equipment, or method blanks.  
 mg/L = milligrams per liter  
 mmol = millimoles



**Table 3**  
 Summary of Arsenic Concentrations in Rock Cores and Groundwater  
 Plant Bowen AP-1, Bartow County, Georgia

Well ID	Groundwater As (mg/L)		Rock Formation As (mg/kg) <sup>(1)</sup>
	Oct-2018	Apr-2019	Feb-2019
BGWC-20	<0.00057	0.00027 J	2.6
BGWC-31	0.0034 J	0.0036 J	2.8
BGWC-34D	0.013	0.015	13
BGWC-22	0.0016 J	0.0021 J	3.5
BGWC-23	0.0015 J	0.00093 J	0.76
BGWC-32	0.00076 J	0.00093 J	1.7
BGWC-35D	0.0019 J	0.0018 J	2.6
BGWC-30	0.00064 J	0.00024 J	1.6
BGWC-36D	0.00082 J	0.00039 J	1.1

Notes:

< = Parameter was not detected above the indicated method detection limit (MDL).

As = Arsenic

J = Parameter was estimated and detected between the MDL and the reporting limit.

mg/kg = milligrams per kilogram

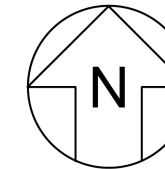
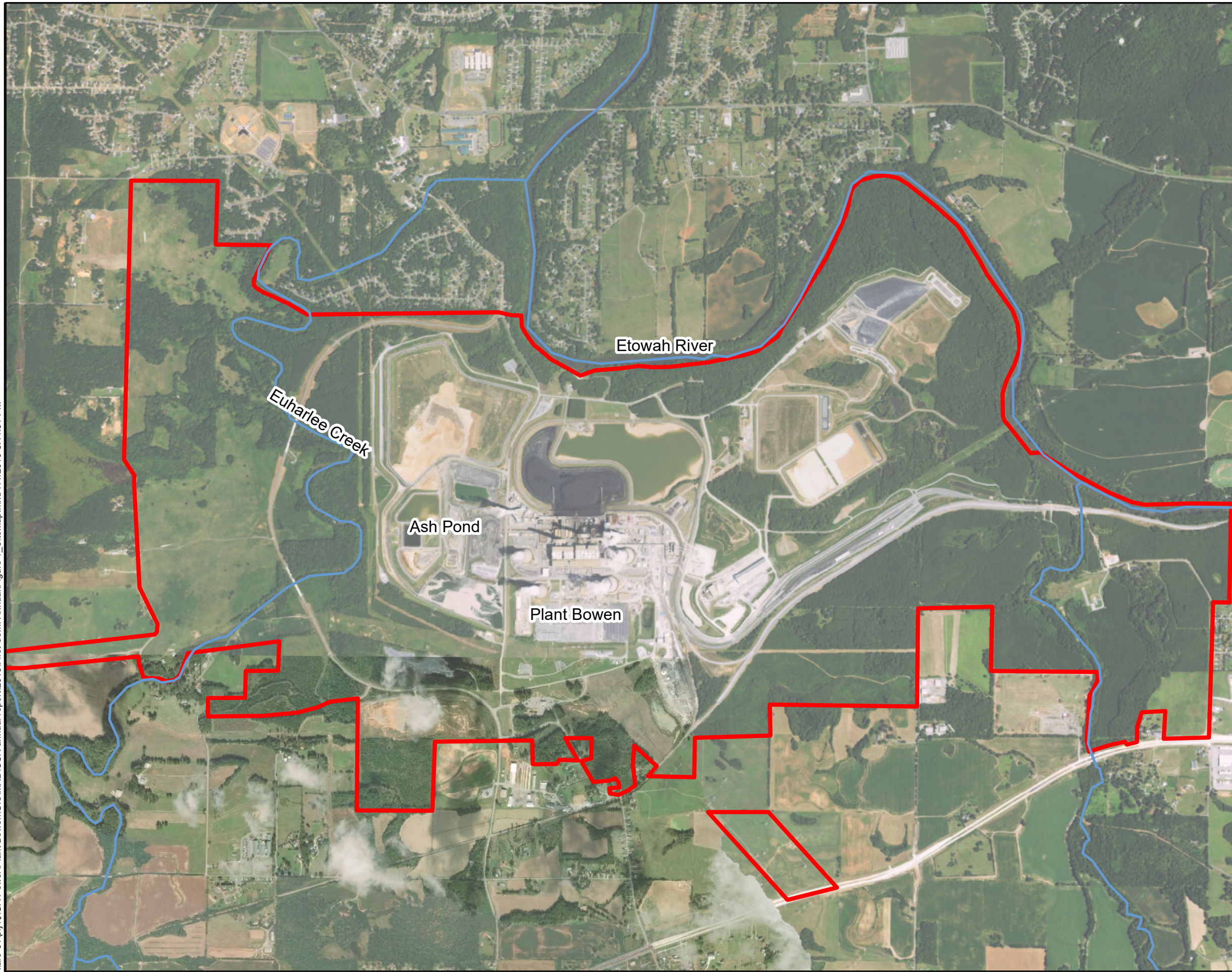
mg/L = milligrams per liter

(1) Rock samples were collected from the screen interval depth of its corresponding well.

(2) Wells are grouped by the primary compliance monitoring well and supporting adjacent horizontal and vertical delineation wells.

# FIGURES

\\laro-01\proj\GA Power\Plant Bowen\GIS\MXD\CCR annual report\2019\First Semi-Annual\Figure 1\_SiteMap.mxd 7/1/2019 3:44:51 PM

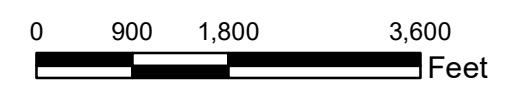


**LEGEND**

- Approximate Site Boundary
- River or Stream



Notes:  
1. Aerial photograph source: USDA FSA, 2015.



**SITE LOCATION MAP**

GEORGIA POWER COMPANY  
PLANT BOWEN AP-1  
BARTOW COUNTY, GEORGIA

Prepared For: Georgia Power

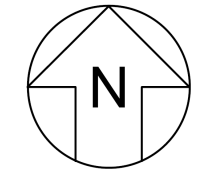
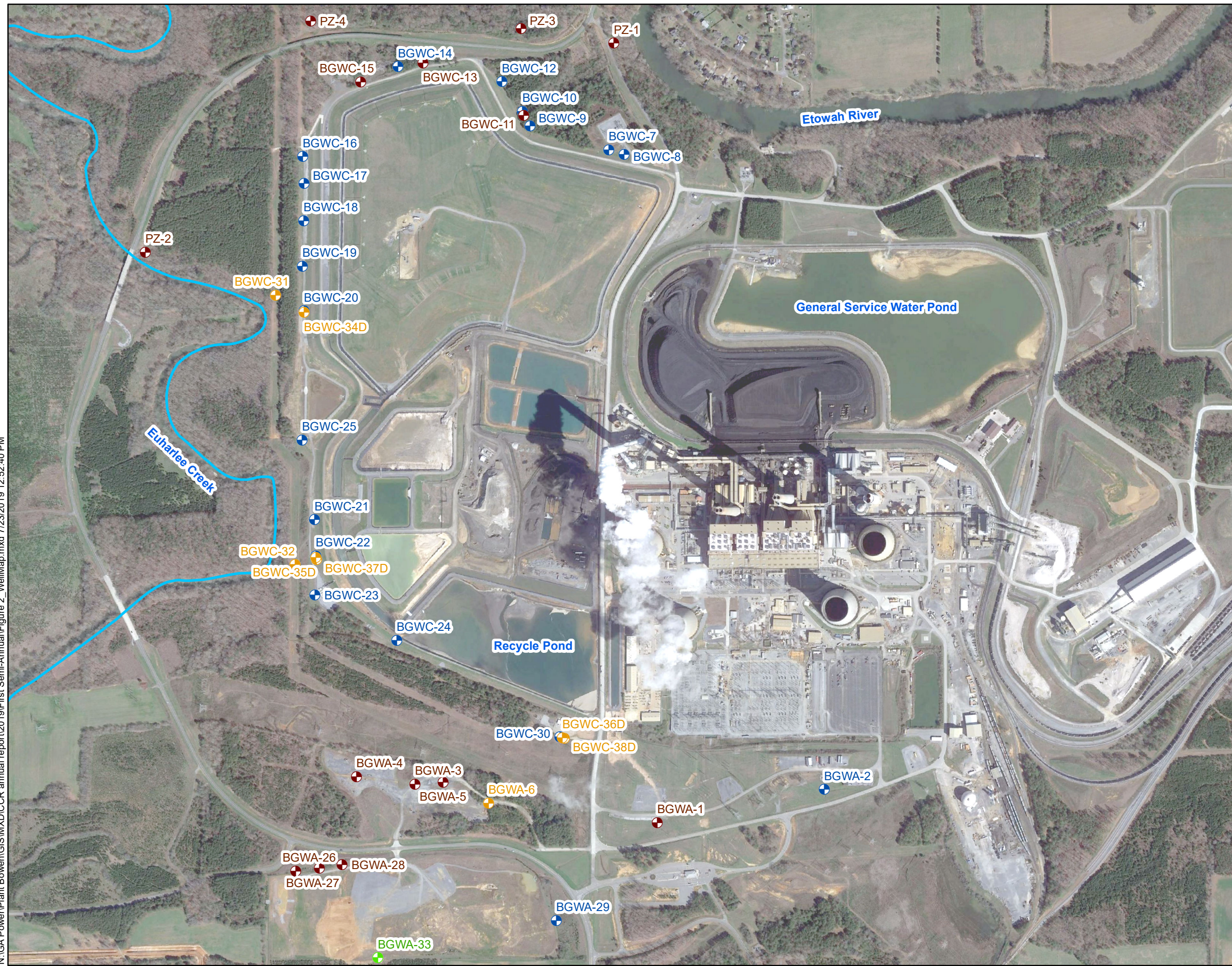
Prepared By: Geosyntec  
consultants

KENNESAW, GA




JULY 2019

**FIGURE**  
**1**

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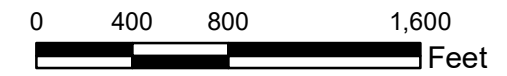


**LEGEND**

-  Compliance Monitoring Well
-  Delineation Monitoring Well
-  Characterization Monitoring Well
-  Groundwater Level Monitoring Piezometer



- Notes:
1. All wells and piezometers presented are screened within the weathered fractured bedrock.
  2. Aerial photograph source: Google Earth Pro, February 2018.



**MONITORING WELL NETWORK MAP**

GEORGIA POWER COMPANY  
PLANT BOWEN AP-1  
BARTOW COUNTY, GEORGIA

Prepared For:  Georgia Power

Prepared By:  Geosyntec  
consultants

**FIGURE**  
**2**

KENNESAW, GA

JULY 2019

# APPENDIX A

## Laboratory Analytical Report of Rock Cores

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton  
4101 Shuffel Street NW  
North Canton, OH 44720  
Tel: (330)497-9396

TestAmerica Job ID: 240-108844-1

Client Project/Site: Plant Bowen GW6581C

For:

Geosyntec Consultants, Inc.  
1255 Roberts Blvd, NW  
Suite 200  
Kennesaw, Georgia 30144

Attn: Mr. Whitney Law



Authorized for release by:  
3/13/2019 2:48:44 PM

Veronica Bortot, Senior Project Manager  
(412)963-2435

[veronica.bortot@testamericainc.com](mailto:veronica.bortot@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*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: Geosyntec Consultants, Inc.  
Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

## Qualifiers

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## 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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

# Case Narrative

Client: Geosyntec Consultants, Inc.  
Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

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**Job ID: 240-108844-1**

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**Laboratory: TestAmerica Canton**

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**Narrative**

**Job Narrative  
240-108844-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 3/2/2019 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.6° C and 3.0° C.

**Metals**

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





# Method Summary

Client: Geosyntec Consultants, Inc.  
Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	TAL CAN
Part Size Red	Particle Size Reduction Preparation	None	TAL CAN
3050B	Preparation, Metals	SW846	TAL CAN
Part Size Red	Particle Size Reduction Preparation	None	TAL CAN

**Protocol References:**

None = None

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

**Laboratory References:**

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396



# Sample Summary

Client: Geosyntec Consultants, Inc.  
Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-108844-1	BGWC-35D-68-78-2019-02-28	Solid	02/28/19 10:15	03/02/19 09:45
240-108844-2	BGWC-31-38-48-2019-02-28	Solid	02/28/19 10:25	03/02/19 09:45
240-108844-3	BGWC-34D-67-77-2019-02-28	Solid	02/28/19 10:40	03/02/19 09:45
240-108844-4	BGWC-36D-47-57-2019-02-28	Solid	02/28/19 11:00	03/02/19 09:45
240-108844-5	BGWC-32-38-48-2019-02-28	Solid	02/28/19 11:10	03/02/19 09:45
240-108844-6	BGWC-36D-83-93-2019-02-28	Solid	02/28/19 11:15	03/02/19 09:45
240-108844-7	BGWC-30-47-57-2019-02-28	Solid	02/28/19 11:30	03/02/19 09:45
240-108844-8	BGWC-20-40-46-2019-02-28	Solid	02/28/19 11:45	03/02/19 09:45
240-108844-9	BGWC-22-30-36-2019-02-28	Solid	02/28/19 11:50	03/02/19 09:45
240-108844-10	BGWC-23-50-56-2019-02-28	Solid	02/28/19 12:00	03/02/19 09:45
240-108844-11	BGWC-34D-DUP-67-77-2019-02-28	Solid	02/28/19 10:50	03/02/19 09:45

# Client Sample Results

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-35D-68-78-2019-02-28**

**Lab Sample ID: 240-108844-1**

**Date Collected: 02/28/19 10:15**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

**Method: 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.6		0.76	0.046	mg/Kg		03/06/19 08:00	03/06/19 16:52	2
Cobalt	0.51		0.15	0.040	mg/Kg		03/06/19 08:00	03/06/19 16:52	2
Molybdenum	1.5		0.76	0.19	mg/Kg		03/06/19 08:00	03/06/19 16:52	2

**Method: Part Size Red - Particle Size Reduction Preparation**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/05/19 15:20	1



# Client Sample Results

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-31-38-48-2019-02-28**

**Lab Sample ID: 240-108844-2**

Date Collected: 02/28/19 10:25

Matrix: Solid

Date Received: 03/02/19 09:45

**Method: 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.8		0.72	0.043	mg/Kg		03/06/19 08:00	03/06/19 17:08	2
Cobalt	0.70		0.14	0.038	mg/Kg		03/06/19 08:00	03/06/19 17:08	2
Molybdenum	1.0		0.72	0.18	mg/Kg		03/06/19 08:00	03/06/19 17:08	2

**Method: Part Size Red - Particle Size Reduction Preparation**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/05/19 15:20	1



# Client Sample Results

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-34D-67-77-2019-02-28**

**Lab Sample ID: 240-108844-3**

**Date Collected: 02/28/19 10:40**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

**Method: 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	13		0.84	0.050	mg/Kg		03/06/19 08:00	03/06/19 17:10	2
Cobalt	1.4		0.17	0.044	mg/Kg		03/06/19 08:00	03/06/19 17:10	2
Molybdenum	0.69	J	0.84	0.21	mg/Kg		03/06/19 08:00	03/06/19 17:10	2

**Method: Part Size Red - Particle Size Reduction Preparation**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/05/19 15:20	1



# Client Sample Results

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-36D-47-57-2019-02-28**

**Lab Sample ID: 240-108844-4**

**Date Collected: 02/28/19 11:00**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

**Method: 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.2		0.83	0.050	mg/Kg		03/06/19 08:00	03/06/19 17:12	2
Cobalt	0.58		0.17	0.043	mg/Kg		03/06/19 08:00	03/06/19 17:12	2
Molybdenum	ND		0.83	0.21	mg/Kg		03/06/19 08:00	03/06/19 17:12	2

**Method: Part Size Red - Particle Size Reduction Preparation**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/05/19 15:20	1



# Client Sample Results

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-32-38-48-2019-02-28**

**Lab Sample ID: 240-108844-5**

**Date Collected: 02/28/19 11:10**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

**Method: 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.7		0.72	0.043	mg/Kg		03/06/19 08:00	03/06/19 17:15	2
Cobalt	1.0		0.14	0.037	mg/Kg		03/06/19 08:00	03/06/19 17:15	2
Molybdenum	0.31	J	0.72	0.18	mg/Kg		03/06/19 08:00	03/06/19 17:15	2

**Method: Part Size Red - Particle Size Reduction Preparation**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/05/19 15:20	1



# Client Sample Results

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-36D-83-93-2019-02-28**

**Lab Sample ID: 240-108844-6**

**Date Collected: 02/28/19 11:15**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

**Method: 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.1		0.86	0.052	mg/Kg		03/06/19 08:00	03/06/19 17:17	2
Cobalt	0.55		0.17	0.045	mg/Kg		03/06/19 08:00	03/06/19 17:17	2
Molybdenum	0.27	J	0.86	0.21	mg/Kg		03/06/19 08:00	03/06/19 17:17	2

**Method: Part Size Red - Particle Size Reduction Preparation**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/05/19 15:20	1





# Client Sample Results

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-30-47-57-2019-02-28**

**Lab Sample ID: 240-108844-7**

**Date Collected: 02/28/19 11:30**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

**Method: 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.6		0.83	0.050	mg/Kg		03/06/19 08:00	03/06/19 17:19	2
Cobalt	0.66		0.17	0.043	mg/Kg		03/06/19 08:00	03/06/19 17:19	2
Molybdenum	ND		0.83	0.21	mg/Kg		03/06/19 08:00	03/06/19 17:19	2

**Method: Part Size Red - Particle Size Reduction Preparation**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/05/19 15:20	1



# Client Sample Results

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-20-40-46-2019-02-28**

**Lab Sample ID: 240-108844-8**

**Date Collected: 02/28/19 11:45**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

**Method: 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.6		0.85	0.051	mg/Kg		03/06/19 08:00	03/06/19 17:22	2
Cobalt	0.59		0.17	0.044	mg/Kg		03/06/19 08:00	03/06/19 17:22	2
Molybdenum	0.66	J	0.85	0.21	mg/Kg		03/06/19 08:00	03/06/19 17:22	2

**Method: Part Size Red - Particle Size Reduction Preparation**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/05/19 15:20	1



# Client Sample Results

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-22-30-36-2019-02-28**

**Lab Sample ID: 240-108844-9**

**Date Collected: 02/28/19 11:50**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

**Method: 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.5		0.75	0.045	mg/Kg		03/06/19 08:00	03/06/19 17:24	2
Cobalt	1.3		0.15	0.039	mg/Kg		03/06/19 08:00	03/06/19 17:24	2
Molybdenum	0.90		0.75	0.19	mg/Kg		03/06/19 08:00	03/06/19 17:24	2

**Method: Part Size Red - Particle Size Reduction Preparation**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/05/19 15:20	1



# Client Sample Results

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-23-50-56-2019-02-28**

**Lab Sample ID: 240-108844-10**

**Date Collected: 02/28/19 12:00**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

**Method: 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.76		0.72	0.043	mg/Kg		03/06/19 08:00	03/06/19 17:27	2
Cobalt	0.70		0.14	0.037	mg/Kg		03/06/19 08:00	03/06/19 17:27	2
Molybdenum	ND		0.72	0.18	mg/Kg		03/06/19 08:00	03/06/19 17:27	2

**Method: Part Size Red - Particle Size Reduction Preparation**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/05/19 15:20	1



# Client Sample Results

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-34D-DUP-67-77-2019-02-28**

**Lab Sample ID: 240-108844-11**

**Date Collected: 02/28/19 10:50**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

**Method: 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.9		0.79	0.048	mg/Kg		03/06/19 08:00	03/06/19 17:29	2
Cobalt	1.3		0.16	0.041	mg/Kg		03/06/19 08:00	03/06/19 17:29	2
Molybdenum	0.28	J	0.79	0.20	mg/Kg		03/06/19 08:00	03/06/19 17:29	2

**Method: Part Size Red - Particle Size Reduction Preparation**

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
PSR sample generated	Done				NONE			03/05/19 15:20	1



# QC Sample Results

Client: Geosyntec Consultants, Inc.  
Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

## Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 240-370461/1-A ^2  
Matrix: Solid  
Analysis Batch: 370640

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 370461

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.060	mg/Kg		03/06/19 08:00	03/06/19 16:47	2
Cobalt	ND		0.20	0.052	mg/Kg		03/06/19 08:00	03/06/19 16:47	2
Molybdenum	ND		1.0	0.25	mg/Kg		03/06/19 08:00	03/06/19 16:47	2

# QC Association Summary

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

## Metals

### Processed Batch: 370408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-108844-1	BGWC-35D-68-78-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-2	BGWC-31-38-48-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-3	BGWC-34D-67-77-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-4	BGWC-36D-47-57-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-5	BGWC-32-38-48-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-6	BGWC-36D-83-93-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-7	BGWC-30-47-57-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-8	BGWC-20-40-46-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-9	BGWC-22-30-36-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-10	BGWC-23-50-56-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-11	BGWC-34D-DUP-67-77-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-1 MS	BGWC-35D-68-78-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-1 MSD	BGWC-35D-68-78-2019-02-28	Total/NA	Solid	Part Size Red	

### Prep Batch: 370461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-108844-1	BGWC-35D-68-78-2019-02-28	Total/NA	Solid	3050B	370408
240-108844-2	BGWC-31-38-48-2019-02-28	Total/NA	Solid	3050B	370408
240-108844-3	BGWC-34D-67-77-2019-02-28	Total/NA	Solid	3050B	370408
240-108844-4	BGWC-36D-47-57-2019-02-28	Total/NA	Solid	3050B	370408
240-108844-5	BGWC-32-38-48-2019-02-28	Total/NA	Solid	3050B	370408
240-108844-6	BGWC-36D-83-93-2019-02-28	Total/NA	Solid	3050B	370408
240-108844-7	BGWC-30-47-57-2019-02-28	Total/NA	Solid	3050B	370408
240-108844-8	BGWC-20-40-46-2019-02-28	Total/NA	Solid	3050B	370408
240-108844-9	BGWC-22-30-36-2019-02-28	Total/NA	Solid	3050B	370408
240-108844-10	BGWC-23-50-56-2019-02-28	Total/NA	Solid	3050B	370408
240-108844-11	BGWC-34D-DUP-67-77-2019-02-28	Total/NA	Solid	3050B	370408
MB 240-370461/1-A ^2	Method Blank	Total/NA	Solid	3050B	
LCS 240-370461/3-A ^2	Lab Control Sample	Total/NA	Solid	3050B	
240-108844-1 MS	BGWC-35D-68-78-2019-02-28	Total/NA	Solid	3050B	370408
240-108844-1 MSD	BGWC-35D-68-78-2019-02-28	Total/NA	Solid	3050B	370408

### Analysis Batch: 370640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-108844-1	BGWC-35D-68-78-2019-02-28	Total/NA	Solid	6020B	370461
240-108844-2	BGWC-31-38-48-2019-02-28	Total/NA	Solid	6020B	370461
240-108844-3	BGWC-34D-67-77-2019-02-28	Total/NA	Solid	6020B	370461
240-108844-4	BGWC-36D-47-57-2019-02-28	Total/NA	Solid	6020B	370461
240-108844-5	BGWC-32-38-48-2019-02-28	Total/NA	Solid	6020B	370461
240-108844-6	BGWC-36D-83-93-2019-02-28	Total/NA	Solid	6020B	370461
240-108844-7	BGWC-30-47-57-2019-02-28	Total/NA	Solid	6020B	370461
240-108844-8	BGWC-20-40-46-2019-02-28	Total/NA	Solid	6020B	370461
240-108844-9	BGWC-22-30-36-2019-02-28	Total/NA	Solid	6020B	370461
240-108844-10	BGWC-23-50-56-2019-02-28	Total/NA	Solid	6020B	370461
240-108844-11	BGWC-34D-DUP-67-77-2019-02-28	Total/NA	Solid	6020B	370461
MB 240-370461/1-A ^2	Method Blank	Total/NA	Solid	6020B	370461
LCS 240-370461/3-A ^2	Lab Control Sample	Total/NA	Solid	6020B	370461
240-108844-1 MS	BGWC-35D-68-78-2019-02-28	Total/NA	Solid	6020B	370461
240-108844-1 MSD	BGWC-35D-68-78-2019-02-28	Total/NA	Solid	6020B	370461

TestAmerica Canton

# QC Association Summary

Client: Geosyntec Consultants, Inc.  
Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

## Organic Prep

### Analysis Batch: 371063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-108844-1	BGWC-35D-68-78-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-2	BGWC-31-38-48-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-3	BGWC-34D-67-77-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-4	BGWC-36D-47-57-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-5	BGWC-32-38-48-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-6	BGWC-36D-83-93-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-7	BGWC-30-47-57-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-8	BGWC-20-40-46-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-9	BGWC-22-30-36-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-10	BGWC-23-50-56-2019-02-28	Total/NA	Solid	Part Size Red	
240-108844-11	BGWC-34D-DUP-67-77-2019-02-28	Total/NA	Solid	Part Size Red	



# Lab Chronicle

Client: Geosyntec Consultants, Inc.  
Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-35D-68-78-2019-02-28**

**Lab Sample ID: 240-108844-1**

**Date Collected: 02/28/19 10:15**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Processed	Part Size Red					370408	03/05/19 15:20	POP	TAL CAN
Total/NA	Prep	3050B			1.31 g	100 mL	370461	03/06/19 08:00	MBB	TAL CAN
Total/NA	Analysis	6020B		2			370640	03/06/19 16:52	DSH	TAL CAN
Total/NA	Analysis	Part Size Red		1			371063	03/05/19 15:20	DRJ	TAL CAN

**Client Sample ID: BGWC-31-38-48-2019-02-28**

**Lab Sample ID: 240-108844-2**

**Date Collected: 02/28/19 10:25**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Processed	Part Size Red					370408	03/05/19 15:20	POP	TAL CAN
Total/NA	Prep	3050B			1.38 g	100 mL	370461	03/06/19 08:00	MBB	TAL CAN
Total/NA	Analysis	6020B		2			370640	03/06/19 17:08	DSH	TAL CAN
Total/NA	Analysis	Part Size Red		1			371063	03/05/19 15:20	DRJ	TAL CAN

**Client Sample ID: BGWC-34D-67-77-2019-02-28**

**Lab Sample ID: 240-108844-3**

**Date Collected: 02/28/19 10:40**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Processed	Part Size Red					370408	03/05/19 15:20	POP	TAL CAN
Total/NA	Prep	3050B			1.19 g	100 mL	370461	03/06/19 08:00	MBB	TAL CAN
Total/NA	Analysis	6020B		2			370640	03/06/19 17:10	DSH	TAL CAN
Total/NA	Analysis	Part Size Red		1			371063	03/05/19 15:20	DRJ	TAL CAN

**Client Sample ID: BGWC-36D-47-57-2019-02-28**

**Lab Sample ID: 240-108844-4**

**Date Collected: 02/28/19 11:00**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Processed	Part Size Red					370408	03/05/19 15:20	POP	TAL CAN
Total/NA	Prep	3050B			1.21 g	100 mL	370461	03/06/19 08:00	MBB	TAL CAN
Total/NA	Analysis	6020B		2			370640	03/06/19 17:12	DSH	TAL CAN
Total/NA	Analysis	Part Size Red		1			371063	03/05/19 15:20	DRJ	TAL CAN

**Client Sample ID: BGWC-32-38-48-2019-02-28**

**Lab Sample ID: 240-108844-5**

**Date Collected: 02/28/19 11:10**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Processed	Part Size Red					370408	03/05/19 15:20	POP	TAL CAN
Total/NA	Prep	3050B			1.39 g	100 mL	370461	03/06/19 08:00	MBB	TAL CAN
Total/NA	Analysis	6020B		2			370640	03/06/19 17:15	DSH	TAL CAN

TestAmerica Canton

# Lab Chronicle

Client: Geosyntec Consultants, Inc.  
Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-32-38-48-2019-02-28**

**Lab Sample ID: 240-108844-5**

Date Collected: 02/28/19 11:10

Matrix: Solid

Date Received: 03/02/19 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Part Size Red		1			371063	03/05/19 15:20	DRJ	TAL CAN

**Client Sample ID: BGWC-36D-83-93-2019-02-28**

**Lab Sample ID: 240-108844-6**

Date Collected: 02/28/19 11:15

Matrix: Solid

Date Received: 03/02/19 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Processed	Part Size Red					370408	03/05/19 15:20	POP	TAL CAN
Total/NA	Prep	3050B			1.16 g	100 mL	370461	03/06/19 08:00	MBB	TAL CAN
Total/NA	Analysis	6020B		2			370640	03/06/19 17:17	DSH	TAL CAN
Total/NA	Analysis	Part Size Red		1			371063	03/05/19 15:20	DRJ	TAL CAN

**Client Sample ID: BGWC-30-47-57-2019-02-28**

**Lab Sample ID: 240-108844-7**

Date Collected: 02/28/19 11:30

Matrix: Solid

Date Received: 03/02/19 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Processed	Part Size Red					370408	03/05/19 15:20	POP	TAL CAN
Total/NA	Prep	3050B			1.20 g	100 mL	370461	03/06/19 08:00	MBB	TAL CAN
Total/NA	Analysis	6020B		2			370640	03/06/19 17:19	DSH	TAL CAN
Total/NA	Analysis	Part Size Red		1			371063	03/05/19 15:20	DRJ	TAL CAN

**Client Sample ID: BGWC-20-40-46-2019-02-28**

**Lab Sample ID: 240-108844-8**

Date Collected: 02/28/19 11:45

Matrix: Solid

Date Received: 03/02/19 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Processed	Part Size Red					370408	03/05/19 15:20	POP	TAL CAN
Total/NA	Prep	3050B			1.17 g	100 mL	370461	03/06/19 08:00	MBB	TAL CAN
Total/NA	Analysis	6020B		2			370640	03/06/19 17:22	DSH	TAL CAN
Total/NA	Analysis	Part Size Red		1			371063	03/05/19 15:20	DRJ	TAL CAN

**Client Sample ID: BGWC-22-30-36-2019-02-28**

**Lab Sample ID: 240-108844-9**

Date Collected: 02/28/19 11:50

Matrix: Solid

Date Received: 03/02/19 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Processed	Part Size Red					370408	03/05/19 15:20	POP	TAL CAN
Total/NA	Prep	3050B			1.33 g	100 mL	370461	03/06/19 08:00	MBB	TAL CAN
Total/NA	Analysis	6020B		2			370640	03/06/19 17:24	DSH	TAL CAN
Total/NA	Analysis	Part Size Red		1			371063	03/05/19 15:20	DRJ	TAL CAN

TestAmerica Canton

# Lab Chronicle

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

**Client Sample ID: BGWC-23-50-56-2019-02-28**

**Lab Sample ID: 240-108844-10**

**Date Collected: 02/28/19 12:00**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Processed	Part Size Red					370408	03/05/19 15:20	POP	TAL CAN
Total/NA	Prep	3050B			1.39 g	100 mL	370461	03/06/19 08:00	MBB	TAL CAN
Total/NA	Analysis	6020B		2			370640	03/06/19 17:27	DSH	TAL CAN
Total/NA	Analysis	Part Size Red		1			371063	03/05/19 15:20	DRJ	TAL CAN

**Client Sample ID: BGWC-34D-DUP-67-77-2019-02-28**

**Lab Sample ID: 240-108844-11**

**Date Collected: 02/28/19 10:50**

**Matrix: Solid**

**Date Received: 03/02/19 09:45**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Processed	Part Size Red					370408	03/05/19 15:20	POP	TAL CAN
Total/NA	Prep	3050B			1.26 g	100 mL	370461	03/06/19 08:00	MBB	TAL CAN
Total/NA	Analysis	6020B		2			370640	03/06/19 17:29	DSH	TAL CAN
Total/NA	Analysis	Part Size Red		1			371063	03/05/19 15:20	DRJ	TAL CAN

**Laboratory References:**

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

# Accreditation/Certification Summary

Client: Geosyntec Consultants, Inc.  
 Project/Site: Plant Bowen GW6581C

TestAmerica Job ID: 240-108844-1

## Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-20
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	04-30-19 *
Kentucky (UST)	State Program	4	58	02-23-20
Kentucky (WW)	State Program	4	98016	12-31-19
Minnesota	NELAP	5	039-999-348	12-31-19 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19 *
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-20
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-18-10	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-20 *
West Virginia DEP	State Program	3	210	12-31-19

## Laboratory: TestAmerica Pittsburgh

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	88-0690	06-27-19
California	State Program	9	2891	04-30-19
Connecticut	State Program	1	PH-0688	09-30-20
Florida	NELAP	4	E871008	06-30-19
Illinois	NELAP	5	200005	06-30-19
Kansas	NELAP	7	E-10350	01-31-20
Louisiana	NELAP	6	04041	06-30-19
Nevada	State Program	9	PA00164	07-31-19
New Hampshire	NELAP	1	2030	04-04-19
New Jersey	NELAP	2	PA005	06-30-19
New York	NELAP	2	11182	03-31-19 *
North Carolina (WW/SW)	State Program	4	434	12-31-19
Oregon	NELAP	10	PA-2151	01-28-19 *
Pennsylvania	NELAP	3	02-00416	04-30-19
South Carolina	State Program	4	89014	04-30-19
Texas	NELAP	6	T104704528-15-2	03-31-19 *
US Fish & Wildlife	Federal		LE94312A-1	07-31-19
USDA	Federal		P330-16-00211	06-26-19
Utah	NELAP	8	PA001462015-4	05-31-19
Virginia	NELAP	3	460189	09-14-19
West Virginia DEP	State Program	3	142	01-31-20
Wisconsin	State Program	5	998027800	08-31-19


\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

**TestAmerica Canton**  
 4101 Shurfel Street NW  
 North Canton, OH 44720-6900  
 Main Phone: 330-497-9396

**Quest-189** 3-2-19 2.8 / C2.6  
**Chain of Custody Record**

**TestAmerica**  
 THE LEADER IN TESTING SOLUTIONS

**Quest-189**

<b>Client Information</b> Client Contact: Mr. Whitney Law Company: Geosyntec Consultants, Inc. Address: 1255 Roberts Blvd, NW Suite 200 City: Kennesaw State: GA, Zip: 30144 Phone: 678-202-9573(Tel) Email: wlaw@geosyntec.com Project Name: GW6581C Site: Plant Bowen		Lab PM: Bortol, Veronica E-Mail: veronica.bortol@testamericainc.com Phone: 678-237-7434		Camer Tracking No(s): 180-50076-10525.1 Page 1 of 1 GW6581C	
Due Date Requested: <b>ULT 3/11/19</b> TAT Requested (days): 10-day PO #: Purchase Order Requested: WO #: Project #: 18020125 SSO#:		<b>Analysis Requested</b>			
<b>Sample Identification</b> BGWC-35D-68-78-2019-02-28 BGWC-31-38-48-2019-02-28 BGWC-34D-67-77-2019-02-28 BGWC-36D-47-57-2019-02-28 BGWC-32-38-48-2019-02-28 BGWC-36D-83-93-2019-02-28 BGWC-30-47-57-2019-02-28 BGWC-20-40-46-2019-02-28 BGWC-22-30-36-2019-02-28 BGWC-23-50-56-2019-02-28 BGWC-34D-DUP-67-77-2019-02-28		Sample Date: 2/28/19 Sample Time: 1015 Sample Date: 2/28/19 Sample Time: 1025 Sample Date: 2/28/19 Sample Time: 1040 Sample Date: 2/28/19 Sample Time: 1100 Sample Date: 2/28/19 Sample Time: 1110 Sample Date: 2/28/19 Sample Time: 1115 Sample Date: 2/28/19 Sample Time: 1130 Sample Date: 2/28/19 Sample Time: 1145 Sample Date: 2/28/19 Sample Time: 1150 Sample Date: 2/28/19 Sample Time: 1200 Sample Date: 2/28/19 Sample Time: 1050		Matrix (W=water, S=solid, O=soil, BT=tissue, A=air) Preservation Code: C, S Sample Type (C=Comp, G=grab) Field Filtered Sample (Yes or No)	
Perform MS/MSD (Yes or No) Particle Size Reduction 5020 As. Co. Mo		Total Number of containers 1 1 1 1 1 1 1 1 1 1 1		Special Instructions/Note: 	
<b>Possible Hazard Identification</b> <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I, II, III, IV, Other (specify)					
<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
<b>Special Instructions/QC Requirements:</b>					
Empty Kit Relinquished by:		Date:		Method of Shipment:	
Relinquished by: <i>[Signature]</i>		Date: 3/1/19 9:47		Received by: <i>[Signature]</i>	
Relinquished by: <i>[Signature]</i>		Date: 3/1/19		Received by: <i>[Signature]</i>	
Relinquished by: <i>[Signature]</i>		Date: 16710		Received by: <i>[Signature]</i>	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	



**TestAmerica Canton Sample Receipt Form/Narrative**  
**Canton Facility**

Login #: 108844

Client Geosyntec Consultants Inc Site Name \_\_\_\_\_  
 Cooler Received on 3-2-19 Opened on 3-2-19  
 FedEx: 1<sup>st</sup> Grd  Exp  UPS  FAS  Clipper  Client Drop Off  TestAmerica Courier  Other \_\_\_\_\_

Cooler unpacked by: \_\_\_\_\_

Receipt After-hours: Drop-off Date/Time \_\_\_\_\_ Storage Location \_\_\_\_\_

TestAmerica Cooler # 1A Foam Box  Client Cooler  Box  Other \_\_\_\_\_  
 Packing material used: Bubble Wrap Foam Plastic Bag None \_\_\_\_\_ Other \_\_\_\_\_  
 COOLANT: Wet Ice Blue Ice  Dry Ice  Water  None \_\_\_\_\_

1. Cooler temperature upon receipt  See Multiple Cooler Form  
 IR GUN# IR-8 (CF -0.2 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C  
 IR GUN #36 (CF +0.7°C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 2 Yes No  
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA  
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No  
 -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No  
 If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC861525
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # \_\_\_\_\_ Yes No
16. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:  
 VOAs  
 Oil and Grease  
 TOC

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other \_\_\_\_\_

Concerning \_\_\_\_\_

**17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES**

Samples processed by: \_\_\_\_\_

Martin

**18. SAMPLE CONDITION**

Sample(s) \_\_\_\_\_ were received after the recommended holding time had expired.  
 Sample(s) \_\_\_\_\_ were received in a broken container.  
 Sample(s) \_\_\_\_\_ were received with bubble >6 mm in diameter. (Notify PM)

**19. SAMPLE PRESERVATION**

Sample(s) \_\_\_\_\_ were further preserved in the laboratory.  
 Time preserved: \_\_\_\_\_ Preservative(s) added/Lot number(s): \_\_\_\_\_

VOA Sample Preservation - Date/Time VOAs Frozen: \_\_\_\_\_



# APPENDIX C

## Laboratory Analytical and Field Sampling Reports

Appendix C1: Laboratory Analytical Data Packages and  
Data Validation Reports

Appendix C2: Field Sampling Forms



## APPENDIX C1

# Laboratory Analytical Data Packages and Data Validation Reports

# Laboratory Reports

March 06, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2615445

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Maria Padilla, Georgia Power  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615445

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### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615445

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615445001	BGWA-2	Water	02/25/19 11:03	02/27/19 15:43
2615445002	BGWC-8	Water	02/25/19 13:12	02/27/19 15:43
2615445003	BGWC-16	Water	02/25/19 15:50	02/27/19 15:43

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2615445

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2615445001	BGWA-2	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2615445002	BGWC-8	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2615445003	BGWC-16	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615445

Sample: BGWA-2		Lab ID: 2615445001		Collected: 02/25/19 11:03		Received: 02/27/19 15:43		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/04/19 10:39	03/04/19 20:01	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/04/19 10:39	03/04/19 20:01	7440-38-2	
Barium	<b>0.16</b>	mg/L	0.010	0.00078	1	03/04/19 10:39	03/04/19 20:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/04/19 10:39	03/04/19 20:01	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/04/19 10:39	03/04/19 20:01	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/04/19 10:39	03/04/19 20:01	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/04/19 10:39	03/04/19 20:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/04/19 10:39	03/04/19 20:01	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/04/19 10:39	03/04/19 20:01	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/04/19 10:39	03/04/19 20:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/04/19 10:39	03/04/19 20:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/04/19 10:39	03/04/19 20:01	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	02/28/19 11:45	02/28/19 15:40	7439-97-6	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		03/04/19 12:54	16984-48-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615445

Sample: <b>BGWC-8</b>		Lab ID: <b>2615445002</b>		Collected: 02/25/19 13:12		Received: 02/27/19 15:43		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/04/19 10:39	03/04/19 20:23	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/04/19 10:39	03/04/19 20:23	7440-38-2	
Barium	<b>0.030</b>	mg/L	0.010	0.00078	1	03/04/19 10:39	03/04/19 20:23	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/04/19 10:39	03/04/19 20:23	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/04/19 10:39	03/04/19 20:23	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/04/19 10:39	03/04/19 20:23	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/04/19 10:39	03/04/19 20:23	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/04/19 10:39	03/04/19 20:23	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/04/19 10:39	03/04/19 20:23	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/04/19 10:39	03/04/19 20:23	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/04/19 10:39	03/04/19 20:23	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/04/19 10:39	03/04/19 20:23	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	02/28/19 11:45	02/28/19 16:04	7439-97-6	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		03/04/19 13:56	16984-48-8	M1

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615445

Sample: <b>BGWC-16</b>		Lab ID: <b>2615445003</b>		Collected: 02/25/19 15:50		Received: 02/27/19 15:43		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/04/19 10:39	03/04/19 20:35	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/04/19 10:39	03/04/19 20:35	7440-38-2	
Barium	<b>0.028</b>	mg/L	0.010	0.00078	1	03/04/19 10:39	03/04/19 20:35	7440-39-3	
Beryllium	<b>0.000087J</b>	mg/L	0.0030	0.000050	1	03/04/19 10:39	03/04/19 20:35	7440-41-7	
Cadmium	<b>0.0016</b>	mg/L	0.0010	0.000093	1	03/04/19 10:39	03/04/19 20:35	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/04/19 10:39	03/04/19 20:35	7440-47-3	
Cobalt	<b>0.0071J</b>	mg/L	0.010	0.00052	1	03/04/19 10:39	03/04/19 20:35	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/04/19 10:39	03/04/19 20:35	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/04/19 10:39	03/04/19 20:35	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/04/19 10:39	03/04/19 20:35	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/04/19 10:39	03/04/19 20:35	7782-49-2	
Thallium	<b>0.00023J</b>	mg/L	0.0010	0.00014	1	03/04/19 10:39	03/04/19 20:35	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	02/28/19 11:45	02/28/19 16:06	7439-97-6	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	<b>0.13J</b>	mg/L	0.30	0.029	1		03/04/19 14:37	16984-48-8	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615445

QC Batch: 23344 Analysis Method: EPA 7470A  
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury  
Associated Lab Samples: 2615445001, 2615445002, 2615445003

METHOD BLANK: 104469 Matrix: Water  
Associated Lab Samples: 2615445001, 2615445002, 2615445003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	02/28/19 15:35	

LABORATORY CONTROL SAMPLE: 104470

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 104471 104472

Parameter	Units	2615445001 Result	MS		MSD		% Rec	% Rec	% Rec	Limits	Max		Qual
			Spike Conc.	MS Result	MSD Result	MSD Result					RPD	RPD	
Mercury	mg/L	ND	0.0025	0.0025	0.0024	0.0024	98	98	75-125	0	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2615445

QC Batch: 23515 Analysis Method: EPA 6020B  
 QC Batch Method: EPA 3005A Analysis Description: 6020B MET  
 Associated Lab Samples: 2615445001, 2615445002, 2615445003

METHOD BLANK: 105353 Matrix: Water

Associated Lab Samples: 2615445001, 2615445002, 2615445003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/04/19 19:49	
Arsenic	mg/L	ND	0.0050	0.00057	03/04/19 19:49	
Barium	mg/L	ND	0.010	0.00078	03/04/19 19:49	
Beryllium	mg/L	ND	0.0030	0.000050	03/04/19 19:49	
Cadmium	mg/L	ND	0.0010	0.000093	03/04/19 19:49	
Chromium	mg/L	ND	0.010	0.0016	03/04/19 19:49	
Cobalt	mg/L	ND	0.010	0.00052	03/04/19 19:49	
Lead	mg/L	ND	0.0050	0.00027	03/04/19 19:49	
Lithium	mg/L	ND	0.050	0.00097	03/04/19 19:49	
Molybdenum	mg/L	ND	0.010	0.0019	03/04/19 19:49	
Selenium	mg/L	ND	0.010	0.0014	03/04/19 19:49	
Thallium	mg/L	ND	0.0010	0.00014	03/04/19 19:49	

LABORATORY CONTROL SAMPLE: 105354

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	105	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.10	101	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Cadmium	mg/L	0.1	0.10	101	80-120	
Chromium	mg/L	0.1	0.10	105	80-120	
Cobalt	mg/L	0.1	0.10	102	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 105392 105393

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2615445001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	105	103	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.097	100	97	75-125	3	20	
Barium	mg/L	0.16	0.1	0.1	0.27	0.27	116	111	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.1	0.098	0.095	98	95	75-125	4	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	0	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2615445

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 105392		105393		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2615445001 Result	MS Spike Conc.	MSD Spike Conc.									
Chromium	mg/L	ND	0.1	0.1	0.10	0.099	102	99	75-125	3	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.097	100	96	75-125	3	20		
Lead	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Lithium	mg/L	ND	0.1	0.1	0.097	0.095	97	95	75-125	2	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	102	100	75-125	2	20		
Selenium	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	0	20		
Thallium	mg/L	ND	0.1	0.1	0.10	0.097	100	97	75-125	3	20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2615445

QC Batch: 23493 Analysis Method: EPA 300.0  
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
 Associated Lab Samples: 2615445001, 2615445002, 2615445003

METHOD BLANK: 105280 Matrix: Water

Associated Lab Samples: 2615445001, 2615445002, 2615445003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	03/04/19 12:13	

LABORATORY CONTROL SAMPLE: 105281

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.4	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 105285 105286

Parameter	Units	2615445001		2615445002		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Fluoride	mg/L	ND	10	10	9.6	10.4	96	104	90-110	8	15		

MATRIX SPIKE SAMPLE: 105358

Parameter	Units	2615445002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	ND	10	8.8	88	90-110	M1

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615445

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615445

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2615445001	BGWA-2	EPA 3005A	23515	EPA 6020B	23543
2615445002	BGWC-8	EPA 3005A	23515	EPA 6020B	23543
2615445003	BGWC-16	EPA 3005A	23515	EPA 6020B	23543
2615445001	BGWA-2	EPA 7470A	23344	EPA 7470A	23360
2615445002	BGWC-8	EPA 7470A	23344	EPA 7470A	23360
2615445003	BGWC-16	EPA 7470A	23344	EPA 7470A	23360
2615445001	BGWA-2	EPA 300.0	23493		
2615445002	BGWC-8	EPA 300.0	23493		
2615445003	BGWC-16	EPA 300.0	23493		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2615445

Client Name: GA Power

PM: BM

Due Date: 03/06/19

CLIENT: GAPower-CCR

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: \_\_\_\_\_

Proj. Due Date:  
Proj. Name:

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 082 Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 2.5°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 2/27/19/CR

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix: <u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased): _____			

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

8151A WSC

Project Manager Review: \_\_\_\_\_

Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

March 22, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2615446

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 27, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615446

---

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615446

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615446001	BGWA-2	Water	02/25/19 11:03	02/27/19 15:43
2615446002	BGWC-8	Water	02/25/19 13:12	02/27/19 15:43
2615446003	BGWC-16	Water	02/25/19 15:50	02/27/19 15:43

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2615446

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2615446001	BGWA-2	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615446002	BGWC-8	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615446003	BGWC-16	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615446

**Sample: BGWA-2**      **Lab ID: 2615446001**      Collected: 02/25/19 11:03      Received: 02/27/19 15:43      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.10 ± 0.426 (0.485)</b> C:91% T:NA	pCi/L	03/12/19 09:13	13982-63-3	
Radium-228	EPA 9320	<b>0.327 ± 0.381 (0.802)</b> C:77% T:79%	pCi/L	03/18/19 16:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.43 ± 0.807 (1.29)</b>	pCi/L	03/19/19 14:43	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615446

**Sample: BGWC-8**      **Lab ID: 2615446002**      Collected: 02/25/19 13:12      Received: 02/27/19 15:43      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.313 ± 0.236 (0.383)</b> C:94% T:NA	pCi/L	03/12/19 09:13	13982-63-3	
Radium-228	EPA 9320	<b>0.712 ± 0.405 (0.733)</b> C:72% T:87%	pCi/L	03/18/19 16:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.03 ± 0.641 (1.12)</b>	pCi/L	03/19/19 14:43	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615446

**Sample: BGWC-16**      **Lab ID: 2615446003**      Collected: 02/25/19 15:50      Received: 02/27/19 15:43      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.606 ± 0.298 (0.357)</b> C:97% T:NA	pCi/L	03/12/19 09:13	13982-63-3	
Radium-228	EPA 9320	<b>0.473 ± 0.340 (0.652)</b> C:76% T:85%	pCi/L	03/18/19 16:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.08 ± 0.638 (1.01)</b>	pCi/L	03/19/19 14:43	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615446

---

QC Batch:	332854	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	2615446001, 2615446002, 2615446003		

---

METHOD BLANK:	1619642	Matrix:	Water
Associated Lab Samples:	2615446001, 2615446002, 2615446003		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.381 ± 0.318 (0.630) C:77% T:89%	pCi/L	03/18/19 16:07	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615446

---

QC Batch:	332626	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	2615446001, 2615446002, 2615446003		

---

METHOD BLANK:	1618580	Matrix:	Water
Associated Lab Samples:	2615446001, 2615446002, 2615446003		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.397 ± 0.246 (0.344) C:98% T:NA	pCi/L	03/12/19 09:13	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615446

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond

Pace Project No.: 2615446

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2615446001	BGWA-2	EPA 9315	332626		
2615446002	BGWC-8	EPA 9315	332626		
2615446003	BGWC-16	EPA 9315	332626		
2615446001	BGWA-2	EPA 9320	332854		
2615446002	BGWC-8	EPA 9320	332854		
2615446003	BGWC-16	EPA 9320	332854		
2615446001	BGWA-2	Total Radium Calculation	334412		
2615446002	BGWC-8	Total Radium Calculation	334412		
2615446003	BGWC-16	Total Radium Calculation	334412		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2615446

Client Name: GA Power

PM: BM Due Date: 03/27/19
CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other
Tracking #:

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 082 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.5C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 2/27/19 [Signature]

Temp should be above freezing to 6C

Comments:

Table with 16 rows of checklist items including Chain of Custody Present, Samples Arrived within Hold Time, Short Hold Time Analysis, etc.

Client Notification/ Resolution: Person Contacted: Date/Time: Comments/ Resolution: Field Data Required? Y / N

8151A WSC

Project Manager Review: Date:

March 07, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

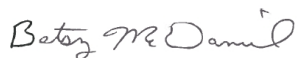
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2615499

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 28, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Maria Padilla, Georgia Power  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615499

---

### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092  
Florida DOH Certification #: E87315  
Georgia DW Inorganics Certification #: 812  
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Virginia Certification #: 460204

---

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615499

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615499001	BGWA-29	Water	02/27/19 11:16	02/28/19 17:00
2615499002	BGWC-17	Water	02/27/19 13:00	02/28/19 17:00
2615499003	BGWC-18	Water	02/27/19 15:00	02/28/19 17:00
2615499004	BGWC-20	Water	02/27/19 16:46	02/28/19 17:00
2615499005	Dup-1	Water	02/27/19 00:00	02/28/19 17:00

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2615499

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2615499001	BGWA-29	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615499002	BGWC-17	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615499003	BGWC-18	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615499004	BGWC-20	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615499005	Dup-1	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615499

Sample: <b>BGWA-29</b>		Lab ID: <b>2615499001</b>		Collected: 02/27/19 11:16		Received: 02/28/19 17:00		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	03/05/19 11:25	03/06/19 13:06	7440-36-0		
Arsenic	<b>0.0011J</b>	mg/L	0.0050	0.00057	1	03/05/19 11:25	03/06/19 13:06	7440-38-2		
Barium	<b>0.013</b>	mg/L	0.010	0.00078	1	03/05/19 11:25	03/06/19 13:06	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	03/05/19 11:25	03/06/19 13:06	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	03/05/19 11:25	03/06/19 13:06	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	03/05/19 11:25	03/06/19 13:06	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	03/05/19 11:25	03/06/19 13:06	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	03/05/19 11:25	03/06/19 13:06	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	03/05/19 11:25	03/06/19 13:06	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	03/05/19 11:25	03/06/19 13:06	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	03/05/19 11:25	03/06/19 13:06	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	03/05/19 11:25	03/06/19 13:06	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.000065J</b>	mg/L	0.00050	0.000036	1	03/04/19 10:46	03/05/19 12:45	7439-97-6	B	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		03/04/19 22:12	16984-48-8	M1	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615499

Sample: <b>BGWC-17</b>		Lab ID: <b>2615499002</b>		Collected: 02/27/19 13:00		Received: 02/28/19 17:00		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	03/05/19 11:25	03/06/19 13:11	7440-36-0		
Arsenic	<b>0.0010J</b>	mg/L	0.0050	0.00057	1	03/05/19 11:25	03/06/19 13:11	7440-38-2		
Barium	<b>0.014</b>	mg/L	0.010	0.00078	1	03/05/19 11:25	03/06/19 13:11	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	03/05/19 11:25	03/06/19 13:11	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	03/05/19 11:25	03/06/19 13:11	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	03/05/19 11:25	03/06/19 13:11	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	03/05/19 11:25	03/06/19 13:11	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	03/05/19 11:25	03/06/19 13:11	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	03/05/19 11:25	03/06/19 13:11	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	03/05/19 11:25	03/06/19 13:11	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	03/05/19 11:25	03/06/19 13:11	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	03/05/19 11:25	03/06/19 13:11	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.00029J</b>	mg/L	0.00050	0.000036	1	03/04/19 10:46	03/05/19 12:47	7439-97-6	B	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Fluoride	<b>0.26J</b>	mg/L	0.30	0.029	1		03/04/19 23:14	16984-48-8		

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615499

Sample: <b>BGWC-18</b>		Lab ID: <b>2615499003</b>		Collected: 02/27/19 15:00		Received: 02/28/19 17:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/05/19 11:25	03/06/19 13:17	7440-36-0	
Arsenic	<b>0.00083J</b>	mg/L	0.0050	0.00057	1	03/05/19 11:25	03/06/19 13:17	7440-38-2	
Barium	<b>0.027</b>	mg/L	0.010	0.00078	1	03/05/19 11:25	03/06/19 13:17	7440-39-3	
Beryllium	<b>0.00011J</b>	mg/L	0.0030	0.000050	1	03/05/19 11:25	03/06/19 13:17	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/05/19 11:25	03/06/19 13:17	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/05/19 11:25	03/06/19 13:17	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/05/19 11:25	03/06/19 13:17	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/05/19 11:25	03/06/19 13:17	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/05/19 11:25	03/06/19 13:17	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/05/19 11:25	03/06/19 13:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/05/19 11:25	03/06/19 13:17	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/05/19 11:25	03/06/19 13:17	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.000079J</b>	mg/L	0.00050	0.000036	1	03/04/19 10:46	03/05/19 12:50	7439-97-6	B
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		03/04/19 23:55	16984-48-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615499

Sample: <b>BGWC-20</b>		Lab ID: <b>2615499004</b>		Collected: 02/27/19 16:46		Received: 02/28/19 17:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/05/19 11:25	03/06/19 13:23	7440-36-0	
Arsenic	<b>0.0014J</b>	mg/L	0.0050	0.00057	1	03/05/19 11:25	03/06/19 13:23	7440-38-2	
Barium	<b>0.032</b>	mg/L	0.010	0.00078	1	03/05/19 11:25	03/06/19 13:23	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/05/19 11:25	03/06/19 13:23	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/05/19 11:25	03/06/19 13:23	7440-43-9	
Chromium	<b>0.0048J</b>	mg/L	0.010	0.0016	1	03/05/19 11:25	03/06/19 13:23	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/05/19 11:25	03/06/19 13:23	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/05/19 11:25	03/06/19 13:23	7439-92-1	
Lithium	<b>0.015J</b>	mg/L	0.050	0.00097	1	03/05/19 11:25	03/06/19 13:23	7439-93-2	
Molybdenum	<b>0.013</b>	mg/L	0.010	0.0019	1	03/05/19 11:25	03/06/19 13:23	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/05/19 11:25	03/06/19 13:23	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/05/19 11:25	03/06/19 13:23	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.000066J</b>	mg/L	0.00050	0.000036	1	03/04/19 10:46	03/05/19 12:52	7439-97-6	B
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	<b>0.13J</b>	mg/L	0.30	0.029	1		03/05/19 00:16	16984-48-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615499

Sample: Dup-1		Lab ID: 2615499005		Collected: 02/27/19 00:00		Received: 02/28/19 17:00		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/05/19 11:25	03/06/19 13:28	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/05/19 11:25	03/06/19 13:28	7440-38-2	
Barium	<b>0.013</b>	mg/L	0.010	0.00078	1	03/05/19 11:25	03/06/19 13:28	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/05/19 11:25	03/06/19 13:28	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/05/19 11:25	03/06/19 13:28	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/05/19 11:25	03/06/19 13:28	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/05/19 11:25	03/06/19 13:28	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/05/19 11:25	03/06/19 13:28	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/05/19 11:25	03/06/19 13:28	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/05/19 11:25	03/06/19 13:28	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/05/19 11:25	03/06/19 13:28	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/05/19 11:25	03/06/19 13:28	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.000054J</b>	mg/L	0.00050	0.000036	1	03/04/19 10:46	03/05/19 12:59	7439-97-6	B
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		03/05/19 00:36	16984-48-8	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615499

QC Batch: 23510 Analysis Method: EPA 7470A  
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury  
Associated Lab Samples: 2615499001, 2615499002, 2615499003, 2615499004, 2615499005

METHOD BLANK: 105333 Matrix: Water  
Associated Lab Samples: 2615499001, 2615499002, 2615499003, 2615499004, 2615499005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	0.000058J	0.00050	0.000036	03/05/19 12:05	

LABORATORY CONTROL SAMPLE: 105334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0027	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 105335 105336

Parameter	Units	MS		MSD		% Rec		% Rec	MSD	% Rec	Limits	RPD	Max RPD	Qual
		2615468001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec							
Mercury	mg/L	0.000074J	0.0025	0.0025	0.0025	0.0025	99	97	75-125	2	20			

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615499

QC Batch: 23567 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020B MET  
Associated Lab Samples: 2615499001, 2615499002, 2615499003, 2615499004, 2615499005

METHOD BLANK: 105477 Matrix: Water  
Associated Lab Samples: 2615499001, 2615499002, 2615499003, 2615499004, 2615499005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/06/19 12:37	
Arsenic	mg/L	ND	0.0050	0.00057	03/06/19 12:37	
Barium	mg/L	ND	0.010	0.00078	03/06/19 12:37	
Beryllium	mg/L	ND	0.0030	0.000050	03/06/19 12:37	
Cadmium	mg/L	ND	0.0010	0.000093	03/06/19 12:37	
Chromium	mg/L	ND	0.010	0.0016	03/06/19 12:37	
Cobalt	mg/L	ND	0.010	0.00052	03/06/19 12:37	
Lead	mg/L	ND	0.0050	0.00027	03/06/19 12:37	
Lithium	mg/L	ND	0.050	0.00097	03/06/19 12:37	
Molybdenum	mg/L	ND	0.010	0.0019	03/06/19 12:37	
Selenium	mg/L	ND	0.010	0.0014	03/06/19 12:37	
Thallium	mg/L	ND	0.0010	0.00014	03/06/19 12:37	

LABORATORY CONTROL SAMPLE: 105478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	100	80-120	
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.098	98	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	102	80-120	
Lead	mg/L	0.1	0.10	100	80-120	
Lithium	mg/L	0.1	0.099	99	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 105479 105480

Parameter	Units	2615503001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result						
Antimony	mg/L	ND	0.1	0.1	0.10	0.11	104	107	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.098	100	98	75-125	2	20	
Barium	mg/L	0.0067J	0.1	0.1	0.11	0.11	104	104	75-125	0	20	
Beryllium	mg/L	0.00016J	0.1	0.1	0.096	0.098	96	98	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	103	100	75-125	2	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2615499

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 105479		105480		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2615503001 Result	MS Spike Conc.	MSD Spike Conc.									
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	104	103	75-125	1	20		
Cobalt	mg/L	ND	0.1	0.1	0.10	0.10	103	100	75-125	3	20		
Lead	mg/L	ND	0.1	0.1	0.10	0.10	102	101	75-125	1	20		
Lithium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20		
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	105	105	75-125	0	20		
Selenium	mg/L	ND	0.1	0.1	0.11	0.10	104	100	75-125	4	20		
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	101	101	75-125	0	20		

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615499

QC Batch: 23494 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 2615499001, 2615499002, 2615499003, 2615499004, 2615499005

METHOD BLANK: 105287 Matrix: Water  
Associated Lab Samples: 2615499001, 2615499002, 2615499003, 2615499004, 2615499005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	03/04/19 21:30	

LABORATORY CONTROL SAMPLE: 105288

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.5	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 105374 105375

Parameter	Units	2615499001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	ND	10	10	8.5	8.9	85	89	90-110	5	15	M1

MATRIX SPIKE SAMPLE: 105376

Parameter	Units	2615499002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.26J	10	9.9	96	90-110	

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615499

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond

Pace Project No.: 2615499

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2615499001	BGWA-29	EPA 3005A	23567	EPA 6020B	23647
2615499002	BGWC-17	EPA 3005A	23567	EPA 6020B	23647
2615499003	BGWC-18	EPA 3005A	23567	EPA 6020B	23647
2615499004	BGWC-20	EPA 3005A	23567	EPA 6020B	23647
2615499005	Dup-1	EPA 3005A	23567	EPA 6020B	23647
2615499001	BGWA-29	EPA 7470A	23510	EPA 7470A	23534
2615499002	BGWC-17	EPA 7470A	23510	EPA 7470A	23534
2615499003	BGWC-18	EPA 7470A	23510	EPA 7470A	23534
2615499004	BGWC-20	EPA 7470A	23510	EPA 7470A	23534
2615499005	Dup-1	EPA 7470A	23510	EPA 7470A	23534
2615499001	BGWA-29	EPA 300.0	23494		
2615499002	BGWC-17	EPA 300.0	23494		
2615499003	BGWC-18	EPA 300.0	23494		
2615499004	BGWC-20	EPA 300.0	23494		
2615499005	Dup-1	EPA 300.0	23494		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2615499

Client Name: Georgia Power

PM: BM

Due Date: 03/07/19

CLIENT: GAPower-CCR

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: \_\_\_\_\_

Proj. Due Date:  
Proj. Name:

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 082 Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 4.1°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 2/28/19 COY

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix: <u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) <u>Pads</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

8151A WSC

Project Manager Review: \_\_\_\_\_

Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

March 22, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

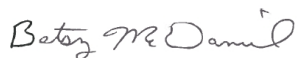
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2615500

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on February 28, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615500

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 9526  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615500

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615500001	BGWA-29	Water	02/27/19 11:16	02/28/19 17:00
2615500002	BGWC-17	Water	02/27/19 13:00	02/28/19 17:00
2615500003	BGWC-18	Water	02/27/19 15:00	02/28/19 17:00
2615500004	BGWC-20	Water	02/27/19 16:46	02/28/19 17:00
2615500005	Dup-1	Water	02/27/19 00:00	02/28/19 17:00

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2615500

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2615500001	BGWA-29	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615500002	BGWC-17	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615500003	BGWC-18	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615500004	BGWC-20	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615500005	Dup-1	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615500

**Sample: BGWA-29**      **Lab ID: 2615500001**      Collected: 02/27/19 11:16      Received: 02/28/19 17:00      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.343 ± 0.176 (0.290)</b> C:94% T:NA	pCi/L	03/13/19 18:50	13982-63-3	
Radium-228	EPA 9320	<b>0.598 ± 0.412 (0.787)</b> C:74% T:79%	pCi/L	03/18/19 16:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.941 ± 0.588 (1.08)</b>	pCi/L	03/19/19 14:44	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615500

**Sample: BGWC-17**      **Lab ID: 2615500002**      Collected: 02/27/19 13:00      Received: 02/28/19 17:00      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.430 ± 0.149 (0.177)</b> C:87% T:NA	pCi/L	03/13/19 18:50	13982-63-3	
Radium-228	EPA 9320	<b>1.14 ± 0.513 (0.847)</b> C:74% T:75%	pCi/L	03/18/19 16:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.57 ± 0.662 (1.02)</b>	pCi/L	03/19/19 14:44	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615500

**Sample: BGWC-18**      **Lab ID: 2615500003**      Collected: 02/27/19 15:00      Received: 02/28/19 17:00      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.519 ± 0.174 (0.227)</b> <b>C:93% T:NA</b>	pCi/L	03/13/19 18:50	13982-63-3	
Radium-228	EPA 9320	<b>0.605 ± 0.428 (0.823)</b> <b>C:70% T:80%</b>	pCi/L	03/18/19 16:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.12 ± 0.602 (1.05)</b>	pCi/L	03/21/19 13:16	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615500

**Sample: BGWC-20**      **Lab ID: 2615500004**      Collected: 02/27/19 16:46      Received: 02/28/19 17:00      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.986 ± 0.237 (0.232)</b> C:97% T:NA	pCi/L	03/13/19 18:50	13982-63-3	
Radium-228	EPA 9320	<b>0.258 ± 0.338 (0.716)</b> C:72% T:78%	pCi/L	03/18/19 16:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.24 ± 0.575 (0.948)</b>	pCi/L	03/21/19 13:16	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615500

**Sample: Dup-1**      **Lab ID: 2615500005**      Collected: 02/27/19 00:00      Received: 02/28/19 17:00      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.401 ± 0.135 (0.156)</b> C:93% T:NA	pCi/L	03/13/19 18:50	13982-63-3	
Radium-228	EPA 9320	<b>0.588 ± 0.352 (0.632)</b> C:76% T:83%	pCi/L	03/18/19 16:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.989 ± 0.487 (0.788)</b>	pCi/L	03/19/19 14:44	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615500

QC Batch: 332854 Analysis Method: EPA 9320

QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228

Associated Lab Samples: 2615500001, 2615500002, 2615500003, 2615500004, 2615500005

METHOD BLANK: 1619642 Matrix: Water

Associated Lab Samples: 2615500001, 2615500002, 2615500003, 2615500004, 2615500005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.381 ± 0.318 (0.630) C:77% T:89%	pCi/L	03/18/19 16:07	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615500

QC Batch: 332856 Analysis Method: EPA 9315

QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium

Associated Lab Samples: 2615500001, 2615500002, 2615500003, 2615500004, 2615500005

METHOD BLANK: 1619644 Matrix: Water

Associated Lab Samples: 2615500001, 2615500002, 2615500003, 2615500004, 2615500005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.265 ± 0.116 (0.162) C:92% T:NA	pCi/L	03/13/19 20:28	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615500

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond

Pace Project No.: 2615500

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2615500001	BGWA-29	EPA 9315	332856		
2615500002	BGWC-17	EPA 9315	332856		
2615500003	BGWC-18	EPA 9315	332856		
2615500004	BGWC-20	EPA 9315	332856		
2615500005	Dup-1	EPA 9315	332856		
2615500001	BGWA-29	EPA 9320	332854		
2615500002	BGWC-17	EPA 9320	332854		
2615500003	BGWC-18	EPA 9320	332854		
2615500004	BGWC-20	EPA 9320	332854		
2615500005	Dup-1	EPA 9320	332854		
2615500001	BGWA-29	Total Radium Calculation	334415		
2615500002	BGWC-17	Total Radium Calculation	334415		
2615500003	BGWC-18	Total Radium Calculation	334844		
2615500004	BGWC-20	Total Radium Calculation	334844		
2615500005	Dup-1	Total Radium Calculation	334415		

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# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b>		<b>Section B</b>		<b>Section C</b>	
<b>Required Client Information:</b>		<b>Required Project Information:</b>		<b>Invoice Information:</b>	
Company	Georgia Power - Coal Combustion Residuals	Report To	Jou Abraham	Attention	
Address	2480 Marner Road Atlanta, GA 30339	Copy To	Geosyntec	Company Name	
Email	jabraham@southernco.com	Purchase Order #	SCS10348606	Address	
Phone	(404)506-7239	Project Name	Plant Bowen Ash Pond	Pace Project Manager	betsy.mcdaniel@pacelabs.com
Requested Due Date		Project #		Pace Quote	
				Pace Profile #	315
				State / Location	GA
				Regulatory Agency	

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES							Analyses Test Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)		
			START DATE	END TIME				H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other					
1	B6WA-29	DW	2/27/19	1116	WTG	WTG	4	1	3						1		1	2	1
2	B6WC-17	WW	2/27/19	1300	WTG	WTG	4	1	3						1		1	2	2
3	B6WC-18	P	2/27/19	1500	WTG	WTG	4	1	3						1		1	2	3
4	B6WC-20	SL	2/27/19	1646	WTG	WTG	4	1	3						1		1	2	4
5	Dup-1	SL	2/27/19	---	WTG	WTG	4	1	3						1		1	2	5

DATE RECEIVED BY CLIENT	2/28/19 1:20	DATE	2/28/19 1700	TEMP IN C	11.1	RECEIVED	Y	ICY	Y	SEALED	Y	CUSTODY	Y	COOLER	Y	SAMPLES	INTACT	Y/N
DATE RECEIVED BY PACELABS	2/27/19	DATE	2/27/19	TEMP IN C		RECEIVED		ICY		SEALED		CUSTODY		COOLER		SAMPLES	INTACT	Y/N

**WO# : 26155500**

26155500



Sample Condition Upon Receipt

Client Name: Georgia Power

WO#: **2615500**

Due Date: 03/28/19

PM: BM

CLIENT: GAPower-CCR

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used 082 Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 11°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 2/28/19/COJ

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix: <u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) <u>Pads</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

8151A WSC

Project Manager Review: \_\_\_\_\_

Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

March 11, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

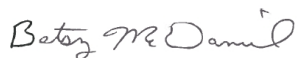
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2615551

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 01, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615551

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### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615551

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615551001	BGWC-10	Water	02/28/19 12:26	03/01/19 16:22
2615551002	BGWC-7	Water	02/28/19 13:32	03/01/19 16:22
2615551003	BGWC-12	Water	02/28/19 15:14	03/01/19 16:22

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2615551

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2615551001	BGWC-10	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2615551002	BGWC-7	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1
2615551003	BGWC-12	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	RLC	1

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615551

Sample: <b>BGWC-10</b>		Lab ID: <b>2615551001</b>		Collected: 02/28/19 12:26		Received: 03/01/19 16:22		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/06/19 19:53	7440-36-0		
Arsenic	<b>0.0058</b>	mg/L	0.0050	0.00057	1	03/06/19 11:40	03/06/19 19:53	7440-38-2		
Barium	<b>0.053</b>	mg/L	0.010	0.00078	1	03/06/19 11:40	03/06/19 19:53	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	03/06/19 11:40	03/07/19 13:55	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/06/19 19:53	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	03/06/19 11:40	03/06/19 19:53	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	03/06/19 11:40	03/06/19 19:53	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/06/19 19:53	7439-92-1		
Lithium	<b>0.0017J</b>	mg/L	0.050	0.00097	1	03/06/19 11:40	03/06/19 19:53	7439-93-2		
Molybdenum	<b>0.0035J</b>	mg/L	0.010	0.0019	1	03/06/19 11:40	03/06/19 19:53	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	03/06/19 11:40	03/06/19 19:53	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/06/19 19:53	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.000048J</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 14:29	7439-97-6	B	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Fluoride	<b>0.14J</b>	mg/L	0.30	0.029	1		03/07/19 20:28	16984-48-8		

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615551

Sample: <b>BGWC-7</b>		Lab ID: <b>2615551002</b>		Collected: 02/28/19 13:32		Received: 03/01/19 16:22		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/06/19 20:16	7440-36-0	
Arsenic	<b>0.0011J</b>	mg/L	0.0050	0.00057	1	03/06/19 11:40	03/06/19 20:16	7440-38-2	
Barium	<b>0.041</b>	mg/L	0.010	0.00078	1	03/06/19 11:40	03/06/19 20:16	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/06/19 11:40	03/07/19 14:12	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/06/19 20:16	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/06/19 11:40	03/06/19 20:16	7440-47-3	
Cobalt	<b>0.00067J</b>	mg/L	0.010	0.00052	1	03/06/19 11:40	03/06/19 20:16	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/06/19 20:16	7439-92-1	
Lithium	<b>0.0086J</b>	mg/L	0.050	0.00097	1	03/06/19 11:40	03/06/19 20:16	7439-93-2	
Molybdenum	<b>0.016</b>	mg/L	0.010	0.0019	1	03/06/19 11:40	03/06/19 20:16	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/06/19 11:40	03/06/19 20:16	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/06/19 20:16	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.000053J</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 14:39	7439-97-6	B
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	<b>0.23J</b>	mg/L	0.30	0.029	1		03/07/19 21:37	16984-48-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615551

Sample: <b>BGWC-12</b>		Lab ID: <b>2615551003</b>		Collected: 02/28/19 15:14		Received: 03/01/19 16:22		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/06/19 20:21	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/06/19 11:40	03/06/19 20:21	7440-38-2	
Barium	<b>0.033</b>	mg/L	0.010	0.00078	1	03/06/19 11:40	03/06/19 20:21	7440-39-3	
Beryllium	<b>0.000076J</b>	mg/L	0.0030	0.000050	1	03/06/19 11:40	03/07/19 14:18	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/06/19 20:21	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/06/19 11:40	03/06/19 20:21	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/06/19 11:40	03/06/19 20:21	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/06/19 20:21	7439-92-1	
Lithium	<b>0.0011J</b>	mg/L	0.050	0.00097	1	03/06/19 11:40	03/06/19 20:21	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/06/19 11:40	03/06/19 20:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/06/19 11:40	03/06/19 20:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/06/19 20:21	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.000058J</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 14:41	7439-97-6	B
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	<b>0.18J</b>	mg/L	0.30	0.029	1		03/07/19 22:00	16984-48-8	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2615551

QC Batch: 23535

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2615551001, 2615551002, 2615551003

METHOD BLANK: 105394

Matrix: Water

Associated Lab Samples: 2615551001, 2615551002, 2615551003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	0.000050J	0.00050	0.000036	03/05/19 14:25	

LABORATORY CONTROL SAMPLE: 105395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 105396

105397

Parameter	Units	105396		105397		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2615551001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/L	0.000048J	0.0025	0.0025	0.0027	0.0022	104	87	75-125	18	20

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615551

QC Batch: 23687 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020B MET  
Associated Lab Samples: 2615551001, 2615551002, 2615551003

METHOD BLANK: 106016 Matrix: Water  
Associated Lab Samples: 2615551001, 2615551002, 2615551003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/06/19 18:24	
Arsenic	mg/L	ND	0.0050	0.00057	03/06/19 18:24	
Barium	mg/L	ND	0.010	0.00078	03/06/19 18:24	
Beryllium	mg/L	ND	0.0030	0.000050	03/06/19 18:24	
Cadmium	mg/L	ND	0.0010	0.000093	03/06/19 18:24	
Chromium	mg/L	ND	0.010	0.0016	03/06/19 18:24	
Cobalt	mg/L	ND	0.010	0.00052	03/06/19 18:24	
Lead	mg/L	ND	0.0050	0.00027	03/06/19 18:24	
Lithium	mg/L	ND	0.050	0.00097	03/06/19 18:24	
Molybdenum	mg/L	ND	0.010	0.0019	03/06/19 18:24	
Selenium	mg/L	ND	0.010	0.0014	03/06/19 18:24	
Thallium	mg/L	ND	0.0010	0.00014	03/06/19 18:24	

LABORATORY CONTROL SAMPLE: 106017

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	108	80-120	
Arsenic	mg/L	0.1	0.10	101	80-120	
Barium	mg/L	0.1	0.10	104	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.10	102	80-120	
Cobalt	mg/L	0.1	0.10	102	80-120	
Lead	mg/L	0.1	0.10	102	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.10	105	80-120	
Selenium	mg/L	0.1	0.10	104	80-120	
Thallium	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 106018 106019

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2615551001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Antimony	mg/L	ND	0.1	0.1	0.10	0.11	105	107	75-125	2	20	
Arsenic	mg/L	0.0058	0.1	0.1	0.11	0.11	101	103	75-125	2	20	
Barium	mg/L	0.053	0.1	0.1	0.15	0.16	102	106	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.10	0.10	101	101	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.099	0.10	99	100	75-125	2	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2615551

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 106018		106019		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2615551001 Result	MS Spike Conc.	MSD Spike Conc.								
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20	
Cobalt	mg/L	ND	0.1	0.1	0.099	0.10	99	100	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	0	20	
Lithium	mg/L	0.0017J	0.1	0.1	0.096	0.095	95	94	75-125	1	20	
Molybdenum	mg/L	0.0035J	0.1	0.1	0.10	0.11	101	104	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.11	103	106	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2615551

QC Batch: 23823 Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions

Associated Lab Samples: 2615551001, 2615551002, 2615551003

METHOD BLANK: 106696 Matrix: Water

Associated Lab Samples: 2615551001, 2615551002, 2615551003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	03/07/19 19:43	

LABORATORY CONTROL SAMPLE: 106697

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.8	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 106698 106699

Parameter	Units	106698		106699		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		2615551001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Fluoride	mg/L	0.14J	10	10	10.0	10	99	98	90-110	0	15		

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615551

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond

Pace Project No.: 2615551

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2615551001	BGWC-10	EPA 3005A	23687	EPA 6020B	23738
2615551002	BGWC-7	EPA 3005A	23687	EPA 6020B	23738
2615551003	BGWC-12	EPA 3005A	23687	EPA 6020B	23738
2615551001	BGWC-10	EPA 7470A	23535	EPA 7470A	23568
2615551002	BGWC-7	EPA 7470A	23535	EPA 7470A	23568
2615551003	BGWC-12	EPA 7470A	23535	EPA 7470A	23568
2615551001	BGWC-10	EPA 300.0	23823		
2615551002	BGWC-7	EPA 300.0	23823		
2615551003	BGWC-12	EPA 300.0	23823		

### REPORT OF LABORATORY ANALYSIS

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Client Name: Georgia Power Coal Combustion

PM: BM Due Date: 03/08/19 CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: \_\_\_\_\_

Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 083 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 2.8 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 3/1/19

Temp should be above freezing to 6°C

Comments:

Table with 16 rows of checklist items regarding custody, volume, and testing procedures.

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: Robert Mull Date/Time: 3/4/2019

Comments/ Resolution: Per consultant, these samples set only App. IV list; no Cl, no 504, no TDS, no B, no Ca.

Project Manager Review: BMCD

Date: 3/4/2019

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

March 22, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

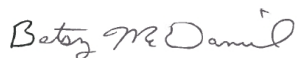
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2615552

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 01, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615552

---

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615552

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615552001	BGWC-10	Water	02/28/19 12:26	03/01/19 16:22
2615552002	BGWC-7	Water	02/28/19 13:32	03/01/19 16:22
2615552003	BGWC-12	Water	02/28/19 15:14	03/01/19 16:22

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2615552

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2615552001	BGWC-10	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615552002	BGWC-7	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615552003	BGWC-12	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615552

**Sample: BGWC-10**      **Lab ID: 2615552001**      Collected: 02/28/19 12:26      Received: 03/01/19 16:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.11 ± 0.245 (0.171)</b> <b>C:88% T:NA</b>	pCi/L	03/13/19 20:28	13982-63-3	
Radium-228	EPA 9320	<b>0.768 ± 0.429 (0.764)</b> <b>C:71% T:81%</b>	pCi/L	03/18/19 16:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.88 ± 0.674 (0.935)</b>	pCi/L	03/19/19 14:44	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615552

**Sample: BGWC-7**      **Lab ID: 2615552002**      Collected: 02/28/19 13:32      Received: 03/01/19 16:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.883 ± 0.206 (0.160)</b> C:91% T:NA	pCi/L	03/13/19 20:28	13982-63-3	
Radium-228	EPA 9320	<b>0.495 ± 0.403 (0.800)</b> C:77% T:77%	pCi/L	03/18/19 16:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.38 ± 0.609 (0.960)</b>	pCi/L	03/19/19 14:44	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615552

**Sample: BGWC-12**      **Lab ID: 2615552003**      Collected: 02/28/19 15:14      Received: 03/01/19 16:22      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.461 ± 0.142 (0.157)</b> C:96% T:NA	pCi/L	03/13/19 20:28	13982-63-3	
Radium-228	EPA 9320	<b>0.575 ± 0.339 (0.607)</b> C:75% T:86%	pCi/L	03/18/19 16:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.04 ± 0.481 (0.764)</b>	pCi/L	03/19/19 14:44	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615552

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QC Batch:	332854	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	2615552001, 2615552002, 2615552003		

---

METHOD BLANK:	1619642	Matrix:	Water
Associated Lab Samples:	2615552001, 2615552002, 2615552003		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.381 ± 0.318 (0.630) C:77% T:89%	pCi/L	03/18/19 16:07	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615552

QC Batch: 332856

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2615552001, 2615552002, 2615552003

METHOD BLANK: 1619644

Matrix: Water

Associated Lab Samples: 2615552001, 2615552002, 2615552003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.265 ± 0.116 (0.162) C:92% T:NA	pCi/L	03/13/19 20:28	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615552

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615552

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2615552001	BGWC-10	EPA 9315	332856		
2615552002	BGWC-7	EPA 9315	332856		
2615552003	BGWC-12	EPA 9315	332856		
2615552001	BGWC-10	EPA 9320	332854		
2615552002	BGWC-7	EPA 9320	332854		
2615552003	BGWC-12	EPA 9320	332854		
2615552001	BGWC-10	Total Radium Calculation	334415		
2615552002	BGWC-7	Total Radium Calculation	334415		
2615552003	BGWC-12	Total Radium Calculation	334415		

**REPORT OF LABORATORY ANALYSIS**

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**CHAIN-OF-CUSTODY / A**  
The Chain-of-Custody is a LEGAL DOC

WO#: 2615552



1 of 1

**Section A**  
 Company: Georgia Power - Coal Combustion Residuals  
 Address: 2480 Maner Road, Atlanta, GA 30339  
 Email: jabraham@southernco.com  
 Phone: (404)506-7239  
 Requested Due Date: \_\_\_\_\_

**Section B**  
 Required Project Information:  
 Report To: Jpu Abraham  
 Copy To: Geosyntec  
 Purchase Order #: SCS10348605  
 Project Name: Plant Bowen Ash Pond  
 Project #: \_\_\_\_\_

**Section C**  
 Invoice Information:  
 Attention: \_\_\_\_\_  
 Company Name: Pace Analytical  
 Address: \_\_\_\_\_  
 Pace Project Manager: beisy.mcdaniel@pacelabs.com  
 Pace Profile #: 315  
 State / Location: GA  
 Regulatory Agency: \_\_\_\_\_

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G-GRAB C-COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES						Analyses Test Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
			START DATE	END DATE				H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol			
1	Boiler-10	WW	3/28/19 12:42		WTG	WTG	4	Unpreserved								1
2	Boiler-7	WW	3/28/19 13:52		WTG	WTG	4									2
3	Boiler-12	WW	3/28/19 15:14		WTG	WTG	4									3
4																
5																
6																
7																
8																
9																
10																
11																
12																

**ADDITIONAL COMMENTS**  
 Cindy Mander 3/28/19 11:29  
 Cindy Mander 3/28/19 13:09  
 Cindy Mander 3/28/19 16:22

**RELINQUISHED BY / AFFILIATION:**  
 DATE: 3/28/19  
 TIME: 11:29  
 ACCEPTED BY / AFFILIATION: \_\_\_\_\_  
 DATE: 3/28/19  
 TIME: 16:22

**TEMP IN C**  
 21.8

**SAMPLE CONDITIONS**  
 Received on Ice (Y/N): \_\_\_\_\_  
 Custody Sealed (Y/N): \_\_\_\_\_  
 Samples Intact (Y/N): \_\_\_\_\_

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Cindy Mander  
 SIGNATURE of SAMPLER: [Signature]  
 PRINT Name of SAMPLER: Cindy Mander  
 SIGNATURE of SAMPLER: [Signature]  
 DATE Signed: 3/28/19



Sample Condition Upon Receipt

WO#: 2615552

Client Name: Georgia Power Coal Combustion

PM: BM Due Date: 03/08/19 CLIENT: GPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other Tracking #:

Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 083 Type of Ice: Wet Blue None

Cooler Temperature 2.8 Biological Tissue is Frozen: Yes No

Samples on ice, cooling process has begun Date and Initials of person examining contents: 3/1/19

Temp should be above freezing to 6°C Comments:

Table with 16 rows of checklist items (Chain of Custody Present, Filled Out, Relinquished, etc.) and checkboxes for Yes, No, N/A.

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review:

Date:

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

March 08, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2615560

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 01, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

---

### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615560001	BGWC-30	Water	03/01/19 11:35	03/01/19 16:57
2615560002	BGWC-22	Water	03/01/19 11:40	03/01/19 16:57
2615560003	BGWC-24	Water	03/01/19 12:04	03/01/19 16:57
2615560004	BGWC-25	Water	03/01/19 13:04	03/01/19 16:57
2615560005	BGWC-19	Water	03/01/19 13:56	03/01/19 16:57
2615560006	BGWC-23	Water	03/01/19 14:07	03/01/19 16:57
2615560007	Dup-2	Water	03/01/19 00:00	03/01/19 16:57
2615560008	FBL030119	Water	03/01/19 14:40	03/01/19 16:57
2615560009	EQBL030119	Water	03/01/19 14:45	03/01/19 16:57

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615560

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2615560001	BGWC-30	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615560002	BGWC-22	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615560003	BGWC-24	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615560004	BGWC-25	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615560005	BGWC-19	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615560006	BGWC-23	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615560007	Dup-2	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615560008	FBL030119	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615560009	EQBL030119	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

Sample: <b>BGWC-30</b>		Lab ID: <b>2615560001</b>		Collected: 03/01/19 11:35		Received: 03/01/19 16:57		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/06/19 20:27	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/06/19 11:40	03/06/19 20:27	7440-38-2	
Barium	<b>0.078</b>	mg/L	0.010	0.00078	1	03/06/19 11:40	03/06/19 20:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/06/19 11:40	03/07/19 14:23	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/06/19 20:27	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/06/19 11:40	03/06/19 20:27	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/06/19 11:40	03/06/19 20:27	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/06/19 20:27	7439-92-1	
Lithium	<b>0.0044J</b>	mg/L	0.050	0.00097	1	03/06/19 11:40	03/06/19 20:27	7439-93-2	
Molybdenum	<b>0.011</b>	mg/L	0.010	0.0019	1	03/06/19 11:40	03/06/19 20:27	7439-98-7	
Selenium	<b>0.010J</b>	mg/L	0.010	0.0014	1	03/06/19 11:40	03/06/19 20:27	7782-49-2	
Thallium	<b>0.00024J</b>	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/06/19 20:27	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.00010J</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 14:44	7439-97-6	B
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	<b>0.24J</b>	mg/L	0.30	0.029	1		03/05/19 11:14	16984-48-8	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615560

Sample: <b>BGWC-22</b>		Lab ID: <b>2615560002</b>		Collected: 03/01/19 11:40		Received: 03/01/19 16:57		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/06/19 20:33	7440-36-0		
Arsenic	<b>0.0011J</b>	mg/L	0.0050	0.00057	1	03/06/19 11:40	03/06/19 20:33	7440-38-2		
Barium	<b>0.087</b>	mg/L	0.010	0.00078	1	03/06/19 11:40	03/06/19 20:33	7440-39-3		
Beryllium	<b>0.00012J</b>	mg/L	0.0030	0.000050	1	03/06/19 11:40	03/07/19 14:29	7440-41-7		
Cadmium	<b>0.00013J</b>	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/06/19 20:33	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	03/06/19 11:40	03/06/19 20:33	7440-47-3		
Cobalt	<b>0.017</b>	mg/L	0.010	0.00052	1	03/06/19 11:40	03/06/19 20:33	7440-48-4		
Lead	<b>0.00033J</b>	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/06/19 20:33	7439-92-1		
Lithium	<b>0.022J</b>	mg/L	0.050	0.00097	1	03/06/19 11:40	03/06/19 20:33	7439-93-2		
Molybdenum	<b>0.039</b>	mg/L	0.010	0.0019	1	03/06/19 11:40	03/06/19 20:33	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	03/06/19 11:40	03/06/19 20:33	7782-49-2		
Thallium	<b>0.00074J</b>	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/06/19 20:33	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.000042J</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 14:46	7439-97-6	B	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Fluoride	<b>0.34</b>	mg/L	0.30	0.029	1		03/05/19 11:37	16984-48-8		

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

Sample: <b>BGWC-24</b> Lab ID: <b>2615560003</b> Collected: 03/01/19 12:04      Received: 03/01/19 16:57      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b> Analytical Method: EPA 6020B      Preparation Method: EPA 3005A									
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/06/19 20:50	7440-36-0	
Arsenic	<b>0.0032J</b>	mg/L	0.025	0.0028	5	03/06/19 11:40	03/07/19 14:48	7440-38-2	D3
Barium	<b>0.12</b>	mg/L	0.010	0.00078	1	03/06/19 11:40	03/06/19 20:50	7440-39-3	
Beryllium	ND	mg/L	0.015	0.00025	5	03/06/19 11:40	03/07/19 14:48	7440-41-7	D3
Cadmium	<b>0.0058</b>	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/06/19 20:50	7440-43-9	
Chromium	ND	mg/L	0.050	0.0078	5	03/06/19 11:40	03/07/19 14:48	7440-47-3	D3
Cobalt	<b>0.0055J</b>	mg/L	0.050	0.0026	5	03/06/19 11:40	03/07/19 14:48	7440-48-4	D3
Lead	ND	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/06/19 20:50	7439-92-1	
Lithium	<b>0.0068J</b>	mg/L	0.050	0.00097	1	03/06/19 11:40	03/06/19 20:50	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/06/19 11:40	03/06/19 20:50	7439-98-7	
Selenium	ND	mg/L	0.050	0.0068	5	03/06/19 11:40	03/07/19 14:48	7782-49-2	D3
Thallium	<b>0.00070J</b>	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/06/19 20:50	7440-28-0	
<b>7470 Mercury</b> Analytical Method: EPA 7470A      Preparation Method: EPA 7470A									
Mercury	<b>0.00093</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 14:53	7439-97-6	
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Fluoride	<b>1.0</b>	mg/L	0.30	0.029	1		03/05/19 12:00	16984-48-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

Sample: <b>BGWC-25</b>		Lab ID: <b>2615560004</b>		Collected: 03/01/19 13:04		Received: 03/01/19 16:57		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/06/19 20:56	7440-36-0	
Arsenic	<b>0.0022J</b>	mg/L	0.0050	0.00057	1	03/06/19 11:40	03/07/19 14:54	7440-38-2	
Barium	<b>0.021</b>	mg/L	0.010	0.00078	1	03/06/19 11:40	03/06/19 20:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/06/19 11:40	03/07/19 14:54	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/06/19 20:56	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/06/19 11:40	03/07/19 14:54	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/06/19 11:40	03/07/19 14:54	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/06/19 20:56	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/06/19 11:40	03/06/19 20:56	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/06/19 11:40	03/06/19 20:56	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/06/19 11:40	03/07/19 14:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/06/19 20:56	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.000047J</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 14:56	7439-97-6	B
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	<b>0.12J</b>	mg/L	0.30	0.029	1		03/05/19 13:13	16984-48-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

Sample: <b>BGWC-19</b>		Lab ID: <b>2615560005</b>		Collected: 03/01/19 13:56		Received: 03/01/19 16:57		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/06/19 21:02	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/06/19 11:40	03/07/19 14:59	7440-38-2	
Barium	<b>0.028</b>	mg/L	0.010	0.00078	1	03/06/19 11:40	03/06/19 21:02	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/06/19 11:40	03/07/19 14:59	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/06/19 21:02	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/06/19 11:40	03/07/19 14:59	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/06/19 11:40	03/07/19 14:59	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/06/19 21:02	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/06/19 11:40	03/06/19 21:02	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/06/19 11:40	03/06/19 21:02	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/06/19 11:40	03/07/19 14:59	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/06/19 21:02	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.000050J</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 14:58	7439-97-6	B
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	<b>0.14J</b>	mg/L	0.30	0.029	1		03/05/19 13:36	16984-48-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

Sample: <b>BGWC-23</b>		Lab ID: <b>2615560006</b>		Collected: 03/01/19 14:07		Received: 03/01/19 16:57		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/07/19 16:52	7440-36-0		
Arsenic	<b>0.0023J</b>	mg/L	0.0050	0.00057	1	03/06/19 11:40	03/07/19 16:52	7440-38-2		
Barium	<b>0.097</b>	mg/L	0.010	0.00078	1	03/06/19 11:40	03/07/19 16:52	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	03/06/19 11:40	03/07/19 16:52	7440-41-7		
Cadmium	<b>0.00019J</b>	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/07/19 16:52	7440-43-9		
Chromium	<b>0.0033J</b>	mg/L	0.010	0.0016	1	03/06/19 11:40	03/07/19 16:52	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	03/06/19 11:40	03/07/19 16:52	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/07/19 16:52	7439-92-1		
Lithium	<b>0.017J</b>	mg/L	0.050	0.00097	1	03/06/19 11:40	03/07/19 16:52	7439-93-2		
Molybdenum	<b>0.013</b>	mg/L	0.010	0.0019	1	03/06/19 11:40	03/07/19 16:52	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	03/06/19 11:40	03/07/19 16:52	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/07/19 16:52	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.000044J</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 15:00	7439-97-6	B	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Fluoride	<b>0.38</b>	mg/L	0.30	0.029	1		03/05/19 13:59	16984-48-8		

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

Sample: Dup-2		Lab ID: 2615560007		Collected: 03/01/19 00:00		Received: 03/01/19 16:57		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/06/19 21:07	7440-36-0	
Arsenic	<b>0.0022J</b>	mg/L	0.0050	0.00057	1	03/06/19 11:40	03/07/19 15:05	7440-38-2	
Barium	<b>0.086</b>	mg/L	0.010	0.00078	1	03/06/19 11:40	03/06/19 21:07	7440-39-3	
Beryllium	<b>0.00013J</b>	mg/L	0.0030	0.000050	1	03/06/19 11:40	03/07/19 15:05	7440-41-7	
Cadmium	<b>0.00013J</b>	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/06/19 21:07	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/06/19 11:40	03/07/19 15:05	7440-47-3	
Cobalt	<b>0.017</b>	mg/L	0.010	0.00052	1	03/06/19 11:40	03/07/19 15:05	7440-48-4	
Lead	<b>0.00031J</b>	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/06/19 21:07	7439-92-1	
Lithium	<b>0.021J</b>	mg/L	0.050	0.00097	1	03/06/19 11:40	03/06/19 21:07	7439-93-2	
Molybdenum	<b>0.038</b>	mg/L	0.010	0.0019	1	03/06/19 11:40	03/06/19 21:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/06/19 11:40	03/07/19 15:05	7782-49-2	
Thallium	<b>0.00071J</b>	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/06/19 21:07	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.000047J</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 15:03	7439-97-6	B
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	<b>0.37</b>	mg/L	0.30	0.029	1		03/05/19 14:21	16984-48-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

Sample: <b>FBL030119</b>		Lab ID: <b>2615560008</b>		Collected: 03/01/19 14:40		Received: 03/01/19 16:57		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/07/19 17:21	7440-36-0		
Arsenic	ND	mg/L	0.0050	0.00057	1	03/06/19 11:40	03/07/19 17:21	7440-38-2		
Barium	ND	mg/L	0.010	0.00078	1	03/06/19 11:40	03/07/19 17:21	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	03/06/19 11:40	03/07/19 17:21	7440-41-7		
Cadmium	ND	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/07/19 17:21	7440-43-9		
Chromium	ND	mg/L	0.010	0.0016	1	03/06/19 11:40	03/07/19 17:21	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	03/06/19 11:40	03/07/19 17:21	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/07/19 17:21	7439-92-1		
Lithium	ND	mg/L	0.050	0.00097	1	03/06/19 11:40	03/07/19 17:21	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	03/06/19 11:40	03/07/19 17:21	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	03/06/19 11:40	03/07/19 17:21	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/07/19 17:21	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.000047J</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 15:05	7439-97-6	B	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		03/05/19 16:16	16984-48-8		

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

Sample: EQBL030119		Lab ID: 2615560009		Collected: 03/01/19 14:45		Received: 03/01/19 16:57		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/06/19 11:40	03/07/19 17:27	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/06/19 11:40	03/07/19 17:27	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	03/06/19 11:40	03/07/19 17:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/06/19 11:40	03/07/19 17:27	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/06/19 11:40	03/07/19 17:27	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/06/19 11:40	03/07/19 17:27	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/06/19 11:40	03/07/19 17:27	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/06/19 11:40	03/07/19 17:27	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/06/19 11:40	03/07/19 17:27	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/06/19 11:40	03/07/19 17:27	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/06/19 11:40	03/07/19 17:27	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/06/19 11:40	03/07/19 17:27	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.000043J</b>	mg/L	0.00050	0.000036	1	03/04/19 15:02	03/05/19 15:07	7439-97-6	B
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		03/05/19 16:39	16984-48-8	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615560

QC Batch: 23535 Analysis Method: EPA 7470A  
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury  
Associated Lab Samples: 2615560001, 2615560002, 2615560003, 2615560004, 2615560005, 2615560006, 2615560007, 2615560008, 2615560009

METHOD BLANK: 105394 Matrix: Water  
Associated Lab Samples: 2615560001, 2615560002, 2615560003, 2615560004, 2615560005, 2615560006, 2615560007, 2615560008, 2615560009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	0.000050J	0.00050	0.000036	03/05/19 14:25	

LABORATORY CONTROL SAMPLE: 105395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 105396 105397

Parameter	Units	2615551001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Mercury	mg/L	0.000048J	0.0025	0.0025	0.0027	0.0022	104	87	75-125	18	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615560

QC Batch: 23687 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020B MET  
Associated Lab Samples: 2615560001, 2615560002, 2615560003, 2615560004, 2615560005, 2615560007

METHOD BLANK: 106016 Matrix: Water  
Associated Lab Samples: 2615560001, 2615560002, 2615560003, 2615560004, 2615560005, 2615560007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/06/19 18:24	
Arsenic	mg/L	ND	0.0050	0.00057	03/06/19 18:24	
Barium	mg/L	ND	0.010	0.00078	03/06/19 18:24	
Beryllium	mg/L	ND	0.0030	0.000050	03/06/19 18:24	
Cadmium	mg/L	ND	0.0010	0.000093	03/06/19 18:24	
Chromium	mg/L	ND	0.010	0.0016	03/06/19 18:24	
Cobalt	mg/L	ND	0.010	0.00052	03/06/19 18:24	
Lead	mg/L	ND	0.0050	0.00027	03/06/19 18:24	
Lithium	mg/L	ND	0.050	0.00097	03/06/19 18:24	
Molybdenum	mg/L	ND	0.010	0.0019	03/06/19 18:24	
Selenium	mg/L	ND	0.010	0.0014	03/06/19 18:24	
Thallium	mg/L	ND	0.0010	0.00014	03/06/19 18:24	

LABORATORY CONTROL SAMPLE: 106017

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	108	80-120	
Arsenic	mg/L	0.1	0.10	101	80-120	
Barium	mg/L	0.1	0.10	104	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Chromium	mg/L	0.1	0.10	102	80-120	
Cobalt	mg/L	0.1	0.10	102	80-120	
Lead	mg/L	0.1	0.10	102	80-120	
Lithium	mg/L	0.1	0.10	102	80-120	
Molybdenum	mg/L	0.1	0.10	105	80-120	
Selenium	mg/L	0.1	0.10	104	80-120	
Thallium	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 106018 106019

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		261551001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Antimony	mg/L	ND	0.1	0.1	0.10	0.11	105	107	75-125	2	20	
Arsenic	mg/L	0.0058	0.1	0.1	0.11	0.11	101	103	75-125	2	20	
Barium	mg/L	0.053	0.1	0.1	0.15	0.16	102	106	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.10	0.10	101	101	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.099	0.10	99	100	75-125	2	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 106018		106019		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2615551001 Result	MS Spike Conc.	MSD Spike Conc.								
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20	
Cobalt	mg/L	ND	0.1	0.1	0.099	0.10	99	100	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	0	20	
Lithium	mg/L	0.0017J	0.1	0.1	0.096	0.095	95	94	75-125	1	20	
Molybdenum	mg/L	0.0035J	0.1	0.1	0.10	0.11	101	104	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.11	103	106	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615560

QC Batch: 23688 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020B MET  
Associated Lab Samples: 2615560006, 2615560008, 2615560009

METHOD BLANK: 106022 Matrix: Water  
Associated Lab Samples: 2615560006, 2615560008, 2615560009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/07/19 16:35	
Arsenic	mg/L	ND	0.0050	0.00057	03/07/19 16:35	
Barium	mg/L	ND	0.010	0.00078	03/07/19 16:35	
Beryllium	mg/L	ND	0.0030	0.000050	03/07/19 16:35	
Cadmium	mg/L	ND	0.0010	0.000093	03/07/19 16:35	
Chromium	mg/L	ND	0.010	0.0016	03/07/19 16:35	
Cobalt	mg/L	ND	0.010	0.00052	03/07/19 16:35	
Lead	mg/L	ND	0.0050	0.00027	03/07/19 16:35	
Lithium	mg/L	ND	0.050	0.00097	03/07/19 16:35	
Molybdenum	mg/L	ND	0.010	0.0019	03/07/19 16:35	
Selenium	mg/L	ND	0.010	0.0014	03/07/19 16:35	
Thallium	mg/L	ND	0.0010	0.00014	03/07/19 16:35	

LABORATORY CONTROL SAMPLE: 106023

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	102	80-120	
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Beryllium	mg/L	0.1	0.095	95	80-120	
Cadmium	mg/L	0.1	0.097	97	80-120	
Chromium	mg/L	0.1	0.10	100	80-120	
Cobalt	mg/L	0.1	0.095	95	80-120	
Lead	mg/L	0.1	0.095	95	80-120	
Lithium	mg/L	0.1	0.096	96	80-120	
Molybdenum	mg/L	0.1	0.098	98	80-120	
Selenium	mg/L	0.1	0.10	100	80-120	
Thallium	mg/L	0.1	0.094	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 106024 106025

Parameter	Units	2615560006 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.10	0.11	102	105	75-125	3	20	
Arsenic	mg/L	0.0023J	0.1	0.1	0.10	0.11	101	104	75-125	3	20	
Barium	mg/L	0.097	0.1	0.1	0.21	0.22	112	121	75-125	4	20	
Beryllium	mg/L	ND	0.1	0.1	0.093	0.099	93	99	75-125	6	20	
Cadmium	mg/L	0.00019J	0.1	0.1	0.095	0.096	95	96	75-125	1	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 106024		106025		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2615560006 Result	MS Spike Conc.	MSD Spike Conc.									
Chromium	mg/L	0.0033J	0.1	0.1	0.10	0.11	98	104	75-125	5	20		
Cobalt	mg/L	ND	0.1	0.1	0.094	0.098	93	97	75-125	4	20		
Lead	mg/L	ND	0.1	0.1	0.090	0.093	90	93	75-125	3	20		
Lithium	mg/L	0.017J	0.1	0.1	0.12	0.12	100	106	75-125	5	20		
Molybdenum	mg/L	0.013	0.1	0.1	0.11	0.12	101	105	75-125	3	20		
Selenium	mg/L	ND	0.1	0.1	0.099	0.10	99	103	75-125	4	20		
Thallium	mg/L	ND	0.1	0.1	0.092	0.094	92	94	75-125	2	20		

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615560

QC Batch: 23574 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 2615560001, 2615560002, 2615560003, 2615560004, 2615560005, 2615560006, 2615560007, 2615560008, 2615560009

METHOD BLANK: 105501 Matrix: Water  
Associated Lab Samples: 2615560001, 2615560002, 2615560003, 2615560004, 2615560005, 2615560006, 2615560007, 2615560008, 2615560009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	03/05/19 03:59	

LABORATORY CONTROL SAMPLE: 105502

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	10.3	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 105503 105504

Parameter	Units	2615503012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.22J	10	10	10.1	10.1	99	99	90-110	0	15	

MATRIX SPIKE SAMPLE: 105505

Parameter	Units	2615503013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.14J	10	9.7	96	90-110	

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615560

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615560

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2615560001	BGWC-30	EPA 3005A	23687	EPA 6020B	23738
2615560002	BGWC-22	EPA 3005A	23687	EPA 6020B	23738
2615560003	BGWC-24	EPA 3005A	23687	EPA 6020B	23738
2615560004	BGWC-25	EPA 3005A	23687	EPA 6020B	23738
2615560005	BGWC-19	EPA 3005A	23687	EPA 6020B	23738
2615560006	BGWC-23	EPA 3005A	23688	EPA 6020B	23745
2615560007	Dup-2	EPA 3005A	23687	EPA 6020B	23738
2615560008	FBL030119	EPA 3005A	23688	EPA 6020B	23745
2615560009	EQBL030119	EPA 3005A	23688	EPA 6020B	23745
2615560001	BGWC-30	EPA 7470A	23535	EPA 7470A	23568
2615560002	BGWC-22	EPA 7470A	23535	EPA 7470A	23568
2615560003	BGWC-24	EPA 7470A	23535	EPA 7470A	23568
2615560004	BGWC-25	EPA 7470A	23535	EPA 7470A	23568
2615560005	BGWC-19	EPA 7470A	23535	EPA 7470A	23568
2615560006	BGWC-23	EPA 7470A	23535	EPA 7470A	23568
2615560007	Dup-2	EPA 7470A	23535	EPA 7470A	23568
2615560008	FBL030119	EPA 7470A	23535	EPA 7470A	23568
2615560009	EQBL030119	EPA 7470A	23535	EPA 7470A	23568
2615560001	BGWC-30	EPA 300.0	23574		
2615560002	BGWC-22	EPA 300.0	23574		
2615560003	BGWC-24	EPA 300.0	23574		
2615560004	BGWC-25	EPA 300.0	23574		
2615560005	BGWC-19	EPA 300.0	23574		
2615560006	BGWC-23	EPA 300.0	23574		
2615560007	Dup-2	EPA 300.0	23574		
2615560008	FBL030119	EPA 300.0	23574		
2615560009	EQBL030119	EPA 300.0	23574		

**REPORT OF LABORATORY ANALYSIS**

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Sample Condition Upon Receipt

WO#: 2615560

Client Name: GA Power

PM: BM

Due Date: 03/08/19

CLIENT: GAPower-CCR

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 4.8°C

Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 082

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 3/11/19 CCR

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix: <u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

8151A WSC

Project Manager Review: \_\_\_\_\_

Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

March 22, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2615561

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 01, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 9526

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615561001	BGWC-30	Water	03/01/19 11:35	03/01/19 16:57
2615561002	BGWC-22	Water	03/01/19 11:40	03/01/19 16:57
2615561003	BGWC-24	Water	03/01/19 12:04	03/01/19 16:57
2615561004	BGWC-25	Water	03/01/19 13:04	03/01/19 16:57
2615561005	BGWC-19	Water	03/01/19 13:56	03/01/19 16:57
2615561006	BGWC-23	Water	03/01/19 14:07	03/01/19 16:57
2615561007	Dup-2	Water	03/01/19 00:00	03/01/19 16:57
2615561008	FBL030119	Water	03/01/19 14:40	03/01/19 16:57
2615561009	EQBL030119	Water	03/01/19 14:45	03/01/19 16:57

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2615561001	BGWC-30	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615561002	BGWC-22	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615561003	BGWC-24	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615561004	BGWC-25	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615561005	BGWC-19	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615561006	BGWC-23	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615561007	Dup-2	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615561008	FBL030119	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2615561009	EQBL030119	EPA 9315	JJY	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

**Sample: BGWC-30**      **Lab ID: 2615561001**      Collected: 03/01/19 11:35      Received: 03/01/19 16:57      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.79 ± 0.417 (0.354)</b> <b>C:48% T:NA</b>	pCi/L	03/13/19 18:51	13982-63-3	
Radium-228	EPA 9320	<b>0.678 ± 0.391 (0.703)</b> <b>C:76% T:81%</b>	pCi/L	03/18/19 16:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.47 ± 0.808 (1.06)</b>	pCi/L	03/21/19 13:16	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

**Sample: BGWC-22**      **Lab ID: 2615561002**      Collected: 03/01/19 11:40      Received: 03/01/19 16:57      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.20 ± 0.410 (0.243)</b> C:93% T:NA	pCi/L	03/13/19 18:51	13982-63-3	
Radium-228	EPA 9320	<b>1.12 ± 0.501 (0.818)</b> C:73% T:75%	pCi/L	03/18/19 16:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.32 ± 0.911 (1.06)</b>	pCi/L	03/21/19 13:16	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

**Sample: BGWC-24**      **Lab ID: 2615561003**      Collected: 03/01/19 12:04      Received: 03/01/19 16:57      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.69 ± 0.717 (0.522)</b> C:87% T:NA	pCi/L	03/14/19 08:17	13982-63-3	
Radium-228	EPA 9320	<b>0.676 ± 0.537 (1.06)</b> C:72% T:80%	pCi/L	03/18/19 18:20	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.37 ± 1.25 (1.58)</b>	pCi/L	03/21/19 13:16	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

**Sample: BGWC-25**      **Lab ID: 2615561004**      Collected: 03/01/19 13:04      Received: 03/01/19 16:57      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.324 ± 0.125 (0.165)</b> C:97% T:NA	pCi/L	03/13/19 18:51	13982-63-3	
Radium-228	EPA 9320	<b>0.310 ± 0.464 (1.000)</b> C:75% T:79%	pCi/L	03/18/19 18:20	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.634 ± 0.589 (1.17)</b>	pCi/L	03/21/19 13:16	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

**Sample: BGWC-19**      **Lab ID: 2615561005**      Collected: 03/01/19 13:56      Received: 03/01/19 16:57      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.515 ± 0.177 (0.233)</b> <b>C:88% T:NA</b>	pCi/L	03/13/19 18:51	13982-63-3	
Radium-228	EPA 9320	<b>0.474 ± 0.390 (0.780)</b> <b>C:69% T:86%</b>	pCi/L	03/20/19 11:11	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.989 ± 0.567 (1.01)</b>	pCi/L	03/21/19 13:16	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

**Sample: BGWC-23**      **Lab ID: 2615561006**      Collected: 03/01/19 14:07      Received: 03/01/19 16:57      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.27 ± 0.271 (0.185)</b> <b>C:92% T:NA</b>	pCi/L	03/13/19 18:51	13982-63-3	
Radium-228	EPA 9320	<b>0.971 ± 0.497 (0.890)</b> <b>C:69% T:84%</b>	pCi/L	03/20/19 11:11	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.24 ± 0.768 (1.08)</b>	pCi/L	03/21/19 13:16	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

**Sample: Dup-2**      **Lab ID: 2615561007**      Collected: 03/01/19 00:00      Received: 03/01/19 16:57      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>4.94 ± 0.867 (0.339)</b> C:47% T:NA	pCi/L	03/13/19 18:51	13982-63-3	
Radium-228	EPA 9320	<b>0.309 ± 0.497 (1.08)</b> C:73% T:83%	pCi/L	03/18/19 18:19	15262-20-1	
Total Radium	Total Radium Calculation	<b>5.25 ± 1.36 (1.42)</b>	pCi/L	03/21/19 13:16	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

**Sample: FBL030119**      **Lab ID: 2615561008**      Collected: 03/01/19 14:40      Received: 03/01/19 16:57      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.309 ± 0.116 (0.146)</b> C:98% T:NA	pCi/L	03/13/19 20:28	13982-63-3	
Radium-228	EPA 9320	<b>0.420 ± 0.420 (0.869)</b> C:67% T:85%	pCi/L	03/20/19 11:11	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.729 ± 0.536 (1.02)</b>	pCi/L	03/21/19 13:16	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

**Sample: EQBL030119**      **Lab ID: 2615561009**      Collected: 03/01/19 14:45      Received: 03/01/19 16:57      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.657 ± 0.321 (0.369)</b> C:95% T:NA	pCi/L	03/14/19 08:13	13982-63-3	
Radium-228	EPA 9320	<b>0.411 ± 0.320 (0.627)</b> C:73% T:89%	pCi/L	03/20/19 11:11	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.07 ± 0.641 (0.996)</b>	pCi/L	03/21/19 13:16	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

QC Batch: 332854

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2615561001, 2615561002, 2615561003, 2615561004, 2615561007

METHOD BLANK: 1619642

Matrix: Water

Associated Lab Samples: 2615561001, 2615561002, 2615561003, 2615561004, 2615561007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.381 ± 0.318 (0.630) C:77% T:89%	pCi/L	03/18/19 16:07	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

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QC Batch:	332855	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	2615561005, 2615561006, 2615561008, 2615561009		

---

METHOD BLANK:	1619643	Matrix:	Water
Associated Lab Samples:	2615561005, 2615561006, 2615561008, 2615561009		

---

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.349 ± 0.394 (0.830) C:71% T:87%	pCi/L	03/20/19 11:10	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

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QC Batch:	332856	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	2615561001, 2615561002, 2615561003, 2615561004, 2615561005, 2615561006, 2615561007, 2615561008		

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METHOD BLANK:	1619644	Matrix:	Water
Associated Lab Samples:	2615561001, 2615561002, 2615561003, 2615561004, 2615561005, 2615561006, 2615561007, 2615561008		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.265 ± 0.116 (0.162) C:92% T:NA	pCi/L	03/13/19 20:28	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

QC Batch: 332857

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2615561009

METHOD BLANK: 1619645

Matrix: Water

Associated Lab Samples: 2615561009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.424 ± 0.162 (0.231) C:91% T:NA	pCi/L	03/13/19 18:54	

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond

Pace Project No.: 2615561

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2615561001	BGWC-30	EPA 9315	332856		
2615561002	BGWC-22	EPA 9315	332856		
2615561003	BGWC-24	EPA 9315	332856		
2615561004	BGWC-25	EPA 9315	332856		
2615561005	BGWC-19	EPA 9315	332856		
2615561006	BGWC-23	EPA 9315	332856		
2615561007	Dup-2	EPA 9315	332856		
2615561008	FBL030119	EPA 9315	332856		
2615561009	EQBL030119	EPA 9315	332857		
2615561001	BGWC-30	EPA 9320	332854		
2615561002	BGWC-22	EPA 9320	332854		
2615561003	BGWC-24	EPA 9320	332854		
2615561004	BGWC-25	EPA 9320	332854		
2615561005	BGWC-19	EPA 9320	332855		
2615561006	BGWC-23	EPA 9320	332855		
2615561007	Dup-2	EPA 9320	332854		
2615561008	FBL030119	EPA 9320	332855		
2615561009	EQBL030119	EPA 9320	332855		
2615561001	BGWC-30	Total Radium Calculation	334844		
2615561002	BGWC-22	Total Radium Calculation	334844		
2615561003	BGWC-24	Total Radium Calculation	334844		
2615561004	BGWC-25	Total Radium Calculation	334844		
2615561005	BGWC-19	Total Radium Calculation	334844		
2615561006	BGWC-23	Total Radium Calculation	334844		
2615561007	Dup-2	Total Radium Calculation	334844		
2615561008	FBL030119	Total Radium Calculation	334844		
2615561009	EQBL030119	Total Radium Calculation	334844		

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Sample Condition Upon Receipt

WO#: 2615561
PM: BM
CLIENT: GAPower-CCR
Due Date: 03/29/19

Client Name: GA Power

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 4.8C Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 082 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3/11/19 CCR

Table with 16 rows and 3 columns. Columns: Question, Yes/No/N/A checkboxes, and Item Number. Rows include Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Samples checked for dechlorination, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

8151A WSC

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

March 18, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

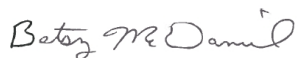
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2615876

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615876

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### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615876

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615876001	BGWC-14	Water	03/06/19 13:55	03/09/19 09:05
2615876002	FBL030619	Water	03/06/19 15:18	03/09/19 09:05
2615876003	EQBL030619	Water	03/06/19 15:23	03/09/19 09:05

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2615876

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2615876001	BGWC-14	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615876002	FBL030619	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2615876003	EQBL030619	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615876

Sample: <b>BGWC-14</b>		Lab ID: <b>2615876001</b>		Collected: 03/06/19 13:55		Received: 03/09/19 09:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/13/19 10:50	03/14/19 14:12	7440-36-0	
Arsenic	<b>0.0015J</b>	mg/L	0.0050	0.00057	1	03/13/19 10:50	03/14/19 14:12	7440-38-2	
Barium	<b>0.065</b>	mg/L	0.010	0.00078	1	03/13/19 10:50	03/14/19 14:12	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/13/19 10:50	03/14/19 14:12	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/13/19 10:50	03/14/19 14:12	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/13/19 10:50	03/14/19 14:12	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/13/19 10:50	03/14/19 14:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/13/19 10:50	03/14/19 14:12	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/13/19 10:50	03/14/19 14:12	7439-93-2	
Molybdenum	<b>0.013</b>	mg/L	0.010	0.0019	1	03/13/19 10:50	03/14/19 14:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/13/19 10:50	03/14/19 14:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/13/19 10:50	03/14/19 14:12	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	03/13/19 08:25	03/13/19 11:57	7439-97-6	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	<b>0.88</b>	mg/L	0.30	0.029	1		03/12/19 22:30	16984-48-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615876

Sample: <b>FBL030619</b>		Lab ID: <b>2615876002</b>		Collected: 03/06/19 15:18		Received: 03/09/19 09:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/13/19 10:50	03/14/19 14:18	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/13/19 10:50	03/14/19 14:18	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	03/13/19 10:50	03/14/19 14:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/13/19 10:50	03/14/19 14:18	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/13/19 10:50	03/14/19 14:18	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/13/19 10:50	03/14/19 14:18	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/13/19 10:50	03/14/19 14:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/13/19 10:50	03/14/19 14:18	7439-92-1	
Lithium	<b>0.0020J</b>	mg/L	0.050	0.00097	1	03/13/19 10:50	03/14/19 14:18	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/13/19 10:50	03/14/19 14:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/13/19 10:50	03/14/19 14:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/13/19 10:50	03/14/19 14:18	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	03/13/19 08:25	03/13/19 12:09	7439-97-6	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		03/12/19 23:38	16984-48-8	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615876

Sample: EQBL030619		Lab ID: 2615876003		Collected: 03/06/19 15:23		Received: 03/09/19 09:05		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	03/13/19 10:50	03/14/19 14:24	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	03/13/19 10:50	03/14/19 14:24	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	03/13/19 10:50	03/14/19 14:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/13/19 10:50	03/14/19 14:24	7440-41-7	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/13/19 10:50	03/14/19 14:24	7440-43-9	
Chromium	ND	mg/L	0.010	0.0016	1	03/13/19 10:50	03/14/19 14:24	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/13/19 10:50	03/14/19 14:24	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	03/13/19 10:50	03/14/19 14:24	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	03/13/19 10:50	03/14/19 14:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	03/13/19 10:50	03/14/19 14:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	03/13/19 10:50	03/14/19 14:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	03/13/19 10:50	03/14/19 14:24	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	03/13/19 08:25	03/13/19 12:16	7439-97-6	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Fluoride	ND	mg/L	0.30	0.029	1		03/13/19 00:00	16984-48-8	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615876

QC Batch: 24123 Analysis Method: EPA 7470A  
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury  
Associated Lab Samples: 2615876001, 2615876002, 2615876003

METHOD BLANK: 108124 Matrix: Water  
Associated Lab Samples: 2615876001, 2615876002, 2615876003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	03/13/19 11:53	

LABORATORY CONTROL SAMPLE: 108125

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 108126 108127

Parameter	Units	2615876001 Result	MS		MSD		% Rec	% Rec	% Rec	Limits	Max		Qual
			Spike Conc.	MS Result	MSD Result	MSD Result					RPD	RPD	
Mercury	mg/L	ND	0.0025	0.0025	0.0028	0.0026	111	103	75-125	8	20		

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615876

QC Batch: 24189 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020B MET  
Associated Lab Samples: 2615876001, 2615876002, 2615876003

METHOD BLANK: 108347 Matrix: Water  
Associated Lab Samples: 2615876001, 2615876002, 2615876003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/14/19 14:01	
Arsenic	mg/L	ND	0.0050	0.00057	03/14/19 14:01	
Barium	mg/L	ND	0.010	0.00078	03/14/19 14:01	
Beryllium	mg/L	ND	0.0030	0.000050	03/14/19 14:01	
Cadmium	mg/L	ND	0.0010	0.000093	03/14/19 14:01	
Chromium	mg/L	ND	0.010	0.0016	03/14/19 14:01	
Cobalt	mg/L	ND	0.010	0.00052	03/14/19 14:01	
Lead	mg/L	ND	0.0050	0.00027	03/14/19 14:01	
Lithium	mg/L	ND	0.050	0.00097	03/14/19 14:01	
Molybdenum	mg/L	ND	0.010	0.0019	03/14/19 14:01	
Selenium	mg/L	ND	0.010	0.0014	03/14/19 14:01	
Thallium	mg/L	ND	0.0010	0.00014	03/14/19 14:01	

LABORATORY CONTROL SAMPLE: 108348

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.10	101	80-120	
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Cadmium	mg/L	0.1	0.098	98	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.097	97	80-120	
Lead	mg/L	0.1	0.095	95	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.095	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 108349 108350

Parameter	Units	2615879006 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result						
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	100	101	75-125	0	20	
Arsenic	mg/L	0.00085J	0.1	0.1	0.10	0.10	99	100	75-125	0	20	
Barium	mg/L	0.042	0.1	0.1	0.14	0.14	97	102	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.095	0.098	95	98	75-125	3	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.098	100	98	75-125	2	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2615876

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 108349		108350		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2615879006 Result	MS Spike Conc.	MSD Spike Conc.								
Chromium	mg/L	ND	0.1	0.1	0.098	0.099	98	98	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20	
Lithium	mg/L	0.0015J	0.1	0.1	0.096	0.10	94	99	75-125	5	20	
Molybdenum	mg/L	0.0061J	0.1	0.1	0.11	0.11	103	102	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.097	0.099	97	99	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2615876

QC Batch: 24135 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 2615876001, 2615876002, 2615876003

METHOD BLANK: 108159 Matrix: Water

Associated Lab Samples: 2615876001, 2615876002, 2615876003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	03/12/19 21:45	

LABORATORY CONTROL SAMPLE: 108160

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.5	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 108161 108162

Parameter	Units	108161		108162		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		2615876001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Fluoride	mg/L	0.88	10	10	10.0	10.1	92	92	90-110	1	15		

MATRIX SPIKE SAMPLE: 108163

Parameter	Units	2615876002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	ND	10	9.6	96	90-110	

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615876

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615876

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2615876001	BGWC-14	EPA 3005A	24189	EPA 6020B	24210
2615876002	FBL030619	EPA 3005A	24189	EPA 6020B	24210
2615876003	EQBL030619	EPA 3005A	24189	EPA 6020B	24210
2615876001	BGWC-14	EPA 7470A	24123	EPA 7470A	24183
2615876002	FBL030619	EPA 7470A	24123	EPA 7470A	24183
2615876003	EQBL030619	EPA 7470A	24123	EPA 7470A	24183
2615876001	BGWC-14	EPA 300.0	24135		
2615876002	FBL030619	EPA 300.0	24135		
2615876003	EQBL030619	EPA 300.0	24135		

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Pace Analytical Services, Inc.  
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
(770) 734-4200 : FAX (770) 734-4201 : www.asi-lab.com

**CHAIN OF CUSTODY RECORD**

CLIENT NAME: Southern Company Services  
 CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:  
2480 Niner Road  
Atlanta, GA 30339  
 REPORT TO: John Abraham CC: Geosyntec  
 REQUESTED COMPLETION DATE: PO# SC510348606  
 PROJECT NAME/STATE: Plant Bowen Ash Pond  
 PROJECT #:

CONTAINER TYPE PRESERVATION	ANALYSIS REQUESTED				DATE/TIME	RELINQUISHED BY:	DATE/TIME	CLIENT	COURIER	OTHER	FS
	# of	Fluoride EPA 300	Metals App. IV EPA 602/720	Rad: um 226 + 228							
4	1	1	2		3/6/19	1600	Robert M. Aubrey Crafton				
4	1	1	2		3/6/19						
4	1	1	2		3/6/19						

CONTAINER TYPE: P - PLASTIC, A - AMBER GLASS, G - CLEAR GLASS, V - VOA VIAL, S - STERILE, O - OTHER  
 PRESERVATION: 1 - HCl, ≤6°C, 2 - H<sub>2</sub>SO<sub>4</sub>, ≤6°C, 3 - HNO<sub>3</sub>, 4 - NaOH, ≤6°C, 5 - NaOH/ZnAc, ≤6°C, 6 - Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>, ≤6°C, 7 - ≤6°C not frozen  
 \*MATRIX CODES:  
 DW - DRINKING WATER, WW - WASTEWATER, GW - GROUNDWATER, SW - SURFACE WATER, ST - STORM WATER, W - WATER, S - SOIL, SL - SLUDGE, SD - SOLID, A - AIR, L - LIQUID, P - PRODUCT  
 REMARKS/ADDITIONAL INFORMATION

LAB #: \_\_\_\_\_  
 Entered into LIMS: \_\_\_\_\_  
 Tracking #: \_\_\_\_\_  
 W0#: 2615876  
 2615876



Sample Condition Upon Receipt

WO#: 2615876

Client Name: GA Power

PM: BM Due Date: 03/18/19 CLIENT: GAPower-CCR

Courier: [x] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Commercial [ ] Pace Other

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present: [x] yes [ ] no Seals intact: [x] yes [ ] no

Packing Material: [ ] Bubble Wrap [ ] Bubble Bags [ ] None [ ] Other

Thermometer Used 082 Type of Ice: [x] Wet [ ] Blue [ ] None [ ] Samples on ice, cooling process has begun

Cooler Temperature 1.1°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3/9/19 [Signature]

Table with 16 rows and 3 columns. Columns: Description, Yes/No/N/A checkboxes, and Item Number. Rows include Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Samples checked for dechlorination, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

Client Notification/ Resolution: \_\_\_\_\_ Field Data Required? Y / N
Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_
Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

April 02, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

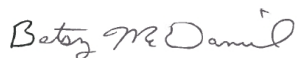
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2615877

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615877

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 9526  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615877

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615877001	BGWC-14	Water	03/06/19 13:55	03/09/19 09:05
2615877002	FBL030619	Water	03/06/19 15:18	03/09/19 09:05
2615877003	EQBL030619	Water	03/06/19 15:23	03/09/19 09:05

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2615877

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2615877001	BGWC-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2615877002	FBL030619	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
2615877003	EQBL030619	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615877

**Sample: BGWC-14**      **Lab ID: 2615877001**      Collected: 03/06/19 13:55      Received: 03/09/19 09:05      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>7.31 ± 1.16 (0.206)</b> C:81% T:NA	pCi/L	03/14/19 15:34	13982-63-3	
Radium-228	EPA 9320	<b>2.15 ± 0.645 (0.824)</b> C:77% T:89%	pCi/L	03/27/19 16:13	15262-20-1	
Total Radium	Total Radium Calculation	<b>9.46 ± 1.81 (1.03)</b>	pCi/L	03/28/19 15:38	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615877

**Sample: FBL030619**      **Lab ID: 2615877002**      Collected: 03/06/19 15:18      Received: 03/09/19 09:05      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.189 ± 0.142 (0.251)</b> C:91% T:NA	pCi/L	03/14/19 15:34	13982-63-3	
Radium-228	EPA 9320	<b>0.385 ± 0.329 (0.657)</b> C:78% T:89%	pCi/L	03/27/19 16:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.574 ± 0.471 (0.908)</b>	pCi/L	03/28/19 15:38	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615877

**Sample: EQBL030619**      **Lab ID: 2615877003**      Collected: 03/06/19 15:23      Received: 03/09/19 09:05      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.242 ± 0.126 (0.192)</b> C:94% T:NA	pCi/L	03/14/19 15:34	13982-63-3	
Radium-228	EPA 9320	<b>-0.298 ± 0.326 (0.820)</b> C:74% T:86%	pCi/L	03/27/19 16:13	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.242 ± 0.452 (1.01)</b>	pCi/L	03/28/19 15:38	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615877

QC Batch: 333523

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2615877001, 2615877002, 2615877003

METHOD BLANK: 1622805

Matrix: Water

Associated Lab Samples: 2615877001, 2615877002, 2615877003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.339 ± 0.328 (0.659) C:96% T:NA	pCi/L	03/15/19 09:04	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: Plant Bowen Ash Pond

Pace Project No.: 2615877

QC Batch: 334689

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2615877001

METHOD BLANK: 1628695

Matrix: Water

Associated Lab Samples: 2615877001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0633 ± 0.285 (0.651) C:77% T:86%	pCi/L	03/27/19 12:58	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615877

QC Batch: 334690

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2615877002, 2615877003

METHOD BLANK: 1628696

Matrix: Water

Associated Lab Samples: 2615877002, 2615877003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.646 ± 0.338 (0.565) C:74% T:86%	pCi/L	03/27/19 16:14	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615877

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond

Pace Project No.: 2615877

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2615877001	BGWC-14	EPA 9315	333523		
2615877002	FBL030619	EPA 9315	333523		
2615877003	EQBL030619	EPA 9315	333523		
2615877001	BGWC-14	EPA 9320	334689		
2615877002	FBL030619	EPA 9320	334690		
2615877003	EQBL030619	EPA 9320	334690		
2615877001	BGWC-14	Total Radium Calculation	335992		
2615877002	FBL030619	Total Radium Calculation	335992		
2615877003	EQBL030619	Total Radium Calculation	335992		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2615877

Client Name: GA Power

PM: BM

Due Date: 04/08/19

CLIENT: GAPower-CCR

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 082 Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 1.1°C

Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 3/9/1904

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix: <u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased): _____			

Client Notification/ Resolution:

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Field Data Required? Y / N

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_

Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHN Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

March 16, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

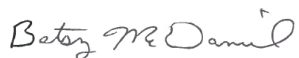
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2615880

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615880

---

### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092  
Florida DOH Certification #: E87315  
Georgia DW Inorganics Certification #: 812  
Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2615880

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615880001	BGWC-34D	Water	03/04/19 14:54	03/09/19 09:05

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2615880

---

<b>Lab ID</b>	<b>Sample ID</b>	<b>Method</b>	<b>Analysts</b>	<b>Analytes Reported</b>
2615880001	BGWC-34D	EPA 6020B	CSW	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615880

Sample: <b>BGWC-34D</b>		Lab ID: <b>2615880001</b>		Collected: 03/04/19 14:54	Received: 03/09/19 09:05	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Arsenic	<b>0.020</b>	mg/L	0.0050	0.00057	1	03/13/19 10:50	03/14/19 17:19	7440-38-2	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2615880

QC Batch: 24189 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020B MET  
Associated Lab Samples: 2615880001

METHOD BLANK: 108347 Matrix: Water  
Associated Lab Samples: 2615880001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00057	03/14/19 14:01	

LABORATORY CONTROL SAMPLE: 108348

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 108349 108350

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2615879006 Result	Spike Conc.	Spike Conc.	Result						
Arsenic	mg/L	0.00085J	0.1	0.1	0.10	0.10	99	100	75-125	0	20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2615880

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond

Pace Project No.: 2615880

---

<b>Lab ID</b>	<b>Sample ID</b>	<b>QC Batch Method</b>	<b>QC Batch</b>	<b>Analytical Method</b>	<b>Analytical Batch</b>
2615880001	BGWC-34D	EPA 3005A	24189	EPA 6020B	24210

---

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 2615880  
PM: BM  
CLIENT: GAPower-CCR  
Due Date: 03/18/19  
Proj. Due Date:  
Proj. Name:

Client Name: GAPower

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 082 Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 1.1°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 3/9/19 GW

		Comments:	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix:	<u>W</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

May 07, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2617064

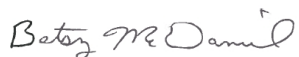
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the one issued on 4/15/2019. The report has been revised to correct metals units and target list per consultant request. No other changes have been made to this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617064

---

### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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### Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

---

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617064

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617064001	BGWC-32	Water	04/05/19 09:36	04/05/19 12:42

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617064

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617064001	BGWC-32	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617064

Sample: <b>BGWC-32</b>		Lab ID: <b>2617064001</b>		Collected: 04/05/19 09:36		Received: 04/05/19 12:42		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	<b>0.00093J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 22:28	7440-38-2		
Barium	<b>0.085</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 22:28	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 22:28	7440-41-7		
Boron	<b>4.6J</b>	mg/L	5.0	0.13	50	04/09/19 20:29	04/11/19 17:59	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 22:28	7440-43-9		
Calcium	<b>265</b>	mg/L	25.0	1.0	50	04/09/19 20:29	04/11/19 17:59	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 22:28	7440-47-3		
Cobalt	<b>0.011</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 22:28	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 22:28	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 22:28	7439-93-2		
Molybdenum	<b>0.0035J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 22:28	7439-98-7		
Selenium	<b>0.00015J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 22:28	7782-49-2		
Thallium	<b>0.00046J</b>	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 22:28	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:01	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>1160</b>	mg/L	25.0	10.0	1		04/11/19 20:53			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>270</b>	mg/L	12.5	1.2	50		04/09/19 11:11	16887-00-6		
Fluoride	<b>0.66</b>	mg/L	0.30	0.029	1		04/09/19 09:27	16984-48-8		
Sulfate	<b>312</b>	mg/L	50.0	0.85	50		04/09/19 11:11	14808-79-8		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617064

QC Batch: 468368	Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A	Analysis Description: 7470 Mercury
Associated Lab Samples: 2617064001	

METHOD BLANK: 2544203 Matrix: Water  
Associated Lab Samples: 2617064001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00010	04/11/19 17:59	

LABORATORY CONTROL SAMPLE: 2544204

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0023	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544205 2544206

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92421822002 Result	Spike Conc.	Spike Conc.	Conc.								
Mercury	mg/L					0.0024	0.0023				2	25	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617064

QC Batch: 468329 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3010A Analysis Description: 6020 MET  
Associated Lab Samples: 2617064001

METHOD BLANK: 2544088 Matrix: Water  
Associated Lab Samples: 2617064001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.000062J	0.0050	0.000060	04/10/19 19:29	
Barium	mg/L	ND	0.010	0.000060	04/10/19 19:29	
Beryllium	mg/L	ND	0.0030	0.000050	04/10/19 19:29	
Boron	mg/L	ND	0.10	0.0026	04/10/19 19:29	
Cadmium	mg/L	ND	0.0010	0.000070	04/10/19 19:29	
Calcium	mg/L	ND	0.50	0.021	04/10/19 19:29	
Chromium	mg/L	ND	0.010	0.00042	04/10/19 19:29	
Cobalt	mg/L	ND	0.010	0.000050	04/10/19 19:29	
Lead	mg/L	ND	0.0050	0.000050	04/10/19 19:29	BC
Lithium	mg/L	ND	0.050	0.00042	04/10/19 19:29	
Molybdenum	mg/L	ND	0.010	0.00010	04/10/19 19:29	
Selenium	mg/L	ND	0.010	0.000080	04/10/19 19:29	
Thallium	mg/L	ND	0.0010	0.000060	04/10/19 19:29	

LABORATORY CONTROL SAMPLE: 2544089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.010	103	80-120	
Barium	mg/L	0.05	0.050	99	80-120	
Beryllium	mg/L	0.01	0.0095	95	80-120	
Boron	mg/L	0.05	0.049J	98	80-120	
Cadmium	mg/L	0.01	0.010	102	80-120	
Calcium	mg/L	0.62	0.64	102	80-120	
Chromium	mg/L	0.05	0.050	101	80-120	
Cobalt	mg/L	0.01	0.010	101	80-120	
Lead	mg/L	0.05	0.051	101	80-120	BC
Lithium	mg/L	0.05	0.052	104	80-120	
Molybdenum	mg/L	0.05	0.052	103	80-120	
Selenium	mg/L	0.05	0.051	102	80-120	
Thallium	mg/L	0.01	0.010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544090 2544091

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2617082009 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	0.00012J	0.01	0.01	0.0092	0.0091	91	90	75-125	1	20	
Barium	mg/L	0.025	0.05	0.05	0.068	0.067	87	85	75-125	2	20	
Beryllium	mg/L	ND	0.01	0.01	0.0081	0.0080	80	79	75-125	2	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617064

Parameter	Units	2544090		2544091		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Boron	mg/L	0.49J	0.05	0.05	0.56	0.58	137	180	75-125	4	20	M1	
Cadmium	mg/L	ND	0.01	0.01	0.0091	0.0091	91	90	75-125	0	20		
Calcium	mg/L	55.8	0.62	0.62	54.5	53.7	-203	-330	75-125	1	20	M6	
Chromium	mg/L	ND	0.05	0.05	0.045	0.044	89	88	75-125	1	20		
Cobalt	mg/L	0.00010J	0.01	0.01	0.0089J	0.0088J	88	87	75-125	1	20		
Lead	mg/L	ND	0.05	0.05	0.044	0.045	88	90	75-125	2	20		
Lithium	mg/L	ND	0.05	0.05	0.044J	0.044J	89	87	75-125	2	20		
Molybdenum	mg/L	ND	0.05	0.05	0.046	0.046	92	93	75-125	1	20		
Selenium	mg/L	0.00091J	0.05	0.05	0.046	0.045	90	88	75-125	2	20		
Thallium	mg/L	ND	0.01	0.01	0.0088	0.0090	88	90	75-125	2	20		

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**QUALITY CONTROL DATA**

Project: Plant Bowen Ash Pond

Pace Project No.: 2617064

QC Batch: 26252

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 2617064001

LABORATORY CONTROL SAMPLE: 118510

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	408	102	84-108	

SAMPLE DUPLICATE: 118512

Parameter	Units	2617150003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2310	2380	3	10	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617064

QC Batch: 25956 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 2617064001

METHOD BLANK: 117263 Matrix: Water  
Associated Lab Samples: 2617064001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.066J	0.25	0.024	04/08/19 22:43	
Fluoride	mg/L	ND	0.30	0.029	04/08/19 22:43	
Sulfate	mg/L	0.045J	1.0	0.017	04/08/19 22:43	

LABORATORY CONTROL SAMPLE: 117264

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.8	98	90-110	
Fluoride	mg/L	10	9.7	97	90-110	
Sulfate	mg/L	10	9.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 117265 117266

Parameter	Units	2617035001		2617035002		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	4.3	10	10	14.3	14.4	100	101	90-110	1	15		
Fluoride	mg/L	ND	10	10	9.7	9.8	97	98	90-110	1	15		
Sulfate	mg/L	8.5	10	10	17.6	17.7	91	92	90-110	0	15		

MATRIX SPIKE SAMPLE: 117267

Parameter	Units	2617035002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.2	10	13.9	96	90-110	
Fluoride	mg/L	ND	10	9.3	93	90-110	
Sulfate	mg/L	2.1	10	11.2	91	90-110	

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617064

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

### ANALYTE QUALIFIERS

BC The same analyte was detected in an associated blank at a concentration above 1/2 the reporting limit but below the laboratory reporting limit.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant Bowen Ash Pond

Pace Project No.: 2617064

<b>Lab ID</b>	<b>Sample ID</b>	<b>QC Batch Method</b>	<b>QC Batch</b>	<b>Analytical Method</b>	<b>Analytical Batch</b>
2617064001	BGWC-32	EPA 3010A	468329	EPA 6020B	468391
2617064001	BGWC-32	EPA 7470A	468368	EPA 7470A	468610
2617064001	BGWC-32	SM 2540C	26252		
2617064001	BGWC-32	EPA 300.0	25956		

**REPORT OF LABORATORY ANALYSIS**

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Sample Condition Upon Receipt

WO#: 2617064

Client Name: GA Power

PM: BM

Due Date: 04/12/19

CLIENT: GAPower-CCR

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 082 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 2.0°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/5/19 CCR

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix: <u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_

Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

April 29, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

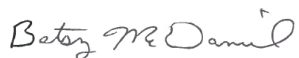
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2617065

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617065

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 9526  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617065

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617065001	BGWC-32	Water	04/05/19 09:36	04/05/19 12:42

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2617065

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617065001	BGWC-32	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617065

**Sample: BGWC-32**      **Lab ID: 2617065001**      Collected: 04/05/19 09:36      Received: 04/05/19 12:42      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.18 ± 0.450 (0.450)</b> <b>C:88% T:NA</b>	pCi/L	04/17/19 08:36	13982-63-3	
Radium-228	EPA 9320	<b>1.02 ± 0.402 (0.629)</b> <b>C:86% T:88%</b>	pCi/L	04/18/19 12:30	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.20 ± 0.852 (1.08)</b>	pCi/L	04/22/19 11:17	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617065

QC Batch: 337917

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2617065001

METHOD BLANK: 1644525

Matrix: Water

Associated Lab Samples: 2617065001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.221 ± 0.211 (0.378) C:90% T:NA	pCi/L	04/17/19 08:36	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617065

QC Batch: 337911

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2617065001

METHOD BLANK: 1644521

Matrix: Water

Associated Lab Samples: 2617065001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.526 ± 0.315 (0.569) C:87% T:76%	pCi/L	04/18/19 12:31	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617065

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617065

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617065001	BGWC-32	EPA 9315	337917		
2617065001	BGWC-32	EPA 9320	337911		
2617065001	BGWC-32	Total Radium Calculation	339290		

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Sample Condition Upon Receipt

WO#: 2617065

Client Name: GAPower

PM: BM

Due Date: 05/03/19

CLIENT: GAPower-CCR

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: \_\_\_\_\_

Proj. Due Date: \_\_\_\_\_  
Proj. Name: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 082 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 2.0°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/5/19 CCR

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix:	<u>W</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):	_____		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_

Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

May 03, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2617076

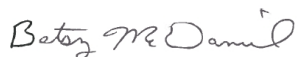
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the one issued on 4/13/2019. The report has been revised to correct metals units and target list per consultant request. No other changes have been made to this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

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### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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### Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617076001	BGWA-33	Water	04/03/19 10:28	04/05/19 11:20
2617076002	BGWC-19	Water	04/03/19 11:55	04/05/19 11:20
2617076003	BGWC-20	Water	04/03/19 10:30	04/05/19 11:20
2617076004	BGWC-21	Water	04/03/19 14:05	04/05/19 11:20
2617076005	BGWC-22	Water	04/03/19 11:18	04/05/19 11:20
2617076006	BGWC-23	Water	04/03/19 09:38	04/05/19 11:20
2617076007	BGWC-24	Water	04/03/19 16:36	04/05/19 11:20
2617076008	FBL040319	Water	04/03/19 12:46	04/05/19 11:20
2617076009	EQBL040319	Water	04/03/19 12:50	04/05/19 11:20

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617076001	BGWA-33	EPA 6020B	JMW1	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617076002	BGWC-19	EPA 6020B	JMW1	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617076003	BGWC-20	EPA 6020B	JMW1	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617076004	BGWC-21	EPA 6020B	JMW1	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617076005	BGWC-22	EPA 6020B	JMW1	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617076006	BGWC-23	EPA 6020B	JMW1	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617076007	BGWC-24	EPA 6020B	JMW1, KQ	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617076008	FBL040319	EPA 6020B	JMW1	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617076009	EQBL040319	EPA 6020B	JMW1	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

Sample: BGWA-33		Lab ID: 2617076001		Collected: 04/03/19 10:28		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.0020J</b>	mg/L	0.0050	0.000060	1	04/09/19 10:55	04/10/19 02:14	7440-38-2	
Barium	<b>0.025</b>	mg/L	0.010	0.000060	1	04/09/19 10:55	04/10/19 02:14	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 10:55	04/10/19 02:14	7440-41-7	
Boron	<b>0.66</b>	mg/L	0.10	0.0026	1	04/09/19 10:55	04/10/19 02:14	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 10:55	04/10/19 02:14	7440-43-9	
Calcium	<b>44.9</b>	mg/L	0.50	0.021	1	04/09/19 10:55	04/10/19 02:14	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 10:55	04/10/19 02:14	7440-47-3	
Cobalt	<b>0.00011J</b>	mg/L	0.010	0.000050	1	04/09/19 10:55	04/10/19 02:14	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 10:55	04/10/19 02:14	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 10:55	04/10/19 02:14	7439-93-2	
Molybdenum	<b>0.034</b>	mg/L	0.010	0.00010	1	04/09/19 10:55	04/10/19 02:14	7439-98-7	
Selenium	<b>0.00013J</b>	mg/L	0.010	0.000080	1	04/09/19 10:55	04/10/19 02:14	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 10:55	04/10/19 02:14	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:22	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>235</b>	mg/L	25.0	10.0	1		04/10/19 16:34		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>5.2</b>	mg/L	0.25	0.024	1		04/10/19 02:15	16887-00-6	
Fluoride	<b>0.085J</b>	mg/L	0.30	0.029	1		04/10/19 02:15	16984-48-8	
Sulfate	<b>26.2</b>	mg/L	1.0	0.017	1		04/10/19 02:15	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617076

Sample: <b>BGWC-19</b> Lab ID: <b>2617076002</b> Collected: 04/03/19 11:55      Received: 04/05/19 11:20      Matrix: Water										
Parameters	Results	Units	Report Limit		MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020B      Preparation Method: EPA 3010A										
Arsenic	<b>0.00017J</b>	mg/L	0.0050	0.000060		1	04/09/19 10:55	04/10/19 02:18	7440-38-2	
Barium	<b>0.033</b>	mg/L	0.010	0.000060		1	04/09/19 10:55	04/10/19 02:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050		1	04/09/19 10:55	04/10/19 02:18	7440-41-7	
Boron	<b>0.51</b>	mg/L	0.10	0.0026		1	04/09/19 10:55	04/10/19 02:18	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070		1	04/09/19 10:55	04/10/19 02:18	7440-43-9	
Calcium	<b>51.3</b>	mg/L	0.50	0.021		1	04/09/19 10:55	04/10/19 02:18	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042		1	04/09/19 10:55	04/10/19 02:18	7440-47-3	
Cobalt	<b>0.000072J</b>	mg/L	0.010	0.000050		1	04/09/19 10:55	04/10/19 02:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050		1	04/09/19 10:55	04/10/19 02:18	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042		1	04/09/19 10:55	04/10/19 02:18	7439-93-2	
Molybdenum	<b>0.00023J</b>	mg/L	0.010	0.00010		1	04/09/19 10:55	04/10/19 02:18	7439-98-7	
Selenium	<b>0.00058J</b>	mg/L	0.010	0.000080		1	04/09/19 10:55	04/10/19 02:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060		1	04/09/19 10:55	04/10/19 02:18	7440-28-0	
<b>7470 Mercury</b> Analytical Method: EPA 7470A      Preparation Method: EPA 7470A										
Mercury	ND	mg/L	0.00020	0.00010		1	04/10/19 12:38	04/11/19 19:25	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C										
Total Dissolved Solids	<b>259</b>	mg/L	25.0	10.0		1		04/10/19 16:34		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0										
Chloride	<b>9.7</b>	mg/L	0.25	0.024		1		04/10/19 02:39	16887-00-6	
Fluoride	<b>0.051J</b>	mg/L	0.30	0.029		1		04/10/19 02:39	16984-48-8	
Sulfate	<b>90.6</b>	mg/L	10.0	0.17		10		04/10/19 09:31	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

Sample: <b>BGWC-20</b>		Lab ID: <b>2617076003</b>		Collected: 04/03/19 10:30		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.00027J</b>	mg/L	0.0050	0.000060	1	04/09/19 10:55	04/10/19 02:21	7440-38-2	
Barium	<b>0.029</b>	mg/L	0.010	0.000060	1	04/09/19 10:55	04/10/19 02:21	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 10:55	04/10/19 02:21	7440-41-7	
Boron	<b>2.6</b>	mg/L	0.10	0.0026	1	04/09/19 10:55	04/10/19 02:21	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 10:55	04/10/19 02:21	7440-43-9	
Calcium	<b>220</b>	mg/L	0.50	0.021	1	04/09/19 10:55	04/10/19 02:21	7440-70-2	
Chromium	<b>0.00088J</b>	mg/L	0.010	0.00042	1	04/09/19 10:55	04/10/19 02:21	7440-47-3	
Cobalt	<b>0.00024J</b>	mg/L	0.010	0.000050	1	04/09/19 10:55	04/10/19 02:21	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 10:55	04/10/19 02:21	7439-92-1	
Lithium	<b>0.012J</b>	mg/L	0.050	0.00042	1	04/09/19 10:55	04/10/19 02:21	7439-93-2	
Molybdenum	<b>0.012</b>	mg/L	0.010	0.00010	1	04/09/19 10:55	04/10/19 02:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 10:55	04/10/19 02:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 10:55	04/10/19 02:21	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:27	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>1090</b>	mg/L	25.0	10.0	1		04/10/19 16:34		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>144</b>	mg/L	12.5	1.2	50		04/10/19 09:54	16887-00-6	
Fluoride	<b>0.072J</b>	mg/L	0.30	0.029	1		04/10/19 03:02	16984-48-8	
Sulfate	<b>593</b>	mg/L	50.0	0.85	50		04/10/19 09:54	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

Sample: <b>BGWC-21</b>		Lab ID: <b>2617076004</b>		Collected: 04/03/19 14:05		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.00038J</b>	mg/L	0.0050	0.000060	1	04/09/19 10:55	04/10/19 02:35	7440-38-2	
Barium	<b>0.033</b>	mg/L	0.010	0.000060	1	04/09/19 10:55	04/10/19 02:35	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 10:55	04/10/19 02:35	7440-41-7	
Boron	<b>0.12</b>	mg/L	0.10	0.0026	1	04/09/19 10:55	04/10/19 02:35	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 10:55	04/10/19 02:35	7440-43-9	
Calcium	<b>43.4</b>	mg/L	0.50	0.021	1	04/09/19 10:55	04/10/19 02:35	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 10:55	04/10/19 02:35	7440-47-3	
Cobalt	<b>0.00064J</b>	mg/L	0.010	0.000050	1	04/09/19 10:55	04/10/19 02:35	7440-48-4	
Lead	<b>0.000068J</b>	mg/L	0.0050	0.000050	1	04/09/19 10:55	04/10/19 02:35	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 10:55	04/10/19 02:35	7439-93-2	
Molybdenum	<b>0.0019J</b>	mg/L	0.010	0.00010	1	04/09/19 10:55	04/10/19 02:35	7439-98-7	
Selenium	<b>0.00012J</b>	mg/L	0.010	0.000080	1	04/09/19 10:55	04/10/19 02:35	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 10:55	04/10/19 02:35	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:29	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>244</b>	mg/L	25.0	10.0	1		04/10/19 16:35		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>5.0</b>	mg/L	0.25	0.024	1		04/10/19 03:25	16887-00-6	
Fluoride	<b>0.032J</b>	mg/L	0.30	0.029	1		04/10/19 03:25	16984-48-8	
Sulfate	<b>61.9</b>	mg/L	5.0	0.085	5		04/10/19 11:49	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

Sample: <b>BGWC-22</b>		Lab ID: <b>2617076005</b>		Collected: 04/03/19 11:18		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	<b>0.0021J</b>	mg/L	0.0050	0.000060	1	04/09/19 10:55	04/10/19 02:38	7440-38-2		
Barium	<b>0.082</b>	mg/L	0.010	0.000060	1	04/09/19 10:55	04/10/19 02:38	7440-39-3		
Beryllium	<b>0.000067J</b>	mg/L	0.0030	0.000050	1	04/09/19 10:55	04/10/19 02:38	7440-41-7		
Boron	<b>7.9</b>	mg/L	0.10	0.0026	1	04/09/19 10:55	04/10/19 02:38	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 10:55	04/10/19 02:38	7440-43-9		
Calcium	<b>458</b>	mg/L	0.50	0.021	1	04/09/19 10:55	04/10/19 02:38	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 10:55	04/10/19 02:38	7440-47-3		
Cobalt	<b>0.019</b>	mg/L	0.010	0.000050	1	04/09/19 10:55	04/10/19 02:38	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 10:55	04/10/19 02:38	7439-92-1		
Lithium	<b>0.024J</b>	mg/L	0.050	0.00042	1	04/09/19 10:55	04/10/19 02:38	7439-93-2		
Molybdenum	<b>0.039</b>	mg/L	0.010	0.00010	1	04/09/19 10:55	04/10/19 02:38	7439-98-7		
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 10:55	04/10/19 02:38	7782-49-2		
Thallium	<b>0.00070J</b>	mg/L	0.0010	0.000060	1	04/09/19 10:55	04/10/19 02:38	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:32	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>2180</b>	mg/L	25.0	10.0	1		04/10/19 16:35			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>856</b>	mg/L	12.5	1.2	50		04/10/19 12:11	16887-00-6		
Fluoride	<b>0.23J</b>	mg/L	0.30	0.029	1		04/10/19 03:48	16984-48-8		
Sulfate	<b>720</b>	mg/L	50.0	0.85	50		04/10/19 12:11	14808-79-8		

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

Sample: <b>BGWC-23</b>		Lab ID: <b>2617076006</b>		Collected: 04/03/19 09:38	Received: 04/05/19 11:20	Matrix: Water				
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	<b>0.00093J</b>	mg/L	0.0050	0.000060	1	04/09/19 10:55	04/10/19 02:42	7440-38-2		
Barium	<b>0.087</b>	mg/L	0.010	0.000060	1	04/09/19 10:55	04/10/19 02:42	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 10:55	04/10/19 02:42	7440-41-7		
Boron	<b>6.5</b>	mg/L	0.10	0.0026	1	04/09/19 10:55	04/10/19 02:42	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 10:55	04/10/19 02:42	7440-43-9		
Calcium	<b>396</b>	mg/L	0.50	0.021	1	04/09/19 10:55	04/10/19 02:42	7440-70-2		
Chromium	<b>0.00057J</b>	mg/L	0.010	0.00042	1	04/09/19 10:55	04/10/19 02:42	7440-47-3		
Cobalt	<b>0.00058J</b>	mg/L	0.010	0.000050	1	04/09/19 10:55	04/10/19 02:42	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 10:55	04/10/19 02:42	7439-92-1		
Lithium	<b>0.013J</b>	mg/L	0.050	0.00042	1	04/09/19 10:55	04/10/19 02:42	7439-93-2		
Molybdenum	<b>0.012</b>	mg/L	0.010	0.00010	1	04/09/19 10:55	04/10/19 02:42	7439-98-7		
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 10:55	04/10/19 02:42	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 10:55	04/10/19 02:42	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:34	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>1990</b>	mg/L	25.0	10.0	1		04/10/19 16:35			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>679</b>	mg/L	12.5	1.2	50		04/10/19 12:34	16887-00-6		
Fluoride	<b>0.10J</b>	mg/L	0.30	0.029	1		04/10/19 04:10	16984-48-8		
Sulfate	<b>603</b>	mg/L	50.0	0.85	50		04/10/19 12:34	14808-79-8		

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

<b>Sample: BGWC-24</b>		<b>Lab ID: 2617076007</b>		Collected: 04/03/19 16:36	Received: 04/05/19 11:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.0019J</b>	mg/L	0.0050	0.000060	1	04/09/19 10:55	04/10/19 02:45	7440-38-2	
Barium	<b>0.095</b>	mg/L	0.010	0.000060	1	04/09/19 10:55	04/10/19 02:45	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 10:55	04/10/19 02:45	7440-41-7	
Boron	<b>23.3</b>	mg/L	0.10	0.0026	1	04/09/19 10:55	04/10/19 02:45	7440-42-8	
Cadmium	<b>0.0053</b>	mg/L	0.0010	0.000070	1	04/09/19 10:55	04/10/19 02:45	7440-43-9	
Calcium	<b>945</b>	mg/L	50.0	2.1	100	05/01/19 17:00	05/03/19 12:09	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 10:55	04/10/19 02:45	7440-47-3	
Cobalt	<b>0.0048J</b>	mg/L	0.010	0.000050	1	04/09/19 10:55	04/10/19 02:45	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 10:55	04/10/19 02:45	7439-92-1	
Lithium	<b>0.0048J</b>	mg/L	0.050	0.00042	1	04/09/19 10:55	04/10/19 02:45	7439-93-2	
Molybdenum	<b>0.00095J</b>	mg/L	0.010	0.00010	1	04/09/19 10:55	04/10/19 02:45	7439-98-7	
Selenium	<b>0.0038J</b>	mg/L	0.010	0.000080	1	04/09/19 10:55	04/10/19 02:45	7782-49-2	
Thallium	<b>0.00064J</b>	mg/L	0.0010	0.000060	1	04/09/19 10:55	04/10/19 02:45	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.0013</b>	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:36	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>13.0J</b>	mg/L	25.0	10.0	1		04/10/19 16:35		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>1890</b>	mg/L	12.5	1.2	50		04/12/19 15:33	16887-00-6	
Fluoride	<b>3.0</b>	mg/L	0.30	0.029	1		04/10/19 04:34	16984-48-8	
Sulfate	<b>648</b>	mg/L	50.0	0.85	50		04/12/19 15:33	14808-79-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

<b>Sample: FBL040319</b>		<b>Lab ID: 2617076008</b>		Collected: 04/03/19 12:46	Received: 04/05/19 11:20	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	ND	mg/L	0.0050	0.000060	1	04/09/19 10:55	04/10/19 02:49	7440-38-2		
Barium	<b>0.000086J</b>	mg/L	0.010	0.000060	1	04/09/19 10:55	04/10/19 02:49	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 10:55	04/10/19 02:49	7440-41-7		
Boron	<b>0.93</b>	mg/L	0.10	0.0026	1	04/09/19 10:55	04/10/19 02:49	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 10:55	04/10/19 02:49	7440-43-9		
Calcium	<b>0.090J</b>	mg/L	0.50	0.021	1	04/09/19 10:55	04/10/19 02:49	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 10:55	04/10/19 02:49	7440-47-3		
Cobalt	ND	mg/L	0.010	0.000050	1	04/09/19 10:55	04/10/19 02:49	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 10:55	04/10/19 02:49	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 10:55	04/10/19 02:49	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00010	1	04/09/19 10:55	04/10/19 02:49	7439-98-7		
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 10:55	04/10/19 02:49	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 10:55	04/10/19 02:49	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:39	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>12.0J</b>	mg/L	25.0	10.0	1		04/10/19 16:35			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>0.31</b>	mg/L	0.25	0.024	1		04/10/19 06:28	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 06:28	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		04/10/19 06:28	14808-79-8		

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

Sample: EQBL040319		Lab ID: 2617076009		Collected: 04/03/19 12:50		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	ND	mg/L	0.0050	0.000060	1	04/09/19 10:55	04/10/19 02:52	7440-38-2		
Barium	ND	mg/L	0.010	0.000060	1	04/09/19 10:55	04/10/19 02:52	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 10:55	04/10/19 02:52	7440-41-7		
Boron	<b>0.32</b>	mg/L	0.10	0.0026	1	04/09/19 10:55	04/10/19 02:52	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 10:55	04/10/19 02:52	7440-43-9		
Calcium	<b>0.026J</b>	mg/L	0.50	0.021	1	04/09/19 10:55	04/10/19 02:52	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 10:55	04/10/19 02:52	7440-47-3		
Cobalt	ND	mg/L	0.010	0.000050	1	04/09/19 10:55	04/10/19 02:52	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 10:55	04/10/19 02:52	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 10:55	04/10/19 02:52	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00010	1	04/09/19 10:55	04/10/19 02:52	7439-98-7		
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 10:55	04/10/19 02:52	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 10:55	04/10/19 02:52	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:41	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>45.0</b>	mg/L	25.0	10.0	1		04/10/19 16:35			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>0.32</b>	mg/L	0.25	0.024	1		04/10/19 06:51	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 06:51	16984-48-8		
Sulfate	ND	mg/L	1.0	0.017	1		04/10/19 06:51	14808-79-8		

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**QUALITY CONTROL DATA**

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

QC Batch: 468366 Analysis Method: EPA 7470A  
 QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury  
 Associated Lab Samples: 2617076001, 2617076002, 2617076003, 2617076004, 2617076005, 2617076006, 2617076007, 2617076008, 2617076009

METHOD BLANK: 2544199 Matrix: Water  
 Associated Lab Samples: 2617076001, 2617076002, 2617076003, 2617076004, 2617076005, 2617076006, 2617076007, 2617076008, 2617076009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00010	04/11/19 19:03	

LABORATORY CONTROL SAMPLE: 2544200

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544201 2544202

Parameter	Units	2617069003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L				0.0019	0.0021				10	25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617076

QC Batch: 468126 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3010A Analysis Description: 6020 MET  
Associated Lab Samples: 2617076001, 2617076002, 2617076003, 2617076004, 2617076005, 2617076006, 2617076007, 2617076008, 2617076009

METHOD BLANK: 2543175 Matrix: Water  
Associated Lab Samples: 2617076001, 2617076002, 2617076003, 2617076004, 2617076005, 2617076006, 2617076007, 2617076008, 2617076009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000060	04/11/19 00:58	
Barium	mg/L	ND	0.010	0.000060	04/11/19 00:58	
Beryllium	mg/L	ND	0.0030	0.000050	04/10/19 00:56	
Boron	mg/L	ND	0.10	0.0026	04/11/19 00:58	
Cadmium	mg/L	ND	0.0010	0.000070	04/11/19 00:58	
Calcium	mg/L	ND	0.50	0.021	04/11/19 00:58	
Chromium	mg/L	ND	0.010	0.00042	04/11/19 00:58	
Cobalt	mg/L	ND	0.010	0.000050	04/11/19 00:58	
Lead	mg/L	ND	0.0050	0.000050	04/11/19 00:58	
Lithium	mg/L	ND	0.050	0.00042	04/11/19 00:58	
Molybdenum	mg/L	ND	0.010	0.00010	04/11/19 00:58	
Selenium	mg/L	ND	0.010	0.000080	04/11/19 00:58	
Thallium	mg/L	ND	0.0010	0.000060	04/11/19 00:58	

LABORATORY CONTROL SAMPLE: 2543176

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.0099	99	80-120	
Barium	mg/L	0.05	0.049	98	80-120	
Beryllium	mg/L	0.01	0.0095	95	80-120	
Boron	mg/L	0.05	0.047J	94	80-120	
Cadmium	mg/L	0.01	0.010	101	80-120	
Calcium	mg/L	0.62	0.63	101	80-120	
Chromium	mg/L	0.05	0.050	99	80-120	
Cobalt	mg/L	0.01	0.010J	100	80-120	
Lead	mg/L	0.05	0.050	100	80-120	
Lithium	mg/L	0.05	0.050J	100	80-120	
Molybdenum	mg/L	0.05	0.051	102	80-120	
Selenium	mg/L	0.05	0.050	99	80-120	
Thallium	mg/L	0.01	0.0099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2543177 2543178

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Arsenic	mg/L	0.00017J	0.01	0.01	0.010	0.010	102	99	75-125	3	20
Barium	mg/L	0.018	0.05	0.05	0.069	0.068	101	99	75-125	1	20

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

Parameter	Units	2543177		2543178		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Beryllium	mg/L	ND	0.01	0.01	0.0088	0.0084	87	84	75-125	4	20
Boron	mg/L	2.3	0.05	0.05	2.4	2.4	205	248	75-125	1	20 M6
Cadmium	mg/L	0.0018	0.01	0.01	0.012	0.011	97	96	75-125	1	20
Calcium	mg/L	214	0.62	0.62	218	216	575	271	75-125	1	20 M6
Chromium	mg/L	ND	0.05	0.05	0.050	0.049	99	98	75-125	1	20
Cobalt	mg/L	0.035	0.01	0.01	0.044	0.044	97	94	75-125	1	20
Lead	mg/L	0.000072J	0.05	0.05	0.052	0.051	103	102	75-125	1	20
Lithium	mg/L	0.00090J	0.05	0.05	0.046J	0.045J	90	88	75-125	2	20
Molybdenum	mg/L	ND	0.05	0.05	0.052	0.052	104	103	75-125	1	20
Selenium	mg/L	0.00021J	0.05	0.05	0.050	0.049	99	97	75-125	2	20
Thallium	mg/L	ND	0.01	0.01	0.010	0.010	104	102	75-125	1	20

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617076

QC Batch: 473123

Analysis Method: EPA 6020B

QC Batch Method: EPA 3010A

Analysis Description: 6020 MET

Associated Lab Samples: 2617076007

METHOD BLANK: 2566181

Matrix: Water

Associated Lab Samples: 2617076007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.20	0.021	05/03/19 12:02	

LABORATORY CONTROL SAMPLE: 2566182

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	0.62	0.64	103	80-120	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617076

QC Batch: 26061 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 2617076001, 2617076002, 2617076003, 2617076004, 2617076005, 2617076006, 2617076007, 2617076008, 2617076009

METHOD BLANK: 117670 Matrix: Water  
Associated Lab Samples: 2617076001, 2617076002, 2617076003, 2617076004, 2617076005, 2617076006, 2617076007, 2617076008, 2617076009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.31	0.25	0.024	04/09/19 19:01	
Fluoride	mg/L	ND	0.30	0.029	04/09/19 19:01	
Sulfate	mg/L	ND	1.0	0.017	04/09/19 19:01	

LABORATORY CONTROL SAMPLE: 117671

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	9.4	94	90-110	
Sulfate	mg/L	10	10.8	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 117672 117673

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Spike Conc.	Result	Spike Conc.	Result							
Chloride	mg/L	10	6.9	10	10	16.0	16.1	91	92	90-110	1	15
Fluoride	mg/L	10	0.042J	10	10	9.0	9.1	89	91	90-110	2	15 M1
Sulfate	mg/L	10	358	10	10	224	224	-1340	-1330	90-110	0	15 M1

MATRIX SPIKE SAMPLE: 117674

Parameter	Units	2617069002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	7.2	10	16.3	91	90-110	
Fluoride	mg/L	0.045J	10	9.3	92	90-110	
Sulfate	mg/L	369	10	226	-1430	90-110 M1	

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## QUALIFIERS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617076

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617076

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617076001	BGWA-33	EPA 3010A	468126	EPA 6020B	468248
2617076002	BGWC-19	EPA 3010A	468126	EPA 6020B	468248
2617076003	BGWC-20	EPA 3010A	468126	EPA 6020B	468248
2617076004	BGWC-21	EPA 3010A	468126	EPA 6020B	468248
2617076005	BGWC-22	EPA 3010A	468126	EPA 6020B	468248
2617076006	BGWC-23	EPA 3010A	468126	EPA 6020B	468248
2617076007	BGWC-24	EPA 3010A	468126	EPA 6020B	468248
2617076007	BGWC-24	EPA 3010A	473123	EPA 6020B	473134
2617076008	FBL040319	EPA 3010A	468126	EPA 6020B	468248
2617076009	EQBL040319	EPA 3010A	468126	EPA 6020B	468248
2617076001	BGWA-33	EPA 7470A	468366	EPA 7470A	468612
2617076002	BGWC-19	EPA 7470A	468366	EPA 7470A	468612
2617076003	BGWC-20	EPA 7470A	468366	EPA 7470A	468612
2617076004	BGWC-21	EPA 7470A	468366	EPA 7470A	468612
2617076005	BGWC-22	EPA 7470A	468366	EPA 7470A	468612
2617076006	BGWC-23	EPA 7470A	468366	EPA 7470A	468612
2617076007	BGWC-24	EPA 7470A	468366	EPA 7470A	468612
2617076008	FBL040319	EPA 7470A	468366	EPA 7470A	468612
2617076009	EQBL040319	EPA 7470A	468366	EPA 7470A	468612
2617076001	BGWA-33	SM 2540C	26131		
2617076002	BGWC-19	SM 2540C	26131		
2617076003	BGWC-20	SM 2540C	26131		
2617076004	BGWC-21	SM 2540C	26131		
2617076005	BGWC-22	SM 2540C	26131		
2617076006	BGWC-23	SM 2540C	26131		
2617076007	BGWC-24	SM 2540C	26131		
2617076008	FBL040319	SM 2540C	26131		
2617076009	EQBL040319	SM 2540C	26131		
2617076001	BGWA-33	EPA 300.0	26061		
2617076002	BGWC-19	EPA 300.0	26061		
2617076003	BGWC-20	EPA 300.0	26061		
2617076004	BGWC-21	EPA 300.0	26061		
2617076005	BGWC-22	EPA 300.0	26061		
2617076006	BGWC-23	EPA 300.0	26061		
2617076007	BGWC-24	EPA 300.0	26061		
2617076008	FBL040319	EPA 300.0	26061		
2617076009	EQBL040319	EPA 300.0	26061		

**REPORT OF LABORATORY ANALYSIS**

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Sample Condition Upon Receipt

Client Name: GCA Power

Project # \_\_\_\_\_

WO#: **2617076**

PH: **BM** Due Date: **04/12/19**  
CLIENT: **GAPower-CCR**

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used 83 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 0.3

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments: \_\_\_\_\_

Date and Initials of person examining contents: 4/5/19 MK

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.		
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.		
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.		
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.		
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.		
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.		
-Includes date/time/ID/Analysis Matrix:	<u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: \_\_\_\_\_

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Field Data Required? Y / N

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (ie out of hold, incorrect preservative, out of temp, incorrect containers)

April 29, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

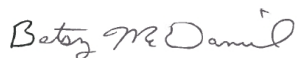
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2617077

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617077

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 9526  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617077001	BGWA-33	Water	04/03/19 10:28	04/05/19 11:20
2617077002	BGWC-19	Water	04/03/19 11:55	04/05/19 11:20
2617077003	BGWC-20	Water	04/03/19 10:30	04/05/19 11:20
2617077004	BGWC-21	Water	04/03/19 14:05	04/05/19 11:20
2617077005	BGWC-22	Water	04/03/19 11:18	04/05/19 11:20
2617077006	BGWC-23	Water	04/03/19 09:38	04/05/19 11:20
2617077007	BGWC-24	Water	04/03/19 16:36	04/05/19 11:20
2617077008	FBL040319	Water	04/03/19 12:46	04/05/19 11:20
2617077009	EQBL040319	Water	04/03/19 12:50	04/05/19 11:20

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617077001	BGWA-33	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617077002	BGWC-19	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617077003	BGWC-20	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617077004	BGWC-21	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617077005	BGWC-22	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617077006	BGWC-23	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617077007	BGWC-24	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617077008	FBL040319	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617077009	EQBL040319	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

**Sample: BGWA-33**      **Lab ID: 2617077001**      Collected: 04/03/19 10:28      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.303 ± 0.314 (0.621)</b> C:71% T:NA	pCi/L	04/17/19 07:55	13982-63-3	
Radium-228	EPA 9320	<b>0.387 ± 0.439 (0.926)</b> C:82% T:77%	pCi/L	04/18/19 12:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.690 ± 0.753 (1.55)</b>	pCi/L	04/22/19 11:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

**Sample: BGWC-19**      **Lab ID: 2617077002**      Collected: 04/03/19 11:55      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.668 ± 0.388 (0.627)</b> <b>C:91% T:NA</b>	pCi/L	04/17/19 07:57	13982-63-3	
Radium-228	EPA 9320	<b>0.312 ± 0.356 (0.747)</b> <b>C:81% T:80%</b>	pCi/L	04/18/19 11:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.980 ± 0.744 (1.37)</b>	pCi/L	04/22/19 11:21	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

**Sample: BGWC-20**      **Lab ID: 2617077003**      Collected: 04/03/19 10:30      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.478 ± 0.297 (0.454)</b> C:94% T:NA	pCi/L	04/17/19 07:55	13982-63-3	
Radium-228	EPA 9320	<b>0.0890 ± 0.377 (0.848)</b> C:82% T:89%	pCi/L	04/18/19 12:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.567 ± 0.674 (1.30)</b>	pCi/L	04/22/19 11:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

**Sample: BGWC-21**      **Lab ID: 2617077004**      Collected: 04/03/19 14:05      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.315 ± 0.232 (0.335)</b> <b>C:91% T:NA</b>	pCi/L	04/17/19 08:07	13982-63-3	
Radium-228	EPA 9320	<b>0.217 ± 0.307 (0.659)</b> <b>C:82% T:82%</b>	pCi/L	04/18/19 14:52	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.532 ± 0.539 (0.994)</b>	pCi/L	04/22/19 11:21	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

**Sample: BGWC-22**      **Lab ID: 2617077005**      Collected: 04/03/19 11:18      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.01 ± 0.615 (0.618)</b> C:96% T:NA	pCi/L	04/17/19 07:57	13982-63-3	
Radium-228	EPA 9320	<b>0.465 ± 0.349 (0.677)</b> C:80% T:78%	pCi/L	04/18/19 11:47	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.48 ± 0.964 (1.30)</b>	pCi/L	04/22/19 11:21	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

**Sample: BGWC-23**      **Lab ID: 2617077006**      Collected: 04/03/19 09:38      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.76 ± 0.601 (0.631)</b> <b>C:83% T:NA</b>	pCi/L	04/17/19 07:54	13982-63-3	
Radium-228	EPA 9320	<b>1.10 ± 0.457 (0.760)</b> <b>C:84% T:85%</b>	pCi/L	04/18/19 12:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.86 ± 1.06 (1.39)</b>	pCi/L	04/22/19 11:17	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

**Sample: BGWC-24**      **Lab ID: 2617077007**      Collected: 04/03/19 16:36      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.38 ± 0.651 (0.375)</b> C:98% T:NA	pCi/L	04/17/19 08:07	13982-63-3	
Radium-228	EPA 9320	<b>1.22 ± 0.463 (0.705)</b> C:77% T:90%	pCi/L	04/18/19 14:52	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.60 ± 1.11 (1.08)</b>	pCi/L	04/22/19 11:21	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

**Sample: FBL040319**      **Lab ID: 2617077008**      Collected: 04/03/19 12:46      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0891 ± 0.172 (0.395)</b> C:96% T:NA	pCi/L	04/17/19 08:07	13982-63-3	
Radium-228	EPA 9320	<b>-0.388 ± 0.247 (0.665)</b> C:80% T:84%	pCi/L	04/18/19 11:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.0891 ± 0.419 (1.06)</b>	pCi/L	04/22/19 11:21	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

**Sample: EQBL040319**      **Lab ID: 2617077009**      Collected: 04/03/19 12:50      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.344 ± 0.240 (0.347)</b> C:95% T:NA	pCi/L	04/17/19 08:07	13982-63-3	
Radium-228	EPA 9320	<b>0.451 ± 0.371 (0.731)</b> C:76% T:71%	pCi/L	04/18/19 11:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.795 ± 0.611 (1.08)</b>	pCi/L	04/22/19 11:21	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

QC Batch: 337919

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2617077002, 2617077004, 2617077005, 2617077007, 2617077008, 2617077009

METHOD BLANK: 1644532

Matrix: Water

Associated Lab Samples: 2617077002, 2617077004, 2617077005, 2617077007, 2617077008, 2617077009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.211 ± 0.257 (0.538) C:93% T:NA	pCi/L	04/17/19 07:57	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

QC Batch: 337917

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2617077001, 2617077003, 2617077006

METHOD BLANK: 1644525

Matrix: Water

Associated Lab Samples: 2617077001, 2617077003, 2617077006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.221 ± 0.211 (0.378) C:90% T:NA	pCi/L	04/17/19 08:36	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

QC Batch: 337911

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2617077001, 2617077003, 2617077006

METHOD BLANK: 1644521

Matrix: Water

Associated Lab Samples: 2617077001, 2617077003, 2617077006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.526 ± 0.315 (0.569) C:87% T:76%	pCi/L	04/18/19 12:31	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617077

QC Batch: 337912

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2617077002, 2617077004, 2617077005, 2617077007, 2617077008, 2617077009

METHOD BLANK: 1644522

Matrix: Water

Associated Lab Samples: 2617077002, 2617077004, 2617077005, 2617077007, 2617077008, 2617077009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.129 ± 0.341 (0.763) C:81% T:73%	pCi/L	04/18/19 11:47	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALIFIERS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617077

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617077

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617077001	BGWA-33	EPA 9315	337917		
2617077002	BGWC-19	EPA 9315	337919		
2617077003	BGWC-20	EPA 9315	337917		
2617077004	BGWC-21	EPA 9315	337919		
2617077005	BGWC-22	EPA 9315	337919		
2617077006	BGWC-23	EPA 9315	337917		
2617077007	BGWC-24	EPA 9315	337919		
2617077008	FBL040319	EPA 9315	337919		
2617077009	EQBL040319	EPA 9315	337919		
2617077001	BGWA-33	EPA 9320	337911		
2617077002	BGWC-19	EPA 9320	337912		
2617077003	BGWC-20	EPA 9320	337911		
2617077004	BGWC-21	EPA 9320	337912		
2617077005	BGWC-22	EPA 9320	337912		
2617077006	BGWC-23	EPA 9320	337911		
2617077007	BGWC-24	EPA 9320	337912		
2617077008	FBL040319	EPA 9320	337912		
2617077009	EQBL040319	EPA 9320	337912		
2617077001	BGWA-33	Total Radium Calculation	339290		
2617077002	BGWC-19	Total Radium Calculation	339291		
2617077003	BGWC-20	Total Radium Calculation	339290		
2617077004	BGWC-21	Total Radium Calculation	339291		
2617077005	BGWC-22	Total Radium Calculation	339291		
2617077006	BGWC-23	Total Radium Calculation	339290		
2617077007	BGWC-24	Total Radium Calculation	339291		
2617077008	FBL040319	Total Radium Calculation	339291		
2617077009	EQBL040319	Total Radium Calculation	339291		

### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: GCA Power

Project # \_\_\_\_\_

WO#: **2617077**

PM: **BM**

Due Date: **05/03/19**

CLIENT: **GAPower-CCR**

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 83 Type of Ice:  Wet  Blue  None

Cooler Temperature 0.3 Biological Tissue is Frozen: Yes No  Samples on ice, cooling process has begun

Date and Initials of person examining contents: 4/5/19 MK

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.		
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.		
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.		
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.		
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.		
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.		
-Includes date/time/ID/Analysis Matrix:	<u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: \_\_\_\_\_

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Field Data Required? Y / N

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

May 03, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2617079

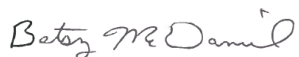
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the one issued on 4/15/2019. The report has been revised to correct metals units and target list per consultant request. No other changes have been made to this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

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### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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### Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617079001	BGWC-14	Water	04/04/19 09:03	04/05/19 11:20
2617079002	BGWC-25	Water	04/04/19 10:28	04/05/19 11:20
2617079003	BGWC-31	Water	04/04/19 11:10	04/05/19 11:20
2617079004	BGWC-34D	Water	04/04/19 15:50	04/05/19 11:20
2617079005	BGWC-35D	Water	04/04/19 12:40	04/05/19 11:20
2617079006	Dup-3	Water	04/04/19 00:00	04/05/19 11:20
2617079007	FBL040419	Water	04/04/19 12:44	04/05/19 11:20
2617079008	EQBL040419	Water	04/04/19 12:58	04/05/19 11:20

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617079001	BGWC-14	EPA 6020B	JMW1, SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617079002	BGWC-25	EPA 6020B	JMW1, SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617079003	BGWC-31	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617079004	BGWC-34D	EPA 6020B	JMW1, SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617079005	BGWC-35D	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617079006	Dup-3	EPA 6020B	JMW1, SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617079007	FBL040419	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617079008	EQBL040419	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

Sample: <b>BGWC-14</b>		Lab ID: <b>2617079001</b>		Collected: 04/04/19 09:03		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	<b>0.00041J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 21:32	7440-38-2	B	
Barium	<b>0.049</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 21:32	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 21:32	7440-41-7		
Boron	<b>0.79J</b>	mg/L	1.0	0.026	10	04/09/19 20:29	04/11/19 17:17	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 21:32	7440-43-9		
Calcium	<b>98.0</b>	mg/L	10.0	0.41	20	04/09/19 20:29	04/12/19 02:12	7440-70-2		
Chromium	<b>0.00057J</b>	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 21:32	7440-47-3		
Cobalt	<b>0.00015J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 21:32	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 21:32	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 21:32	7439-93-2		
Molybdenum	<b>0.0088J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 21:32	7439-98-7		
Selenium	<b>0.00014J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 21:32	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 21:32	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 21:54	04/12/19 10:29	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>617</b>	mg/L	25.0	10.0	1		04/11/19 19:35			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>33.7</b>	mg/L	0.25	0.024	1		04/09/19 22:05	16887-00-6	M1	
Fluoride	<b>0.44</b>	mg/L	0.30	0.029	1		04/09/19 22:05	16984-48-8		
Sulfate	<b>255</b>	mg/L	10.0	0.17	10		04/09/19 22:27	14808-79-8	M1	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

Sample: BGWC-25		Lab ID: 2617079002		Collected: 04/04/19 10:28		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.0016J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/11/19 17:20	7440-38-2	
Barium	<b>0.016</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/11/19 17:20	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/11/19 17:20	7440-41-7	
Boron	<b>0.020J</b>	mg/L	0.10	0.0026	1	04/09/19 20:29	04/11/19 17:20	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/11/19 17:20	7440-43-9	
Calcium	<b>54.8</b>	mg/L	10.0	0.41	20	04/09/19 20:29	04/12/19 02:15	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/11/19 17:20	7440-47-3	
Cobalt	<b>0.00022J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/11/19 17:20	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/11/19 17:20	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/11/19 17:20	7439-93-2	
Molybdenum	<b>0.00096J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/11/19 17:20	7439-98-7	
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 20:29	04/11/19 17:20	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/11/19 17:20	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 21:54	04/12/19 10:41	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>196</b>	mg/L	25.0	10.0	1		04/11/19 19:35		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>3.8</b>	mg/L	0.25	0.024	1		04/09/19 23:31	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/09/19 23:31	16984-48-8	
Sulfate	<b>11.4</b>	mg/L	1.0	0.017	1		04/09/19 23:31	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

Sample: <b>BGWC-31</b>		Lab ID: <b>2617079003</b>		Collected: 04/04/19 11:10		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.0036J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 21:39	7440-38-2	
Barium	<b>0.032</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 21:39	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 21:39	7440-41-7	
Boron	<b>0.59J</b>	mg/L	1.0	0.026	10	04/09/19 20:29	04/11/19 17:27	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 21:39	7440-43-9	
Calcium	<b>69.3</b>	mg/L	5.0	0.21	10	04/09/19 20:29	04/11/19 17:27	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 21:39	7440-47-3	
Cobalt	<b>0.00051J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 21:39	7440-48-4	
Lead	<b>0.00065J</b>	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 21:39	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 21:39	7439-93-2	
Molybdenum	<b>0.00033J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 21:39	7439-98-7	
Selenium	<b>0.000080J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 21:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 21:39	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 21:54	04/12/19 10:43	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>350</b>	mg/L	25.0	10.0	1		04/11/19 19:35		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>32.7</b>	mg/L	0.25	0.024	1		04/09/19 23:52	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/09/19 23:52	16984-48-8	
Sulfate	<b>105</b>	mg/L	10.0	0.17	10		04/10/19 00:13	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

Sample: <b>BGWC-34D</b>		Lab ID: <b>2617079004</b>		Collected: 04/04/19 15:50	Received: 04/05/19 11:20	Matrix: Water			
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.015</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/11/19 17:38	7440-38-2	
Barium	<b>0.031</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/11/19 17:38	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/11/19 17:38	7440-41-7	
Boron	<b>0.15</b>	mg/L	0.10	0.0026	1	04/09/19 20:29	04/11/19 17:38	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/11/19 17:38	7440-43-9	
Calcium	<b>104</b>	mg/L	10.0	0.41	20	04/09/19 20:29	04/12/19 02:19	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/11/19 17:38	7440-47-3	
Cobalt	<b>0.00042J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/11/19 17:38	7440-48-4	
Lead	<b>0.000054J</b>	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/11/19 17:38	7439-92-1	
Lithium	<b>0.00068J</b>	mg/L	0.050	0.00042	1	04/09/19 20:29	04/11/19 17:38	7439-93-2	
Molybdenum	<b>0.0011J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/11/19 17:38	7439-98-7	
Selenium	<b>0.00010J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/11/19 17:38	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/11/19 17:38	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 21:54	04/12/19 10:46	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>419</b>	mg/L	25.0	10.0	1		04/11/19 19:35		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>28.4</b>	mg/L	0.25	0.024	1		04/10/19 00:35	16887-00-6	
Fluoride	<b>0.035J</b>	mg/L	0.30	0.029	1		04/10/19 00:35	16984-48-8	
Sulfate	<b>88.0</b>	mg/L	5.0	0.085	5		04/10/19 00:56	14808-79-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

Sample: <b>BGWC-35D</b>		Lab ID: <b>2617079005</b>		Collected: 04/04/19 12:40	Received: 04/05/19 11:20	Matrix: Water			
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.0018J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 22:14	7440-38-2	
Barium	<b>0.071</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 22:14	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 22:14	7440-41-7	
Boron	<b>8.3</b>	mg/L	5.0	0.13	50	04/09/19 20:29	04/11/19 17:45	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 22:14	7440-43-9	
Calcium	<b>442</b>	mg/L	25.0	1.0	50	04/09/19 20:29	04/11/19 17:45	7440-70-2	
Chromium	<b>0.0011J</b>	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 22:14	7440-47-3	
Cobalt	<b>0.0011J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 22:14	7440-48-4	
Lead	<b>0.00023J</b>	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 22:14	7439-92-1	
Lithium	<b>0.0096J</b>	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 22:14	7439-93-2	
Molybdenum	<b>0.030</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 22:14	7439-98-7	
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 22:14	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 22:14	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 21:54	04/12/19 10:48	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>1930</b>	mg/L	25.0	10.0	1		04/11/19 19:35		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>605</b>	mg/L	12.5	1.2	50		04/10/19 03:04	16887-00-6	
Fluoride	<b>0.26J</b>	mg/L	0.30	0.029	1		04/10/19 01:17	16984-48-8	
Sulfate	<b>643</b>	mg/L	50.0	0.85	50		04/10/19 03:04	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

Sample: Dup-3		Lab ID: 2617079006		Collected: 04/04/19 00:00		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	<b>0.0016J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 22:18	7440-38-2		
Barium	<b>0.015</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 22:18	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 22:18	7440-41-7		
Boron	<b>0.076J</b>	mg/L	0.50	0.013	5	04/09/19 20:29	04/11/19 17:48	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 22:18	7440-43-9		
Calcium	<b>48.4</b>	mg/L	10.0	0.41	20	04/09/19 20:29	04/12/19 02:22	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 22:18	7440-47-3		
Cobalt	<b>0.00020J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 22:18	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 22:18	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 22:18	7439-93-2		
Molybdenum	<b>0.00096J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 22:18	7439-98-7		
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 22:18	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 22:18	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 21:54	04/12/19 10:50	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>207</b>	mg/L	25.0	10.0	1		04/11/19 20:52			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>4.0</b>	mg/L	0.25	0.024	1		04/10/19 03:25	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 03:25	16984-48-8		
Sulfate	<b>11.3</b>	mg/L	1.0	0.017	1		04/10/19 03:25	14808-79-8		

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

<b>Sample: FBL040419</b>		<b>Lab ID: 2617079007</b>		Collected: 04/04/19 12:44	Received: 04/05/19 11:20	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	ND	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/11/19 17:52	7440-38-2	
Barium	<b>0.000071J</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/11/19 17:52	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/11/19 17:52	7440-41-7	
Boron	<b>0.0043J</b>	mg/L	0.10	0.0026	1	04/09/19 20:29	04/11/19 17:52	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/11/19 17:52	7440-43-9	
Calcium	ND	mg/L	0.50	0.021	1	04/09/19 20:29	04/11/19 17:52	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/11/19 17:52	7440-47-3	
Cobalt	ND	mg/L	0.010	0.000050	1	04/09/19 20:29	04/11/19 17:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/11/19 17:52	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/11/19 17:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00010	1	04/09/19 20:29	04/11/19 17:52	7439-98-7	
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 20:29	04/11/19 17:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/11/19 17:52	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 21:54	04/12/19 10:53	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>15.0J</b>	mg/L	25.0	10.0	1		04/11/19 20:53		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>0.073J</b>	mg/L	0.25	0.024	1		04/10/19 04:08	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 04:08	16984-48-8	
Sulfate	<b>0.028J</b>	mg/L	1.0	0.017	1		04/10/19 04:08	14808-79-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

Sample: EQBL040419		Lab ID: 2617079008		Collected: 04/04/19 12:58		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	ND	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/11/19 17:56	7440-38-2		
Barium	ND	mg/L	0.010	0.000060	1	04/09/19 20:29	04/11/19 17:56	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/11/19 17:56	7440-41-7		
Boron	ND	mg/L	0.10	0.0026	1	04/09/19 20:29	04/11/19 17:56	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/11/19 17:56	7440-43-9		
Calcium	ND	mg/L	0.50	0.021	1	04/09/19 20:29	04/11/19 17:56	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/11/19 17:56	7440-47-3		
Cobalt	ND	mg/L	0.010	0.000050	1	04/09/19 20:29	04/11/19 17:56	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/11/19 17:56	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/11/19 17:56	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00010	1	04/09/19 20:29	04/11/19 17:56	7439-98-7		
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 20:29	04/11/19 17:56	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/11/19 17:56	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 21:54	04/12/19 10:55	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	25.0	10.0	1		04/11/19 20:53			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>0.077J</b>	mg/L	0.25	0.024	1		04/10/19 04:29	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 04:29	16984-48-8		
Sulfate	<b>0.028J</b>	mg/L	1.0	0.017	1		04/10/19 04:29	14808-79-8		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

QC Batch: 468642

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2617079001, 2617079002, 2617079003, 2617079004, 2617079005, 2617079006, 2617079007, 2617079008

METHOD BLANK: 2545437

Matrix: Water

Associated Lab Samples: 2617079001, 2617079002, 2617079003, 2617079004, 2617079005, 2617079006, 2617079007, 2617079008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00010	04/12/19 10:24	

LABORATORY CONTROL SAMPLE: 2545438

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0023	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2545439 2545440

Parameter	Units	2617079001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0023	0.0023	93	93	75-125	0	25	

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617079

QC Batch: 468329 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3010A Analysis Description: 6020 MET  
Associated Lab Samples: 2617079001, 2617079002, 2617079003, 2617079004, 2617079005, 2617079006, 2617079007, 2617079008

METHOD BLANK: 2544088 Matrix: Water  
Associated Lab Samples: 2617079001, 2617079002, 2617079003, 2617079004, 2617079005, 2617079006, 2617079007, 2617079008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.000062J	0.0050	0.000060	04/10/19 19:29	
Barium	mg/L	ND	0.010	0.000060	04/10/19 19:29	
Beryllium	mg/L	ND	0.0030	0.000050	04/10/19 19:29	
Boron	mg/L	ND	0.10	0.0026	04/10/19 19:29	
Cadmium	mg/L	ND	0.0010	0.000070	04/10/19 19:29	
Calcium	mg/L	ND	0.50	0.021	04/10/19 19:29	
Chromium	mg/L	ND	0.010	0.00042	04/10/19 19:29	
Cobalt	mg/L	ND	0.010	0.000050	04/10/19 19:29	
Lead	mg/L	ND	0.0050	0.000050	04/10/19 19:29	BC
Lithium	mg/L	ND	0.050	0.00042	04/10/19 19:29	
Molybdenum	mg/L	ND	0.010	0.00010	04/10/19 19:29	
Selenium	mg/L	ND	0.010	0.000080	04/10/19 19:29	
Thallium	mg/L	ND	0.0010	0.000060	04/10/19 19:29	

LABORATORY CONTROL SAMPLE: 2544089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.010	103	80-120	
Barium	mg/L	0.05	0.050	99	80-120	
Beryllium	mg/L	0.01	0.0095	95	80-120	
Boron	mg/L	0.05	0.049J	98	80-120	
Cadmium	mg/L	0.01	0.010	102	80-120	
Calcium	mg/L	0.62	0.64	102	80-120	
Chromium	mg/L	0.05	0.050	101	80-120	
Cobalt	mg/L	0.01	0.010	101	80-120	
Lead	mg/L	0.05	0.051	101	80-120	BC
Lithium	mg/L	0.05	0.052	104	80-120	
Molybdenum	mg/L	0.05	0.052	103	80-120	
Selenium	mg/L	0.05	0.051	102	80-120	
Thallium	mg/L	0.01	0.010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544090 2544091

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2617082009 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	0.00012J	0.01	0.01	0.0092	0.0091	91	90	75-125	1	20	
Barium	mg/L	0.025	0.05	0.05	0.068	0.067	87	85	75-125	2	20	
Beryllium	mg/L	ND	0.01	0.01	0.0081	0.0080	80	79	75-125	2	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

Parameter	Units	2544090		2544091		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Boron	mg/L	0.49J	0.05	0.05	0.56	0.58	137	180	75-125	4	20	M1	
Cadmium	mg/L	ND	0.01	0.01	0.0091	0.0091	91	90	75-125	0	20		
Calcium	mg/L	55.8	0.62	0.62	54.5	53.7	-203	-330	75-125	1	20	M6	
Chromium	mg/L	ND	0.05	0.05	0.045	0.044	89	88	75-125	1	20		
Cobalt	mg/L	0.00010J	0.01	0.01	0.0089J	0.0088J	88	87	75-125	1	20		
Lead	mg/L	ND	0.05	0.05	0.044	0.045	88	90	75-125	2	20		
Lithium	mg/L	ND	0.05	0.05	0.044J	0.044J	89	87	75-125	2	20		
Molybdenum	mg/L	ND	0.05	0.05	0.046	0.046	92	93	75-125	1	20		
Selenium	mg/L	0.00091J	0.05	0.05	0.046	0.045	90	88	75-125	2	20		
Thallium	mg/L	ND	0.01	0.01	0.0088	0.0090	88	90	75-125	2	20		

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

QC Batch: 26251 Analysis Method: SM 2540C  
 QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids  
 Associated Lab Samples: 2617079001, 2617079002, 2617079003, 2617079004, 2617079005

LABORATORY CONTROL SAMPLE: 118507

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	404	101	84-108	

SAMPLE DUPLICATE: 118508

Parameter	Units	2617035009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	85.0	50.0	52	10	D6

SAMPLE DUPLICATE: 118509

Parameter	Units	2617069003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	340	341	0	10	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617079

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QC Batch:	26252	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	2617079006, 2617079007, 2617079008		

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LABORATORY CONTROL SAMPLE: 118510

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	408	102	84-108	

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SAMPLE DUPLICATE: 118512

Parameter	Units	2617150003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2310	2380	3	10	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617079

QC Batch: 26063 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 2617079001, 2617079002, 2617079003, 2617079004, 2617079005, 2617079006, 2617079007, 2617079008

METHOD BLANK: 117675 Matrix: Water  
Associated Lab Samples: 2617079001, 2617079002, 2617079003, 2617079004, 2617079005, 2617079006, 2617079007, 2617079008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.053J	0.25	0.024	04/09/19 21:23	
Fluoride	mg/L	ND	0.30	0.029	04/09/19 21:23	
Sulfate	mg/L	ND	1.0	0.017	04/09/19 21:23	

LABORATORY CONTROL SAMPLE: 117676

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.1	101	90-110	
Sulfate	mg/L	10	9.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 117677 117678

Parameter	Units	2617079001		2617079002		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	33.7	10	10	40.3	40.3	65	65	90-110	0	15	M1	
Fluoride	mg/L	0.44	10	10	10.2	10.1	97	97	90-110	0	15		
Sulfate	mg/L	255	10	10	178	178	-769	-769	90-110	0	15	E, M1	

MATRIX SPIKE SAMPLE: 117679

Parameter	Units	2617079002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.8	10	13.4	96	90-110	
Fluoride	mg/L	ND	10	9.9	99	90-110	
Sulfate	mg/L	11.4	10	20.5	91	90-110	

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617079

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.  
ND - Not Detected at or above adjusted reporting limit.  
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.  
MDL - Adjusted Method Detection Limit.  
PQL - Practical Quantitation Limit.  
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.  
S - Surrogate  
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.  
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.  
LCS(D) - Laboratory Control Sample (Duplicate)  
MS(D) - Matrix Spike (Duplicate)  
DUP - Sample Duplicate  
RPD - Relative Percent Difference  
NC - Not Calculable.  
SG - Silica Gel - Clean-Up  
U - Indicates the compound was analyzed for, but not detected.  
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.  
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.  
TNI - The NELAC Institute.

### LABORATORIES

PASI-A Pace Analytical Services - Asheville  
PASI-GA Pace Analytical Services - Atlanta, GA

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.  
BC The same analyte was detected in an associated blank at a concentration above 1/2 the reporting limit but below the laboratory reporting limit.  
D6 The precision between the sample and sample duplicate exceeded laboratory control limits.  
E Analyte concentration exceeded the calibration range. The reported result is estimated.  
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.  
M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617079

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617079001	BGWC-14	EPA 3010A	468329	EPA 6020B	468391
2617079002	BGWC-25	EPA 3010A	468329	EPA 6020B	468391
2617079003	BGWC-31	EPA 3010A	468329	EPA 6020B	468391
2617079004	BGWC-34D	EPA 3010A	468329	EPA 6020B	468391
2617079005	BGWC-35D	EPA 3010A	468329	EPA 6020B	468391
2617079006	Dup-3	EPA 3010A	468329	EPA 6020B	468391
2617079007	FBL040419	EPA 3010A	468329	EPA 6020B	468391
2617079008	EQBL040419	EPA 3010A	468329	EPA 6020B	468391
2617079001	BGWC-14	EPA 7470A	468642	EPA 7470A	468914
2617079002	BGWC-25	EPA 7470A	468642	EPA 7470A	468914
2617079003	BGWC-31	EPA 7470A	468642	EPA 7470A	468914
2617079004	BGWC-34D	EPA 7470A	468642	EPA 7470A	468914
2617079005	BGWC-35D	EPA 7470A	468642	EPA 7470A	468914
2617079006	Dup-3	EPA 7470A	468642	EPA 7470A	468914
2617079007	FBL040419	EPA 7470A	468642	EPA 7470A	468914
2617079008	EQBL040419	EPA 7470A	468642	EPA 7470A	468914
2617079001	BGWC-14	SM 2540C	26251		
2617079002	BGWC-25	SM 2540C	26251		
2617079003	BGWC-31	SM 2540C	26251		
2617079004	BGWC-34D	SM 2540C	26251		
2617079005	BGWC-35D	SM 2540C	26251		
2617079006	Dup-3	SM 2540C	26252		
2617079007	FBL040419	SM 2540C	26252		
2617079008	EQBL040419	SM 2540C	26252		
2617079001	BGWC-14	EPA 300.0	26063		
2617079002	BGWC-25	EPA 300.0	26063		
2617079003	BGWC-31	EPA 300.0	26063		
2617079004	BGWC-34D	EPA 300.0	26063		
2617079005	BGWC-35D	EPA 300.0	26063		
2617079006	Dup-3	EPA 300.0	26063		
2617079007	FBL040419	EPA 300.0	26063		
2617079008	EQBL040419	EPA 300.0	26063		

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# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

### Section A

#### Required Client Information:

Company: Georgia Power - Coal Combustion Residuals  
 Report To: Jiju Abraham  
 Copy To: Geosyntec  
 Address: 2480 Maner Road  
 Atlanta, GA 30339  
 Email: j.abraham@southernco.com  
 Phone: (404)506-7239 Fax  
 Project Name: Plant Bowen Ash Pond  
 Project #: \_\_\_\_\_

### Section B

#### Required Project Information:

Company Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Pace Order #: SCS10948606  
 Pace Project Manager: betsy.mcdaniel@pacelabs.com  
 Pace Profile #: 315

### Section C

#### Invoice Information:

Attention: \_\_\_\_\_  
 Regulatory Agency: \_\_\_\_\_  
 State / Location: GA

Page: **1** of **1**

ITEM #	MATRIX CODE (see vial codes to left)	MATRIX CODE	DATE	TIME	SAMPLER TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analyses Test Y/N	Requested Analysis Filtered (Y/N)	Residual Chrome (Y/N)		
							H2SO4	HNO3	HCl	H2O2	AsH3	As2O3	Methanol	Other	TS, Cl, F, SO4	Metals 6020 App. III				Metals 6020/7470 App. IV (Ultr)	Radium 226, 228
1	B6WC-14	WT 6	4/4/19	0903		4	1	3							X	X	X				
2	B6WC-25	WT 6	4/4/19	1028		6	1	5							X	X	X				
3	B6WC-31	WT 6	4/4/19	1110		4	1	3							X	X	X				
4	B6WC-34D	WT 6	4/4/19	1550		4	1	3							X	X	X				
5	B6WC-35D	WT 6	4/4/19	1240		4	1	3							X	X	X				
6	DUP-3	WT 6	4/4/19	---		4	1	3							X	X	X				
7	FB1040419	WT 6	4/4/19	1244		4	1	3							X	X	X				
8	FB6L040419	WT 6	4/4/19	1258		4	1	3							X	X	X				

WO#: 2617079

RELINQUISHED BY / LABELATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on	Custody	Sealed	Cooler	Samples	Intact
[Signature]	4-5-19	10:20	[Signature]	4-5-19	10:20	0.5	7	7	7	7	7	7
			[Signature]	4/5/19	11:20							



Sample Condition Upon Receipt

Client Name: GCA Power

Project # \_\_\_\_\_

**WO#: 2617079**

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: \_\_\_\_\_

PM: **BM** Due Date: **04/12/19**  
CLIENT: **GAPower-CCR**

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 83 Type of Ice:  Wet  Blue  None

Samples on ice, cooling process has begun

Cooler Temperature 0.3 Biological Tissue is Frozen: Yes No  
Temp should be above freezing to 6°C

Date and initials of person examining contents: 4/5/19 MK

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.		
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.		
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.		
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.		
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.		
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.		
-Includes date/time/ID/Analysis Matrix:	<u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):	_____			

Client Notification/ Resolution: \_\_\_\_\_

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Field Data Required? Y / N

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



April 29, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

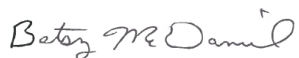
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2617080

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617080

---

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 9526  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617080001	BGWC-14	Water	04/04/19 09:03	04/05/19 11:20
2617080002	BGWC-25	Water	04/04/19 10:28	04/05/19 11:20
2617080003	BGWC-31	Water	04/04/19 11:10	04/05/19 11:20
2617080004	BGWC-34D	Water	04/04/19 15:50	04/05/19 11:20
2617080005	BGWC-35D	Water	04/04/19 12:40	04/05/19 11:20
2617080006	Dup-3	Water	04/04/19 00:00	04/05/19 11:20
2617080007	FBL040419	Water	04/04/19 12:44	04/05/19 11:20
2617080008	EQBL040419	Water	04/04/19 12:58	04/05/19 11:20

## REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617080001	BGWC-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617080002	BGWC-25	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617080003	BGWC-31	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617080004	BGWC-34D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617080005	BGWC-35D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617080006	Dup-3	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617080007	FBL040419	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617080008	EQBL040419	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

**REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

**Sample: BGWC-14**      **Lab ID: 2617080001**      Collected: 04/04/19 09:03      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>5.46 ± 1.20 (0.677)</b> <b>C:90% T:NA</b>	pCi/L	04/17/19 07:50	13982-63-3	
Radium-228	EPA 9320	<b>3.02 ± 0.751 (0.693)</b> <b>C:85% T:78%</b>	pCi/L	04/18/19 12:30	15262-20-1	
Total Radium	Total Radium Calculation	<b>8.48 ± 1.95 (1.37)</b>	pCi/L	04/22/19 11:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

**Sample: BGWC-25**      **Lab ID: 2617080002**      Collected: 04/04/19 10:28      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.186 ± 0.242 (0.504)</b> C:86% T:NA	pCi/L	04/17/19 07:51	13982-63-3	
Radium-228	EPA 9320	<b>0.160 ± 0.372 (0.824)</b> C:84% T:79%	pCi/L	04/18/19 12:30	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.346 ± 0.614 (1.33)</b>	pCi/L	04/22/19 11:17	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

**Sample: BGWC-31**      **Lab ID: 2617080003**      Collected: 04/04/19 11:10      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.808 ± 0.423 (0.604)</b> C:80% T:NA	pCi/L	04/17/19 07:51	13982-63-3	
Radium-228	EPA 9320	<b>0.678 ± 0.386 (0.705)</b> C:82% T:80%	pCi/L	04/18/19 12:30	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.49 ± 0.809 (1.31)</b>	pCi/L	04/22/19 11:17	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

**Sample: BGWC-34D**      **Lab ID: 2617080004**      Collected: 04/04/19 15:50      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.000 ± 0.448 (0.555)</b> C:80% T:NA	pCi/L	04/17/19 07:54	13982-63-3	
Radium-228	EPA 9320	<b>0.891 ± 0.558 (1.07)</b> C:82% T:62%	pCi/L	04/18/19 12:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.89 ± 1.01 (1.63)</b>	pCi/L	04/22/19 11:17	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

Sample: <b>BGWC-35D</b>		Lab ID: <b>2617080005</b>	Collected: 04/04/19 12:40	Received: 04/05/19 11:20	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.08 ± 0.459</b>	<b>(0.597)</b>	pCi/L	04/17/19 07:51	13982-63-3	
Radium-228	EPA 9320	<b>1.29 ± 0.448</b>	<b>(0.635)</b>	pCi/L	04/18/19 12:30	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.37 ± 0.907</b>	<b>(1.23)</b>	pCi/L	04/22/19 11:17	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

**Sample: Dup-3**      **Lab ID: 2617080006**      Collected: 04/04/19 00:00      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.330 ± 0.253 (0.397)</b> C:89% T:NA	pCi/L	04/17/19 07:50	13982-63-3	
Radium-228	EPA 9320	<b>0.224 ± 0.313 (0.672)</b> C:85% T:80%	pCi/L	04/18/19 12:30	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.554 ± 0.566 (1.07)</b>	pCi/L	04/22/19 11:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

**Sample: FBL040419**      **Lab ID: 2617080007**      Collected: 04/04/19 12:44      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.121 ± 0.220 (0.501)</b> C:90% T:NA	pCi/L	04/17/19 07:51	13982-63-3	
Radium-228	EPA 9320	<b>0.679 ± 0.367 (0.653)</b> C:82% T:79%	pCi/L	04/18/19 12:30	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.800 ± 0.587 (1.15)</b>	pCi/L	04/22/19 11:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

**Sample: EQBL040419**      **Lab ID: 2617080008**      Collected: 04/04/19 12:58      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0490 ± 0.173 (0.440)</b> C:89% T:NA	pCi/L	04/17/19 07:52	13982-63-3	
Radium-228	EPA 9320	<b>0.446 ± 0.427 (0.887)</b> C:83% T:82%	pCi/L	04/18/19 12:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.495 ± 0.600 (1.33)</b>	pCi/L	04/22/19 11:17	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

QC Batch: 337911

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2617080001, 2617080002, 2617080003, 2617080004, 2617080005, 2617080006, 2617080007, 2617080008

METHOD BLANK: 1644521

Matrix: Water

Associated Lab Samples: 2617080001, 2617080002, 2617080003, 2617080004, 2617080005, 2617080006, 2617080007, 2617080008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.526 ± 0.315 (0.569) C:87% T:76%	pCi/L	04/18/19 12:31	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617080

QC Batch: 337917

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2617080001, 2617080002, 2617080003, 2617080004, 2617080005, 2617080006, 2617080007, 2617080008

METHOD BLANK: 1644525

Matrix: Water

Associated Lab Samples: 2617080001, 2617080002, 2617080003, 2617080004, 2617080005, 2617080006, 2617080007, 2617080008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.221 ± 0.211 (0.378) C:90% T:NA	pCi/L	04/17/19 08:36	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALIFIERS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617080

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617080

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617080001	BGWC-14	EPA 9315	337917		
2617080002	BGWC-25	EPA 9315	337917		
2617080003	BGWC-31	EPA 9315	337917		
2617080004	BGWC-34D	EPA 9315	337917		
2617080005	BGWC-35D	EPA 9315	337917		
2617080006	Dup-3	EPA 9315	337917		
2617080007	FBL040419	EPA 9315	337917		
2617080008	EQBL040419	EPA 9315	337917		
2617080001	BGWC-14	EPA 9320	337911		
2617080002	BGWC-25	EPA 9320	337911		
2617080003	BGWC-31	EPA 9320	337911		
2617080004	BGWC-34D	EPA 9320	337911		
2617080005	BGWC-35D	EPA 9320	337911		
2617080006	Dup-3	EPA 9320	337911		
2617080007	FBL040419	EPA 9320	337911		
2617080008	EQBL040419	EPA 9320	337911		
2617080001	BGWC-14	Total Radium Calculation	339290		
2617080002	BGWC-25	Total Radium Calculation	339290		
2617080003	BGWC-31	Total Radium Calculation	339290		
2617080004	BGWC-34D	Total Radium Calculation	339290		
2617080005	BGWC-35D	Total Radium Calculation	339290		
2617080006	Dup-3	Total Radium Calculation	339290		
2617080007	FBL040419	Total Radium Calculation	339290		
2617080008	EQBL040419	Total Radium Calculation	339290		

**REPORT OF LABORATORY ANALYSIS**

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# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

**Section A**  
Required Client Information: Company: Georgia Power - Coal Combustion Residuals; Report To: Joju Abraham; Copy To: Geosyntec; Address: 2480 Maner Road, Atlanta, GA 30339; Email: j Abraham@southernco.com; Phone: (404)506-7239; Fax: ; Requested Due Date: ;

**Section B**  
Required Project Information: Project Name: Plant Bowen Ash Pond; Project #: ; Purchase Order #: SCS10346506; Matrix Code: ;

**Section C**  
Invoice Information: Attention: ; Company Name: ; Address: ; State / Location: GA; Regulatory Agency: ;

Page: 1 of 1

ITEM #	MATRIX CODE (see vial codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS PRESERVED	PRESERVATIVES										ANALYSES TEST Y/N	Requested Analysis Filtered (Y/N)			
			Date	Time					H2SO4	HNO3	HCl	NaOH	H2S2O3	Methanol	Other	TDS, Cl, F, SO4	Metals 6020 App. III	Metals 6020/470 App. IV (U.S.P.)			Radium 226, 228		
1	B6WC-14	W6	4/4/19	0903			4	3								X	X	X					
2	B6WC-25	W6	4/4/19	1028			6	5								X	X	X					
3	B6WC-31	W6	4/4/19	1110			4	3								X	X	X					
4	B6WC-34D	W6	4/4/19	1550			4	3								X	X	X					
5	B6WC-35D	W6	4/4/19	1240			4	3								X	X	X					
6	DUP-3	W6	4/4/19	—			4	3								X	X	X					
7	FBL040419	W6	4/4/19	1244			4	3								X	X	X					
8	E06L040419	W6	4/4/19	1258			4	3								X	X	X					
9																							
10																							
11																							
12																							

WO#: 2617080

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
<i>[Signature]</i> Deso Lh	4-5-19	10:20	<i>[Signature]</i> (Pace)	4-5-19	10:20	
			M. Rahman	4/5/19	11:20	Received on ice (Y/N) <input checked="" type="checkbox"/> Sealed (Y/N) <input checked="" type="checkbox"/> Cooled (Y/N) <input checked="" type="checkbox"/> Samples Intact (Y/N) <input checked="" type="checkbox"/>

SAMPLER NAME AND SIGNATURE: *[Signature]*  
PRINT Name of SAMPLER: Audrey Crafton, Veronica Fay, Brian Steele  
SIGNATURE of SAMPLER: *[Signature]*  
DATE Signed: 4/4/19

TEMP in C: 0.3



Sample Condition Upon Receipt

Client Name: GCA Power

Project # \_\_\_\_\_

WO#: **2617080**

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: \_\_\_\_\_

PM: **BM** Due Date: **05/03/19**  
CLIENT: **GAPower-CCR**

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 83 Type of Ice:  Wet  Blue  None

Cooler Temperature 0.3 Biological Tissue is Frozen: Yes No  
Temp should be above freezing to 6°C

Samples on ice, cooling process has begun  
Date and Initials of person examining contents: 4/5/19 MK

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.		
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.		
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.		
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.		
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.		
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.		
-Includes date/time/ID/Analysis Matrix:	<u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):	_____			

Client Notification/ Resolution: \_\_\_\_\_

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Field Data Required? Y / N

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

May 24, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2617082

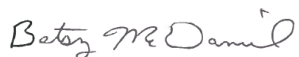
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the one issued on 4/18/2019. The report has been revised to correct mercury units per consultant request. No other changes have been made to this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

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### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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### Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617082001	BGWC-10	Water	04/02/19 16:15	04/05/19 11:20
2617082002	BGWC-30	Water	04/02/19 10:24	04/05/19 11:20
2617082003	BGWC-36D	Water	04/02/19 12:10	04/05/19 11:20
2617082004	BGWC-17	Water	04/02/19 14:43	04/05/19 11:20
2617082005	BGWC-18	Water	04/02/19 16:28	04/05/19 11:20
2617082006	BGWC-7	Water	04/02/19 09:58	04/05/19 11:20
2617082007	BGWA-6	Water	04/02/19 11:33	04/05/19 11:20
2617082008	BGWC-16	Water	04/02/19 13:22	04/05/19 11:20
2617082009	Dup-2	Water	04/02/19 00:00	04/05/19 11:20
2617082010	FBL040219	Water	04/02/19 16:14	04/05/19 11:20
2617082011	EQBL040219	Water	04/02/19 16:20	04/05/19 11:20

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617082001	BGWC-10	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617082002	BGWC-30	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617082003	BGWC-36D	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617082004	BGWC-17	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617082005	BGWC-18	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617082006	BGWC-7	EPA 6020B	JMW1, SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617082007	BGWA-6	EPA 6020B	JMW1, SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617082008	BGWC-16	EPA 6020B	JMW1, SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617082009	Dup-2	EPA 6020B	JMW1, SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617082010	FBL040219	EPA 6020B	SER	13	PASI-A

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617082011	EQBL040219	EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
		EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Sample: <b>BGWC-10</b>		Lab ID: <b>2617082001</b>		Collected: 04/02/19 16:15		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.0057</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 17:31	7440-38-2	
Barium	<b>0.045</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 17:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 17:31	7440-41-7	
Boron	<b>0.51J</b>	mg/L	1.0	0.026	10	04/09/19 20:29	04/11/19 18:03	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 17:31	7440-43-9	
Calcium	<b>57.8</b>	mg/L	5.0	0.21	10	04/09/19 20:29	04/11/19 18:03	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 17:31	7440-47-3	
Cobalt	<b>0.00027J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 17:31	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 17:31	7439-92-1	
Lithium	<b>0.0012J</b>	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 17:31	7439-93-2	
Molybdenum	<b>0.0032J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 17:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 17:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 17:31	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:44	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>355</b>	mg/L	25.0	10.0	1		04/09/19 18:50		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>24.1</b>	mg/L	0.25	0.024	1		04/10/19 04:51	16887-00-6	
Fluoride	<b>0.044J</b>	mg/L	0.30	0.029	1		04/10/19 04:51	16984-48-8	
Sulfate	<b>105</b>	mg/L	10.0	0.17	10		04/10/19 10:34	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Sample: <b>BGWC-30</b>		Lab ID: <b>2617082002</b>		Collected: 04/02/19 10:24		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.00024J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 17:35	7440-38-2	
Barium	<b>0.075</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 17:35	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 17:35	7440-41-7	
Boron	<b>6.1J</b>	mg/L	10.0	0.26	100	04/09/19 20:29	04/11/19 18:06	7440-42-8	
Cadmium	<b>0.000079J</b>	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 17:35	7440-43-9	
Calcium	<b>181</b>	mg/L	50.0	2.1	100	04/09/19 20:29	04/11/19 18:06	7440-70-2	
Chromium	<b>0.00095J</b>	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 17:35	7440-47-3	
Cobalt	<b>0.00022J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 17:35	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 17:35	7439-92-1	
Lithium	<b>0.0041J</b>	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 17:35	7439-93-2	
Molybdenum	<b>0.010</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 17:35	7439-98-7	
Selenium	<b>0.0092J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 17:35	7782-49-2	
Thallium	<b>0.00024J</b>	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 17:35	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:51	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>773</b>	mg/L	25.0	10.0	1		04/09/19 18:50		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>333</b>	mg/L	5.0	0.48	20		04/10/19 10:56	16887-00-6	
Fluoride	<b>0.68</b>	mg/L	0.30	0.029	1		04/10/19 05:12	16984-48-8	
Sulfate	<b>153</b>	mg/L	20.0	0.34	20		04/10/19 10:56	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617082

Sample: <b>BGWC-36D</b>		Lab ID: <b>2617082003</b>		Collected: 04/02/19 12:10		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.00039J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 17:38	7440-38-2	
Barium	<b>0.074</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 17:38	7440-39-3	
Beryllium	<b>0.000070J</b>	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 17:38	7440-41-7	
Boron	<b>6.7J</b>	mg/L	10.0	0.26	100	04/09/19 20:29	04/11/19 18:10	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 17:38	7440-43-9	
Calcium	<b>200</b>	mg/L	50.0	2.1	100	04/09/19 20:29	04/11/19 18:10	7440-70-2	
Chromium	<b>0.0010J</b>	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 17:38	7440-47-3	
Cobalt	<b>0.0011J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 17:38	7440-48-4	
Lead	<b>0.00067J</b>	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 17:38	7439-92-1	
Lithium	<b>0.0021J</b>	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 17:38	7439-93-2	
Molybdenum	<b>0.011</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 17:38	7439-98-7	
Selenium	<b>0.014</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 17:38	7782-49-2	
Thallium	<b>0.00022J</b>	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 17:38	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:53	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>976</b>	mg/L	25.0	10.0	1		04/09/19 18:50		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>378</b>	mg/L	2.5	0.24	10		04/10/19 11:18	16887-00-6	
Fluoride	<b>0.44</b>	mg/L	0.30	0.029	1		04/10/19 05:55	16984-48-8	
Sulfate	<b>192</b>	mg/L	10.0	0.17	10		04/10/19 11:18	14808-79-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Sample: <b>BGWC-17</b>		Lab ID: <b>2617082004</b>		Collected: 04/02/19 14:43		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	<b>0.00024J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 17:42	7440-38-2		
Barium	<b>0.015</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 17:42	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 17:42	7440-41-7		
Boron	<b>0.95J</b>	mg/L	1.0	0.026	10	04/09/19 20:29	04/11/19 18:44	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 17:42	7440-43-9		
Calcium	<b>63.9</b>	mg/L	5.0	0.21	10	04/09/19 20:29	04/11/19 18:44	7440-70-2		
Chromium	<b>0.00044J</b>	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 17:42	7440-47-3		
Cobalt	<b>0.00015J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 17:42	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 17:42	7439-92-1		
Lithium	<b>0.00069J</b>	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 17:42	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 17:42	7439-98-7		
Selenium	<b>0.00077J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 17:42	7782-49-2		
Thallium	<b>0.000075J</b>	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 17:42	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.00040</b>	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:55	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>321</b>	mg/L	25.0	10.0	1		04/09/19 18:51			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>18.7</b>	mg/L	0.25	0.024	1		04/10/19 06:16	16887-00-6		
Fluoride	<b>0.14J</b>	mg/L	0.30	0.029	1		04/10/19 06:16	16984-48-8		
Sulfate	<b>86.9</b>	mg/L	10.0	0.17	10		04/10/19 13:08	14808-79-8		

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Sample: <b>BGWC-18</b>		Lab ID: <b>2617082005</b>		Collected: 04/02/19 16:28		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.00015J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 20:24	7440-38-2	
Barium	<b>0.028</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 20:24	7440-39-3	
Beryllium	<b>0.000052J</b>	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 20:24	7440-41-7	
Boron	<b>0.56J</b>	mg/L	1.0	0.026	10	04/09/19 20:29	04/11/19 18:47	7440-42-8	
Cadmium	<b>0.000073J</b>	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 20:24	7440-43-9	
Calcium	<b>53.3</b>	mg/L	5.0	0.21	10	04/09/19 20:29	04/11/19 18:47	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 20:24	7440-47-3	
Cobalt	<b>0.00012J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 20:24	7440-48-4	
Lead	<b>0.000081J</b>	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 20:24	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 20:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 20:24	7439-98-7	
Selenium	<b>0.0010J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 20:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 20:24	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 19:58	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>258</b>	mg/L	25.0	10.0	1		04/09/19 18:51		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>4.5</b>	mg/L	0.25	0.024	1		04/10/19 08:02	16887-00-6	
Fluoride	<b>0.044J</b>	mg/L	0.30	0.029	1		04/10/19 08:02	16984-48-8	
Sulfate	<b>70.1</b>	mg/L	10.0	0.17	10		04/10/19 13:29	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Sample: <b>BGWC-7</b>		Lab ID: <b>2617082006</b>		Collected: 04/02/19 09:58	Received: 04/05/19 11:20	Matrix: Water			
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.0016J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 20:28	7440-38-2	
Barium	<b>0.031</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 20:28	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 20:28	7440-41-7	
Boron	<b>1.4</b>	mg/L	1.0	0.026	10	04/09/19 20:29	04/11/19 18:51	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 20:28	7440-43-9	
Calcium	<b>140</b>	mg/L	10.0	0.41	20	04/09/19 20:29	04/12/19 01:36	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 20:28	7440-47-3	
Cobalt	<b>0.00094J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 20:28	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 20:28	7439-92-1	
Lithium	<b>0.0073J</b>	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 20:28	7439-93-2	
Molybdenum	<b>0.011</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 20:28	7439-98-7	
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 20:28	7782-49-2	
Thallium	<b>0.000070J</b>	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 20:28	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 20:00	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>728</b>	mg/L	25.0	10.0	1		04/09/19 18:51		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>9.4</b>	mg/L	0.25	0.024	1		04/10/19 08:24	16887-00-6	
Fluoride	<b>0.22J</b>	mg/L	0.30	0.029	1		04/10/19 08:24	16984-48-8	
Sulfate	<b>334</b>	mg/L	20.0	0.34	20		04/10/19 13:51	14808-79-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Sample: BGWA-6		Lab ID: 2617082007		Collected: 04/02/19 11:33		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.00032J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 20:31	7440-38-2	
Barium	<b>0.011</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 20:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 20:31	7440-41-7	
Boron	<b>0.037J</b>	mg/L	0.20	0.0051	2	04/09/19 20:29	04/11/19 18:54	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 20:31	7440-43-9	
Calcium	<b>64.1</b>	mg/L	10.0	0.41	20	04/09/19 20:29	04/12/19 01:40	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 20:31	7440-47-3	
Cobalt	<b>0.00016J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 20:31	7440-48-4	
Lead	<b>0.000070J</b>	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 20:31	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 20:31	7439-93-2	
Molybdenum	<b>0.00026J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 20:31	7439-98-7	
Selenium	<b>0.00031J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 20:31	7782-49-2	
Thallium	<b>0.000062J</b>	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 20:31	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 20:03	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>295</b>	mg/L	25.0	10.0	1		04/09/19 18:51		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>9.0</b>	mg/L	0.25	0.024	1		04/10/19 08:45	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 08:45	16984-48-8	
Sulfate	<b>29.8</b>	mg/L	1.0	0.017	1		04/10/19 08:45	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Sample: <b>BGWC-16</b>		Lab ID: <b>2617082008</b>		Collected: 04/02/19 13:22		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.00030J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 20:35	7440-38-2	
Barium	<b>0.025</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 20:35	7440-39-3	
Beryllium	<b>0.000063J</b>	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 20:35	7440-41-7	
Boron	<b>1.1</b>	mg/L	1.0	0.026	10	04/09/19 20:29	04/11/19 18:58	7440-42-8	
Cadmium	<b>0.0014</b>	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 20:35	7440-43-9	
Calcium	<b>117</b>	mg/L	10.0	0.41	20	04/09/19 20:29	04/12/19 01:43	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 20:35	7440-47-3	
Cobalt	<b>0.0056J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 20:35	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 20:35	7439-92-1	
Lithium	<b>0.00049J</b>	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 20:35	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 20:35	7439-98-7	
Selenium	<b>0.00060J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 20:35	7782-49-2	
Thallium	<b>0.00020J</b>	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 20:35	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 20:05	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>604</b>	mg/L	25.0	10.0	1		04/09/19 18:51		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>20.3</b>	mg/L	0.25	0.024	1		04/10/19 09:07	16887-00-6	
Fluoride	<b>0.23J</b>	mg/L	0.30	0.029	1		04/10/19 09:07	16984-48-8	
Sulfate	<b>272</b>	mg/L	20.0	0.34	20		04/10/19 14:13	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Sample: Dup-2		Lab ID: 2617082009		Collected: 04/02/19 00:00		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	<b>0.00012J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 20:39	7440-38-2	B	
Barium	<b>0.025</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 20:39	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 20:39	7440-41-7		
Boron	<b>0.49J</b>	mg/L	0.50	0.013	5	04/09/19 20:29	04/11/19 14:51	7440-42-8	M1	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 20:39	7440-43-9		
Calcium	<b>55.8</b>	mg/L	10.0	0.41	20	04/09/19 20:29	04/12/19 01:47	7440-70-2	M6	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 20:39	7440-47-3		
Cobalt	<b>0.00010J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 20:39	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 20:39	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 20:39	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 20:39	7439-98-7		
Selenium	<b>0.00091J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 20:39	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 20:39	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 20:07	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>262</b>	mg/L	25.0	10.0	1		04/09/19 18:51			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>4.5</b>	mg/L	0.25	0.024	1		04/10/19 09:29	16887-00-6		
Fluoride	<b>0.047J</b>	mg/L	0.30	0.029	1		04/10/19 09:29	16984-48-8		
Sulfate	<b>72.0</b>	mg/L	20.0	0.34	20		04/10/19 14:35	14808-79-8		

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Sample: <b>FBL040219</b>		Lab ID: <b>2617082010</b>		Collected: 04/02/19 16:14		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	ND	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/11/19 16:27	7440-38-2		
Barium	<b>0.00011J</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/11/19 16:27	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/11/19 16:27	7440-41-7		
Boron	<b>0.0094J</b>	mg/L	0.10	0.0026	1	04/09/19 20:29	04/11/19 16:27	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/11/19 16:27	7440-43-9		
Calcium	ND	mg/L	0.50	0.021	1	04/09/19 20:29	04/11/19 16:27	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/11/19 16:27	7440-47-3		
Cobalt	ND	mg/L	0.010	0.000050	1	04/09/19 20:29	04/11/19 16:27	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/11/19 16:27	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/11/19 16:27	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.00010	1	04/09/19 20:29	04/11/19 16:27	7439-98-7		
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 20:29	04/11/19 16:27	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/11/19 16:27	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 18:30	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>13.0J</b>	mg/L	25.0	10.0	1		04/09/19 18:52			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>0.088J</b>	mg/L	0.25	0.024	1		04/10/19 09:51	16887-00-6	B	
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 09:51	16984-48-8		
Sulfate	<b>0.051J</b>	mg/L	1.0	0.017	1		04/10/19 09:51	14808-79-8		

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

Sample: EQBL040219		Lab ID: 2617082011		Collected: 04/02/19 16:20		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	ND	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/11/19 16:31	7440-38-2	
Barium	<b>0.000076J</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/11/19 16:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/11/19 16:31	7440-41-7	
Boron	<b>0.0035J</b>	mg/L	0.10	0.0026	1	04/09/19 20:29	04/11/19 16:31	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/11/19 16:31	7440-43-9	
Calcium	ND	mg/L	0.50	0.021	1	04/09/19 20:29	04/11/19 16:31	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/11/19 16:31	7440-47-3	
Cobalt	ND	mg/L	0.010	0.000050	1	04/09/19 20:29	04/11/19 16:31	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/11/19 16:31	7439-92-1	
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/11/19 16:31	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00010	1	04/09/19 20:29	04/11/19 16:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 20:29	04/11/19 16:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/11/19 16:31	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 18:32	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>11.0J</b>	mg/L	25.0	10.0	1		04/09/19 18:52		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>0.19J</b>	mg/L	0.25	0.024	1		04/10/19 10:13	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 10:13	16984-48-8	
Sulfate	<b>0.052J</b>	mg/L	1.0	0.017	1		04/10/19 10:13	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617082

QC Batch: 468366 Analysis Method: EPA 7470A  
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury  
Associated Lab Samples: 2617082001, 2617082002, 2617082003, 2617082004, 2617082005, 2617082006, 2617082007, 2617082008, 2617082009

METHOD BLANK: 2544199 Matrix: Water  
Associated Lab Samples: 2617082001, 2617082002, 2617082003, 2617082004, 2617082005, 2617082006, 2617082007, 2617082008, 2617082009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00010	04/11/19 19:03	

LABORATORY CONTROL SAMPLE: 2544200

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544201 2544202

Parameter	Units	2617069003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
										RPD	RPD	
Mercury	mg/L				0.0019	0.0021				10	25	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617082

QC Batch: 468368 Analysis Method: EPA 7470A  
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury  
Associated Lab Samples: 2617082010, 2617082011

METHOD BLANK: 2544203 Matrix: Water  
Associated Lab Samples: 2617082010, 2617082011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00010	04/11/19 17:59	

LABORATORY CONTROL SAMPLE: 2544204

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0023	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544205 2544206

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92421822002 Result	Spike Conc.	Spike Conc.	Result						
Mercury	mg/L				0.0024	0.0023			2	25	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617082

QC Batch: 468328 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3010A Analysis Description: 6020 MET  
Associated Lab Samples: 2617082001, 2617082002, 2617082003, 2617082004, 2617082005, 2617082006, 2617082007, 2617082008

METHOD BLANK: 2544084 Matrix: Water  
Associated Lab Samples: 2617082001, 2617082002, 2617082003, 2617082004, 2617082005, 2617082006, 2617082007, 2617082008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.000060	04/10/19 16:27	
Barium	mg/L	ND	0.010	0.000060	04/10/19 16:27	
Beryllium	mg/L	ND	0.0030	0.000050	04/10/19 16:27	
Boron	mg/L	ND	0.10	0.0026	04/10/19 16:27	
Cadmium	mg/L	ND	0.0010	0.000070	04/10/19 16:27	
Calcium	mg/L	ND	0.50	0.021	04/10/19 16:27	
Chromium	mg/L	ND	0.010	0.00042	04/10/19 16:27	
Cobalt	mg/L	ND	0.010	0.000050	04/10/19 16:27	
Lead	mg/L	ND	0.0050	0.000050	04/10/19 16:27	
Lithium	mg/L	ND	0.050	0.00042	04/10/19 16:27	
Molybdenum	mg/L	ND	0.010	0.00010	04/10/19 16:27	
Selenium	mg/L	ND	0.010	0.000080	04/10/19 16:27	
Thallium	mg/L	ND	0.0010	0.000060	04/10/19 16:27	

LABORATORY CONTROL SAMPLE: 2544085

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.010	100	80-120	
Barium	mg/L	0.05	0.049	99	80-120	
Beryllium	mg/L	0.01	0.0090	90	80-120	
Boron	mg/L	0.05	0.048J	95	80-120	
Cadmium	mg/L	0.01	0.010	100	80-120	
Calcium	mg/L	0.62	0.62	100	80-120	
Chromium	mg/L	0.05	0.050	101	80-120	
Cobalt	mg/L	0.01	0.010	101	80-120	
Lead	mg/L	0.05	0.050	100	80-120	
Lithium	mg/L	0.05	0.049J	99	80-120	
Molybdenum	mg/L	0.05	0.050	101	80-120	
Selenium	mg/L	0.05	0.050	100	80-120	
Thallium	mg/L	0.01	0.0099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544086 2544087

Parameter	Units	MS		MSD		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		92421822002	Spike Conc.	MS Result	MSD Result						
Arsenic	mg/L			0.0099	0.0099				1	20	
Barium	mg/L			0.060	0.061				1	20	
Beryllium	mg/L			0.0090	0.0091				1	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544086												2544087	
Parameter	Units	92421822002 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Cadmium	mg/L				0.010	0.010				1	20		
Chromium	mg/L				0.049	0.050				1	20		
Cobalt	mg/L				0.0099J	0.010				1	20		
Lead	mg/L				0.049	0.050				2	20		
Lithium	mg/L				0.048J	0.047J				2	20		
Molybdenum	mg/L				0.050	0.050				1	20		
Selenium	mg/L				0.048	0.049				2	20		
Thallium	mg/L				0.0097	0.0099				2	20		

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617082

QC Batch: 468329 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3010A Analysis Description: 6020 MET  
Associated Lab Samples: 2617082009, 2617082010, 2617082011

METHOD BLANK: 2544088 Matrix: Water  
Associated Lab Samples: 2617082009, 2617082010, 2617082011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.000062J	0.0050	0.000060	04/10/19 19:29	
Barium	mg/L	ND	0.010	0.000060	04/10/19 19:29	
Beryllium	mg/L	ND	0.0030	0.000050	04/10/19 19:29	
Boron	mg/L	ND	0.10	0.0026	04/10/19 19:29	
Cadmium	mg/L	ND	0.0010	0.000070	04/10/19 19:29	
Calcium	mg/L	ND	0.50	0.021	04/10/19 19:29	
Chromium	mg/L	ND	0.010	0.00042	04/10/19 19:29	
Cobalt	mg/L	ND	0.010	0.000050	04/10/19 19:29	
Lead	mg/L	ND	0.0050	0.000050	04/10/19 19:29	BC
Lithium	mg/L	ND	0.050	0.00042	04/10/19 19:29	
Molybdenum	mg/L	ND	0.010	0.00010	04/10/19 19:29	
Selenium	mg/L	ND	0.010	0.000080	04/10/19 19:29	
Thallium	mg/L	ND	0.0010	0.000060	04/10/19 19:29	

LABORATORY CONTROL SAMPLE: 2544089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.010	103	80-120	
Barium	mg/L	0.05	0.050	99	80-120	
Beryllium	mg/L	0.01	0.0095	95	80-120	
Boron	mg/L	0.05	0.049J	98	80-120	
Cadmium	mg/L	0.01	0.010	102	80-120	
Calcium	mg/L	0.62	0.64	102	80-120	
Chromium	mg/L	0.05	0.050	101	80-120	
Cobalt	mg/L	0.01	0.010	101	80-120	
Lead	mg/L	0.05	0.051	101	80-120	BC
Lithium	mg/L	0.05	0.052	104	80-120	
Molybdenum	mg/L	0.05	0.052	103	80-120	
Selenium	mg/L	0.05	0.051	102	80-120	
Thallium	mg/L	0.01	0.010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544090 2544091

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2617082009 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
Arsenic	mg/L	0.00012J	0.01	0.01	0.0092	0.0091	91	90	75-125	1	20	
Barium	mg/L	0.025	0.05	0.05	0.068	0.067	87	85	75-125	2	20	
Beryllium	mg/L	ND	0.01	0.01	0.0081	0.0080	80	79	75-125	2	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

		MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544090			2544091							
Parameter	Units	2617082009 Result	MS	MSD	MS	MSD	MS	MSD	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Boron	mg/L	0.49J	0.05	0.05	0.56	0.58	137	180	75-125	4	20	M1
Cadmium	mg/L	ND	0.01	0.01	0.0091	0.0091	91	90	75-125	0	20	
Calcium	mg/L	55.8	0.62	0.62	54.5	53.7	-203	-330	75-125	1	20	M6
Chromium	mg/L	ND	0.05	0.05	0.045	0.044	89	88	75-125	1	20	
Cobalt	mg/L	0.00010J	0.01	0.01	0.0089J	0.0088J	88	87	75-125	1	20	
Lead	mg/L	ND	0.05	0.05	0.044	0.045	88	90	75-125	2	20	
Lithium	mg/L	ND	0.05	0.05	0.044J	0.044J	89	87	75-125	2	20	
Molybdenum	mg/L	ND	0.05	0.05	0.046	0.046	92	93	75-125	1	20	
Selenium	mg/L	0.00091J	0.05	0.05	0.046	0.045	90	88	75-125	2	20	
Thallium	mg/L	ND	0.01	0.01	0.0088	0.0090	88	90	75-125	2	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

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QC Batch: 26059 Analysis Method: SM 2540C  
 QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids  
 Associated Lab Samples: 2617082001, 2617082002, 2617082003, 2617082004, 2617082005, 2617082006, 2617082007, 2617082008,  
 2617082009, 2617082010, 2617082011

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LABORATORY CONTROL SAMPLE: 117667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	407	102	84-108	

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SAMPLE DUPLICATE: 117668

Parameter	Units	2616931001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	540	670	21	10	D6

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SAMPLE DUPLICATE: 117669

Parameter	Units	2617082006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	728	766	5	10	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617082

QC Batch: 26063 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 2617082001, 2617082002, 2617082003, 2617082004, 2617082005, 2617082006, 2617082007, 2617082008, 2617082009, 2617082010, 2617082011

METHOD BLANK: 117675 Matrix: Water  
Associated Lab Samples: 2617082001, 2617082002, 2617082003, 2617082004, 2617082005, 2617082006, 2617082007, 2617082008, 2617082009, 2617082010, 2617082011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.053J	0.25	0.024	04/09/19 21:23	
Fluoride	mg/L	ND	0.30	0.029	04/09/19 21:23	
Sulfate	mg/L	ND	1.0	0.017	04/09/19 21:23	

LABORATORY CONTROL SAMPLE: 117676

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.1	101	90-110	
Sulfate	mg/L	10	9.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 117677 117678

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2617079001 Result	Spike Conc.	Spike Conc.	MS Result								
Chloride	mg/L	33.7	10	10	40.3	40.3	65	65	90-110	0	15	M1	
Fluoride	mg/L	0.44	10	10	10.2	10.1	97	97	90-110	0	15		
Sulfate	mg/L	255	10	10	178	178	-769	-769	90-110	0	15	E,M1	

MATRIX SPIKE SAMPLE: 117679

Parameter	Units	2617079002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.8	10	13.4	96	90-110	
Fluoride	mg/L	ND	10	9.9	99	90-110	
Sulfate	mg/L	11.4	10	20.5	91	90-110	

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617082

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

BC The same analyte was detected in an associated blank at a concentration above 1/2 the reporting limit but below the laboratory reporting limit.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617082

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617082001	BGWC-10	EPA 3010A	468328	EPA 6020B	468390
2617082002	BGWC-30	EPA 3010A	468328	EPA 6020B	468390
2617082003	BGWC-36D	EPA 3010A	468328	EPA 6020B	468390
2617082004	BGWC-17	EPA 3010A	468328	EPA 6020B	468390
2617082005	BGWC-18	EPA 3010A	468328	EPA 6020B	468390
2617082006	BGWC-7	EPA 3010A	468328	EPA 6020B	468390
2617082007	BGWA-6	EPA 3010A	468328	EPA 6020B	468390
2617082008	BGWC-16	EPA 3010A	468328	EPA 6020B	468390
2617082009	Dup-2	EPA 3010A	468329	EPA 6020B	468391
2617082010	FBL040219	EPA 3010A	468329	EPA 6020B	468391
2617082011	EQBL040219	EPA 3010A	468329	EPA 6020B	468391
2617082001	BGWC-10	EPA 7470A	468366	EPA 7470A	468612
2617082002	BGWC-30	EPA 7470A	468366	EPA 7470A	468612
2617082003	BGWC-36D	EPA 7470A	468366	EPA 7470A	468612
2617082004	BGWC-17	EPA 7470A	468366	EPA 7470A	468612
2617082005	BGWC-18	EPA 7470A	468366	EPA 7470A	468612
2617082006	BGWC-7	EPA 7470A	468366	EPA 7470A	468612
2617082007	BGWA-6	EPA 7470A	468366	EPA 7470A	468612
2617082008	BGWC-16	EPA 7470A	468366	EPA 7470A	468612
2617082009	Dup-2	EPA 7470A	468366	EPA 7470A	468612
2617082010	FBL040219	EPA 7470A	468368	EPA 7470A	468610
2617082011	EQBL040219	EPA 7470A	468368	EPA 7470A	468610
2617082001	BGWC-10	SM 2540C	26059		
2617082002	BGWC-30	SM 2540C	26059		
2617082003	BGWC-36D	SM 2540C	26059		
2617082004	BGWC-17	SM 2540C	26059		
2617082005	BGWC-18	SM 2540C	26059		
2617082006	BGWC-7	SM 2540C	26059		
2617082007	BGWA-6	SM 2540C	26059		
2617082008	BGWC-16	SM 2540C	26059		
2617082009	Dup-2	SM 2540C	26059		
2617082010	FBL040219	SM 2540C	26059		
2617082011	EQBL040219	SM 2540C	26059		
2617082001	BGWC-10	EPA 300.0	26063		
2617082002	BGWC-30	EPA 300.0	26063		
2617082003	BGWC-36D	EPA 300.0	26063		
2617082004	BGWC-17	EPA 300.0	26063		
2617082005	BGWC-18	EPA 300.0	26063		
2617082006	BGWC-7	EPA 300.0	26063		
2617082007	BGWA-6	EPA 300.0	26063		
2617082008	BGWC-16	EPA 300.0	26063		
2617082009	Dup-2	EPA 300.0	26063		
2617082010	FBL040219	EPA 300.0	26063		
2617082011	EQBL040219	EPA 300.0	26063		

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# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

<b>Section A</b>		<b>Section B</b>		<b>Section C</b>	
<b>Required Client Information:</b>		<b>Required Project Information:</b>		<b>Invoice Information:</b>	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Juju Abraham	Attention:	
Address:	2480 Manser Road Atlanta, GA 30339	Copy To:	Geosyntec	Company Name:	
Email:	jabraham@geosyntec.com	Whitney Law		Address:	
Phone:	(404)506-7239	Purchase Order #:	SCS10348606	Pace Quote:	
Requested Due Date:		Project Name:	Plant Bowen Ash Pond	Pace Project Manager:	belsy.mcdaniel@pacelabs.com
		Project #:		Pace Profile #:	315
				Regulatory Agency:	
				State / Location:	GA

#	SAMPLE ID One Character per box (A-Z, 0-9 /, -) Sample IDs must be unique	MATRIX CODE DW WW P SL WP AS OT TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	# OF CONTAINERS	PRESERVATIVES											ANALYSES TEST Y/N	Requested Analysis Filtered (Y/N)				
			Date	Time			H2SO4	HNO3	HCl	NaOH	MnSO4	Methanol	Other	DS, Cl, F, SO4	Metals 6020 App. III	Metals 60207470 App. IV (Ultr)	Radium 226, 228						
1	B6WDC-10		4/2/19	1615	G	41											X	X	X				
2	B6WDC-30		4/2/19	1024	G	61											X	X	X				
3	B6WDC-36D		4/2/19	1210	G	41											X	X	X				
4	B6WDC-17		4/2/19	1443	G	41											X	X	X				
5	B6WDC-18		4/2/19	1628	G	61											X	X	X				
6	B6WDC-17		4/2/19	0958	G	41											X	X	X				
7	B6WDC-6		4/2/19	1133	G	41											X	X	X				
8	B6WDC-16		4/2/19	1322	G	41											X	X	X				
9	Dup-2		4/2/19	-	G	41											X	X	X				
10	FBL040219		4/2/19	1614	G	41											X	X	X				
11	FBL040219		4/2/19	1620	G	41											X	X	X				
12																							

NO# : 2617082

RELABORATED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
<i>[Signature]</i>	4-5-19	10:20	<i>[Signature]</i>	4-5-19	19:20	
			<i>[Signature]</i>	4/5/19	11:20	
						0.3

SAMPLER NAME AND SIGNATURE: *[Signature]*

PRINT NAME OF SAMPLER: *[Signature]*

SIGNATURE OF ANALYST: *[Signature]*

DATE SIGNED: 4/2/19

TEMP IN C: \_\_\_\_\_

Received on: \_\_\_\_\_

Is (Y/N): \_\_\_\_\_

Custody Sealed (Y/N): \_\_\_\_\_

Cooler (Y/N): \_\_\_\_\_

Samples Intact (Y/N): \_\_\_\_\_



Sample Condition Upon Receipt

Client Name: GCA Power

Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
Tracking #: \_\_\_\_\_

WO#: **2617082**

PM: **BM** Due Date: **04/12/19**  
CLIENT: **GAPower-CCR**

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used 83 Type of Ice:  Wet  Blue  None

Samples on ice, cooling process has begun

Cooler Temperature 0.3 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 4/5/19 MK

Temp should be above freezing to 6°C Comments: \_\_\_\_\_

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.		
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.		
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.		
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.		
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.		
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.		
-Includes date/time/ID/Analysis Matrix:	<u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

April 29, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

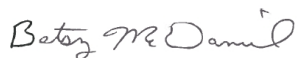
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2617084

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617084

---

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 9526  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617084001	BGWC-10	Water	04/02/19 16:15	04/05/19 11:20
2617084002	BGWC-30	Water	04/02/19 10:24	04/05/19 11:20
2617084003	BGWC-36D	Water	04/02/19 12:10	04/05/19 11:20
2617084004	BGWC-17	Water	04/02/19 14:43	04/05/19 11:20
2617084005	BGWC-18	Water	04/02/19 16:28	04/05/19 11:20
2617084006	BGWC-7	Water	04/02/19 09:58	04/05/19 11:20
2617084007	BGWA-6	Water	04/02/19 11:33	04/05/19 11:20
2617084008	BGWC-16	Water	04/02/19 13:22	04/05/19 11:20
2617084009	Dup-2	Water	04/02/19 00:00	04/05/19 11:20
2617084010	FBL040219	Water	04/02/19 16:14	04/05/19 11:20
2617084011	EQBL040219	Water	04/02/19 16:20	04/05/19 11:20

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617084

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617084001	BGWC-10	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617084002	BGWC-30	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617084003	BGWC-36D	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617084004	BGWC-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617084005	BGWC-18	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617084006	BGWC-7	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617084007	BGWA-6	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617084008	BGWC-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617084009	Dup-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617084010	FBL040219	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617084011	EQBL040219	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

**Sample: BGWC-10**      **Lab ID: 2617084001**      Collected: 04/02/19 16:15      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.459 ± 0.299 (0.464)</b> C:89% T:NA	pCi/L	04/18/19 08:04	13982-63-3	
Radium-228	EPA 9320	<b>0.755 ± 0.454 (0.843)</b> C:82% T:71%	pCi/L	04/18/19 15:37	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.21 ± 0.753 (1.31)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

**Sample: BGWC-30**      **Lab ID: 2617084002**      Collected: 04/02/19 10:24      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.18 ± 0.462 (0.481)</b> C:90% T:NA	pCi/L	04/18/19 08:03	13982-63-3	
Radium-228	EPA 9320	<b>1.11 ± 0.472 (0.770)</b> C:80% T:82%	pCi/L	04/18/19 15:37	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.29 ± 0.934 (1.25)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

**Sample: BGWC-36D**      **Lab ID: 2617084003**      Collected: 04/02/19 12:10      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.39 ± 0.524 (0.616)</b> <b>C:91% T:NA</b>	pCi/L	04/18/19 08:03	13982-63-3	
Radium-228	EPA 9320	<b>1.42 ± 0.489 (0.648)</b> <b>C:83% T:75%</b>	pCi/L	04/18/19 15:37	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.81 ± 1.01 (1.26)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

**Sample: BGWC-17**      **Lab ID: 2617084004**      Collected: 04/02/19 14:43      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.133 ± 0.265 (0.614)</b> <b>C:90% T:NA</b>	pCi/L	04/18/19 08:03	13982-63-3	
Radium-228	EPA 9320	<b>0.577 ± 0.383 (0.727)</b> <b>C:83% T:77%</b>	pCi/L	04/18/19 15:38	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.710 ± 0.648 (1.34)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

**Sample: BGWC-18**      **Lab ID: 2617084005**      Collected: 04/02/19 16:28      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.393 ± 0.280 (0.437)</b> C:87% T:NA	pCi/L	04/18/19 08:04	13982-63-3	
Radium-228	EPA 9320	<b>0.421 ± 0.322 (0.631)</b> C:85% T:87%	pCi/L	04/18/19 15:37	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.814 ± 0.602 (1.07)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

**Sample: BGWC-7**      **Lab ID: 2617084006**      Collected: 04/02/19 09:58      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.675 ± 0.403 (0.663)</b> C:91% T:NA	pCi/L	04/18/19 08:03	13982-63-3	
Radium-228	EPA 9320	<b>0.897 ± 0.389 (0.623)</b> C:84% T:86%	pCi/L	04/18/19 15:37	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.57 ± 0.792 (1.29)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

**Sample: BGWA-6**      **Lab ID: 2617084007**      Collected: 04/02/19 11:33      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0561 ± 0.221 (0.557)</b> C:86% T:NA	pCi/L	04/18/19 08:03	13982-63-3	
Radium-228	EPA 9320	<b>0.584 ± 0.363 (0.672)</b> C:81% T:81%	pCi/L	04/18/19 15:37	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.640 ± 0.584 (1.23)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

**Sample: BGWC-16**      **Lab ID: 2617084008**      Collected: 04/02/19 13:22      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.512 ± 0.329 (0.513)</b> C:87% T:NA	pCi/L	04/18/19 08:03	13982-63-3	
Radium-228	EPA 9320	<b>1.22 ± 0.510 (0.807)</b> C:80% T:74%	pCi/L	04/18/19 15:38	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.73 ± 0.839 (1.32)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

**Sample: Dup-2**      **Lab ID: 2617084009**      Collected: 04/02/19 00:00      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.642 ± 0.325 (0.376)</b> C:91% T:NA	pCi/L	04/18/19 08:03	13982-63-3	
Radium-228	EPA 9320	<b>0.861 ± 0.454 (0.802)</b> C:79% T:70%	pCi/L	04/18/19 15:37	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.50 ± 0.779 (1.18)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

**Sample: FBL040219**      **Lab ID: 2617084010**      Collected: 04/02/19 16:14      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>-0.157 ± 0.127 (0.517)</b> C:89% T:NA	pCi/L	04/18/19 08:03	13982-63-3	
Radium-228	EPA 9320	<b>0.583 ± 0.545 (1.11)</b> C:87% T:84%	pCi/L	04/18/19 19:59	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.583 ± 0.672 (1.63)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0972 ± 0.242 (0.579)</b> C:93% T:NA	pCi/L	04/18/19 08:04	13982-63-3	
Radium-228	EPA 9320	<b>0.634 ± 0.570 (1.16)</b> C:81% T:85%	pCi/L	04/18/19 19:59	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.731 ± 0.812 (1.74)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

---

QC Batch:	337921	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	2617084001, 2617084002, 2617084003, 2617084004, 2617084005, 2617084006, 2617084007, 2617084008, 2617084009, 2617084010, 2617084011		

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METHOD BLANK:	1644534	Matrix:	Water
Associated Lab Samples:	2617084001, 2617084002, 2617084003, 2617084004, 2617084005, 2617084006, 2617084007, 2617084008, 2617084009, 2617084010, 2617084011		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.156 ± 0.184 (0.361) C:97% T:NA	pCi/L	04/18/19 09:01	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

QC Batch: 337913

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2617084001, 2617084002, 2617084003, 2617084004, 2617084005, 2617084006, 2617084007, 2617084008, 2617084009, 2617084010, 2617084011

METHOD BLANK: 1644523

Matrix: Water

Associated Lab Samples: 2617084001, 2617084002, 2617084003, 2617084004, 2617084005, 2617084006, 2617084007, 2617084008, 2617084009, 2617084010, 2617084011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.226 ± 0.293 (0.621) C:88% T:75%	pCi/L	04/18/19 15:38	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617084

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617084

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617084001	BGWC-10	EPA 9315	337921		
2617084002	BGWC-30	EPA 9315	337921		
2617084003	BGWC-36D	EPA 9315	337921		
2617084004	BGWC-17	EPA 9315	337921		
2617084005	BGWC-18	EPA 9315	337921		
2617084006	BGWC-7	EPA 9315	337921		
2617084007	BGWA-6	EPA 9315	337921		
2617084008	BGWC-16	EPA 9315	337921		
2617084009	Dup-2	EPA 9315	337921		
2617084010	FBL040219	EPA 9315	337921		
2617084011	EQBL040219	EPA 9315	337921		
2617084001	BGWC-10	EPA 9320	337913		
2617084002	BGWC-30	EPA 9320	337913		
2617084003	BGWC-36D	EPA 9320	337913		
2617084004	BGWC-17	EPA 9320	337913		
2617084005	BGWC-18	EPA 9320	337913		
2617084006	BGWC-7	EPA 9320	337913		
2617084007	BGWA-6	EPA 9320	337913		
2617084008	BGWC-16	EPA 9320	337913		
2617084009	Dup-2	EPA 9320	337913		
2617084010	FBL040219	EPA 9320	337913		
2617084011	EQBL040219	EPA 9320	337913		
2617084001	BGWC-10	Total Radium Calculation	339292		
2617084002	BGWC-30	Total Radium Calculation	339292		
2617084003	BGWC-36D	Total Radium Calculation	339292		
2617084004	BGWC-17	Total Radium Calculation	339292		
2617084005	BGWC-18	Total Radium Calculation	339292		
2617084006	BGWC-7	Total Radium Calculation	339292		
2617084007	BGWA-6	Total Radium Calculation	339292		
2617084008	BGWC-16	Total Radium Calculation	339292		
2617084009	Dup-2	Total Radium Calculation	339292		
2617084010	FBL040219	Total Radium Calculation	339292		
2617084011	EQBL040219	Total Radium Calculation	339292		

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**CHAIN-OF-CUSTODY / Analytical Request Document**

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

<b>Section A</b>		<b>Section B</b>		<b>Section C</b>	
<b>Required Client Information:</b>			<b>Required Project Information:</b>		
Company: Georgia Power - Coal Combustion Residuals	Report To: John Abraham	Company Name: Geosyntec	<b>Invoice Information:</b>		
Address: 2480 Manner Road	Whitney-Law	Purchase Order #: SCS10348606	Attention:		
Email: j.abraham@southemco.com	Project Name: Plant Bowen Ash Pond	Pace Profile #: 315	Company Name:		
Phone: (404)506-7239	Requested Due Date:	Address:			
Fax:	State / Location				
Regulatory Agency					

ITEM #	MATRIX	CODE	SAMPLE TYPE (see valid codes to left)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analyses Test	Y/N	Requested Analysis Filtered (Y/N)							
				Date	Time			H2SO4	HNO3	HI	Na2S2O3	Methanol	Other	TDS, Cl, F, SO4	Metals 6020 App. III				Metals 60207470 App. IV (List)	Residual Chlorine (Y/N)					
1	B6WDC-10	DW	G	4/2/19	1615		4	1																	
2	B6WDC-30	WT	G	4/2/19	1024		6	1																	
3	B6WDC-36D	Waste Water Product	G	4/2/19	1210		4	1																	
4	B6WDC-17	Sl	G	4/2/19	1443		4	1																	
5	B6WDC-18	Oil	G	4/2/19	1628		6	1																	
6	B6WDC-17	Wipe	G	4/2/19	0958		4	1																	
7	B6WDC-6	Air	G	4/2/19	1133		4	1																	
8	B6WDC-16	Other	G	4/2/19	1322		4	1																	
9	Dug-7	Tissue	G	4/2/19	-		4	1																	
10	FBI040219		G	4/2/19	1614		4	1																	
11	FBI040219		G	4/2/19	1620		4	1																	
12																									

**WO# : 2617084**

REQUISITIONED BY / AFFILIATION	DATE	TIME	ACCeptED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIOnS	TEMP In C	Received on	Ice (Y/N)	Sealed Custody (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)	
<i>Rexlure</i>	4-5-19	10:20	<i>Rexlure</i>	4-5-19	10:00								
			<i>Radman</i>	4/5/19	11:20		0.3						
<b>ADDITIONAL COMMENTS</b>			<b>SAMPLER NAME AND SIGNATURE</b>										
			PRINT NAME OF SAMPLER: <i>Radman</i>										
			SIGNATURE OF SAMPLER: <i>[Signature]</i>										



# Sample Condition Upon Receipt

Client Name: GCA Power

Project # \_\_\_\_\_

**WO#: 2617084**

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: \_\_\_\_\_

PM: **BM** Due Date: **05/03/19**  
CLIENT: **GAPower-CCR**

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used: 83 Type of Ice:  Wet  Blue  None

Samples on ice, cooling process has begun

Cooler Temperature: 0.3 Biological Tissue is Frozen: Yes  No

Date and initials of person examining contents: 4/5/19 MK

Temp should be above freezing to 6°C

Comments: \_\_\_\_\_

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.		
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.		
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.		
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.		
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.		
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.		
-Includes date/time/ID/Analysis Matrix:	<u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

May 03, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2617086

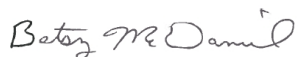
Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the one issued on 4/15/2019. The report has been revised to correct metals units and target list per consultant request. No other changes have been made to this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

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### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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### Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804

Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40

South Carolina Certification #: 99030001

Virginia/VELAP Certification #: 460222

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617086001	BGWA-2	Water	04/01/19 10:39	04/05/19 11:20
2617086002	BGWA-29	Water	04/01/19 10:55	04/05/19 11:20
2617086003	BGWC-8	Water	04/01/19 12:36	04/05/19 11:20
2617086004	BGWC-9	Water	04/01/19 14:02	04/05/19 11:20
2617086005	BGWC-12	Water	04/01/19 15:12	04/05/19 11:20
2617086006	Dup-1	Water	04/01/19 00:00	04/05/19 11:20

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617086001	BGWA-2	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617086002	BGWA-29	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617086003	BGWC-8	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617086004	BGWC-9	EPA 6020B	JMW1, SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617086005	BGWC-12	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA
2617086006	Dup-1	EPA 6020B	SER	13	PASI-A
		EPA 7470A	RDT	1	PASI-A
		SM 2540C	RLC	1	PASI-GA
		EPA 300.0	RLC	3	PASI-GA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

Sample: BGWA-2		Lab ID: 2617086001		Collected: 04/01/19 10:39		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	<b>0.00049J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/11/19 16:34	7440-38-2	B	
Barium	<b>0.16</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/11/19 16:34	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/11/19 16:34	7440-41-7		
Boron	<b>0.0076J</b>	mg/L	0.10	0.0026	1	04/09/19 20:29	04/11/19 16:34	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/11/19 16:34	7440-43-9		
Calcium	<b>48.2</b>	mg/L	2.5	0.10	5	04/09/19 20:29	04/11/19 16:38	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/11/19 16:34	7440-47-3		
Cobalt	<b>0.00014J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/11/19 16:34	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/11/19 16:34	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/11/19 16:34	7439-93-2		
Molybdenum	<b>0.0014J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/11/19 16:34	7439-98-7		
Selenium	<b>0.00011J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/11/19 16:34	7782-49-2		
Thallium	<b>0.00011J</b>	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/11/19 16:34	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 18:35	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>226</b>	mg/L	25.0	10.0	1		04/08/19 15:23		D6	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>4.2</b>	mg/L	0.25	0.024	1		04/10/19 02:13	16887-00-6		
Fluoride	<b>0.047J</b>	mg/L	0.30	0.029	1		04/10/19 02:13	16984-48-8		
Sulfate	<b>10.8</b>	mg/L	1.0	0.017	1		04/10/19 02:13	14808-79-8	M1	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

Sample: BGWA-29      Lab ID: 2617086002      Collected: 04/01/19 10:55      Received: 04/05/19 11:20      Matrix: Water									
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b> Analytical Method: EPA 6020B      Preparation Method: EPA 3010A									
Arsenic	0.00019J	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/11/19 16:41	7440-38-2	B
Barium	0.014	mg/L	0.010	0.000060	1	04/09/19 20:29	04/11/19 16:41	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/11/19 16:41	7440-41-7	
Boron	0.0048J	mg/L	0.10	0.0026	1	04/09/19 20:29	04/11/19 16:41	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/11/19 16:41	7440-43-9	
Calcium	24.6	mg/L	2.5	0.10	5	04/09/19 20:29	04/11/19 16:45	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/11/19 16:41	7440-47-3	
Cobalt	ND	mg/L	0.010	0.000050	1	04/09/19 20:29	04/11/19 16:41	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/11/19 16:41	7439-92-1	
Lithium	0.00059J	mg/L	0.050	0.00042	1	04/09/19 20:29	04/11/19 16:41	7439-93-2	
Molybdenum	0.00053J	mg/L	0.010	0.00010	1	04/09/19 20:29	04/11/19 16:41	7439-98-7	
Selenium	ND	mg/L	0.010	0.000080	1	04/09/19 20:29	04/11/19 16:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/11/19 16:41	7440-28-0	
<b>7470 Mercury</b> Analytical Method: EPA 7470A      Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 18:37	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	114	mg/L	25.0	10.0	1		04/08/19 15:25		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Chloride	1.6	mg/L	0.25	0.024	1		04/10/19 03:23	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 03:23	16984-48-8	
Sulfate	5.2	mg/L	1.0	0.017	1		04/10/19 03:23	14808-79-8	M1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

Sample: <b>BGWC-8</b>		Lab ID: <b>2617086003</b>		Collected: 04/01/19 12:36		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	<b>0.00041J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/11/19 16:55	7440-38-2	B	
Barium	<b>0.025</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/11/19 16:55	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/11/19 16:55	7440-41-7		
Boron	<b>0.046J</b>	mg/L	0.10	0.0026	1	04/09/19 20:29	04/11/19 16:55	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/11/19 16:55	7440-43-9		
Calcium	<b>47.2</b>	mg/L	2.5	0.10	5	04/09/19 20:29	04/11/19 16:59	7440-70-2		
Chromium	<b>0.00091J</b>	mg/L	0.010	0.00042	1	04/09/19 20:29	04/11/19 16:55	7440-47-3		
Cobalt	<b>0.000056J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/11/19 16:55	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/11/19 16:55	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/11/19 16:55	7439-93-2		
Molybdenum	<b>0.00054J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/11/19 16:55	7439-98-7		
Selenium	<b>0.00015J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/11/19 16:55	7782-49-2		
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/11/19 16:55	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 18:39	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>191</b>	mg/L	25.0	10.0	1		04/08/19 15:25			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>1.8</b>	mg/L	0.25	0.024	1		04/10/19 03:46	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		04/10/19 03:46	16984-48-8		
Sulfate	<b>30.5</b>	mg/L	1.0	0.017	1		04/10/19 03:46	14808-79-8		

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617086

Sample: <b>BGWC-9</b>		Lab ID: <b>2617086004</b>		Collected: 04/01/19 14:02		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	<b>0.0026J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 21:21	7440-38-2		
Barium	<b>0.027</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 21:21	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 21:21	7440-41-7		
Boron	<b>0.50</b>	mg/L	0.50	0.013	5	04/09/19 20:29	04/11/19 17:03	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 21:21	7440-43-9		
Calcium	<b>59.3</b>	mg/L	10.0	0.41	20	04/09/19 20:29	04/12/19 02:26	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 21:21	7440-47-3		
Cobalt	<b>0.00024J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 21:21	7440-48-4		
Lead	<b>0.000092J</b>	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 21:21	7439-92-1		
Lithium	<b>0.0012J</b>	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 21:21	7439-93-2		
Molybdenum	<b>0.0027J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 21:21	7439-98-7		
Selenium	<b>0.00040J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 21:21	7782-49-2		
Thallium	<b>0.000065J</b>	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 21:21	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 18:42	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>326</b>	mg/L	25.0	10.0	1		04/08/19 15:26			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>13.4</b>	mg/L	0.25	0.024	1		04/10/19 04:09	16887-00-6		
Fluoride	<b>0.33</b>	mg/L	0.30	0.029	1		04/10/19 04:09	16984-48-8		
Sulfate	<b>81.4</b>	mg/L	10.0	0.17	10		04/10/19 09:57	14808-79-8		

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

Sample: <b>BGWC-12</b>		Lab ID: <b>2617086005</b>		Collected: 04/01/19 15:12		Received: 04/05/19 11:20		Matrix: Water	
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual
			Limit	MDL	DF				
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A							
Arsenic	<b>0.00028J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/10/19 21:25	7440-38-2	B
Barium	<b>0.023</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/10/19 21:25	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/10/19 21:25	7440-41-7	
Boron	<b>0.86J</b>	mg/L	1.0	0.026	10	04/09/19 20:29	04/11/19 17:06	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/10/19 21:25	7440-43-9	
Calcium	<b>94.8</b>	mg/L	5.0	0.21	10	04/09/19 20:29	04/11/19 17:06	7440-70-2	
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/10/19 21:25	7440-47-3	
Cobalt	<b>0.00034J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/10/19 21:25	7440-48-4	
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/10/19 21:25	7439-92-1	
Lithium	<b>0.00078J</b>	mg/L	0.050	0.00042	1	04/09/19 20:29	04/10/19 21:25	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00010	1	04/09/19 20:29	04/10/19 21:25	7439-98-7	
Selenium	<b>0.00040J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/10/19 21:25	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/10/19 21:25	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 18:44	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>191</b>	mg/L	25.0	10.0	1		04/08/19 15:27		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>24.1</b>	mg/L	0.25	0.024	1		04/10/19 04:32	16887-00-6	
Fluoride	<b>0.065J</b>	mg/L	0.30	0.029	1		04/10/19 04:32	16984-48-8	
Sulfate	<b>239</b>	mg/L	20.0	0.34	20		04/10/19 10:20	14808-79-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

Sample: Dup-1		Lab ID: 2617086006		Collected: 04/01/19 00:00		Received: 04/05/19 11:20		Matrix: Water		
Parameters	Results	Units	Report			Prepared	Analyzed	CAS No.	Qual	
			Limit	MDL	DF					
<b>6020 MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3010A								
Arsenic	<b>0.00048J</b>	mg/L	0.0050	0.000060	1	04/09/19 20:29	04/11/19 17:10	7440-38-2	B	
Barium	<b>0.16</b>	mg/L	0.010	0.000060	1	04/09/19 20:29	04/11/19 17:10	7440-39-3		
Beryllium	ND	mg/L	0.0030	0.000050	1	04/09/19 20:29	04/11/19 17:10	7440-41-7		
Boron	<b>0.013J</b>	mg/L	0.10	0.0026	1	04/09/19 20:29	04/11/19 17:10	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000070	1	04/09/19 20:29	04/11/19 17:10	7440-43-9		
Calcium	<b>46.7</b>	mg/L	2.5	0.10	5	04/09/19 20:29	04/11/19 17:13	7440-70-2		
Chromium	ND	mg/L	0.010	0.00042	1	04/09/19 20:29	04/11/19 17:10	7440-47-3		
Cobalt	<b>0.00014J</b>	mg/L	0.010	0.000050	1	04/09/19 20:29	04/11/19 17:10	7440-48-4		
Lead	ND	mg/L	0.0050	0.000050	1	04/09/19 20:29	04/11/19 17:10	7439-92-1		
Lithium	ND	mg/L	0.050	0.00042	1	04/09/19 20:29	04/11/19 17:10	7439-93-2		
Molybdenum	<b>0.0014J</b>	mg/L	0.010	0.00010	1	04/09/19 20:29	04/11/19 17:10	7439-98-7		
Selenium	<b>0.00011J</b>	mg/L	0.010	0.000080	1	04/09/19 20:29	04/11/19 17:10	7782-49-2		
Thallium	<b>0.00011J</b>	mg/L	0.0010	0.000060	1	04/09/19 20:29	04/11/19 17:10	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00020	0.00010	1	04/10/19 12:38	04/11/19 18:47	7439-97-6		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>178</b>	mg/L	25.0	10.0	1		04/08/19 15:28			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>4.2</b>	mg/L	0.25	0.024	1		04/10/19 04:55	16887-00-6		
Fluoride	<b>0.21J</b>	mg/L	0.30	0.029	1		04/10/19 04:55	16984-48-8		
Sulfate	<b>10.9</b>	mg/L	1.0	0.017	1		04/10/19 04:55	14808-79-8		

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

QC Batch: 468368

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury

Associated Lab Samples: 2617086001, 2617086002, 2617086003, 2617086004, 2617086005, 2617086006

METHOD BLANK: 2544203

Matrix: Water

Associated Lab Samples: 2617086001, 2617086002, 2617086003, 2617086004, 2617086005, 2617086006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00010	04/11/19 17:59	

LABORATORY CONTROL SAMPLE: 2544204

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0023	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544205 2544206

Parameter	Units	2544205		2544206		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		92421822002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	mg/L				0.0024	0.0023			2	25	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617086

QC Batch: 468329 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3010A Analysis Description: 6020 MET  
Associated Lab Samples: 2617086001, 2617086002, 2617086003, 2617086004, 2617086005, 2617086006

METHOD BLANK: 2544088 Matrix: Water  
Associated Lab Samples: 2617086001, 2617086002, 2617086003, 2617086004, 2617086005, 2617086006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	0.000062J	0.0050	0.000060	04/10/19 19:29	
Barium	mg/L	ND	0.010	0.000060	04/10/19 19:29	
Beryllium	mg/L	ND	0.0030	0.000050	04/10/19 19:29	
Boron	mg/L	ND	0.10	0.0026	04/10/19 19:29	
Cadmium	mg/L	ND	0.0010	0.000070	04/10/19 19:29	
Calcium	mg/L	ND	0.50	0.021	04/10/19 19:29	
Chromium	mg/L	ND	0.010	0.00042	04/10/19 19:29	
Cobalt	mg/L	ND	0.010	0.000050	04/10/19 19:29	
Lead	mg/L	ND	0.0050	0.000050	04/10/19 19:29	BC
Lithium	mg/L	ND	0.050	0.00042	04/10/19 19:29	
Molybdenum	mg/L	ND	0.010	0.00010	04/10/19 19:29	
Selenium	mg/L	ND	0.010	0.000080	04/10/19 19:29	
Thallium	mg/L	ND	0.0010	0.000060	04/10/19 19:29	

LABORATORY CONTROL SAMPLE: 2544089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.01	0.010	103	80-120	
Barium	mg/L	0.05	0.050	99	80-120	
Beryllium	mg/L	0.01	0.0095	95	80-120	
Boron	mg/L	0.05	0.049J	98	80-120	
Cadmium	mg/L	0.01	0.010	102	80-120	
Calcium	mg/L	0.62	0.64	102	80-120	
Chromium	mg/L	0.05	0.050	101	80-120	
Cobalt	mg/L	0.01	0.010	101	80-120	
Lead	mg/L	0.05	0.051	101	80-120	BC
Lithium	mg/L	0.05	0.052	104	80-120	
Molybdenum	mg/L	0.05	0.052	103	80-120	
Selenium	mg/L	0.05	0.051	102	80-120	
Thallium	mg/L	0.01	0.010	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2544090 2544091

Parameter	Units	2617082009 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Arsenic	mg/L	0.00012J	0.01	0.01	0.0092	0.0091	91	90	75-125	1	20	
Barium	mg/L	0.025	0.05	0.05	0.068	0.067	87	85	75-125	2	20	
Beryllium	mg/L	ND	0.01	0.01	0.0081	0.0080	80	79	75-125	2	20	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

Parameter	Units	2544090		2544091		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Boron	mg/L	0.49J	0.05	0.05	0.56	0.58	137	180	75-125	4	20	M1	
Cadmium	mg/L	ND	0.01	0.01	0.0091	0.0091	91	90	75-125	0	20		
Calcium	mg/L	55.8	0.62	0.62	54.5	53.7	-203	-330	75-125	1	20	M6	
Chromium	mg/L	ND	0.05	0.05	0.045	0.044	89	88	75-125	1	20		
Cobalt	mg/L	0.00010J	0.01	0.01	0.0089J	0.0088J	88	87	75-125	1	20		
Lead	mg/L	ND	0.05	0.05	0.044	0.045	88	90	75-125	2	20		
Lithium	mg/L	ND	0.05	0.05	0.044J	0.044J	89	87	75-125	2	20		
Molybdenum	mg/L	ND	0.05	0.05	0.046	0.046	92	93	75-125	1	20		
Selenium	mg/L	0.00091J	0.05	0.05	0.046	0.045	90	88	75-125	2	20		
Thallium	mg/L	ND	0.01	0.01	0.0088	0.0090	88	90	75-125	2	20		

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617086

QC Batch: 25999 Analysis Method: SM 2540C  
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids  
Associated Lab Samples: 2617086001, 2617086002, 2617086003, 2617086004, 2617086005, 2617086006

LABORATORY CONTROL SAMPLE: 117377

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	411	103	84-108	

SAMPLE DUPLICATE: 117378

Parameter	Units	2617086001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	226	203	11	10	D6

SAMPLE DUPLICATE: 117379

Parameter	Units	2616901015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	13.0J		10	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617086

QC Batch: 26064 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 2617086001, 2617086002, 2617086003, 2617086004, 2617086005, 2617086006

METHOD BLANK: 117680 Matrix: Water  
Associated Lab Samples: 2617086001, 2617086002, 2617086003, 2617086004, 2617086005, 2617086006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	04/10/19 01:27	
Fluoride	mg/L	ND	0.30	0.029	04/10/19 01:27	
Sulfate	mg/L	ND	1.0	0.017	04/10/19 01:27	

LABORATORY CONTROL SAMPLE: 117681

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	10.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 117682 117683

Parameter	Units	2617086001 Result	MS Spike Conc.	MSD Spike Conc.	117682		117683		% Rec Limits	RPD	Max RPD	Qual
					MS Result	MSD Result	MS % Rec	MSD % Rec				
Chloride	mg/L	4.2	10	10	14.3	14.3	101	101	90-110	0	15	
Fluoride	mg/L	0.047J	10	10	10.4	10.4	103	103	90-110	0	15	
Sulfate	mg/L	10.8	10	10	19.6	19.6	89	88	90-110	0	15 M1	

MATRIX SPIKE SAMPLE: 117684

Parameter	Units	2617086002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.6	10	10.7	91	90-110	
Fluoride	mg/L	ND	10	9.2	92	90-110	
Sulfate	mg/L	5.2	10	13.7	85	90-110 M1	

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

BC The same analyte was detected in an associated blank at a concentration above 1/2 the reporting limit but below the laboratory reporting limit.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond

Pace Project No.: 2617086

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617086001	BGWA-2	EPA 3010A	468329	EPA 6020B	468391
2617086002	BGWA-29	EPA 3010A	468329	EPA 6020B	468391
2617086003	BGWC-8	EPA 3010A	468329	EPA 6020B	468391
2617086004	BGWC-9	EPA 3010A	468329	EPA 6020B	468391
2617086005	BGWC-12	EPA 3010A	468329	EPA 6020B	468391
2617086006	Dup-1	EPA 3010A	468329	EPA 6020B	468391
2617086001	BGWA-2	EPA 7470A	468368	EPA 7470A	468610
2617086002	BGWA-29	EPA 7470A	468368	EPA 7470A	468610
2617086003	BGWC-8	EPA 7470A	468368	EPA 7470A	468610
2617086004	BGWC-9	EPA 7470A	468368	EPA 7470A	468610
2617086005	BGWC-12	EPA 7470A	468368	EPA 7470A	468610
2617086006	Dup-1	EPA 7470A	468368	EPA 7470A	468610
2617086001	BGWA-2	SM 2540C	25999		
2617086002	BGWA-29	SM 2540C	25999		
2617086003	BGWC-8	SM 2540C	25999		
2617086004	BGWC-9	SM 2540C	25999		
2617086005	BGWC-12	SM 2540C	25999		
2617086006	Dup-1	SM 2540C	25999		
2617086001	BGWA-2	EPA 300.0	26064		
2617086002	BGWA-29	EPA 300.0	26064		
2617086003	BGWC-8	EPA 300.0	26064		
2617086004	BGWC-9	EPA 300.0	26064		
2617086005	BGWC-12	EPA 300.0	26064		
2617086006	Dup-1	EPA 300.0	26064		

### REPORT OF LABORATORY ANALYSIS

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**CHAIN-OF-CUSTODY / Analytical Request Document**

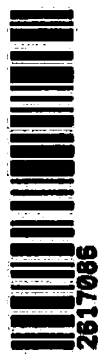
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Jetu Abraham	Attention:	
Address:	2480 Maner Road Atlanta, GA 30339	Copy To:	Geosyntec	Company Name:	
Email:	jabraham@southernco.com	Whitney Law	Purchase Order #:	Address:	
Phone:	(404) 506-7239	Project Name:	Plant Bowen Ash Pond	Pace Project Manager:	
Requested Due Date:		Project #:		Pace Profile #:	

#	MATRIX CODE (A-Z, 0-9 / , -)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION	PRESERVATIVES						ANALYSES TEST Y/N	REQUESTED ANALYSIS FILTERED (Y/N)
		Date	Time			H2SO4	HNO3	HCl	NaOH	M2S2O8	Methanol		
1	BOWDA-2	4/11/19	10:39	G	41		3					Y	
2	BOWDA-29	4/11/19	10:56	G	41		3					Y	
3	BOWDA-8	4/11/19	12:36	G	41		3					Y	
4	BOWDA-9	4/11/19	14:07	G	41		3					Y	
5	BOWDA-12	4/11/19	15:12	G	41		3					Y	
6	Drop-1	4/11/19		G	41		3					Y	

**WO#: 2617086**



ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		SAMPLE CONDITIONS		
	DATE	TIME	DATE	TIME	Received on	Ice	Temp in C
	4-5-19	10:20	4-5-19	10:20			
			<i>[Signature]</i>   Pace				
			<i>[Signature]</i>   Rahman		0.3	Y	Y

SAMPLER NAME AND SIGNATURE		DATE SIGNED:	
<i>[Signature]</i>   Bowen Ash Pond		4/11/19	
PRINT NAME OF SAMPLER:		DATE SIGNED:	
A. Bowen		4/11/19	
SIGNATURE OF SAMPLER:		DATE SIGNED:	
<i>[Signature]</i>   Bowen Ash Pond		4/11/19	



Sample Condition Upon Receipt

Client Name: GCA Power

Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

**WO#: 2617086**

Tracking #: \_\_\_\_\_

PM: **BM** Due Date: **04/12/19**

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes

**CLIENT: GCPower-CCR**

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 83 Type of Ice:  Wet  Blue  None

Samples on ice, cooling process has begun  
Date and Initials of person examining contents: 4/5/19 MK

Cooler Temperature 0.3 Biological Tissue is Frozen: Yes No  
Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.		
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.		
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.		
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.		
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.		
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.		
-Includes date/time/ID/Analysis Matrix:	<u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):	_____			

**Client Notification/Resolution:** \_\_\_\_\_

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Field Data Required? Y / N

**Project Manager Review:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

April 29, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339


RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2617087

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 05, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617087

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 9526  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617087

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2617087001	BGWA-2	Water	04/01/19 10:39	04/05/19 11:20
2617087002	BGWA-29	Water	04/01/19 10:55	04/05/19 11:20
2617087003	BGWC-8	Water	04/01/19 12:36	04/05/19 11:20
2617087004	BGWC-9	Water	04/01/19 14:02	04/05/19 11:20
2617087005	BGWC-12	Water	04/01/19 15:12	04/05/19 11:20
2617087006	Dup-1	Water	04/01/19 00:00	04/05/19 11:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2617087

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2617087001	BGWA-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617087002	BGWA-29	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617087003	BGWC-8	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617087004	BGWC-9	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617087005	BGWC-12	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2617087006	Dup-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617087

**Sample: BGWA-2**      **Lab ID: 2617087001**      Collected: 04/01/19 10:39      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.616 ± 0.315 (0.349)</b> <b>C:88% T:NA</b>	pCi/L	04/18/19 09:01	13982-63-3	
Radium-228	EPA 9320	<b>0.820 ± 0.620 (1.22)</b> <b>C:80% T:76%</b>	pCi/L	04/18/19 18:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.44 ± 0.935 (1.57)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617087

**Sample: BGWA-29**      **Lab ID: 2617087002**      Collected: 04/01/19 10:55      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0932 ± 0.225 (0.535)</b> C:89% T:NA	pCi/L	04/18/19 09:01	13982-63-3	
Radium-228	EPA 9320	<b>0.567 ± 0.500 (1.01)</b> C:86% T:79%	pCi/L	04/18/19 18:11	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.660 ± 0.725 (1.55)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617087

**Sample: BGWC-8**      **Lab ID: 2617087003**      Collected: 04/01/19 12:36      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.326 ± 0.265 (0.451)</b> <b>C:82% T:NA</b>	pCi/L	04/18/19 09:01	13982-63-3	
Radium-228	EPA 9320	<b>0.148 ± 0.449 (1.01)</b> <b>C:84% T:82%</b>	pCi/L	04/18/19 18:20	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.474 ± 0.714 (1.46)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617087

**Sample: BGWC-9**      **Lab ID: 2617087004**      Collected: 04/01/19 14:02      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.225 ± 0.210 (0.369)</b> C:94% T:NA	pCi/L	04/18/19 09:01	13982-63-3	
Radium-228	EPA 9320	<b>-0.216 ± 0.398 (0.985)</b> C:83% T:80%	pCi/L	04/18/19 18:19	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.225 ± 0.608 (1.35)</b>	pCi/L	04/22/19 11:25	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617087

**Sample: BGWC-12**      **Lab ID: 2617087005**      Collected: 04/01/19 15:12      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.328 ± 0.252 (0.422)</b> C:95% T:NA	pCi/L	04/18/19 09:01	13982-63-3	
Radium-228	EPA 9320	<b>-0.347 ± 0.447 (1.12)</b> C:84% T:76%	pCi/L	04/18/19 18:19	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.328 ± 0.699 (1.54)</b>	pCi/L	04/22/19 11:25	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617087

**Sample: Dup-1**      **Lab ID: 2617087006**      Collected: 04/01/19 00:00      Received: 04/05/19 11:20      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.668 ± 0.322 (0.346)</b> C:92% T:NA	pCi/L	04/18/19 09:01	13982-63-3	
Radium-228	EPA 9320	<b>0.831 ± 0.398 (0.684)</b> C:80% T:92%	pCi/L	04/18/19 15:36	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.50 ± 0.720 (1.03)</b>	pCi/L	04/22/19 11:25	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617087

QC Batch: 337921 Analysis Method: EPA 9315

QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium

Associated Lab Samples: 2617087001, 2617087002, 2617087003, 2617087004, 2617087005, 2617087006

METHOD BLANK: 1644534 Matrix: Water

Associated Lab Samples: 2617087001, 2617087002, 2617087003, 2617087004, 2617087005, 2617087006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.156 ± 0.184 (0.361) C:97% T:NA	pCi/L	04/18/19 09:01	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond

Pace Project No.: 2617087

QC Batch: 337913

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2617087001, 2617087002, 2617087003, 2617087004, 2617087005, 2617087006

METHOD BLANK: 1644523

Matrix: Water

Associated Lab Samples: 2617087001, 2617087002, 2617087003, 2617087004, 2617087005, 2617087006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.226 ± 0.293 (0.621) C:88% T:75%	pCi/L	04/18/19 15:38	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2617087

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond  
Pace Project No.: 2617087

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2617087001	BGWA-2	EPA 9315	337921		
2617087002	BGWA-29	EPA 9315	337921		
2617087003	BGWC-8	EPA 9315	337921		
2617087004	BGWC-9	EPA 9315	337921		
2617087005	BGWC-12	EPA 9315	337921		
2617087006	Dup-1	EPA 9315	337921		
2617087001	BGWA-2	EPA 9320	337913		
2617087002	BGWA-29	EPA 9320	337913		
2617087003	BGWC-8	EPA 9320	337913		
2617087004	BGWC-9	EPA 9320	337913		
2617087005	BGWC-12	EPA 9320	337913		
2617087006	Dup-1	EPA 9320	337913		
2617087001	BGWA-2	Total Radium Calculation	339292		
2617087002	BGWA-29	Total Radium Calculation	339292		
2617087003	BGWC-8	Total Radium Calculation	339292		
2617087004	BGWC-9	Total Radium Calculation	339292		
2617087005	BGWC-12	Total Radium Calculation	339292		
2617087006	Dup-1	Total Radium Calculation	339292		

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# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

<b>Section A</b>		<b>Section B</b>		<b>Section C</b>	
<b>Required Client Information:</b>		<b>Required Project Information:</b>		<b>Invoice Information:</b>	
Company:	Georgia Power - Coal Combustion Residuals	Report To:	Jbju Abraham	Attention:	
Address:	2480 Manor Road Atlanta, GA 30339	Copy To:	Geosyntec Whitliffy Lew	Company Name:	
Email:	jabraham@southernco.com	Purchase Order #:	SCS10348606	Address:	
Phone:	(404)506-7239	Project Name:	Plant Bowen Ash Pond	Pace Project Manager:	betsy.mcdaniel@parcelabs.com
Requested Due Date:		Project #:		Pace Profile #:	315
				Regulatory Agency:	
				State/Location:	GA

#	MATRIX	CODE	DATE	TIME	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP IN C	Received on	Sealed	Cooler	Samples
1	Drinking Water	DW	4/1/19	1039	RESOLUT	4-5-19	10:20	RESOLUT	4-5-19	10:20					
2	Waste Water	WW	4/1/19	1055	RESOLUT	4-5-19	10:20	RESOLUT	4-5-19	10:20					
3	Waste Water	WW	4/1/19	1236	RESOLUT	4-5-19	10:20	RESOLUT	4-5-19	10:20					
4	Waste Water	WW	4/1/19	1407	RESOLUT	4-5-19	10:20	RESOLUT	4-5-19	10:20					
5	Waste Water	WW	4/1/19	1512	RESOLUT	4-5-19	10:20	RESOLUT	4-5-19	10:20					
6	Waste Water	WW	4/1/19		RESOLUT	4-5-19	10:20	RESOLUT	4-5-19	10:20					
7															
8															
9															
10															
11															
12															

NO#: 2617087

<b>ADDITIONAL COMMENTS</b>		<b>RELINQUISHED BY / AFFILIATION</b>		<b>DATE</b>		<b>TIME</b>		<b>ACCEPTED BY / AFFILIATION</b>		<b>DATE</b>		<b>TIME</b>		<b>SAMPLE CONDITIONS</b>	
App. IV Parameters: As, Ba, Be, Cd, Co, Cr, Hg, Li, Mo, Pb, Se, Tl, Only		RESOLUT		4-5-19		10:20		RESOLUT		4-5-19		10:20			
		RESOLUT						RESOLUT		4/5/19		11:20		0.3 7 7 7	
<b>SAMPLER NAME AND SIGNATURE</b>															
PRINT Name of SAMPLER: <i>Andrew C. ...</i>															
SIGNATURE of SAMPLER: <i>Andrew C. ...</i>															
DATE Signed: 4/1/19															



Sample Condition Upon Receipt

Client Name: GCA Power

Project # \_\_\_\_\_

WO#: **2617087**

PM: **BM**

Due Date: **05/03/19**

CLIENT: **GAPower-CCR**

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used 83 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 0.3 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4/5/19 MK

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.		
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.		
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.		
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.		
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.		
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.		
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.		
-Includes date/time/ID/Analysis Matrix:	<u>W</u>			
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.		
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.		
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.		
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased):				

Client Notification/Resolution: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

July 01, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2618160

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on May 03, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the report issued on 5/13/2019. The report has been revised to provide confirmation molybdenum data on BGWC-38D. No other changes have been made to this report.

This revised report replaces the revision issued on 5/23/2019. The report has been revised to remove the extra metals for sample BGWC-22 (2618160001) and to remove the confirmation result for BGWC-38D (2618160003). No other changes have been made to this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Eben Buchanan for  
Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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July 01, 2019  
Page 2

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## **REPORT OF LABORATORY ANALYSIS**

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2618160

---

### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2618160

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2618160001	BGWC-22	Water	05/02/19 11:12	05/03/19 13:25
2618160002	BGWA-2	Water	05/02/19 14:15	05/03/19 13:25
2618160003	BGWC-38D	Water	05/02/19 16:10	05/03/19 13:25
2618160004	BGWC-37D	Water	05/03/19 10:38	05/03/19 13:25
2618160005	BGWC-32	Water	05/03/19 10:44	05/03/19 13:25
2618160006	Dup-01	Water	05/02/19 00:00	05/03/19 13:25
2618160007	FBL-050319	Water	05/03/19 11:21	05/03/19 13:25
2618160008	EQBL-050319	Water	05/03/19 11:24	05/03/19 13:25

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond

Pace Project No.: 2618160

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2618160001	BGWC-22	EPA 6010D	AAP	1
		EPA 6020B	CSW	7
		SM 2320B	JAD	3
		EPA 300.0	RLC	3
2618160002	BGWA-2	EPA 6010D	AAP	1
		EPA 6020B	CSW	7
		SM 2320B	JAD	3
		EPA 300.0	RLC	3
2618160003	BGWC-38D	EPA 6020B	CSW	1
2618160004	BGWC-37D	EPA 6020B	CSW	1
2618160005	BGWC-32	EPA 6010D	AAP	1
		EPA 6020B	CSW	7
		SM 2320B	JAD	3
		EPA 300.0	RLC	3
2618160006	Dup-01	EPA 6020B	CSW	1
2618160007	FBL-050319	EPA 6010D	AAP	1
		EPA 6020B	CSW	7
		SM 2320B	JAD	3
		EPA 300.0	MWB	3
2618160008	EQBL-050319	EPA 6010D	AAP	1
		EPA 6020B	CSW	7
		SM 2320B	JAD	3
		EPA 300.0	RLC	3

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2618160

Sample: <b>BGWC-22</b>		Lab ID: <b>2618160001</b>		Collected: 05/02/19 11:12		Received: 05/03/19 13:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D MET ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Silicon	<b>5.0</b>	mg/L	0.040	0.0040	1	05/07/19 12:26	05/10/19 02:32	7440-21-3	
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	<b>10.1</b>	mg/L	0.040	0.0039	1	05/07/19 14:25	05/09/19 21:21	7440-42-8	M1
Calcium	<b>647</b>	mg/L	25.0	0.69	50	05/07/19 14:25	05/09/19 21:27	7440-70-2	M6
Cobalt	<b>0.023J</b>	mg/L	0.050	0.0026	5	05/07/19 14:25	05/11/19 12:37	7440-48-4	
Magnesium	<b>84.0</b>	mg/L	2.5	0.31	50	05/07/19 14:25	05/11/19 11:45	7439-95-4	M6
Molybdenum	<b>0.043</b>	mg/L	0.010	0.0019	1	05/07/19 14:25	05/09/19 21:21	7439-98-7	
Potassium	<b>13.6</b>	mg/L	0.10	0.035	1	05/07/19 14:25	05/09/19 21:21	7440-09-7	M1
Sodium	<b>39.0</b>	mg/L	0.10	0.015	1	05/07/19 14:25	05/09/19 21:21	7440-23-5	M1
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B							
Alkalinity, Bicarbonate (CaCO <sub>3</sub> )	<b>79.0</b>	mg/L	20.0	20.0	1		05/03/19 17:30		
Alkalinity, Carbonate (CaCO <sub>3</sub> )	ND	mg/L	20.0	20.0	1		05/03/19 17:30		
Alkalinity, Total as CaCO <sub>3</sub>	<b>79.0</b>	mg/L	20.0	20.0	1		05/03/19 17:30		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>999</b>	mg/L	12.5	1.2	50		05/10/19 10:37	16887-00-6	
Fluoride	<b>1.4</b>	mg/L	0.30	0.029	1		05/09/19 02:48	16984-48-8	
Sulfate	<b>827</b>	mg/L	50.0	0.85	50		05/10/19 10:37	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2618160

Sample: <b>BGWA-2</b>		Lab ID: <b>2618160002</b>		Collected: 05/02/19 14:15	Received: 05/03/19 13:25	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D MET ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Silicon	<b>4.6</b>	mg/L	0.040	0.0040	1	05/07/19 12:26	05/10/19 03:15	7440-21-3	
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	<b>0.015J</b>	mg/L	0.040	0.0039	1	05/07/19 14:25	05/09/19 22:12	7440-42-8	
Calcium	<b>44.8</b>	mg/L	25.0	0.69	50	05/07/19 14:25	05/09/19 22:18	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	05/07/19 14:25	05/09/19 22:12	7440-48-4	
Magnesium	<b>25.5</b>	mg/L	2.5	0.31	50	05/07/19 14:25	05/09/19 22:18	7439-95-4	
Molybdenum	ND	mg/L	0.010	0.0019	1	05/07/19 14:25	05/09/19 22:12	7439-98-7	
Potassium	<b>1.9</b>	mg/L	0.10	0.035	1	05/07/19 14:25	05/09/19 22:12	7440-09-7	
Sodium	<b>2.7</b>	mg/L	0.10	0.015	1	05/07/19 14:25	05/09/19 22:12	7440-23-5	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B							
Alkalinity, Bicarbonate (CaCO <sub>3</sub> )	<b>196</b>	mg/L	20.0	20.0	1		05/03/19 17:34		
Alkalinity, Carbonate (CaCO <sub>3</sub> )	ND	mg/L	20.0	20.0	1		05/03/19 17:34		
Alkalinity, Total as CaCO <sub>3</sub>	<b>196</b>	mg/L	20.0	20.0	1		05/03/19 17:34		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>4.3</b>	mg/L	0.25	0.024	1		05/09/19 04:31	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		05/09/19 04:31	16984-48-8	
Sulfate	<b>11.2</b>	mg/L	1.0	0.017	1		05/09/19 04:31	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2618160

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Sample: BGWC-38D</b>									
<b>Lab ID: 2618160003</b>									
Collected: 05/02/19 16:10    Received: 05/03/19 13:25    Matrix: Water									
<b>6020B MET ICPMS</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3005A									
Molybdenum	<b>0.11</b>	mg/L	0.010	0.0019	1	05/07/19 14:25	05/09/19 22:24	7439-98-7	

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2618160

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Sample: BGWC-37D</b>									
<b>Lab ID: 2618160004</b>									
Collected: 05/03/19 10:38    Received: 05/03/19 13:25    Matrix: Water									
<b>6020B MET ICPMS</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3005A									
Molybdenum	<b>0.040</b>	mg/L	0.010	0.0019	1	05/07/19 14:25	05/09/19 22:30	7439-98-7	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2618160

Sample: <b>BGWC-32</b>		Lab ID: <b>2618160005</b>		Collected: 05/03/19 10:44		Received: 05/03/19 13:25		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D MET ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A							
Silicon	<b>4.6</b>	mg/L	0.040	0.0040	1	05/07/19 12:26	05/10/19 03:20	7440-21-3	
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	<b>3.4</b>	mg/L	0.040	0.0039	1	05/07/19 14:25	05/09/19 22:35	7440-42-8	
Calcium	<b>203</b>	mg/L	25.0	0.69	50	05/07/19 14:25	05/09/19 22:41	7440-70-2	
Cobalt	<b>0.0078J</b>	mg/L	0.010	0.00052	1	05/07/19 14:25	05/09/19 22:35	7440-48-4	
Magnesium	<b>61.4</b>	mg/L	2.5	0.31	50	05/07/19 14:25	05/09/19 22:41	7439-95-4	
Molybdenum	<b>0.0048J</b>	mg/L	0.010	0.0019	1	05/07/19 14:25	05/09/19 22:35	7439-98-7	
Potassium	<b>4.9</b>	mg/L	0.10	0.035	1	05/07/19 14:25	05/09/19 22:35	7440-09-7	
Sodium	<b>19.2</b>	mg/L	5.0	0.75	50	05/07/19 14:25	05/09/19 22:41	7440-23-5	B
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B							
Alkalinity, Bicarbonate (CaCO <sub>3</sub> )	<b>184</b>	mg/L	20.0	20.0	1		05/03/19 17:39		
Alkalinity, Carbonate (CaCO <sub>3</sub> )	ND	mg/L	20.0	20.0	1		05/03/19 17:39		
Alkalinity, Total as CaCO <sub>3</sub>	<b>184</b>	mg/L	20.0	20.0	1		05/03/19 17:39		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>257</b>	mg/L	5.0	0.48	20		05/10/19 10:59	16887-00-6	
Fluoride	<b>1.3</b>	mg/L	0.30	0.029	1		05/09/19 04:52	16984-48-8	
Sulfate	<b>304</b>	mg/L	20.0	0.34	20		05/10/19 10:59	14808-79-8	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2618160

Sample: Dup-01		Lab ID: 2618160006		Collected: 05/02/19 00:00	Received: 05/03/19 13:25	Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Molybdenum	<b>0.11</b>	mg/L	0.010	0.0019	1	05/07/19 14:25	05/09/19 22:47	7439-98-7	

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2618160

<b>Sample: FBL-050319</b>		<b>Lab ID: 2618160007</b>		Collected: 05/03/19 11:21	Received: 05/03/19 13:25	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual	
<b>6010D MET ICP</b>		Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Silicon	ND	mg/L	0.040	0.0040	1	05/07/19 12:26	05/10/19 03:30	7440-21-3		
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.031J</b>	mg/L	0.040	0.0039	1	05/07/19 14:25	05/09/19 22:52	7440-42-8		
Calcium	<b>0.051J</b>	mg/L	0.50	0.014	1	05/07/19 14:25	05/09/19 22:52	7440-70-2		
Cobalt	ND	mg/L	0.010	0.00052	1	05/07/19 14:25	05/09/19 22:52	7440-48-4		
Magnesium	<b>0.015J</b>	mg/L	0.050	0.0062	1	05/07/19 14:25	05/09/19 22:52	7439-95-4	B	
Molybdenum	ND	mg/L	0.010	0.0019	1	05/07/19 14:25	05/09/19 22:52	7439-98-7		
Potassium	ND	mg/L	0.10	0.035	1	05/07/19 14:25	05/09/19 22:52	7440-09-7		
Sodium	ND	mg/L	0.10	0.015	1	05/07/19 14:25	05/09/19 22:52	7440-23-5		
<b>2320B Alkalinity Low Level</b>		Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		05/06/19 17:44			
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		05/06/19 17:44			
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		05/06/19 17:44			
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>0.062J</b>	mg/L	0.25	0.024	1		05/10/19 18:56	16887-00-6		
Fluoride	ND	mg/L	0.30	0.029	1		05/10/19 18:56	16984-48-8		
Sulfate	<b>0.040J</b>	mg/L	1.0	0.017	1		05/10/19 18:56	14808-79-8		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond  
Pace Project No.: 2618160

Sample: EQBL-050319      Lab ID: 2618160008      Collected: 05/03/19 11:24      Received: 05/03/19 13:25      Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010D MET ICP</b> Analytical Method: EPA 6010D      Preparation Method: EPA 3010A									
Silicon	ND	mg/L	0.040	0.0040	1	05/07/19 12:26	05/10/19 03:36	7440-21-3	
<b>6020B MET ICPMS</b> Analytical Method: EPA 6020B      Preparation Method: EPA 3005A									
Boron	<b>0.012J</b>	mg/L	0.040	0.0039	1	05/07/19 14:25	05/09/19 22:58	7440-42-8	
Calcium	<b>0.088J</b>	mg/L	0.50	0.014	1	05/07/19 14:25	05/09/19 22:58	7440-70-2	
Cobalt	ND	mg/L	0.010	0.00052	1	05/07/19 14:25	05/09/19 22:58	7440-48-4	
Magnesium	<b>0.0084J</b>	mg/L	0.050	0.0062	1	05/07/19 14:25	05/09/19 22:58	7439-95-4	B
Molybdenum	ND	mg/L	0.010	0.0019	1	05/07/19 14:25	05/09/19 22:58	7439-98-7	
Potassium	ND	mg/L	0.10	0.035	1	05/07/19 14:25	05/09/19 22:58	7440-09-7	
Sodium	<b>0.095J</b>	mg/L	0.10	0.015	1	05/07/19 14:25	05/09/19 22:58	7440-23-5	B
<b>2320B Alkalinity Low Level</b> Analytical Method: SM 2320B									
Alkalinity, Bicarbonate (CaCO <sub>3</sub> )	ND	mg/L	1.0	1.0	1		05/06/19 17:47		
Alkalinity, Carbonate (CaCO <sub>3</sub> )	ND	mg/L	1.0	1.0	1		05/06/19 17:47		
Alkalinity, Total as CaCO <sub>3</sub>	ND	mg/L	1.0	1.0	1		05/06/19 17:47		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Chloride	<b>0.29</b>	mg/L	0.25	0.024	1		05/09/19 05:34	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		05/09/19 05:34	16984-48-8	
Sulfate	<b>0.36J</b>	mg/L	1.0	0.017	1		05/09/19 05:34	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond

Pace Project No.: 2618160

QC Batch: 27891 Analysis Method: EPA 6010D

QC Batch Method: EPA 3010A Analysis Description: 6010D MET

Associated Lab Samples: 2618160001, 2618160002, 2618160005, 2618160007, 2618160008

METHOD BLANK: 125502 Matrix: Water

Associated Lab Samples: 2618160001, 2618160002, 2618160005, 2618160007, 2618160008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Silicon	mg/L	ND	0.040	0.0040	05/10/19 02:21	

LABORATORY CONTROL SAMPLE: 125503

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Silicon	mg/L	1	0.97	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 125504 125505

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		2618160001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Silicon	mg/L	5.0	1	1	5.8	6.1	81	105	75-125	4	20		

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2618160

QC Batch: 27900 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020B MET  
Associated Lab Samples: 2618160001, 2618160002, 2618160003, 2618160004, 2618160005, 2618160006, 2618160007, 2618160008

METHOD BLANK: 125551 Matrix: Water  
Associated Lab Samples: 2618160001, 2618160002, 2618160003, 2618160004, 2618160005, 2618160006, 2618160007, 2618160008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	0.0039	05/09/19 21:09	
Calcium	mg/L	ND	0.50	0.014	05/09/19 21:09	
Cobalt	mg/L	ND	0.010	0.00052	05/09/19 21:09	
Magnesium	mg/L	0.012J	0.050	0.0062	05/09/19 21:09	
Molybdenum	mg/L	ND	0.010	0.0019	05/09/19 21:09	
Potassium	mg/L	ND	0.10	0.035	05/09/19 21:09	
Sodium	mg/L	0.16	0.10	0.015	05/09/19 21:09	

LABORATORY CONTROL SAMPLE: 125552

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	1.0	104	80-120	
Calcium	mg/L	1	1.0	103	80-120	
Cobalt	mg/L	0.1	0.11	106	80-120	
Magnesium	mg/L	1	1.1	110	80-120	
Molybdenum	mg/L	0.1	0.11	107	80-120	
Potassium	mg/L	1	1.1	113	80-120	
Sodium	mg/L	1	1.2	119	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 125553 125554

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2618160001 Result	Spike Conc.	Spike Conc.	Result						
Boron	mg/L	10.1	1	1	10.7	12.7	59	258	75-125	17	20 M1
Calcium	mg/L	647	1	1	547	564	-9990	-8280	75-125	3	20 M6
Cobalt	mg/L	0.023J	0.1	0.1	0.13	0.13	106	103	75-125	2	20
Magnesium	mg/L	84.0	1	1	81.0	85.3	-294	135	75-125	5	20 M6
Molybdenum	mg/L	0.043	0.1	0.1	0.14	0.14	101	101	75-125	1	20
Potassium	mg/L	13.6	1	1	14.8	13.2	121	-34	75-125	11	20 M1
Sodium	mg/L	39.0	1	1	39.2	40.1	19	113	75-125	2	20 M1

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2618160

QC Batch: 27817 Analysis Method: SM 2320B  
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity, Low Level  
Associated Lab Samples: 2618160007, 2618160008

METHOD BLANK: 125304 Matrix: Water  
Associated Lab Samples: 2618160007, 2618160008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	ND	1.0	1.0	05/06/19 17:35	

LABORATORY CONTROL SAMPLE: 125305

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	50	49.5	99	85-115	

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### QUALITY CONTROL DATA

Project: Plant Bowen Ash Pond  
Pace Project No.: 2618160

QC Batch: 27947 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 2618160001, 2618160002, 2618160005, 2618160007, 2618160008

METHOD BLANK: 125764 Matrix: Water  
Associated Lab Samples: 2618160001, 2618160002, 2618160005, 2618160007, 2618160008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.10J	0.25	0.024	05/08/19 22:59	
Fluoride	mg/L	ND	0.30	0.029	05/08/19 22:59	
Sulfate	mg/L	0.022J	1.0	0.017	05/08/19 22:59	

LABORATORY CONTROL SAMPLE: 125765

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.2	102	90-110	
Fluoride	mg/L	10	10.3	103	90-110	
Sulfate	mg/L	10	10	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 125766 125767

Parameter	Units	2618153001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	61.2	10	10	71.9	71.7	107	105	90-110	0	15	E
Fluoride	mg/L	0.75	10	10	10.2	10.2	94	94	90-110	0	15	
Sulfate	mg/L	2090J	10	10	722	722	-13700	-13700	90-110	0	15	E,M1

MATRIX SPIKE SAMPLE: 125768

Parameter	Units	2618153002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	72.2	10	78.9	68	90-110	E,M1
Fluoride	mg/L	2.9	10	12.1	93	90-110	
Sulfate	mg/L	1300	10	538	-7590	90-110	E,M1

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2618160

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant Bowen Ash Pond  
Pace Project No.: 2618160

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2618160001	BGWC-22	EPA 3010A	27891	EPA 6010D	27950
2618160002	BGWA-2	EPA 3010A	27891	EPA 6010D	27950
2618160005	BGWC-32	EPA 3010A	27891	EPA 6010D	27950
2618160007	FBL-050319	EPA 3010A	27891	EPA 6010D	27950
2618160008	EQBL-050319	EPA 3010A	27891	EPA 6010D	27950
2618160001	BGWC-22	EPA 3005A	27900	EPA 6020B	28014
2618160002	BGWA-2	EPA 3005A	27900	EPA 6020B	28014
2618160003	BGWC-38D	EPA 3005A	27900	EPA 6020B	28014
2618160004	BGWC-37D	EPA 3005A	27900	EPA 6020B	28014
2618160005	BGWC-32	EPA 3005A	27900	EPA 6020B	28014
2618160006	Dup-01	EPA 3005A	27900	EPA 6020B	28014
2618160007	FBL-050319	EPA 3005A	27900	EPA 6020B	28014
2618160008	EQBL-050319	EPA 3005A	27900	EPA 6020B	28014
2618160001	BGWC-22	SM 2320B	27709		
2618160002	BGWA-2	SM 2320B	27709		
2618160005	BGWC-32	SM 2320B	27709		
2618160007	FBL-050319	SM 2320B	27817		
2618160008	EQBL-050319	SM 2320B	27817		
2618160001	BGWC-22	EPA 300.0	27947		
2618160002	BGWA-2	EPA 300.0	27947		
2618160005	BGWC-32	EPA 300.0	27947		
2618160007	FBL-050319	EPA 300.0	27947		
2618160008	EQBL-050319	EPA 300.0	27947		

**REPORT OF LABORATORY ANALYSIS**

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Sample Condition Upon Receipt

WO#: 2618160

Client Name: GAPower CCR

PM: BM Due Date: 05/10/19
CLIENT: GAPower-CCR

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used 082 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature 5.5c Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 5/3/19 CCR

Table with 16 rows and 3 columns. Columns: Question, Yes/No/N/A checkboxes, and a numerical index. Rows include Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Samples checked for dechlorination, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

Client Notification/ Resolution: Field Data Required? Y / N
Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_
Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

July 10, 2019

Joju Abraham  
Georgia Power - Coal Combustion Residuals  
2480 Maner Road  
Atlanta, GA 30339

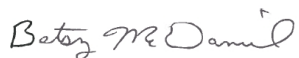
RE: Project: Plant Bowen Ash Pond  
Pace Project No.: 2620544

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on July 09, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Betsy McDaniel  
betsy.mcdaniel@pacelabs.com  
(770)734-4200  
Project Manager

Enclosures

cc: Whitney Law, Geosyntec Consultants  
Noelia Muskus, Geosyntec Consultants  
Rebecca Thornton, Pace Analytical Atlanta



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen Ash Pond

Pace Project No.: 2620544

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### Atlanta Certification IDs

110 Technology Parkway Peachtree Corners, GA 30092

Florida DOH Certification #: E87315

Georgia DW Inorganics Certification #: 812

Georgia DW Microbiology Certification #: 812

North Carolina Certification #: 381

South Carolina Certification #: 98011001

Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: Plant Bowen Ash Pond

Pace Project No.: 2620544

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
2620544001	BGWA-33	Water	07/09/19 11:51	07/09/19 13:20

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond  
Pace Project No.: 2620544

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<b>Lab ID</b>	<b>Sample ID</b>	<b>Method</b>	<b>Analysts</b>	<b>Analytes Reported</b>
2620544001	BGWA-33	EPA 6020B	KLH	2

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## ANALYTICAL RESULTS

Project: Plant Bowen Ash Pond

Pace Project No.: 2620544

Sample: <b>BGWA-33</b>		Lab ID: <b>2620544001</b>		Collected: 07/09/19 11:51		Received: 07/09/19 13:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Boron	<b>0.027J</b>	mg/L	0.040	0.0049	1	07/09/19 14:38	07/10/19 11:53	7440-42-8	
Molybdenum	<b>0.034</b>	mg/L	0.010	0.00095	1	07/09/19 14:38	07/10/19 11:53	7439-98-7	

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## QUALIFIERS

Project: Plant Bowen Ash Pond

Pace Project No.: 2620544

---

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Bowen Ash Pond

Pace Project No.: 2620544

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<b>Lab ID</b>	<b>Sample ID</b>	<b>QC Batch Method</b>	<b>QC Batch</b>	<b>Analytical Method</b>	<b>Analytical Batch</b>
2620544001	BGWA-33	EPA 3005A	31548	EPA 6020B	31551

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# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 Of 1

<b>Section A</b>		<b>Section B</b>		<b>Section C</b>	
<b>Required Client Information:</b>		<b>Required Project Information:</b>		<b>Invoice Information:</b>	
Company: Georgia Power - Coal Combustion Residuals	Report To: Joju Abraham	Company Name: Geosyntec	Attention:	Regulatory Agency:	
Address: 2480 Manor Road	Copy To: Atlanta, GA 30339	Purchase Order #: SCS10348606	Address:	State / Location: GA	
Email: jabraham@southemco.com	Project Name: Plant Bowen Ash Pond	Project #: 315	Pace Project Manager: belsy.mcdaniel@pacelabs.com	Pace Profile #:	
Phone: (404)508-7239	Requested Due Date:				

ITEM #	MATRIX CODE (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	# OF CONTAINERS	PRESERVATIVES		ANALYSES TEST	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
		START DATE TIME	END DATE TIME			UNPRESERVED	H2SO4			
1	DW	7/19/19	1:20	WTG	1	X			X	
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

**ADDITIONAL COMMENTS:** Metals 6020 B+Mo Only  
\*Rush Analysis

**RELINQUISHED BY / AFFILIATION:** *[Signature]* DATE: 7/19/19 TIME: 1:20

**ACCEPTED BY / AFFILIATION:** *[Signature]* DATE: 7/19/19 TIME: 1:30

**SAMPLE CONDITIONS:** Received on ice (Y/N)  Custody Sealed (Y/N)  Cooler (Y/N)  Samples Intact (Y/N)

**SAMPLER NAME AND SIGNATURE:**

PRINT Name of SAMPLER: Audrey Custon, Joe Booth  
SIGNATURE of SAMPLER: *[Signature]* DATE Signed: 7/19/19

**WO# : 2620544**

2620544



Sample Condition Upon Receipt

WO#: 2620544

PM: BM

Due Date: 07/10/19

CLIENT: GRPower-CCR

Client Name: GRPower

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used 082 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 2.1°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Optional
Proj. Due Date:
Proj. Name:

Date and Initials of person examining contents: <u>7/9/19/CRJ</u>
---

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7. <u>24hr TAT</u>
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>082</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project Manager Review: \_\_\_\_\_

Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

# Data Validation Reports

## Memorandum

Date: June 7, 2019  
To: Whitney Law  
From: Kristoffer Henderson  
CC: J. Caprio  
Subject: **Stage 2A Data Validations - Level II Data Deliverable – Pace Analytical Services, LLC Project Number 2615445, 2615446, 2615499, 26115500, 2615551, 2615552, 2615560, 2615561, 2615876, 2615877 and 2615880**

**SITE: Plant Bowen Ash Pond**

### INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of eighteen aqueous samples, two duplicate samples, two field blanks and two equipment blanks collected between 25 February 2019 and 6 March 2019, as part of the Plant Bowen Ash Pond on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Fluoride by Environmental Protection Agency (EPA) Method 300.0
- Metals by EPA Method 3005A/6020B
- Mercury by EPA Method 7470A

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by EPA Method 9315
- Radium-228 by EPA Method 9320
- Total radium by calculation

### EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data are usable for meeting project objectives.

The data were reviewed based on the pertinent methods referenced in the laboratory report, professional and technical judgment and the following documents:



- United States (US) EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

The following samples were analyzed and reported in the laboratory report:

Laboratory ID	Client ID
2615445001	BGWA-2
2615445002	BGWC-8
2615445003	BGWC-16
2615446001	BGWA-2
2615446002	BGWC-8
2615446003	BGWC-16
2615499001	BGWA-29
2615499002	BGWC-17
2615499003	BGWC-18
2615499004	BGWC-20
2615499005	Dup-1
2615500001	BGWA-29
2615500002	BGWC-17
2615500003	BGWC-18
2615500004	BGWC-20
2615500005	Dup-1
2615551001	BGWC-10
2615551002	BGWC-7
2615551003	BGWC-12
2615552001	BGWC-10
2615552002	BGWC-7
2615552003	BGWC-12
2615560001	BGWC-30
2615560002	BGWC-22

Laboratory ID	Client ID
2615560003	BGWC-24
2615560004	BGWC-25
2615560005	BGWC-19
2615560006	BGWC-23
2615560007	Dup-2
2615560008	FBL030119
2615560009	EQBL030119
2615561001	BGWC-30
2615561002	BGWC-22
2615561003	BGWC-24
2615561004	BGWC-25
2615561005	BGWC-19
2615561006	BGWC-23
2615561007	Dup-2
2615561008	FBL030119
2615561009	EQBL030119
2615876001	BGWC-14
2615876002	FBL030619
2615876003	EQBL030619
2615877001	BGWC-14
2615877002	FBL030619
2615877003	EQBL030619
2615880001	BGWC-34D

The samples were received within 0-6 degrees Celsius (°C). No sample preservation issues were noted by the laboratory.

The following issues were noted on the chain of custody (COC) forms; these issues did not result in qualifications:

- 2615445, 2615446, 2615499 and 2615500: The *relinquished by* years were missing from the COC forms.
- 2615445 and 2615446: There was a discrepancy in the date and time for the first sample relinquishing. The *relinquished by* time was documented as 2/27 1:34 and the *received by* time was documented as 2/27/19 1543.
- 2615499 and 2615500: There was a discrepancy in the date and time for the first sample relinquishing. The *relinquished by* time was documented as 2/28 1:23 and the *received by* time was documented as 2/28/19 1700.
- 2615499, 2615500, 2615560 and 2615561: Collection times were not listed for the field duplicates, Dup-1 and Dup-2. The field duplicates were logged in with the collection times of 00:00.
- 2615551 and 2615552: Incorrect error corrections were observed on the COC, instead of the proper procedure of a single strike through, correction, and initials and date of person making the corrections.
- 2615551: and 2615552 Analyses for total dissolved solid (TDS), chloride and sulfate were requested on the COC. These analyses were not reported per the client's request.

## 1.0 METALS

The samples were analyzed for metals by EPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ⊗ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

### **1.1 Overall Assessment**

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

### **1.2 Holding Time**

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

### **1.3 Method Blank**

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five method blanks were reported (batches 23515, 23567, 23687, 23688 and 24189). Metals were not detected in the method blanks above the method detection limits (MDLs).

### **1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)**

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three sample set specific MS/MSD pairs were reported using samples BGWA-2, BGWC-10 and BGWC-23. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria.

Two batch MS/MSD pairs were reported. Since these were batch QC there was no impact on this data and qualifications were not applied.

### **1.5 Laboratory Control Sample (LCS)**

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

### **1.6 Field Blank**

Two field blanks, FBL030119 and FBL030619, were collected with the sample set. Metals were not detected in the field blanks above the MDLs, with the following exception.

Lithium was detected in FBL030619 at an estimated concentration greater than the MDL and less than the reporting limit (RL). Therefore, the lithium concentrations in the associated samples less

than five times the field blank concentration were U\* qualified as not detected at the reported concentration.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
BGWC-20	Lithium	0.015	J	0.015	U*	BF
BGWC-10	Lithium	0.0017	J	0.0017	U*	BF
BGWC-7	Lithium	0.0086	J	0.0086	U*	BF
BGWC-12	Lithium	0.0011	J	0.0011	U*	BF
BGWC-30	Lithium	0.0044	J	0.0044	U*	BF
BGWC-24	Lithium	0.0068	J	0.0068	U*	BF
GWA-56	Lithium	0.0015	J	0.0015	U*	BF

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

\* Validation qualifiers are defined in Attachment 1 at the end of this report

\*\*Reason codes are defined in Attachment 2 at the end of this report

### 1.7 Equipment Blank

Two equipment blanks, EQBL030119 and EQBL030619, were collected with the sample set. Metals were not detected in the equipment blanks above the MDLs.

### 1.8 Field Duplicate

Two field duplicates, Dup-1 and Dup-2, were collected with the sample set. Acceptable precision ( $RPD \leq 20\%$  or difference  $< RL$ ) was demonstrated between the field duplicates and the original samples BGWA-29 and BGWC-22, respectively.

### 1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

### 1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flag D3 used in the level II reports was not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes included in the EDDs that were not requested or reported in the laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

## 2.0 MERCURY

The samples were analyzed for mercury by EPA method 7470A.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

### 2.1 Overall Assessment

The mercury data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

### 2.2 Holding Time

The holding time for the mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

### 2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported (batches 23344, 23510, 23535 and 24123). Mercury was not detected in the method blanks above the MDL, with the following exceptions.

2615499, 2615551 and 2615560: Mercury was detected at estimated concentrations greater than the MDL and less than the RL in the method blanks in batches 23510 and 23535. Therefore, the

mercury concentrations in the associated samples less than five times the method blank concentration were U\* qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
BGWA-29	Mercury	0.000065	J	0.000065	U*	BL
BGWC-18	Mercury	0.000079	J	0.000079	U*	BL
BGWC-20	Mercury	0.000066	J	0.000066	U*	BL
Dup-1	Mercury	0.000054	J	0.000054	U*	BL
BGWC-10	Mercury	0.000048	J	0.000048	U*	BL
BGWC-7	Mercury	0.000053	J	0.000053	U*	BL
BGWC-12	Mercury	0.000058	J	0.000058	U*	BL
BGWC-30	Mercury	0.00010	J	0.00010	U*	BL
BGWC-22	Mercury	0.000042	J	0.000042	U*	BL
BGWC-25	Mercury	0.000047	J	0.000047	U*	BL
BGWC-19	Mercury	0.000050	J	0.000050	U*	BL
BGWC-23	Mercury	0.000044	J	0.000044	U*	BL
Dup-2	Mercury	0.000047	J	0.000047	U*	BL
FBL030119	Mercury	0.000047	J	0.000047	U*	BL
EQBL030119	Mercury	0.000043	J	0.000043	U*	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

## 2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three sample set specific MS/MSD pairs were reported using samples BGWA-2, BGWC-10 and BGWC-14. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

One batch MS/MSD pair was also reported. Since these were batch QC there was no impact on this data and qualifications were not applied.

## 2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

## 2.6 Field Blank

Two field blanks, FBL030119 and FBL030619, were collected with the sample set. Mercury was not detected in the field blanks above the MDL, with the following exception.

Mercury was detected in FBL030119 at an estimated concentration greater than the MDL and less than the RL. Since the mercury concentration in FBL030119 was U\* qualified as not detected due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

## **2.7 Equipment Blank**

Two equipment blanks, EQBL030119 and EQBL030619, were collected with the sample set. Mercury was not detected in the equipment blanks above the MDL, with the following exception.

Mercury was detected in EBL030119 at an estimated concentration greater than the MDL and less than the RL. Since the mercury concentration in EBL030119 was U\* qualified as not detected due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

## **2.8 Field Duplicate**

Two field duplicates, Dup-1 and Dup-2, were collected with the sample set. Acceptable precision ( $RPD \leq 20\%$  or difference  $< RL$ ) was demonstrated between the field duplicates and the original samples BGWA-29 and BGWC-22, respectively.

## **2.9 Sensitivity**

The samples were reported to the MDL. Elevated non-detect results were not reported.

## **2.10 Electronic Data Deliverable Review**

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flag B used in the level II reports was not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes included in the EDDs that were not requested or reported in the laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

## **3.0 FLUORIDE**

The samples were analyzed for fluoride by EPA method 300.0.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues

were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ⊗ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

### **3.1 Overall Assessment**

The fluoride data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

### **3.2 Holding Times**

The holding time for the fluoride analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

### **3.3 Method Blank**

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five method blanks were reported (batches 23493, 23494, 23823, 23574 and 24135). Fluoride was not detected in the method blanks above the MDL.

### **3.4 Matrix Spike/Matrix Spike Duplicate**

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three sample set specific MS/MSD pairs were reported using samples BGWA-2, BGWA-29 and BGWC-14 and three sample set specific MSs were reported using samples BGWC-8, BGWC-17 and FBL030619. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of fluoride were low and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample BGWA-29. Therefore, the fluoride concentrations were



J qualified as estimated and the non-detect results were UJ qualified as estimated less than the MDL in the associated samples.

One batch MS and one batch MS/MSD pair were also reported. Since these were batch QC there was no impact on this data and qualifications were not applied.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
BGWA-29	Fluoride	0.029	U	0.029	UJ	M-
BGWC-17	Fluoride	0.26	J	0.26	J	M-
BGWC-18	Fluoride	0.029	U	0.029	UJ	M-
BGWC-20	Fluoride	0.13	J	0.13	J	M-
Dup-1	Fluoride	0.029	U	0.029	UJ	M-

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

U-not detected at or above the MDL

### 3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Five LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

### 3.6 Field Blank

Two field blanks, FBL030119 and FBL030619, were collected with the sample set. Fluoride was not detected in the field blanks above the MDL.

### 3.7 Equipment Blank

Two equipment blanks, EQBL030119 and EQBL030619, were collected with the sample set. Fluoride was not detected in the equipment blanks above the MDL.

### 3.8 Field Duplicate

Two field duplicates, Dup-1 and Dup-2, were collected with the sample set. Acceptable precision ( $RPD \leq 20\%$  or difference  $< RL$ ) was demonstrated between the field duplicates and the original samples BGWA-29 and BGWC-22, respectively.

### **3.9 Sensitivity**

The samples were reported to the MDL. No elevated nondetect results were reported.

### **3.10 Electronic Data Deliverable Review**

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flag M1 used in the level II reports was not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes included in the EDDs that were not requested or reported in the laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

## **4.0 RADIOCHEMISTRY**

The samples were analyzed for radium-226 by EPA method 9315, radium-228 by EPA method 9320 and total radium by calculation.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Tracers and Carriers
- ✓ Equipment Blank
- ✓ Field Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

### **4.1 Overall Assessment**

The radium-226 and radium-228 data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as

estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

#### **4.2 Holding Times**

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

#### **4.3 Method Blank**

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported for the radium-228 data (batches 332854, 332855, 334689 and 334690). Four method blanks were reported for the radium-226 data (batches 332626, 332856, 332857 and 333523). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs), with the following exceptions.

2615446: Radium-226 was detected at a concentration greater than the MDC in the method blank in batch 332626. Therefore, the radium-226 concentrations in the associated samples that were greater than the method blank concentration and with normalized absolute differences (NADs) less than 2.58 were U\* qualified as not detected at the reported concentrations.

2615500, 2615552 and 2615561: Radium-226 was detected at a concentration greater than the MDC in the method blank in batch 332856. Therefore, the radium-226 concentrations in the associated samples that were greater than the method blank concentration and with NADs less than 2.58 were U\* qualified as not detected at the reported concentrations.

2615561: Radium-226 was detected at a concentration greater than the MDC in the method blank in batch 332857. Therefore, the radium-226 concentration in the associated sample that was greater than the method blank concentration and with an NAD less than 2.58 was U\* qualified as not detected at the reported concentration.

2615877: Radium-228 was detected at a concentration greater than the MDC in the method blank in batch 334690. Since radium-228 was not detected above the MDC in the associated samples, no qualifications were applied to the data.

In addition, the combined radium-226 + 228 concentrations were qualified as following:

- Combined radium-226 + 228 concentrations with radium-228 less than the MDC and the radium-226 U\* qualified as not detected at the reported concentration were also U\* qualified as not detected at the reported concentration.
- Combined radium-226 + 228 concentration with a radium-226 concentration that was U\* qualified as not detected at the reported concentration and a radium-228 concentration greater than the MDC was J qualified as estimated.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
BGWA-2	Radium-226	1.10	NA	1.10	U*	BL
BGWA-2	Combined Radium 226 + 228	1.43	NA	1.43	U*	BL
BGWC-16	Radium-226	0.606	NA	0.606	U*	BL
BGWC-16	Combined Radium 226 + 228	1.08	NA	1.08	U*	BL
BGWA-29	Radium-226	0.343	NA	0.343	U*	BL
BGWC-17	Radium-226	0.430	NA	0.430	U*	BL
BGWC-17	Combined Radium 226 + 228	1.57	NA	1.57	J	BL
BGWC-18	Radium-226	0.519	NA	0.519	U*	BL
BGWC-18	Combined Radium 226 + 228	1.12	NA	1.12	U*	BL
BGWC-20	Radium-226	0.986	NA	0.986	U*	BL
BGWC-20	Combined Radium 226 + 228	1.24	NA	1.24	U*	BL
Dup-1	Radium-226	0.401	NA	0.401	U*	BL
Dup-1	Combined Radium 226 + 228	0.989	NA	0.989	U*	BL
BGWC-7	Radium-226	0.883	NA	0.883	U*	BL
BGWC-7	Combined Radium 226 + 228	1.38	NA	1.38	U*	BL
BGWC-12	Radium-226	0.461	NA	0.461	U*	BL
BGWC-12	Combined Radium 226 + 228	1.04	NA	1.04	U*	BL
BGWC-25	Radium-226	0.324	NA	0.324	U*	BL
BGWC-19	Radium-226	0.515	NA	0.515	U*	BL
FBL030119	Radium-226	0.309	NA	0.309	U*	BL
EQBL030119	Radium-226	0.657	NA	0.657	U*	BL
EQBL030119	Combined Radium 226 + 228	1.07	NA	1.07	U*	BL

pCi/L- picocuries per liter

NA-not applicable

#### **4.4 Matrix Spike/Matrix Spike Duplicate**

MS/MSD pairs were not reported with the data.

#### **4.5 Laboratory Control Sample**

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCSs and two LCS/LCS duplicate (LCSD) pairs were reported for radium-226. One LCS and three LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma ( $2\sigma$ )] results were within the laboratory and SOP specified acceptance criteria.

#### **4.6 Laboratory Duplicate**

One sample set specific laboratory duplicate was reported for radium-226 using sample EQBL030119. One sample set specific laboratory duplicate was reported for radium-228 using sample BGWC-22. The RER ( $2\sigma$ ) results were within the laboratory and SOP specified acceptance criteria.

Three batch laboratory duplicates were also reported for radium-226. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### **4.7 Tracers and Carriers**

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory and SOP specified acceptance criteria.

#### **4.8 Equipment Blank**

Two equipment blanks were collected with the sample sets, EQBL030119 and EQBL030619. Radium-226 and Radium-228 were not detected in the equipment blanks above the MDCs, with the following exceptions.

Radium-226 was detected at concentrations greater than the MDC in EBL030119 and EQBL030619. Since the radium-226 concentrations in the associated samples were either U\* qualified due to method blank contamination or had an NAD > 2.58, no additional qualifications were applied to the data, based on professional and technical judgment.

#### **4.9 Field Blank**

Two field blanks were collected with the sample sets, FBL030119 and FBL030619. Radium-226 and Radium-228 were not detected in the field blanks above the MDCs, with the following exception.

Radium-226 was detected at a concentration greater than the MDC in FBL030119. Since the radium-226 concentration in FBL030119 was U\* qualified due to method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

#### **4.10 Field Duplicate**

Two field duplicates, Dup-1 and Dup-2, were collected with the sample set. Acceptable precision (RER ( $2\sigma$ ) < 3) was demonstrated between the field duplicates and the original samples BGWA-29 and BGWC-22, respectively.

#### **4.11 Sensitivity**

The samples were reported to the MDCs. No elevated non-detect results were reported.

#### **4.12 Electronic Data Deliverables Review**

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

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\* \* \* \* \*

**ATTACHMENT 1**  
**DATA VALIDATION QUALIFIER DEFINITIONS**  
**AND INTERPRETATION KEY**  
**Assigned by Geosyntec's Data Validation Team per the SOP**

**DATA QUALIFIER DEFINITIONS**

- U The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit.
- U\* This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious analytical deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.
- UR The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.

**ATTACHMENT 2**  
**DATA VALIDATION REASON CODES**  
**Assigned by Geosyntec's Data Validation Team per the SOP**

<b>Reason Code</b>	<b>Explanation</b>
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.
M+	MS and/or MSD recoveries outside of acceptance limits. The result may be biased high.



## Memorandum

Date: June 7, 2019  
To: Whitney Law  
From: Kristoffer Henderson  
CC: J. Caprio  
Subject: **Stage 2A Data Validations - Level II Data Deliverable – Pace Analytical Services, LLC Project Number 2617064, 2617065, 2617076, 2617077, 2617079, 2617080, 2617082, 2617084, 2617086 and 2617087**

**SITE: Plant Bowen Ash Pond**

### INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of twenty-six aqueous samples, three duplicate samples, three field blanks and three equipment blanks collected between 1-5 April 2019, as part of the Plant Bowen Ash Pond on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals by Environmental Protection Agency (EPA) Method 3005A/6020B
- Mercury by EPA Method 7470A
- Anions (Chloride, Fluoride and Sulfate) by EPA Method 300.0
- Total Dissolved Solids (TDS) by Standard Method 2540C

The samples were analyzed at Pace Analytical Services, LLC, Greensburg, Pennsylvania, for the following analytical tests:

- Radium-226 by EPA Method 9315
- Radium-228 by EPA Method 9320
- Total radium by calculation

### EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data are usable for meeting project objectives.

The data were reviewed based on the pertinent methods referenced in the laboratory report, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (EPA 540-R-2017-001);
- American National Standard, Verification and Validation of Radiological Data for use in Waste Management and Environmental Remediation, February 15, 2012 (ANSI/ANS-41.5-2012); and,
- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

The following samples were analyzed and reported in the laboratory report:

Laboratory ID	Client ID
2617064001	BGWC-32
2617065001	BGWC-32
2617076001	BGWA-33
2617076002	BGWC-19
2617076003	BGWC-20
2617076004	BGWC-21
2617076005	BGWC-22
2617076006	BGWC-23
2617076007	BGWC-24
2617076008	FBL040319
2617076009	EQBL040319
2617077001	BGWA-33
2617077002	BGWC-19
2617077003	BGWC-20
2617077004	BGWC-21
2617077005	BGWC-22
2617077006	BGWC-23
2617077007	BGWC-24
2617077008	FBL040319
2617077009	EQBL040319
2617079001	BGWC-14
2617079002	BGWC-25
2617079003	BGWC-31
2617079004	BGWC-34D
2617079005	BGWC-35D
2617079006	Dup-3
2617079007	FBL040419

Laboratory ID	Client ID
2617079008	EQBL040419
2617080001	BGWC-14
2617080002	BGWC-25
2617080003	BGWC-31
2617080004	BGWC-34D
2617080005	BGWC-35D
2617080006	Dup-3
2617080007	FBL040419
2617080008	EQBL040419
2617082001	BGWC-10
2617082002	BGWC-30
2617082003	BGWC-36D
2617082004	BGWC-17
2617082005	BGWC-18
2617082006	BGWC-7
2617082007	BGWA-6
2617082008	BGWC-16
2617082009	Dup-2
2617082010	FBL040219
2617082011	EQBL040219
2617084001	BGWC-10
2617084002	BGWC-30
2617084003	BGWC-36D
2617084004	BGWC-17
2617084005	BGWC-18
2617084006	BGWC-7
2617084007	BGWA-6

Laboratory ID	Client ID
2617084008	BGWC-16
2617084009	Dup-2
2617084010	FBL040219
2617084011	EQBL040219
2617086001	BGWA-2
2617086002	BGWA-29
2617086003	BGWC-8
2617086004	BGWC-9

Laboratory ID	Client ID
2617086005	BGWC-12
2617086006	Dup-1
2617087001	BGWA-2
2617087002	BGWA-29
2617087003	BGWC-8
2617087004	BGWC-9
2617087005	BGWC-12
2617087006	Dup-1

The samples were received within 0-6 degrees Celsius (°C). No sample preservation issues were noted by the laboratory.

The following issues were noted on the chain of custody (COC) forms; these issues did not result in qualifications:

- 2617076, 2617077, 2617079, 2617080, 2617082, 2617084, 2617086 and 2617087: The *relinquished* by signature, date and time for the second sample transfers were missing from the COC forms.
- 2617079, 2617080, 2617082, 2617084, 2617086 and 2617087: Collection times were not listed for the field duplicates, Dup-3, Dup-2 and Dup-1. The field duplicates were logged in with the collection times of 00:00.

Laboratory reports 2617064, 2617079 and 2617086 were revised on April 15, 2019 to correct the units and analyte list for the metals data per the client’s request.

Laboratory report 2617076 was revised on April 13, 2019 to correct the units and analyte list for the metals data per the client’s request.

Laboratory report 2617082 was revised on April 18, 2019 to correct the units for the mercury data per the client’s request.

## 1.0 METALS

The samples were analyzed for metals by EPA methods 3005A/6020B.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time

- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ⊗ Field Blank
- ⊗ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

### 1.1 Overall Assessment

The metals data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

### 1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

### 1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported (batches 468329, 468126, 473123 and 468328). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exception.

2617064, 2617079, 2617082 and 2617086: Arsenic was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL) in the method blank in batch 468329. Therefore, the arsenic concentrations in the associated samples less than five times the method blank concentration were U\* qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier*	Reason Code**
Dup-2	Arsenic	0.00012	J	0.00012	U*	BL
BGWA-29	Arsenic	0.00019	J	0.00019	U*	BL
BGWC-12	Arsenic	0.00028	J	0.00028	U*	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

\* Validation qualifiers are defined in Attachment 1 at the end of this report

\*\*Reason codes are defined in Attachment 2 at the end of this report

#### **1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)**

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample Dup-2. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of boron were high and outside the laboratory and SOP specified acceptance criteria and the recoveries of calcium were low and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample Dup-2. Since the boron and calcium concentrations in sample Dup-2 were greater than four times the spiked concentrations, no qualifications were applied to the data, based on professional and technical judgment.

Three batch MS/MSD pairs were reported. Since these were batch QC there was no impact on this data and qualifications were not applied.

#### **1.5 Laboratory Control Sample (LCS)**

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

#### **1.6 Field Blank**

Three field blanks, FBL040219, FBL040319 and FBL040419, were collected with the sample sets. Metals were not detected in the field blanks above the MDLs, with the following exceptions.

Barium and calcium were detected at estimated concentrations greater than the MDLs and less than the RLs and boron (0.93 mg/L) was detected above the RL in FBL040319. Since barium and calcium were detected in the associated samples at concentrations greater than five times the field blank concentrations, no qualifications were applied to the barium and calcium data. However, the boron concentrations in the associated samples less than five times the field blank concentration were U\* qualified as not detected at the reported concentrations.

Barium and boron were detected at estimated concentrations greater than the MDLs and less than the RLs in FBL040419 and FBL040219. Since barium was detected in the associated samples at concentrations greater than five times the field blank concentration, no qualifications were applied to the barium data. However, the boron concentrations in the associated samples less than five times the field blank concentration were U\* qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
BGWC-32	Boron	4.6	J	4.6	U*	BF
BGWA-33	Boron	0.66	NA	0.66	U*	BF
BGWC-19	Boron	0.51	NA	0.51	U*	BF
BGWC-20	Boron	2.6	NA	2.6	U*	BF
BGWC-21	Boron	0.12	NA	0.12	U*	BF
BGWC-14	Boron	0.79	J	0.79	U*	BF
BGWC-25	Boron	0.020	J	0.020	U*	BF
BGWC-31	Boron	0.59	J	0.59	U*	BF
BGWC-34D	Boron	0.15	NA	0.15	U*	BF
Dup-3	Boron	0.076	J	0.076	U*	BF
BGWC-10	Boron	0.51	J	0.51	U*	BF
BGWC-17	Boron	0.95	J	0.95	U*	BF
BGWC-18	Boron	0.56	J	0.56	U*	BF
BGWC-7	Boron	1.4	NA	1.4	U*	BF
BGWA-6	Boron	0.037	J	0.037	U*	BF
BGWC-16	Boron	1.1	NA	1.1	U*	BF
Dup-2	Boron	0.49	J	0.49	U*	BF
BGWA-2	Boron	0.0076	J	0.0076	U*	BF
BGWA-29	Boron	0.0048	J	0.0048	U*	BF
BGWC-8	Boron	0.046	J	0.046	U*	BF
BGWC-9	Boron	0.50	NA	0.50	U*	BF
BGWC-12	Boron	0.86	J	0.86	U*	BF
Dup-1	Boron	0.013	J	0.013	U*	BF

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

NA-not applicable

### 1.7 Equipment Blank

Three equipment blanks, EQBL040219, EQBL040319 and EQBL040419, were collected with the sample set. Metals were not detected in the equipment blanks above the MDLs, with the following exceptions.

Calcium was detected at an estimated concentration greater than the MDL and less than the RL and boron (0.32 mg/L) was detected above the RL in EQBL040319. Since calcium was detected in the associated samples at concentrations greater than five times the field blank concentration, no qualifications were applied to the calcium data. However, the boron concentrations in the associated samples less than five times the field blank concentration were U\* qualified as not detected at the reported concentration.

Barium and boron were detected at estimated concentrations greater than the MDLs and less than the RLs in EQBL040219. Since barium was detected in the associated samples at concentrations

greater than five times the field blank concentration, no qualifications were applied to the barium data. However, the boron concentrations in the associated samples less than five times the field blank concentration were U\* qualified as not detected at the reported concentration.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
BGWA-33	Boron	0.66	NA	0.66	U*	BE
BGWC-19	Boron	0.51	NA	0.51	U*	BE
BGWC-21	Boron	0.12	NA	0.12	U*	BE
BGWC-14	Boron	0.79	J	0.79	U*	BE
BGWC-25	Boron	0.020	J	0.020	U*	BE
BGWC-31	Boron	0.59	J	0.59	U*	BE
BGWC-34D	Boron	0.15	NA	0.15	U*	BE
Dup-3	Boron	0.076	J	0.076	U*	BE
BGWC-10	Boron	0.51	J	0.51	U*	BE
BGWC-17	Boron	0.95	J	0.95	U*	BE
BGWC-18	Boron	0.56	J	0.56	U*	BE
BGWC-7	Boron	1.4	NA	1.4	U*	BE
BGWA-6	Boron	0.037	J	0.037	U*	BE
BGWC-16	Boron	1.1	NA	1.1	U*	BE
Dup-2	Boron	0.49	J	0.49	U*	BE
BGWA-2	Boron	0.0076	J	0.0076	U*	BE
BGWA-29	Boron	0.0048	J	0.0048	U*	BE
BGWC-8	Boron	0.046	J	0.046	U*	BE
BGWC-9	Boron	0.50	NA	0.50	U*	BE
BGWC-12	Boron	0.86	J	0.86	U*	BE
Dup-1	Boron	0.013	J	0.013	U*	BE

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

NA-not applicable

### 1.8 Field Duplicate

Three field duplicates, Dup-1, Dup-2 and Dup-3, were collected with the sample set. Acceptable precision ( $RPD \leq 20\%$  or difference  $< RL$ ) was demonstrated between the field duplicates and the original samples BGWA-2, BGWC-18 and BGWC-25, respectively.

### 1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

### **1.10 Electronic Data Deliverable (EDD) Review**

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flags B, M1 and M6 used in the level II reports were not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

## **2.0 MERCURY**

The samples were analyzed for mercury by EPA method 7470A.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

### **2.1 Overall Assessment**

The mercury data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.



## **2.2 Holding Time**

The holding time for the mercury analysis of a water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

## **2.3 Method Blank**

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (batches 468368, 468366 and 468642). Mercury was not detected in the method blanks above the MDL.

## **2.4 Matrix Spike/Matrix Spike Duplicate**

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One sample set specific MS/MSD pair was reported using sample BGWC-14. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria.

Two batch MS/MSD pairs were also reported. Since these were batch QC there was no impact on this data and qualifications were not applied.

## **2.5 Laboratory Control Sample**

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

## **2.6 Field Blank**

Three field blanks, FBL040219, FBL040319 and FBL040419, were collected with the sample set. Mercury was not detected in the field blanks above the MDL.

## **2.7 Equipment Blank**

Three equipment blanks, EQBL040219, EQBL040319 and EQBL040419, were collected with the sample set. Mercury was not detected in the equipment blanks above the MDL.

## **2.8 Field Duplicate**

Three field duplicates, Dup-1, Dup-2 and Dup-3, were collected with the sample set. Acceptable precision ( $RPD \leq 20\%$  or difference  $< RL$ ) was demonstrated between the field duplicates and the original samples BGWA-2, BGWC-18 and BGWC-25, respectively.

## **2.9 Sensitivity**

The samples were reported to the MDL. Elevated non-detect results were not reported.

## **2.10 Electronic Data Deliverable Review**

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. There were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

## **3.0 WET CHEMISTRY**

The samples were analyzed for anions (chloride, fluoride and sulfate )by EPA Method 300.0 and TDS by Standard Method 2540C.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ⊗ Method Blank
- ⊗ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ⊗ Field Blank
- ⊗ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

## **3.1 Overall Assessment**

The anions data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total

number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

### 3.2 Holding Times

The holding time for the anions analysis of a water sample is 28 days from sample collection to analysis. The holding time for the TDS analysis of a water sample is 7 days from sample collection to analysis. The holding times were met for the sample analyses.

### 3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported for the anions (batches 25956, 26061, 26063 and 26064). The anions were not detected in the method blanks above the MDLs, with the following exceptions.

2617064: Chloride and sulfate were detected at estimated concentrations greater than the MDLs and less than the RLs in the method blank in batch 25956. Since chloride and sulfate were detected in the associated samples at concentrations greater than five times the method blank concentration, no qualifications were applied to the data.

2617076: Chloride (0.31 mg/L) was detected at a concentration greater than the RL in the method blank in batch 26061. Therefore, the chloride concentrations in the associated samples less than five times the method blank concentration were U\* qualified as not detected at the reported concentrations.

2617079: Chloride was detected at an estimated concentration greater than the MDL and less than the RL in the method blank in batch 26063. Therefore, the chloride concentrations in the associated samples less than five times the method blank concentration were U\* qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
FBL040319	Chloride	0.31	NA	0.31	U*	BL
EQBL040319	Chloride	0.32	NA	0.32	U*	BL
FBL040419	Chloride	0.073	J	0.073	U*	BL
EQBL040419	Chloride	0.077	J	0.077	U*	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

NA-not applicable

### 3.4 Matrix Spike/Matrix Spike Duplicate

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two sample set specific MS/MSD pairs were reported using samples BGWC-14 and BGWA-2 and two sample set specific MSs were reported using samples BGWC-25 and BGWA-29. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.

The recoveries of chloride and sulfate were low and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample BGWC-25. Since the sulfate concentration in sample BGWC-25 was greater than four times the spiked concentration, no qualifications were applied to the sulfate data. However, the chloride concentrations in the associated samples were J qualified as estimated.

The recoveries of sulfate were low and outside the laboratory and SOP specified acceptance criteria in the MS/MSD pair using sample BGWA-2. Therefore, the sulfate concentrations in the associated samples were J qualified as estimated.

The recovery of sulfate was low and outside the laboratory and SOP specified acceptance criteria in the MS using sample BGWA-29. Therefore, the sulfate concentrations in the associated samples were J qualified as estimated.

25956 26061 batch MS and 25956 26061 batch MS/MSD pair were also reported. Since these were batch QC there was no impact on this data and qualifications were not applied.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
BGWC-14	Chloride	33.7	NA	33.7	J	M-
BGWC-25	Chloride	3.8	NA	3.8	J	M-
BGWC-31	Chloride	32.7	NA	32.7	J	M-
BGWC-34D	Chloride	28.4	NA	28.4	J	M-
BGWC-35D	Chloride	605	NA	605	J	M-
Dup-3	Chloride	4.0	NA	4	J	M-
FBL040419	Chloride	0.073	J	0.073	J	M-
EQBL040419	Chloride	0.077	J	0.077	J	M-
BGWA-2	Sulfate	10.8	NA	10.8	J	M-
BGWA-29	Sulfate	5.2	NA	5.2	J	M-
BGWC-8	Sulfate	30.5	NA	30.5	J	M-
BGWC-9	Sulfate	81.4	NA	81.4	J	M-
BGWC-12	Sulfate	239	NA	239	J	M-
Dup-1	Sulfate	10.9	NA	10.9	J	M-

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

NA-not applicable

### **3.5 Laboratory Control Sample**

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for each batch and analysis. The recovery results were within the laboratory and SOP specified acceptance criteria.

### **3.6 Laboratory Duplicate**

Three sample set specific laboratory duplicates were reported using samples BGWC-22, BGWC-7 and BGWA-2. The recovery and RPD results were within the laboratory and SOP specified acceptance criteria, with the following exception.

The RPD of TDS in the laboratory duplicate using sample BGWA-2 was high and outside the laboratory specified acceptance criteria. Since the RPD of TDS was within the SOP specified acceptance criteria, no qualifications were applied to the data, based on professional and technical judgment.

Six batch laboratory duplicates were also reported. Since these were batch QC there was no impact on this data and qualifications were not applied.

### **3.7 Field Blank**

Three field blanks, FBL040219, FBL040319 and FBL040419, were collected with the sample set. The wet chemistry parameters were not detected in the field blanks above the MDLs, with the following exceptions.

TDS was detected at an estimated concentration greater than the MDL and less than the RL and chloride (0.31 mg/L) was detected at a concentration greater than the RL in FBL040319. Since the chloride concentration in FBL040319 was U\* qualified due to method blank contamination, no additional qualifications were applied to the chloride data. However, the TDS concentration in the associated sample less than five times the field blank concentration was U\* qualified as not detected at the reported concentration.

TDS, chloride and sulfate were detected at estimated concentrations greater than the MDLs and less than the RLs in FBL040419 and FBL040219. Since the chloride concentration in FBL040419 was U\* qualified due to method blank contamination and sulfate was detected in the associated samples at concentrations greater than five times the field blank concentration, no additional qualifications were applied to the chloride and sulfate data. However, the TDS concentration in the associated sample less than five times the field blank concentration was U\* qualified as not detected at the reported concentration.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
BGWC-24	TDS	13.0	J	13	U*	BF

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

### 3.8 Equipment Blank

Three equipment blanks, EQBL040219, EQBL040319 and EQBL040419, were collected with the sample set. The wet chemistry parameters were not detected in the equipment blanks above the MDLs with the following exceptions.

TDS (45.0 mg/L) and chloride (0.31 mg/L) were detected at concentrations greater than the RLs in EQBL040319. Since the chloride concentration in EBL040319 was U\* qualified due to method blank contamination, no additional qualifications were applied to the chloride data. However, the TDS concentrations in the associated samples less than five times the field blank concentrations were U\* qualified as not detected at the reported concentrations.

Chloride and sulfate were detected at estimated concentrations greater than the MDLs and less than the RLs in EQBL040419. Since the chloride concentration in EQBL040419 was U\* qualified due to method blank contamination and sulfate was detected in the associated samples at concentrations greater than five times the equipment blank concentration, no additional qualifications were applied to the data.

TDS, chloride and sulfate were detected at estimated concentrations greater than the MDLs and less than the RLs in EQBL040219. Since chloride and sulfate were detected in the associated samples at concentrations greater than five times the field blank concentrations, no qualifications were applied to the chloride and sulfate data. However, the TDS concentrations in the associated samples less than five times the field blank concentrations were U\* qualified as not detected at the reported concentrations.

Sample	Analyte	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
BGWC-24	TDS	13.0	J	13	U*	BE
BGWC-25	TDS	196	NA	196	U*	BE
Dup-3	TDS	207	NA	207	U*	BE
BGWA-29	TDS	114	NA	114	U*	BE
BGWC-8	TDS	191	NA	191	U*	BE
BGWC-12	TDS	191	NA	191	U*	BE
Dup-1	TDS	178	NA	178	U*	BE

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

NA-not applicable

### **3.9 Field Duplicate**

Three field duplicates, Dup-1, Dup-2 and Dup-3, were collected with the sample set. Acceptable precision ( $RPD \leq 20\%$  or difference  $< RL$ ) was demonstrated between the field duplicates and the original samples BGWA-2, BGWC-18 and BGWC-25, respectively.

### **3.10 Sensitivity**

The samples were reported to the MDL. No elevated nondetect results were reported.

### **3.11 Electronic Data Deliverable Review**

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flags D6, M1 and B used in the level II reports were not included in the EDDs. In addition, there were several laboratory report specific EDDs that included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

## **4.0 RADIOCHEMISTRY**

The samples were analyzed for radium-226 by EPA method 9315, radium-228 by EPA method 9320 and total radium by calculation.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ⊗ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Tracers and Carriers
- ✓ Equipment Blank
- ⊗ Field Blank
- ✓ Field Duplicate

- ✓ Sensitivity
- ✓ Electronic Data Deliverables Review

#### **4.1 Overall Assessment**

The radium-226 and radium-228 data reported in these packages are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this dataset is 100%.

#### **4.2 Holding Times**

The holding times for the radium-226 and radium-228 analyses of a water sample are 180 days from sample collection to analysis. The holding times were met for the sample analyses.

#### **4.3 Method Blank**

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported for the radium-228 data (batches 337911, 337912 and 337913). Three method blanks were reported for the radium-226 data (batches 337917, 337919 and 337921). Radium-226 and radium-228 were not detected in the method blanks above the minimum detectable concentrations (MDCs).

#### **4.4 Matrix Spike/Matrix Spike Duplicate**

MS/MSD pairs were not reported with the data.

#### **4.5 Laboratory Control Sample**

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS and two LCS/LCS duplicate (LCSD) pairs were reported for radium-226. Three LCS/LCSD pairs were reported for radium-228. The recovery and replicate error ratio (RER) [2 sigma ( $2\sigma$ )] results were within the laboratory and SOP specified acceptance criteria, with the following exception.

2617084: The recovery of radium-226 in the LCS in batch 337921 was high and outside the laboratory and SOP specified acceptance criteria. Therefore, the radium-226 concentrations in the associated samples were J qualified as estimated. In addition, the combined radium-226 + 228 concentrations greater than the MDC with a J qualified radium-226 component were also J qualified as estimated.



Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
BGWC-30	Radium-226	1.18	NA	1.18	J	L+
BGWC-30	Combined Radium 226 + 228	2.29	NA	2.29	J	L+
BGWC-36D	Radium-226	1.39	NA	1.39	J	L+
BGWC-36D	Combined Radium 226 + 228	2.81	NA	2.81	J	L+
BGWC-7	Radium-226	0.675	NA	0.675	J	L+
BGWC-7	Combined Radium 226 + 228	1.57	NA	1.57	J	L+
Dup-2	Radium-226	0.642	NA	0.642	J	L+
Dup-2	Combined Radium 226 + 228	1.50	NA	1.50	J	L+
BGWA-2	Radium-226	0.616	NA	0.616	J	L+
Dup-1	Radium-226	0.668	NA	0.668	J	L+
Dup-1	Combined Radium 226 + 228	1.50	NA	1.50	J	L+

pCi/L-picocuries per liter

NA-not applicable

#### 4.6 Laboratory Duplicate

Two sample set specific laboratory duplicates were reported for radium-226 using samples BGWC-35D and BGWC-21. The RER ( $2\sigma$ ) results were within the laboratory and SOP specified acceptance criteria.

One batch laboratory duplicate was also reported for radium-226. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

#### 4.7 Tracers and Carriers

Carriers were reported for the radium-226 and radium-228 analyses and a tracer was reported for the radium-228 analyses. The recovery results were within the laboratory and SOP specified acceptance criteria.

#### 4.8 Equipment Blank

Three equipment blanks, EQBL040219, EQBL040319 and EQBL040419, were collected with the sample set. Radium-226 and Radium-228 were not detected in the equipment blanks above the MDCs.

#### 4.9 Field Blank

Three field blanks, FBL040219, FBL040319 and FBL040419, were collected with the sample set. Radium-226 and Radium-228 were not detected in the field blanks above the MDCs, with the following exception.

Radium-228 was detected at a concentration greater than the MDC in FBL040419. Therefore, the radium-228 concentrations in the associated samples greater than the MDC with a normalized absolute difference (NAD), 2.58 were J qualified as estimated. In addition, the combined radium 226 + 228 concentrations greater than the MDC with a radium-228 component that was U\* qualified as not detected were J qualified as estimated.

Sample	Analyte	Laboratory Result (pCi/L)	Laboratory Flag	Validation Result (pCi/L)	Validation Qualifier	Reason Code
BGWC-32	Radium-228	1.02	NA	1.02	U*	BF
BGWC-32	Combined Radium 226 + 228	2.20	NA	2.20	J	BF
BGWC-23	Radium-228	1.10	NA	1.10	U*	BF
BGWC-23	Combined Radium 226 + 228	2.86	NA	2.86	J	BF
BGWC-24	Radium-228	1.22	NA	1.22	U*	BF
BGWC-24	Combined Radium 226 + 228	3.60	NA	3.60	J	BF
BGWC-35D	Radium-228	1.29	NA	1.29	U*	BF
BGWC-35D	Combined Radium 226 + 228	2.37	NA	2.37	J	BF
BGWC-30	Radium-228	1.11	NA	1.11	U*	BF
BGWC-30	Combined Radium 226 + 228	2.29	NA	2.29	J	BF
BGWC-36D	Radium-228	1.42	NA	1.42	U*	BF
BGWC-36D	Combined Radium 226 + 228	2.81	NA	2.81	J	BF
BGWC-7	Radium-228	0.897	NA	0.897	U*	BF
BGWC-7	Combined Radium 226 + 228	1.57	NA	1.57	J	BF
BGWC-16	Radium-228	1.22	NA	1.22	U*	BF
BGWC-16	Combined Radium 226 + 228	1.73	NA	1.73	J	BF
Dup-2	Radium-228	0.861	NA	0.861	U*	BF
Dup-2	Combined Radium 226 + 228	1.50	NA	1.50	J	BF
Dup-1	Radium-228	0.831	NA	0.831	U*	BF
Dup-1	Combined Radium 226 + 228	1.50	NA	1.50	J	BF

pCi/L-picocuries per liter

NA-not applicable

#### 4.10 Field Duplicate

Three field duplicate samples were collected with the sample sets, Dup-1, Dup-2 and Dup-3. Acceptable precision (RER ( $2\sigma$ ) < 3) was demonstrated between the field duplicates and the original samples BGWA-2, BGWC-18 and BGWC-25, respectively.

#### **4.11 Sensitivity**

The samples were reported to the MDCs. No elevated non-detect results were reported.

#### **4.12 Electronic Data Deliverables Review**

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II reports and the EDDs.

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**ATTACHMENT 1**  
**DATA VALIDATION QUALIFIER DEFINITIONS**  
**AND INTERPRETATION KEY**  
**Assigned by Geosyntec's Data Validation Team per the SOP**

**DATA QUALIFIER DEFINITIONS**

- U The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit.
- U\* This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious analytical deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.
- UR The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.

**ATTACHMENT 2**  
**DATA VALIDATION REASON CODES**  
**Assigned by Geosyntec's Data Validation Team per the SOP**

<b>Reason Code</b>	<b>Explanation</b>
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
L+	LCS and/or LCD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.
M+	MS and/or MSD recoveries outside of acceptance limits. The result may be biased high.

## Memorandum

Date: July 1, 2019  
To: Whitney Law  
From: Kristoffer Henderson  
CC: J. Caprio  
Subject: **Stage 2A Data Validations - Level II Data Deliverable – Pace Analytical Services, LLC Project Number 2618160**

**SITE: Plant Bowen Ash Pond**

### INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of five aqueous samples, one field duplicate sample, one field blank and one equipment blank collected between 2-3 May 2019, as part of the Plant Bowen Ash Pond on-site sampling event.

The samples were analyzed at Pace Analytical Services, LLC, Peachtree Corners, Georgia, for the following analytical tests:

- Metals by United States (US) Environmental Protection Agency (EPA) Methods 3005A/6020B
- Silicon by US EPA Method 3010A/6010D
- Alkalinity by Standard Method 2320B
- Anions (Chloride, Fluoride and Sulfate) by US EPA Method 300.0

### EXECUTIVE SUMMARY

Based on the Stage 2A data validation covering the quality control (QC) parameters listed below and the information provided, the data as qualified are usable for meeting project objectives. Qualified data should be used within the limitation of the qualification.

The data were reviewed based on the pertinent methods referenced in the laboratory report, professional and technical judgment and the following documents:

- US EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 2011);
- US EPA National Functional Guidelines for Inorganic Superfund Methods Data Review, January 2017 (US EPA 540-R-2017-001);

- Southern Company Services, Inc., Standard Operating Procedure (hereafter referred to as the SOP) for Level 2A Verification of Coal Combustion Residuals Data, Environmental Testing Laboratory Program, Draft, November 21, 2017, Revision 0, Prepared by Environmental Standards, Inc., Valley Forge, Pennsylvania.

The following samples were analyzed and reported in the laboratory report:

Laboratory ID	Client ID
2618160001	BGWC-22
2618160002	BGWA-2
2618160003	BGWC-38D
2618160004	BGWC-37D

Laboratory ID	Client ID
2618160005	BGWC-32
2618160006	Dup-01
2618160007	FBL-050319
2618160008	EQBL-050319

The samples were received within 0-6 degrees Celsius (°C). No sample preservation issues were noted by the laboratory.

A collection time was not listed on the chain of custody (COC) for the field duplicate. The field duplicate was logged in with the collection time of 00:00.

The report was revised on May 23, 2019 to add the confirmation molybdenum data for sample BGWC-38D. The report was revised a second time on July 1, 2019 to remove the extra metal results for sample BGWC-22 and the confirmation molybdenum data for sample BGWC-38D.

## 1.0 METALS

The samples were analyzed for metals by US EPA Methods 3005A/6020B and silicon by US EPA Methods 3010A/6010D.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ⊗ Field Blank
- ⊗ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

### 1.1 Overall Assessment

The metals data reported in this package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

### 1.2 Holding Time

The holding time for the metals analysis of a water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

### 1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 27891 and 27900). Metals were not detected in the method blanks above the method detection limits (MDLs), with the following exceptions.

Magnesium (0.012 mg/L) was detected at an estimated concentration greater than the MDL and less than the reporting limit (RL) and sodium (0.16 mg/L) was detected at a concentration greater than the RL in the method blank in batch 27900. Therefore, the magnesium and sodium concentrations in the associated samples less than five times the method blank concentrations were U\* qualified as not detected at the reported concentrations.

Sample	ANALYTE	Laboratory Result (mg/L)	Laboratory Flag	Validation Result	Validation Qualifier**	Reason Code***
FBL-050319	Magnesium	0.015	J B	0.015	U*	BL
EQBL-050319	Magnesium	0.0084	J B	0.0084	U*	BL
EQBL-050319	Sodium	0.095	J B	0.095	U*	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

B-laboratory flag indicating analyte was detected in the associated method blank

\*\* Validation qualifiers are defined in Attachment 1 at the end of this report

\*\*\*Reason codes are defined in Attachment 2 at the end of this report

### 1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two sample set specific MS/MSD pairs were reported, using sample BGWC-22. The recovery and relative percent difference (RPD) results were within the laboratory and SOP specified acceptance criteria, with the following exceptions.



The MS recoveries of boron and magnesium were low, and the MSD recoveries were high, outside the laboratory specified acceptance criteria. The MS/MSD recoveries of calcium, the MSD recovery of potassium and the MS recovery of sodium were low and the outside the laboratory specified acceptance criteria. Since the boron, magnesium, calcium, potassium and sodium concentrations in sample BGWC-22 were greater than four times the spiked concentrations, no qualifications were applied to the data, based on professional and technical judgment.

### 1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCSs were reported. The recovery results were within the laboratory and SOP specified acceptance criteria.

### 1.6 Field Blank

One field blank, FBL-050319, was collected with the sample set. Metals were not detected in the field blank above the MDLs, with the following exceptions.

Boron (0.031 mg/L), calcium (0.051 mg/L) and magnesium (0.015 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs. Since calcium was detected in the associated samples at concentrations greater than five times the field blank concentration and the magnesium concentration in FBL-050319 was U\* qualified as not detected at the reported concentration due to the method blank contamination, no additional qualifications were applied to the calcium and magnesium data, based on professional and technical judgment. However, the boron concentration in the associated sample less than five times the field blank concentration was U\* qualified as not detected at the reported concentration.

Sample	ANALYTE	Laboratory Result (mg/L)	Laboratory Flag	Validation Result	Validation Qualifier	Reason Code
BGWA-2	Boron	0.015	J	0.015	U*	BF

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

### 1.7 Equipment Blank

One equipment blank, EQBL-050319, was collected with the sample set. Metals were not detected in the equipment blank above the MDLs, with the following exceptions.

Boron (0.012 mg/L), calcium (0.088 mg/L), magnesium (0.0084 mg/L) and sodium (0.095 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs. Since calcium was detected in the associated samples at concentrations greater than five times the field blank concentration and the magnesium and sodium concentrations in FBL-050319 were U\*

qualified as not detected at the reported concentrations due to the method blank contamination, no additional qualifications were applied to the calcium, magnesium and sodium data, based on professional and technical judgment. However, the boron concentration in the associated sample less than five times the field blank concentration was U\* qualified as not detected at the reported concentration.

Sample	ANALYTE	Laboratory Result (mg/L)	Laboratory Flag	Validation Result	Validation Qualifier	Reason Code
BGWA-2	Boron	0.015	J	0.015	U*	BE

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

### 1.8 Field Duplicate

One field duplicate, Dup-1, was collected with the sample set. Acceptable precision ( $RPD \leq 20\%$  or difference  $< RL$ ) was demonstrated between the field duplicate and the original sample BGWC-38D.

### 1.9 Sensitivity

The samples were reported to the MDLs. Elevated nondetect results were not reported.

### 1.10 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. The laboratory flags B, M1 and M6 used in the level II reports were not included in the EDDs. In addition, the laboratory report specific EDDs included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II report and the EDD.

## 2.0 ALKALINTY AND ANIONS

The samples were analyzed for alkalinity by Standard Method 2320B and anions (chloride, fluoride and sulfate) by US EPA Method 300.0.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ⊗ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Field Blank
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

## 2.1 Overall Assessment

The anions and alkalinity data reported in this package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for these analyses, for this dataset is 100%.

## 2.2 Holding Times

The holding time for the anions analysis of a water sample is 28 days from sample collection to analysis. The holding time for the alkalinity analysis of a water sample is 14 days from sample collection to analysis. The holding times were met for the sample analyses.

## 2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Three method blanks were reported (alkalinity batches 27709 and 27817 and anions batch 27947). The anions and alkalinity were not detected in the method blanks above the MDLs, with the following exceptions.

Chloride (0.10 mg/L) and sulfate (0.022 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs in the method blank in batch 27947. Therefore, the chloride and sulfate concentrations in the associated sample less than five times the method blank concentrations were U\* qualified as not detected at the reported concentrations.

Sample	ANALYTE	Laboratory Result (mg/L)	Laboratory Flag	Validation Result	Validation Qualifier	Reason Code
FBL-050319	Chloride	0.062	J	0.062	U*	BL
FBL-050319	Sulfate	0.040	J	0.040	U*	BL

Sample	ANALYTE	Laboratory Result (mg/L)	Laboratory Flag	Validation Result	Validation Qualifier	Reason Code
EQBL-050319	Chloride	0.29	NA	0.29	U*	BL

mg/L- milligram per liter

J- estimated concentration greater than the MDL and less than the RL

NA-not applicable

#### **2.4 Matrix Spike/Matrix Spike Duplicate**

MS/MSDs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One batch MS and one batch MS/MSD pair were reported for the anions. Since these were batch QC, there was no impact on this data and qualifications were not applied.

#### **2.5 Laboratory Control Sample**

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for each batch and analysis. The recovery results were within the laboratory and SOP specified acceptance criteria.

#### **2.6 Laboratory Duplicate**

One batch laboratory duplicate was reported for alkalinity. Since these were batch QC, there was no impact on this data and qualifications were not applied.

#### **2.7 Field Blank**

One field blank, FBL-050319, was collected with the sample set. The anions were not detected in the field blank above the MDLs, with the following exceptions.

Chloride (0.062 mg/L) and sulfate (0.040 mg/L) were detected at estimated concentrations greater than the MDLs and less than the RLs. Since the chloride and sulfate concentrations in FBL-050319 was U\* qualified as not detected at the reported concentrations due to the method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

#### **2.8 Equipment Blank**

One equipment blank, EQBL-050319, was collected with the sample set. The anions were not detected in the equipment blank above the MDLs with the following exceptions.

Sulfate (0.36 mg/L) was detected at an estimated concentration greater than the MDL and less than the RL and chloride (0.29 mg/L) was detected at a concentration greater than the RL. Since sulfate

was detected in the associated samples at concentrations greater than five times the field blank concentrations and the chloride concentration in EQBL-050319 was U\* qualified as not detected at the reported concentrations due to the method blank contamination, no additional qualifications were applied to the data, based on professional and technical judgment.

## **2.9 Field Duplicate**

One field duplicate, Dup-1, was collected with the sample set. Acceptable precision ( $RPD \leq 20\%$  or difference  $< RL$ ) was demonstrated between the field duplicate and the original sample BGWC-38D.

## **2.10 Sensitivity**

The samples were reported to the MDLs for the anions and to the RLs for alkalinity. No elevated nondetect results were reported.

## **2.11 Electronic Data Deliverable Review**

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The laboratory flag B used in the level II reports were not included in the EDDs. In addition, the laboratory report specific EDDs included project data for samples from a different laboratory report or analytes were included in the EDDs that were not requested or reported in the laboratory report when the sample was used for laboratory batch QC (i.e. if the sample was used for the MS/MSD analyses). No other discrepancies were identified between the level II reports and the EDDs.

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\* \* \* \* \*

**ATTACHMENT 1**  
**DATA VALIDATION QUALIFIER DEFINITIONS**  
**AND INTERPRETATION KEY**  
**Assigned by Geosyntec's Data Validation Team per the SOP**

**DATA QUALIFIER DEFINITIONS**

- U The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit.
- U\* This analyte should be considered “not-detected” because it was detected in an associated blank at a similar level.
- UJ The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R The data are unusable. The sample results are rejected due to serious analytical deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.
- UR The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.

**ATTACHMENT 2**  
**DATA VALIDATION REASON CODES**  
**Assigned by Geosyntec's Data Validation Team per the SOP**

<b>Reason Code</b>	<b>Explanation</b>
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
L+	LCS and/or LCD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.
M+	MS and/or MSD recoveries outside of acceptance limits. The result may be biased high.

APPENDIX C2  
Field Sampling Forms



Product Name: Low-Flow System

Date: 2019-02-25 11:01:24

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 89.0 ft

Pump placement from TOC 84.02 ft

Well Information:

Well ID BGWA-2  
Well diameter 2 in  
Well Total Depth 89.02 ft  
Screen Length 10 ft  
Depth to Water 31.83 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.8822446 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 6.24 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:43:08	2160.01	17.03	7.78	389.00	2.60	31.84	0.93	454.88
Last 5	10:47:08	2400.01	16.63	7.78	390.75	2.07	31.84	0.99	476.49
Last 5	10:51:08	2640.00	17.12	7.78	390.72	1.62	31.84	1.03	483.18
Last 5	10:55:08	2880.00	17.21	7.78	391.54	1.38	31.84	1.09	486.62
Last 5	10:59:08	3120.00	17.29	7.78	389.57	1.21	31.83	1.12	496.21
Variance 0			0.50	0.00	-0.02			0.03	6.70
Variance 1			0.09	-0.00	0.81			0.06	3.43
Variance 2			0.08	0.00	-1.96			0.03	9.59

Notes

Prepurged 3L

Grab Samples

BGWA-2  
Metals, Fluoride, Radium

Product Name: Low-Flow System

Date: 2019-02-27 11:13:39

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 101 ft

Pump placement from TOC 95 ft

Well Information:

Well ID BGWA-29  
Well diameter 2 in  
Well Total Depth 100.10 ft  
Screen Length 10 ft  
Depth to Water 30.70 ft

Pumping Information:

Final Pumping Rate 245 mL/min  
Total System Volume 0.9358057 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.36 in  
Total Volume Pumped 8.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:55:06	1200.02	16.48	7.88	192.71	1.96	30.74	8.55	10.39
Last 5	10:59:06	1440.02	16.49	7.91	190.29	2.04	30.74	8.66	7.72
Last 5	11:03:06	1680.01	16.51	7.96	189.15	2.13	30.74	8.71	7.13
Last 5	11:07:06	1920.01	16.51	7.99	188.89	2.12	30.73	8.71	5.05
Last 5	11:11:06	2160.03	16.53	8.00	188.10	1.64	30.73	8.77	4.32
Variance 0			0.03	0.04	-1.14			0.05	-0.59
Variance 1			-0.00	0.03	-0.26			0.00	-2.08
Variance 2			0.02	0.01	-0.79			0.05	-0.73

Notes

Prepurged 1L

Grab Samples

BGWA-29

Metals

Dup-1

Metals

BGWA-29

Fluoride

Dup-1  
Fluoride  
BGWA-29  
Radium  
Dup-1  
Radium

Product Name: Low-Flow System

Date: 2019-02-27 13:23:30

Project Information:

Operator Name Brian Steele  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 95 ft

Pump placement from TOC 85 ft

Well Information:

Well ID BGWC-7  
Well diameter 2 in  
Well Total Depth 90.20 ft  
Screen Length 10 ft  
Depth to Water 34.19 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.9090251 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 50 in  
Total Volume Pumped 30.7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	13:03:10	11520.04	18.44	7.04	1132.84	0.66	77.20	0.22	-113.78
Last 5	13:07:10	11760.04	18.43	7.04	1139.55	0.72	77.90	0.24	-110.38
Last 5	13:11:10	12000.04	18.56	7.04	1136.43	0.82	78.50	0.22	-108.78
Last 5	13:15:10	12240.04	18.46	7.05	1137.19	0.76	79.30	0.24	-105.93
Last 5	13:19:10	12480.05	18.55	7.05	1131.11	--	--	0.25	-102.71
Variance 0			0.13	0.00	-3.12			-0.01	1.60
Variance 1			-0.11	0.00	0.77			0.01	2.85
Variance 2			0.09	0.00	-6.08			0.01	3.22

Notes

Purged 250 ml before starting low flow  
Complete evacuation no sample

Grab Samples

Product Name: Low-Flow System

Date: 2019-02-25 13:10:51

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 74.73 ft

Well Information:

Well ID BGWC-8  
Well diameter 2 in  
Well Total Depth 79.73 ft  
Screen Length 10 ft  
Depth to Water 35.15 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.8420739 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.36 in  
Total Volume Pumped 5.76 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:53:07	1920.01	17.03	7.74	333.81	5.31	35.18	4.97	915.44
Last 5	12:57:07	2160.01	17.41	7.75	334.44	5.30	35.18	4.92	928.17
Last 5	13:01:07	2400.01	17.00	7.74	333.81	4.73	35.18	4.93	946.58
Last 5	13:05:07	2640.00	17.34	7.74	335.58	4.67	35.19	4.89	961.62
Last 5	13:09:07	2880.00	17.52	7.75	333.35	4.42	35.18	4.79	978.53
Variance 0			-0.41	-0.00	-0.63			0.02	18.40
Variance 1			0.34	-0.00	1.77			-0.04	15.05
Variance 2			0.18	0.01	-2.23			-0.10	16.91

Notes

Prepurged 1.5L

Grab Samples

BGWC-8  
Metals, Fluoride, Radium

Product Name: Low-Flow System

Date: 2019-02-25 16:34:33

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 64 ft

Pump placement from TOC 58.74 ft

Well Information:

Well ID BGWC-9  
Well diameter 2 in  
Well Total Depth 63.74 ft  
Screen Length 10 ft  
Depth to Water 14.50 ft

Pumping Information:

Final Pumping Rate 115 mL/min  
Total System Volume 0.770659 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.32 in  
Total Volume Pumped 11.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	16:12:48	5039.98	17.64	7.34	469.62	11.80	14.60	2.04	920.37
Last 5	16:16:48	5279.98	17.61	7.33	471.49	11.50	14.62	2.12	921.75
Last 5	16:20:48	5519.98	17.56	7.33	473.15	11.00	14.63	2.17	924.34
Last 5	16:24:48	5759.98	17.51	7.33	469.62	11.30	14.62	2.13	929.08
Last 5	16:28:51	6002.97	16.94	7.33	476.32	10.48	14.61	2.18	930.83
Variance 0			-0.05	-0.00	1.66			0.05	2.60
Variance 1			-0.04	0.01	-3.53			-0.03	4.74
Variance 2			-0.58	-0.00	6.69			0.05	1.74

Notes

Prepurged 1.5L  
No sample

Grab Samples

Product Name: Low-Flow System

Date: 2019-02-27 17:34:47

Project Information:

Operator Name Brian Steele  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 70 ft

Pump placement from TOC 58 ft

Well Information:

Well ID BGWC-9  
Well diameter 2 in  
Well Total Depth 63.94 ft  
Screen Length 10 ft  
Depth to Water 16.37 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.7974396 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.72 in  
Total Volume Pumped 32.46 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	17:16:41	12000.04	17.94	7.04	432.38	11.16	16.43	2.81	-3.03
Last 5	17:20:41	12240.04	17.98	7.05	429.29	11.18	16.43	2.78	-3.20
Last 5	17:24:57	12496.05	17.82	7.05	432.74	10.66	16.43	2.80	-2.51
Last 5	17:29:01	12740.04	17.72	7.06	432.26	10.55	16.43	2.81	-2.58
Last 5	17:33:05	12984.05	17.72	7.06	431.46	10.84	16.43	2.78	-2.63
Variance 0			-0.15	-0.00	3.45			0.02	0.70
Variance 1			-0.10	0.00	-0.48			0.01	-0.07
Variance 2			-0.00	0.01	-0.81			-0.03	-0.05

Notes

Prepurged 750 ml before starting low flow  
No samples collected will redevelop well at a later point

Grab Samples

Product Name: Low-Flow System

Date: 2019-02-28 12:24:11

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 64 ft

Pump placement from TOC 57.3 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 42.36 ft  
Screen Length 10 ft  
Depth to Water 13.55 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.770659 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 245.28 in  
Total Volume Pumped 18.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:06:09	6000.98	16.24	7.56	564.43	5.08	32.97	1.79	-75.56
Last 5	12:10:09	6240.98	16.31	7.55	564.05	4.73	33.43	1.83	-76.97
Last 5	12:14:09	6480.98	16.29	7.56	561.80	4.92	33.71	1.90	-75.62
Last 5	12:18:09	6720.98	16.11	7.57	561.62	4.86	33.81	1.82	-76.12
Last 5	12:22:09	6960.97	16.20	7.55	563.13	4.43	33.99	1.49	-81.11
Variance 0			-0.02	0.01	-2.25			0.07	1.35
Variance 1			-0.18	0.00	-0.17			-0.07	-0.50
Variance 2			0.09	-0.01	1.51			-0.34	-4.99

Notes

Grab Samples  
BGWC-10  
Metals  
BGWC-10  
Fluoride  
BGWC-10  
Radium



Product Name: Low-Flow System

Date: 2019-02-28 15:11:30

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 79 ft

Pump placement from TOC 73 ft

Well Information:

Well ID BGWC-12  
Well diameter 2 in  
Well Total Depth 78.06 ft  
Screen Length 10 ft  
Depth to Water 27.63 ft

Pumping Information:

Final Pumping Rate 255 mL/min  
Total System Volume 0.8376105 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 6.6 in  
Total Volume Pumped 5.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:54:06	240.08	17.11	7.32	855.18	0.93	28.00	2.42	-203.07
Last 5	14:58:06	480.03	17.10	7.30	843.67	0.57	28.11	2.56	-147.41
Last 5	15:02:06	720.04	17.06	7.29	865.25	1.48	28.16	2.56	-102.96
Last 5	15:06:06	960.03	17.06	7.28	877.91	2.65	28.17	2.55	-74.28
Last 5	15:10:06	1200.02	17.18	7.28	882.47	4.11	28.18	2.60	-56.83
Variance 0			-0.04	-0.01	21.58			-0.00	44.44
Variance 1			0.00	-0.01	12.66			-0.01	28.68
Variance 2			0.12	-0.00	4.57			0.04	17.46

Notes

Prepurged 0.5L

Grab Samples

BGWC-12

Metals

BGWC-12

Fluoride

BGWC-12

Radium

Product Name: Low-Flow System

Date: 2019-03-04 11:34:44

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Bladder Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 91 ft

Pump placement from TOC 86.00 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.08 ft  
Screen Length 10 ft  
Depth to Water 66.97 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.5961715 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 138.24 in  
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	11:17:14	3840.00	15.03	7.33	914.03	1.79	76.34	3.54	47.57
Last 5	11:21:14	4080.00	15.30	7.33	910.57	1.74	76.99	3.52	46.65
Last 5	11:25:14	4320.00	15.12	7.33	911.78	1.72	77.44	3.54	46.47
Last 5	11:29:14	4559.99	15.33	7.33	911.95	1.65	77.94	3.55	46.18
Last 5	11:33:14	4799.99	15.21	7.33	913.19	1.63	78.49	3.57	45.82
Variance 0			-0.18	0.00	1.20			0.02	-0.18
Variance 1			0.21	-0.00	0.17			0.01	-0.29
Variance 2			-0.12	0.00	1.24			0.02	-0.36

Notes

Pump hung 2' from the bottom because of historically going dry  
Prepurged 1L. Water level dropped below the top of the screen. Complete evacuation being performed

Grab Samples

Product Name: Low-Flow System

Date: 2019-02-25 15:47:55

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 50 ft

Pump placement from TOC 43.99 ft

Well Information:

Well ID BGWC-16  
Well diameter 2 in  
Well Total Depth 48.99 ft  
Screen Length 10 ft  
Depth to Water 7.04 ft

Pumping Information:

Final Pumping Rate 165 mL/min  
Total System Volume 0.7081711 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.08 in  
Total Volume Pumped 5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:28:29	960.02	15.39	6.79	872.35	0.98	7.12	0.82	20.16
Last 5	15:32:30	1201.02	15.75	6.77	876.21	0.55	7.13	0.52	19.19
Last 5	15:36:30	1441.02	15.93	6.76	872.55	0.61	7.12	0.40	18.87
Last 5	15:40:30	1681.02	15.39	6.75	871.54	0.43	7.12	0.34	19.26
Last 5	15:44:30	1921.02	15.39	6.74	875.41	0.51	7.13	0.60	19.41
Variance 0			0.18	-0.01	-3.66			-0.12	-0.32
Variance 1			-0.54	-0.01	-1.01			-0.06	0.39
Variance 2			-0.00	-0.01	3.88			0.26	0.15

Notes

Prepurged 0.5L

Grab Samples

BGWC-16

Metals

BGWC-16

Fluoride

BGWC-16

Radium

Product Name: Low-Flow System

Date: 2019-02-27 12:57:33

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 69 ft

Pump placement from TOC 63 ft

Well Information:

Well ID BGWC-17  
Well diameter 2 in  
Well Total Depth 68.10 ft  
Screen Length 10 ft  
Depth to Water 7.99 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.7929762 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:39:11	480.03	16.28	7.42	538.22	1.93	8.01	0.35	0.56
Last 5	12:43:11	720.02	16.27	7.37	532.45	0.88	8.01	0.28	4.42
Last 5	12:47:11	960.02	16.36	7.38	531.31	0.76	8.01	0.26	3.95
Last 5	12:51:11	1200.02	16.56	7.38	529.45	0.74	8.01	0.21	3.76
Last 5	12:55:11	1440.02	16.53	7.38	527.94	0.87	8.01	0.19	3.49
Variance 0			0.09	0.01	-1.14			-0.02	-0.47
Variance 1			0.20	-0.00	-1.86			-0.05	-0.19
Variance 2			-0.03	0.00	-1.51			-0.02	-0.26

Notes

Prepurged 0.5L

Grab Samples

BGWC-17

Metals

BGWC-17

Fluoride

BGWC-17

Radium

Product Name: Low-Flow System

Date: 2019-02-27 14:55:38

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 39 ft

Pump placement from TOC 32.80 ft

Well Information:

Well ID BGWC-18  
Well diameter 2 in  
Well Total Depth 37.82 ft  
Screen Length 10 ft  
Depth to Water 5.34 ft

Pumping Information:

Final Pumping Rate 455 mL/min  
Total System Volume 0.6590735 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.2 in  
Total Volume Pumped 13.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:36:08	720.03	16.74	6.75	462.20	0.66	5.44	1.40	7.84
Last 5	14:40:08	960.02	16.96	6.69	456.09	1.64	5.47	1.36	7.78
Last 5	14:44:08	1200.02	16.79	6.65	449.32	3.15	5.44	1.38	8.37
Last 5	14:48:08	1440.02	17.10	6.63	440.10	3.60	5.45	1.41	8.34
Last 5	14:52:08	1680.02	16.78	6.58	435.79	3.92	5.46	1.45	9.74
Variance 0			-0.17	-0.04	-6.77			0.02	0.60
Variance 1			0.31	-0.02	-9.22			0.03	-0.03
Variance 2			-0.31	-0.05	-4.31			0.04	1.40

Notes

Grab Samples  
BGWC-18  
Metals  
BGWC-18  
Fluoride  
BGWC-18  
Radium

Product Name: Low-Flow System

Date: 2019-03-01 13:51:40

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 55 ft

Pump placement from TOC 49.70 ft

Well Information:

Well ID BGWC-19  
Well diameter 2 in  
Well Total Depth 54.70 ft  
Screen Length 10 ft  
Depth to Water 9.24 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.7304883 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.52 in  
Total Volume Pumped 2.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:32:44	240.07	17.36	7.23	357.35	1.30	9.34	2.60	8.03
Last 5	13:36:44	480.02	16.34	6.89	361.87	0.34	9.40	2.61	10.84
Last 5	13:40:44	720.02	16.33	6.78	361.07	0.35	9.43	2.60	12.70
Last 5	13:44:44	960.01	16.29	6.73	358.66	0.41	9.45	2.60	14.21
Last 5	13:48:44	1200.01	16.13	6.70	357.96	0.34	9.45	2.56	15.71
Variance 0			-0.01	-0.11	-0.80			-0.01	1.86
Variance 1			-0.04	-0.05	-2.41			-0.00	1.51
Variance 2			-0.16	-0.03	-0.70			-0.03	1.50

Notes

Pre-purged 1 liter.

Grab Samples

BGWC-19

Metals

BGWC-19

Inorganics

BGWC-19

Radium

Product Name: Low-Flow System

Date: 2019-02-27 16:45:19

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 51 ft

Pump placement from TOC 44.74 ft

Well Information:

Well ID BGWC-20  
Well diameter 2 in  
Well Total Depth 49.74 ft  
Screen Length 10 ft  
Depth to Water 10.70 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.7126346 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 100.8 in  
Total Volume Pumped 9.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	16:27:02	2880.01	16.69	7.25	1506.56	1.61	18.29	1.38	9.60
Last 5	16:31:06	3124.00	16.83	7.25	1508.93	1.40	18.40	1.21	5.22
Last 5	16:35:17	3375.00	17.13	7.24	1517.04	0.94	18.84	1.15	-0.02
Last 5	16:39:17	3615.00	16.98	7.26	1515.75	0.81	18.90	1.15	-3.09
Last 5	16:43:17	3855.00	16.83	7.26	1526.66	1.11	19.10	0.97	-6.74
Variance 0			0.31	-0.00	8.11			-0.06	-5.24
Variance 1			-0.15	0.01	-1.29			-0.00	-3.08
Variance 2			-0.16	0.00	10.92			-0.18	-3.65

Notes

Prepurged 0.75L

Grab Samples

BGWC-20  
Fluoride  
BGWC-20  
Metals  
BGWC-20  
Radium

Product Name: Low-Flow System

Date: 2019-02-28 16:43:43

Project Information:

Operator Name Brian Steele  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 60 ft

Pump placement from TOC 48 ft

Well Information:

Well ID BGWC-21  
Well diameter 2 in  
Well Total Depth 53.35 ft  
Screen Length 10 ft  
Depth to Water 12.08 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.7528054 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 6.24 L  
Total Volume Pumped 82.44 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	16:24:35	23771.07	18.38	7.38	538.32	19.20	12.70	0.41	-52.12
Last 5	16:28:35	24011.07	18.44	7.39	535.03	21.80	12.54	0.37	-54.27
Last 5	16:32:35	24251.07	18.19	7.39	533.37	22.70	12.60	0.36	-54.46
Last 5	16:36:35	24491.07	18.31	7.38	539.34	20.40	12.70	0.41	-53.04
Last 5	16:40:35	24731.07	18.43	7.38	539.25	19.90	12.60	0.39	-52.50
Variance 0			-0.25	0.01	-1.65			-0.01	-0.19
Variance 1			0.12	-0.01	5.97			0.05	1.42
Variance 2			0.12	-0.00	-0.09			-0.02	0.54

Notes

Removed 250 ml prior to starting low flow  
No samples collected turbid well needs to be redeveloped

Grab Samples



Product Name: Low-Flow System

Date: 2019-03-01 11:45:13

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 43 ft

Pump placement from TOC 38 ft

Well Information:

Well ID BGWC-22  
Well diameter 2 in  
Well Total Depth 43.05 ft  
Screen Length 10 ft  
Depth to Water 19.56 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.6769272 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3.84 in  
Total Volume Pumped 15.84 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:22:13	6960.04	17.23	6.89	2900.49	5.35	19.93	0.29	-0.37
Last 5	11:26:13	7200.04	17.32	6.89	2902.88	5.43	19.93	0.23	-2.07
Last 5	11:30:13	7440.04	17.40	6.89	2901.42	4.90	19.95	0.19	-3.61
Last 5	11:34:13	7680.04	17.45	6.89	2899.24	4.58	19.94	0.17	-3.34
Last 5	11:38:13	7920.04	17.52	6.90	2895.75	4.49	19.88	0.15	-1.45
Variance 0			0.08	-0.00	-1.46			-0.04	-1.54
Variance 1			0.05	0.00	-2.19			-0.02	0.27
Variance 2			0.08	0.00	-3.48			-0.02	1.89

Notes

Prepurged 2L

Grab Samples

BGWC-22  
Metals, Radium, Fluoride  
DUP-2  
Metals, Radium, Fluoride

Product Name: Low-Flow System

Date: 2019-03-01 14:12:31

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 51 ft

Pump placement from TOC 45.95 ft

Well Information:

Well ID BGWC-23  
Well diameter 2 in  
Well Total Depth 50.95 ft  
Screen Length 10 ft  
Depth to Water 26.57 ft

Pumping Information:

Final Pumping Rate 115 mL/min  
Total System Volume 0.7126346 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 20.76 in  
Total Volume Pumped 5.06 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	13:49:09	1680.05	17.90	7.15	3160.72	1.54	28.04	0.19	-73.63
Last 5	13:53:09	1920.03	17.95	7.16	3138.18	2.02	28.14	0.21	-73.39
Last 5	13:57:09	2160.03	17.72	7.16	3173.27	2.00	28.14	0.16	-71.69
Last 5	14:01:09	2400.03	17.68	7.16	3211.11	1.82	28.15	0.18	-71.49
Last 5	14:05:09	2640.03	17.83	7.16	3246.09	1.79	28.30	0.18	-70.87
Variance 0			-0.23	0.00	35.10			-0.05	1.70
Variance 1			-0.04	-0.00	37.84			0.02	0.20
Variance 2			0.15	-0.00	34.98			-0.01	0.62

Notes

Prepurged 1L

Grab Samples

BGWC-23  
Metals, radium, fluoride

Product Name: Low-Flow System

Date: 2019-03-01 12:03:23

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 66 ft

Pump placement from TOC 61.09 ft

Well Information:

Well ID BGWC-24  
Well diameter 2 in  
Well Total Depth 66.09 ft  
Screen Length 10 ft  
Depth to Water 7.80 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.779586 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 120.6 in  
Total Volume Pumped 19.44 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	11:45:00	6239.97	18.84	6.57	7228.08	0.18	17.47	0.13	-43.65
Last 5	11:49:00	6479.97	18.75	6.57	7253.59	0.10	17.55	0.13	-43.28
Last 5	11:53:00	6719.96	18.67	6.57	7276.93	0.16	17.68	0.14	-41.09
Last 5	11:57:00	6959.96	18.66	6.57	7248.03	0.19	17.79	0.14	-40.95
Last 5	12:01:00	7199.96	18.83	6.57	7271.40	0.18	17.85	0.12	-39.93
Variance 0			-0.08	-0.00	23.34			0.01	2.19
Variance 1			-0.01	0.00	-28.90			-0.00	0.14
Variance 2			0.17	-0.00	23.38			-0.01	1.02

Notes

Pre-purged 3 liters.

Grab Samples

BGWC-24

Metals

BGWC-24

Inorganics

BGWC-24

Radium

Product Name: Low-Flow System

Date: 2019-03-01 13:00:36

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 60 ft

Pump placement from TOC 53.40 ft

Well Information:

Well ID BGWC-25  
Well diameter 2 in  
Well Total Depth 58.37 ft  
Screen Length 10 ft  
Depth to Water 11.95 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.7528054 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 41.76 in  
Total Volume Pumped 3.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:43:07	240.08	16.54	7.44	397.02	0.56	13.56	0.06	49.32
Last 5	12:47:07	480.03	16.57	7.47	396.51	1.12	14.21	0.04	38.09
Last 5	12:51:07	720.03	16.81	7.47	396.88	1.45	15.21	0.02	34.39
Last 5	12:55:07	960.02	17.66	7.48	394.73	1.80	15.36	0.05	37.42
Last 5	12:59:07	1200.02	18.46	7.50	396.42	1.72	15.43	0.07	44.53
Variance 0			0.24	0.00	0.38			-0.02	-3.70
Variance 1			0.85	0.01	-2.15			0.03	3.02
Variance 2			0.80	0.02	1.69			0.02	7.11

Notes

Grab Samples  
BGWC-25  
Metals  
BGWC-25  
Fluoride  
BGWC-25  
Radium

Product Name: Low-Flow System

Date: 2019-03-01 11:32:27

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 62 ft

Pump placement from TOC 56 ft

Well Information:

Well ID BGWC-30  
Well diameter 2 in  
Well Total Depth 61.03 ft  
Screen Length 10 ft  
Depth to Water 10.28 ft

Pumping Information:

Final Pumping Rate 220 mL/min  
Total System Volume 0.7617322 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 4.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:15:03	240.08	19.04	7.27	1388.01	1.32	10.30	2.82	219.48
Last 5	11:19:03	480.03	19.39	7.30	1375.80	1.65	10.31	2.83	208.22
Last 5	11:23:03	720.02	19.03	7.31	1353.52	2.43	10.30	2.82	201.86
Last 5	11:27:03	960.02	19.24	7.31	1359.87	3.20	10.30	2.86	197.91
Last 5	11:31:03	1200.02	19.57	7.32	1353.52	3.17	10.30	2.85	195.41
Variance 0			-0.35	0.01	-22.29			-0.01	-6.36
Variance 1			0.21	0.00	6.35			0.04	-3.95
Variance 2			0.33	0.01	-6.34			-0.02	-2.50

Notes

Prepurged 0.5L

Grab Samples

BGWC-30

Metals

BGWC-30

Fluoride

BGWC-30

Radium

Product Name: Low-Flow System

Date: 2019-03-04 14:51:50

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond Scan  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Bladder Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 74.9 ft

Well Information:

Well ID BGWC-34D  
Well diameter 2 in  
Well Total Depth 79.93 ft  
Screen Length 10 ft  
Depth to Water 8.85 ft

Pumping Information:

Final Pumping Rate 105 mL/min  
Total System Volume 0.5470738 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 111.84 in  
Total Volume Pumped 11.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	14:34:07	4559.99	14.00	7.30	694.67	2.46	17.41	0.05	-159.25
Last 5	14:38:07	4799.99	14.08	7.31	694.27	2.00	17.63	0.05	-161.51
Last 5	14:42:07	5039.99	14.12	7.33	695.66	1.89	17.89	0.05	-165.87
Last 5	14:46:07	5279.98	14.26	7.33	696.43	2.02	18.01	0.05	-168.27
Last 5	14:50:07	5519.98	14.24	7.36	688.01	2.15	18.17	0.04	-172.22
Variance 0			0.04	0.02	1.39			0.00	-4.36
Variance 1			0.14	-0.00	0.77			0.00	-2.41
Variance 2			-0.01	0.03	-8.42			-0.01	-3.94

Notes

Grab Samples  
BGWC-34D  
Arsenic

Product Name: Low-Flow System

Date: 2019-04-01 10:38:14

Project Information:

Operator Name Veronica Fay  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 87 ft

Pump placement from TOC 81.5 ft

Well Information:

Well ID BGWA-2  
Well diameter 2 in  
Well Total Depth 86.50 ft  
Screen Length 10 ft  
Depth to Water 43.46 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.8683177 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 2.7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:20:55	360.02	17.94	7.66	338.40	0.83	43.50	0.67	64.72
Last 5	10:23:55	540.01	18.19	7.68	338.48	1.17	43.50	0.48	65.18
Last 5	10:26:55	720.01	18.03	7.69	337.89	1.07	43.50	0.40	71.38
Last 5	10:29:55	900.01	18.08	7.70	338.47	0.69	43.50	0.36	80.59
Last 5	10:32:55	1080.01	17.93	7.70	339.91	0.65	43.50	0.37	91.63
Variance 0			-0.16	0.02	-0.59			-0.08	6.20
Variance 1			0.05	0.01	0.58			-0.04	9.21
Variance 2			-0.15	-0.00	1.45			0.01	11.05

Notes

Prepurged 1L  
Well performed well

Grab Samples

BGWA- 2  
Metals  
BGWA-2  
Inorganics

BGWA-2  
Radium  
DUP-1  
Metals  
DUP-1  
Inorganics  
DUP-1  
Radium



Product Name: Low-Flow System

Date: 2019-04-02 11:31:59

Project Information:

Operator Name Veronica Fay  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 67 ft

Pump placement from TOC 61.3 ft

Well Information:

Well ID BGWA-6  
Well diameter 2 in  
Well Total Depth 66.3 ft  
Screen Length 10 ft  
Depth to Water 32.92 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.7790493 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 0.96 in  
Total Volume Pumped 2.34 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:16:52	360.02	18.17	7.25	543.42	0.88	32.97	0.49	-14.78
Last 5	11:19:52	540.02	18.42	7.24	543.34	0.78	33.00	0.45	-12.51
Last 5	11:22:52	720.01	18.69	7.24	542.77	0.53	32.97	0.44	-9.17
Last 5	11:25:52	900.01	18.52	7.24	541.15	0.43	33.00	0.44	-3.88
Last 5	11:28:52	1080.01	18.17	7.24	540.52	0.50	33.00	0.43	3.67
Variance 0			0.27	-0.00	-0.56			-0.01	3.34
Variance 1			-0.16	-0.00	-1.62			-0.00	5.29
Variance 2			-0.36	0.00	-0.64			-0.00	7.55

Notes

Prepurged 1.75 L  
Well performed well

Grab Samples

BGWA-6  
Metals  
BGWA-6  
Inorganics

BGWA-6  
Radium



Product Name: Low-Flow System

Date: 2019-04-01 10:53:53

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 101 ft

Pump placement from TOC 95.1 ft

Well Information:

Well ID BGWA-29  
Well diameter 2 in  
Well Total Depth 100.1 ft  
Screen Length 10 ft  
Depth to Water 37.01 ft

Pumping Information:

Final Pumping Rate 135 mL/min  
Total System Volume 0.9358057 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 5.42 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:35:50	1448.02	16.51	7.78	208.76	0.57	37.03	7.67	69.38
Last 5	10:39:50	1688.02	16.51	7.81	208.03	0.48	37.03	7.75	66.62
Last 5	10:43:51	1929.02	16.65	7.83	207.56	0.42	37.03	7.80	65.51
Last 5	10:47:51	2169.02	16.74	7.86	207.11	0.28	37.03	7.91	63.57
Last 5	10:51:51	2409.02	16.84	7.85	206.22	0.24	37.03	7.91	64.14
Variance 0			0.13	0.03	-0.46			0.05	-1.11
Variance 1			0.09	0.03	-0.45			0.11	-1.94
Variance 2			0.10	-0.01	-0.89			0.01	0.57

Notes

Prepurged 0.5L

Grab Samples

BGWA-29  
Metals, Inorganics, Radium

Product Name: Low-Flow System

Date: 2019-04-02 12:53:12

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 541714  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Bladder Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 81 ft

Pump placement from TOC 76.36 ft

Well Information:

Well ID BGWA-33  
Well diameter 2 in  
Well Total Depth 81.36 ft  
Screen Length 10 ft  
Depth to Water 60.43 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.551537 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 125.52 in  
Total Volume Pumped 11.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:34:44	5999.98	16.67	7.67	465.72	2.02	69.97	1.66	21.48
Last 5	12:38:44	6239.98	16.94	7.67	467.08	2.54	70.20	1.65	20.68
Last 5	12:42:44	6479.98	17.07	7.67	467.19	2.50	70.45	1.64	19.75
Last 5	12:46:44	6719.97	17.34	7.67	467.19	2.64	70.68	1.64	19.09
Last 5	12:50:44	6959.97	17.43	7.67	466.92	2.44	70.89	1.64	18.73
Variance 0			0.13	0.00	0.11			-0.01	-0.94
Variance 1			0.27	-0.00	-0.00			0.00	-0.66
Variance 2			0.09	0.00	-0.26			0.00	-0.36

Notes

Pre-purged 1 liter. Water level dropped below top of screen. Complete evacuation method initiated. Samples to be collected 4/3/19.

Grab Samples

Product Name: Low-Flow System

Date: 2019-04-01 16:05:29

Project Information:

Operator Name Veronica Fay  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 88 ft

Pump placement from TOC 82.5 ft

Well Information:

Well ID BGWC-7  
Well diameter 2 in  
Well Total Depth 87.5 ft  
Screen Length 10 ft  
Depth to Water 41.76 ft

Pumping Information:

Final Pumping Rate 125 mL/min  
Total System Volume 0.8727813 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 436.32 in  
Total Volume Pumped 28 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	15:45:12	12779.77	19.31	6.99	1006.02	0.17	76.00	0.27	-50.31
Last 5	15:48:12	12959.77	19.31	6.99	1003.40	0.22	76.50	0.27	-50.16
Last 5	15:51:12	13139.77	19.33	6.99	1004.48	0.19	77.00	0.27	-50.14
Last 5	15:54:11	13319.77	19.23	6.99	1003.99	0.23	77.55	0.27	-49.77
Last 5	15:57:11	13499.76	19.06	6.99	1008.28	0.17	78.10	0.28	-49.81
Variance 0			0.03	-0.00	1.08			0.00	0.02
Variance 1			-0.11	-0.00	-0.50			-0.00	0.38
Variance 2			-0.17	-0.00	4.30			0.01	-0.04

Notes

Prepurged 1L

At 1228 dropped pump rate to 100ml/min due to drawdown issues. Water level dropped below top of screen at 1558. Performed complete evacuation. Purged total volume of 28 L, which includes the 1 prepurged L.

Grab Samples



Product Name: Low-Flow System

Date: 2019-04-01 12:34:03

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 74.73 ft

Well Information:

Well ID BGWC-8  
Well diameter 2 in  
Well Total Depth 79.73 ft  
Screen Length 10 ft  
Depth to Water 43.27 ft

Pumping Information:

Final Pumping Rate 125 mL/min  
Total System Volume 0.8420739 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:15:47	480.03	17.54	7.50	318.95	0.66	43.27	4.98	80.16
Last 5	12:19:47	720.03	17.43	7.56	318.49	0.59	43.26	5.03	80.13
Last 5	12:23:51	964.03	17.54	7.56	318.72	0.88	43.28	5.02	79.34
Last 5	12:27:51	1204.02	17.54	7.55	318.72	1.08	43.29	4.99	80.54
Last 5	12:31:51	1444.02	17.58	7.57	319.22	1.11	43.29	4.95	81.85
Variance 0			0.11	0.00	0.23			-0.01	-0.79
Variance 1			-0.00	-0.01	-0.00			-0.03	1.20
Variance 2			0.04	0.02	0.49			-0.04	1.31

Notes

Prepurged 0.25L

Grab Samples

BGWC-8  
Metals, inorganics, radium

Product Name: Low-Flow System

Date: 2019-04-01 14:00:36

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 64 ft

Pump placement from TOC 58.74 ft

Well Information:

Well ID BGWC-9  
Well diameter 2 in  
Well Total Depth 63.74 ft  
Screen Length 10 ft  
Depth to Water 26.22 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.770659 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.08 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	13:43:36	240.03	18.17	7.04	542.11	0.64	26.28	0.49	80.82
Last 5	13:47:36	480.03	18.09	6.98	550.90	0.63	26.30	0.22	69.27
Last 5	13:51:36	720.03	18.13	6.96	545.99	1.35	26.30	0.15	60.70
Last 5	13:55:36	960.03	18.14	7.00	535.61	1.91	26.30	0.13	52.41
Last 5	13:59:36	1200.02	18.12	7.03	531.32	2.13	26.31	0.12	47.60
Variance 0			0.04	-0.01	-4.91			-0.07	-8.57
Variance 1			0.01	0.03	-10.38			-0.02	-8.29
Variance 2			-0.01	0.03	-4.29			-0.01	-4.81

Notes

Grab Samples

BGWC-9  
Metals, Inorganics, Radium



Product Name: Low-Flow System

Date: 2019-04-02 16:16:23

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 63 ft

Pump placement from TOC 57.36 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 62.36 ft  
Screen Length 10 ft  
Depth to Water 24.23 ft

Pumping Information:

Final Pumping Rate 105 mL/min  
Total System Volume 0.7661957 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 293.6 in  
Total Volume Pumped 9.69 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:56:16	4567.01	17.72	7.55	553.51	0.41	47.93	1.99	44.84
Last 5	16:00:16	4807.01	17.99	7.54	552.70	0.40	48.15	1.85	42.85
Last 5	16:04:27	5058.01	18.16	7.54	551.09	0.53	48.43	1.89	40.85
Last 5	16:08:27	5298.01	18.25	7.54	551.38	0.55	48.58	1.85	39.27
Last 5	16:12:27	5538.01	17.64	7.54	551.95	0.49	48.70	1.77	37.81
Variance 0			0.18	-0.00	-1.61			0.04	-2.00
Variance 1			0.08	-0.00	0.29			-0.03	-1.58
Variance 2			-0.60	0.00	0.57			-0.09	-1.46

Notes

Prepurged 14L

Grab Samples

BGWC-10  
Metals, Inorganics, Radium

Product Name: Low-Flow System

Date: 2019-04-01 15:11:07

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 79 ft

Pump placement from TOC 73.3 ft

Well Information:

Well ID BGWC-12  
Well diameter 2 in  
Well Total Depth 78.3 ft  
Screen Length 10 ft  
Depth to Water 34.83 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.8376105 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 4.44 in  
Total Volume Pumped 2.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	14:53:17	240.03	18.27	7.22	821.42	2.06	35.10	2.93	33.58
Last 5	14:57:17	480.03	18.12	7.24	810.51	0.90	35.16	3.04	32.07
Last 5	15:01:17	720.03	18.13	7.24	809.57	1.11	35.20	3.11	32.14
Last 5	15:05:17	960.03	18.10	7.24	811.06	1.78	35.20	3.12	32.65
Last 5	15:09:17	1200.02	18.12	7.23	823.13	1.86	35.20	3.09	33.36
Variance 0			0.01	-0.00	-0.94			0.07	0.07
Variance 1			-0.03	-0.00	1.49			0.00	0.52
Variance 2			0.02	-0.00	12.07			-0.03	0.71

Notes

Prepurged 0.5L

Grab Samples

BGWC-12  
Metals, Inorganics, Radium

Product Name: Low-Flow System

Date: 2019-04-02 15:32:29

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 541714  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 88 ft

Pump placement from TOC 86.50 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.08 ft  
Screen Length 10 ft  
Depth to Water 80.31 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.5827813 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 30.48 in  
Total Volume Pumped 5.28 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:12:06	1920.01	18.36	7.32	897.61	0.88	82.28	4.02	46.96
Last 5	15:16:06	2160.01	18.23	7.33	898.98	0.92	82.41	4.40	46.85
Last 5	15:20:06	2400.01	17.96	7.33	898.38	0.84	82.56	4.75	46.62
Last 5	15:24:06	2640.01	17.81	7.33	900.61	0.86	82.71	4.91	46.60
Last 5	15:28:06	2880.01	18.34	7.33	906.66	0.72	82.85	4.86	46.29
Variance 0			-0.26	0.01	-0.60			0.35	-0.23
Variance 1			-0.16	-0.00	2.24			0.16	-0.02
Variance 2			0.53	-0.01	6.05			-0.06	-0.31

Notes

Pre-purged 1 liter. Water level started in screen. Complete evacuation method initiated. >1 well volume purged and 48hr recharge as per well specific instructions. Samples to be collected 4/4/19.

Grab Samples

Product Name: Low-Flow System

Date: 2019-04-02 13:21:41

Project Information:

Operator Name Veronica Fay  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 49 ft

Pump placement from TOC 43.99 ft

Well Information:

Well ID BGWC-16  
Well diameter 2 in  
Well Total Depth 48.99 ft  
Screen Length 10 ft  
Depth to Water 15.48 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.6987078 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 1.2 in  
Total Volume Pumped 2.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:06:02	180.06	18.89	6.77	819.05	0.05	15.56	0.32	108.11
Last 5	13:09:02	360.02	18.86	6.76	818.61	0.14	15.57	0.28	138.75
Last 5	13:12:02	540.01	18.70	6.76	816.47	0.32	15.58	0.24	166.11
Last 5	13:15:02	720.01	18.88	6.75	817.07	0.09	15.58	0.21	189.26
Last 5	13:18:02	900.01	18.70	6.75	816.79	0.08	15.58	0.18	214.33
Variance 0			-0.16	-0.01	-2.14			-0.04	27.36
Variance 1			0.17	-0.00	0.60			-0.03	23.15
Variance 2			-0.18	0.00	-0.28			-0.03	25.06

Notes

Prepurged 2L  
Well performed well

Grab Samples

BGWC-16  
Metals  
BGWC-16  
Inorganics

BGWC-16  
Radium



Product Name: Low-Flow System

Date: 2019-04-02 14:42:29

Project Information:

Operator Name Veronica Fay  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 68.1 ft

Pump placement from TOC 63.10 ft

Well Information:

Well ID BGWC-17  
Well diameter 2 in  
Well Total Depth 68.10 ft  
Screen Length 10 ft  
Depth to Water 14.4 ft

Pumping Information:

Final Pumping Rate 125 mL/min  
Total System Volume 0.7839591 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 2.63 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:26:08	540.02	18.03	7.23	519.64	0.97	14.43	0.53	295.39
Last 5	14:29:08	720.01	18.10	7.23	520.31	0.99	14.42	0.50	271.98
Last 5	14:32:08	900.01	18.09	7.22	518.99	0.57	14.42	0.48	258.69
Last 5	14:35:08	1080.00	18.66	7.22	521.12	0.68	14.42	0.45	252.75
Last 5	14:38:08	1260.00	18.66	7.22	520.25	0.45	14.42	0.47	269.67
Variance 0			-0.01	-0.00	-1.32			-0.03	-13.29
Variance 1			0.57	-0.01	2.13			-0.02	-5.94
Variance 2			-0.01	0.00	-0.87			0.01	16.92

Notes

Prepurged 1L  
Actually prepurged 2L

Grab Samples

BGWC-17  
Metals  
BGWC-17  
Inorganics

BGWC-17  
Radium



Product Name: Low-Flow System

Date: 2019-04-02 16:33:11

Project Information:

Operator Name Veronica Fay  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 38 ft

Pump placement from TOC 32.82 ft

Well Information:

Well ID BGWC-18  
Well diameter 2 in  
Well Total Depth 37.82 ft  
Screen Length 10 ft  
Depth to Water 13.34 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.6496101 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 0.6 in  
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	16:11:33	1080.01	17.81	6.51	434.13	0.49	13.39	0.80	101.90
Last 5	16:14:33	1260.00	17.38	6.50	432.49	0.37	13.39	0.75	107.89
Last 5	16:17:33	1440.00	17.14	6.49	437.70	0.33	13.39	0.73	115.33
Last 5	16:20:33	1619.99	17.64	6.49	435.81	0.29	13.39	0.69	126.25
Last 5	16:23:33	1800.00	17.72	6.48	432.68	0.26	13.39	0.67	142.00
Variance 0			-0.24	-0.01	5.21			-0.02	7.44
Variance 1			0.50	-0.00	-1.89			-0.04	10.92
Variance 2			0.07	-0.01	-3.13			-0.02	15.75

Notes

Prepurged 1.5L  
Well performed well

Grab Samples

BGWC-18  
Metals  
BGWC-18  
Inorganics



BGWC-18  
Radium  
DUP-2  
Metals  
DUP-2  
Inorganics  
DUP-2  
Radium



Product Name: Low-Flow System

Date: 2019-04-03 11:55:08

Project Information:

Operator Name Veronica Fay  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 55 ft

Pump placement from TOC 49.70 ft

Well Information:

Well ID BGWC-19  
Well diameter 2 in  
Well Total Depth 54.70 ft  
Screen Length 10 ft  
Depth to Water 15.10 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.7254883 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 2.88 in  
Total Volume Pumped 3.12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:39:59	720.01	18.06	6.62	413.54	1.46	15.34	0.60	12.77
Last 5	11:42:59	900.01	18.12	6.60	412.95	0.61	15.34	0.58	19.88
Last 5	11:45:59	1080.00	18.10	6.59	413.83	1.59	15.34	0.59	29.50
Last 5	11:48:59	1260.00	18.11	6.58	413.16	0.82	15.34	0.60	44.52
Last 5	11:51:59	1440.00	18.21	6.58	412.79	0.63	15.34	0.65	66.60
Variance 0			-0.03	-0.01	0.88			0.02	9.62
Variance 1			0.01	-0.00	-0.67			0.01	15.02
Variance 2			0.10	-0.00	-0.37			0.05	22.08

Notes

Prepurged 0.5 L  
Well performed well

Grab Samples

BGWC-19  
Metals  
BGWC-19  
Inorganics

BGWC-19  
Radium



Product Name: Low-Flow System

Date: 2019-04-03 10:29:57

Project Information:

Operator Name Veronica Fay  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 44.74 ft

Well Information:

Well ID BGWC-20  
Well diameter 2 in  
Well Total Depth 49.74 ft  
Screen Length 10 ft  
Depth to Water 14.73 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.7031711 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 74.4 in  
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:14:29	2519.98	16.25	7.13	1529.31	0.23	20.30	1.52	9.29
Last 5	10:17:29	2699.97	16.43	7.14	1529.87	0.16	20.49	1.46	6.05
Last 5	10:20:29	2879.97	16.51	7.14	1532.41	0.12	20.65	1.44	3.28
Last 5	10:23:29	3059.97	16.60	7.14	1532.84	0.15	20.80	1.38	0.84
Last 5	10:26:29	3239.96	16.65	7.14	1535.16	0.13	20.93	1.31	-1.29
Variance 0			0.08	0.00	2.54			-0.02	-2.77
Variance 1			0.09	0.00	0.43			-0.06	-2.44
Variance 2			0.04	0.00	2.31			-0.06	-2.14

Notes

Prepurged 0.5 L  
Well performed well.

Grab Samples

BGWC-20

Metals

BGWC-20

Inorganics

BGWC-20  
Radium



Product Name: Low-Flow System

Date: 2019-04-03 14:04:30

Project Information:

Operator Name Veronica Fay  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 54 ft

Pump placement from TOC 48.35 ft

Well Information:

Well ID BGWC-21  
Well diameter 2 in  
Well Total Depth 53.35 ft  
Screen Length 10 ft  
Depth to Water 16.92 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.7210249 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 6.24 in  
Total Volume Pumped 2.31 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:48:58	540.02	19.68	7.69	398.07	2.54	17.41	0.57	3.56
Last 5	13:51:58	720.01	19.64	7.70	399.13	2.46	17.43	0.49	-1.82
Last 5	13:54:58	900.01	19.49	7.69	398.88	2.68	17.44	0.40	-7.48
Last 5	13:57:58	1080.01	19.48	7.69	399.62	2.34	17.44	0.36	-13.42
Last 5	14:00:58	1260.00	19.44	7.69	400.31	2.39	17.44	0.34	-19.66
Variance 0			-0.14	-0.00	-0.25			-0.09	-5.67
Variance 1			-0.01	-0.00	0.74			-0.04	-5.93
Variance 2			-0.04	-0.00	0.69			-0.02	-6.24

Notes

Prepurged 1.5L  
Well performed well

Grab Samples

BGWC-21  
Metals  
BGWC-21  
Inorganics

BGWC-21  
Radium



Product Name: Low-Flow System

Date: 2019-04-03 11:16:50

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 43 ft

Pump placement from TOC 38.05 ft

Well Information:

Well ID BGWC-22  
Well diameter 2 in  
Well Total Depth 43.05 ft  
Screen Length 10 ft  
Depth to Water 24.18 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.6769272 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 4.44 in  
Total Volume Pumped 4.68 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:58:40	1200.02	18.08	6.79	3254.80	3.35	24.60	0.58	89.83
Last 5	11:02:40	1440.01	18.18	6.78	3259.41	1.74	24.60	0.54	88.82
Last 5	11:06:40	1680.01	18.18	6.78	3270.84	1.65	24.60	0.47	87.70
Last 5	11:10:40	1920.00	18.30	6.78	3274.70	1.37	24.58	0.40	86.55
Last 5	11:14:40	2160.00	18.34	6.77	3287.98	1.47	24.55	0.35	85.62
Variance 0			-0.00	-0.00	11.43			-0.07	-1.12
Variance 1			0.12	-0.00	3.86			-0.07	-1.14
Variance 2			0.04	-0.00	13.28			-0.06	-0.93

Notes

Prepurged 0.5L

Grab Samples

BGWC-22  
Metals, Inorganics, Radium



Product Name: Low-Flow System

Date: 2019-04-03 09:37:14

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 52 ft

Pump placement from TOC 46.3 ft

Well Information:

Well ID BGWC-23  
Well diameter 2 in  
Well Total Depth 51.3 ft  
Screen Length 10 ft  
Depth to Water 29.97 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.717098 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 14.4 in  
Total Volume Pumped 3.08 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:17:51	720.02	16.31	7.04	2688.70	1.02	31.37	0.68	96.89
Last 5	09:21:51	960.02	16.22	7.01	2745.15	0.91	31.35	0.58	93.59
Last 5	09:25:51	1200.00	15.82	7.01	2790.84	0.57	31.28	0.44	90.86
Last 5	09:29:51	1440.00	15.89	7.00	2849.61	0.42	31.28	0.38	88.32
Last 5	09:33:51	1680.00	15.79	7.00	2880.99	0.27	31.17	0.36	85.94
Variance 0			-0.40	-0.00	45.69			-0.14	-2.73
Variance 1			0.08	-0.01	58.78			-0.06	-2.54
Variance 2			-0.11	0.00	31.38			-0.03	-2.38

Notes

Prepurged 0.5L

Grab Samples

BGWC-23  
Metals, inorganics, Radium

Product Name: Low-Flow System

Date: 2019-04-03 16:35:02

Project Information:

Operator Name Veronica Fay  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 66.09 ft

Pump placement from TOC 61.09 ft

Well Information:

Well ID BGWC-24  
Well diameter 2 in  
Well Total Depth 66.09 ft  
Screen Length 10 ft  
Depth to Water 13.16 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.7749877 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 89.76 in  
Total Volume Pumped 8.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	16:19:01	3779.96	19.97	6.57	6384.04	0.19	20.03	0.14	21.31
Last 5	16:22:01	3959.95	20.02	6.57	6357.24	0.17	20.17	0.17	21.13
Last 5	16:25:01	4139.95	20.01	6.57	6318.67	0.28	20.35	0.19	20.91
Last 5	16:28:01	4319.94	19.99	6.57	6281.32	0.05	20.48	0.17	20.65
Last 5	16:31:01	4499.94	20.05	6.57	6252.19	0.24	20.64	0.18	20.50
Variance 0			-0.01	0.00	-38.56			0.01	-0.21
Variance 1			-0.02	0.00	-37.36			-0.01	-0.26
Variance 2			0.06	0.00	-29.13			0.00	-0.15

Notes

Prepurged 1.9 L

Grab Samples

BGWC-24

Metals

BGWC-24

Inorganics

BGWC-24

Radium

Product Name: Low-Flow System

Date: 2019-04-04 10:25:26

Project Information:

Operator Name Veronica Fay  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 59.0 ft

Pump placement from TOC 53.37 ft

Well Information:

Well ID BGWC-25  
Well diameter 2 in  
Well Total Depth 58.37 ft  
Screen Length 10 ft  
Depth to Water 15.75 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.7433419 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 79.8 in  
Total Volume Pumped 1.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:10:12	360.02	17.81	7.37	402.02	1.49	22.23	0.08	2.96
Last 5	10:13:12	540.01	18.08	7.37	403.09	1.28	22.28	0.09	-1.81
Last 5	10:16:12	720.01	18.12	7.38	402.45	1.34	22.33	0.10	-5.51
Last 5	10:19:12	900.01	17.99	7.38	402.86	1.32	22.36	0.11	-10.13
Last 5	10:22:12	1080.00	17.91	7.38	403.26	1.28	22.40	0.12	-14.54
Variance 0			0.04	0.01	-0.64			0.01	-3.70
Variance 1			-0.13	-0.00	0.41			0.01	-4.62
Variance 2			-0.08	0.00	0.40			0.01	-4.42

Notes

Prepurged 6.5L

Grab Samples

BGWC-25

Metals

BGWC-25

Inorganics

BGWC-25

Radium

DUP-3  
Metals  
DUP-3  
Inorganics  
DUP-3  
Radium



Product Name: Low-Flow System

Date: 2019-04-02 10:22:15

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 62 ft

Pump placement from TOC 56.03 ft

Well Information:

Well ID BGWC-30  
Well diameter 2 in  
Well Total Depth 61.03 ft  
Screen Length 10 ft  
Depth to Water 17.83 ft

Pumping Information:

Final Pumping Rate 155 mL/min  
Total System Volume 0.7617322 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 3.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:04:52	240.03	18.16	7.19	1380.85	0.45	17.81	2.86	95.69
Last 5	10:08:52	480.03	18.03	7.20	1378.15	0.35	17.80	2.88	92.12
Last 5	10:12:52	720.03	17.95	7.21	1381.02	0.28	17.81	2.90	90.70
Last 5	10:16:52	960.03	18.43	7.21	1377.60	0.26	17.81	2.87	90.22
Last 5	10:20:52	1200.03	18.57	7.22	1373.94	0.19	17.81	2.83	89.02
Variance 0			-0.08	0.01	2.87			0.03	-1.43
Variance 1			0.48	0.00	-3.42			-0.03	-0.47
Variance 2			0.14	0.01	-3.66			-0.03	-1.21

Notes

Prepurged 4L

Grab Samples

BGWC-30  
Metals, inorganics, Radium

Product Name: Low-Flow System

Date: 2019-04-04 11:10:37

Project Information:

Operator Name Brian Steele  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 541714  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 55 ft

Pump placement from TOC 44.70 ft

Well Information:

Well ID BGWC-31  
Well diameter 2 in  
Well Total Depth 49.70 ft  
Screen Length 10 ft  
Depth to Water 14.33 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.435488 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.76 in  
Total Volume Pumped 20.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:51:45	5279.97	17.01	7.17	641.25	5.33	14.56	0.16	-59.85
Last 5	10:55:45	5519.97	17.16	7.18	640.54	5.18	14.56	0.15	-62.43
Last 5	10:59:45	5759.96	17.24	7.18	641.28	5.02	14.56	0.14	-64.73
Last 5	11:03:45	5999.96	17.27	7.18	641.88	5.07	14.56	0.13	-66.81
Last 5	11:07:45	6239.96	17.25	7.19	640.84	4.66	14.56	0.13	-68.72
Variance 0			0.08	0.00	0.75			-0.01	-2.30
Variance 1			0.04	0.00	0.59			-0.02	-2.09
Variance 2			-0.02	0.01	-1.04			0.01	-1.91

Notes

Pre purged 200 mL

Grab Samples

BGWC-31

Metals

BGWC-31

Inorganics

BGWC-31

Radium

Product Name: Low-Flow System

Date: 2019-04-04 13:54:20

Project Information:

Operator Name Brian Steele  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 541714  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Bladder Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 57 ft

Pump placement from TOC 47 ft

Well Information:

Well ID BGWC-32  
Well diameter 2 in  
Well Total Depth 51.22 ft  
Screen Length 10 ft  
Depth to Water 34.05 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.444415 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 84.6 in  
Total Volume Pumped 9.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:35:36	4079.98	18.59	7.31	1208.98	2.46	40.40	0.38	-19.55
Last 5	13:39:36	4319.98	18.59	7.30	1224.74	2.35	40.55	0.34	-21.46
Last 5	13:43:36	4560.02	18.66	7.29	1242.63	2.18	40.70	0.33	-23.51
Last 5	13:47:36	4800.00	18.54	7.29	1250.96	2.14	40.85	0.32	-25.07
Last 5	13:51:36	5039.97	18.54	7.28	1270.73	1.63	41.10	0.32	-26.33
Variance 0			0.08	-0.01	17.89			-0.01	-2.05
Variance 1			-0.12	-0.00	8.33			-0.01	-1.56
Variance 2			-0.00	-0.01	19.77			0.00	-1.26

Notes

Prepurged 250 ml

Purge only sample, complete evacuation. Dropped pump rate to 100ml/min after 20 min of pumping. Performed complete evac., water level dropped below top of screen. Removed an additional 13L.

Grab Samples

Product Name: Low-Flow System

Date: 2019-04-04 15:52:06

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Bladder Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 74.75 ft

Well Information:

Well ID BGWC-34D  
Well diameter 2 in  
Well Total Depth 79.75 ft  
Screen Length 10 ft  
Depth to Water 14.16 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.547074 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 158.4 in  
Total Volume Pumped 15.36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:32:26	6720.99	17.90	7.33	697.72	4.06	26.80	0.03	-109.50
Last 5	15:36:26	6960.99	17.90	7.32	697.55	3.42	27.01	0.03	-110.09
Last 5	15:40:26	7200.98	18.02	7.32	696.94	4.22	27.20	0.03	-111.13
Last 5	15:44:26	7440.98	18.01	7.32	697.19	3.61	27.28	0.04	-111.32
Last 5	15:48:26	7680.98	18.04	7.32	696.96	2.95	27.36	0.04	-111.87
Variance 0			0.12	-0.00	-0.61			0.00	-1.04
Variance 1			-0.01	-0.00	0.26			0.00	-0.19
Variance 2			0.03	-0.00	-0.23			0.00	-0.56

Notes

Prepurged 1L

Grab Samples

BGWC-34D  
Metals, Inorganics, Radium



Product Name: Low-Flow System

Date: 2019-04-04 12:40:30

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Bladder Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 81 ft

Pump placement from TOC 75.94 ft

Well Information:

Well ID BGWC-35D  
Well diameter 2 in  
Well Total Depth 80.94 ft  
Screen Length 10 ft  
Depth to Water 25.50 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.551537 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 9.6 in  
Total Volume Pumped 17.28 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:22:31	5521.00	18.66	7.18	2724.81	9.39	26.26	0.08	35.24
Last 5	12:26:31	5760.99	18.61	7.18	2733.25	5.19	26.28	0.07	34.74
Last 5	12:30:31	6000.99	18.63	7.19	2742.88	4.95	26.26	0.07	33.79
Last 5	12:34:31	6240.99	18.66	7.20	2746.21	4.62	26.29	0.07	32.86
Last 5	12:38:31	6480.99	18.65	7.20	2756.52	4.30	26.30	0.07	31.98
Variance 0			0.03	0.01	9.63			-0.00	-0.95
Variance 1			0.02	0.01	3.33			-0.00	-0.92
Variance 2			-0.01	0.01	10.31			-0.00	-0.89

Notes

Prepurged 0.5L

Grab Samples

BGWC-35D  
Metals, Inorganics, Radium

Product Name: Low-Flow System

Date: 2019-04-02 12:09:36

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name April 2019 AP  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 553835  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Bladder Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 97 ft

Pump placement from TOC 91.35 ft

Well Information:

Well ID BGWC-36D  
Well diameter 2 in  
Well Total Depth 96.35 ft  
Screen Length 10 ft  
Depth to Water 17.82 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.622952 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 4.48 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	11:51:41	960.03	19.87	6.51	1608.30	9.97	17.80	0.56	115.10
Last 5	11:55:41	1200.03	19.86	6.48	1609.31	8.69	17.82	0.52	116.00
Last 5	11:59:41	1440.03	19.86	6.47	1617.86	4.91	17.81	0.49	115.96
Last 5	12:03:41	1680.03	20.04	6.47	1625.43	4.49	17.79	0.46	115.59
Last 5	12:07:41	1920.03	19.82	6.48	1627.15	4.77	17.82	0.43	115.55
Variance 0			-0.00	-0.01	8.56			-0.03	-0.05
Variance 1			0.18	0.00	7.57			-0.03	-0.37
Variance 2			-0.21	0.01	1.72			-0.03	-0.04

Notes

Prepurged 0.75L

Grab Samples

BGWC-36D  
Metals, Inorganics, Radium

Product Name: Low-Flow System

Date: 2019-05-02 14:10:55

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name Resample May 2019  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 642531  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 90 ft

Pump placement from TOC 84.21 ft

Well Information:

Well ID BGWA-2  
Well diameter 2 in  
Well Total Depth 89.21 ft  
Screen Length 10 ft  
Depth to Water 46.97 ft

Pumping Information:

Final Pumping Rate 125 mL/min  
Total System Volume 0.886708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	13:53:38	4079.98	19.39	7.75	395.48	0.64	47.00	1.40	-6.48
Last 5	13:57:38	4319.98	19.57	7.74	397.40	0.67	47.00	1.48	-5.00
Last 5	14:01:38	4559.98	19.50	7.73	395.18	0.72	47.01	1.55	-3.87
Last 5	14:05:38	4799.97	19.49	7.72	396.43	0.77	47.01	1.64	-1.84
Last 5	14:09:38	5039.97	19.41	7.71	397.59	0.90	47.01	1.71	-0.80
Variance 0			-0.07	-0.01	-2.22			0.07	1.13
Variance 1			-0.01	-0.01	1.25			0.09	2.03
Variance 2			-0.08	-0.01	1.15			0.07	1.04

Notes

Prepurged 1.0L

Grab Samples

BGWA-2  
Metals, Inorganics

Product Name: Low-Flow System

Date: 2019-05-02 11:09:38

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name Resample May 2019  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 642531  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 43 ft

Pump placement from TOC 38.05 ft

Well Information:

Well ID BGWC-22  
Well diameter 2 in  
Well Total Depth 43.05 ft  
Screen Length 10 ft  
Depth to Water 24.58 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.6769272 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 5.88 in  
Total Volume Pumped 4.16 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:51:18	960.07	19.72	6.92	3652.17	1.36	25.11	0.73	11.60
Last 5	10:55:18	1200.03	19.94	6.92	3662.15	0.80	25.10	0.58	9.14
Last 5	10:59:18	1440.01	20.03	6.92	3664.28	0.71	25.10	0.48	6.87
Last 5	11:03:18	1680.01	19.99	6.92	3674.12	0.68	25.09	0.39	5.42
Last 5	11:07:18	1920.01	20.13	6.92	3679.43	0.69	25.07	0.34	4.43
Variance 0			0.09	0.00	2.14			-0.11	-2.28
Variance 1			-0.04	0.00	9.83			-0.08	-1.45
Variance 2			0.14	-0.00	5.32			-0.05	-0.99

Notes

Prepurged 1.5L

Grab Samples

BGWC-22  
Metals, Inorganics

Product Name: Low-Flow System

Date: 2019-05-03 10:55:58

Project Information:

Operator Name Veronica Fay  
Company Name Resolute  
Project Name Development  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 613179  
Turbidity Make/Model LaMott 2020we

Pump Information:

Pump Model/Type Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 52 ft

Pump placement from TOC 46.22 ft

Well Information:

Well ID BGWC-32  
Well diameter 2 in  
Well Total Depth 51.22 ft  
Screen Length 10 ft  
Depth to Water 34.24 ft

Pumping Information:

Final Pumping Rate 105 mL/min  
Total System Volume 0.422098 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 59.04 in  
Total Volume Pumped 4.41 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:30:24	1800.00	19.82	7.20	1572.44	2.17	38.68	2.86	89.03
Last 5	10:33:24	1980.00	19.74	7.20	1570.51	2.58	38.83	2.85	89.39
Last 5	10:36:24	2159.99	19.99	7.19	1569.13	2.21	38.95	2.82	89.69
Last 5	10:39:24	2339.99	20.04	7.19	1568.41	2.08	39.06	2.76	90.09
Last 5	10:42:24	2519.99	19.59	7.18	1581.02	1.51	39.16	2.56	91.03
Variance 0			0.25	-0.00	-1.38			-0.04	0.29
Variance 1			0.05	-0.00	-0.73			-0.06	0.40
Variance 2			-0.45	-0.01	12.62			-0.19	0.94

Notes

Prepurged 0.25 L

Well has a bit of a drawdown issue. Draw down does stabilize after roughly 40 minutes of pumping.

Grab Samples

BGWC-32

Metals

BGWC-32

Inorganics

Product Name: Low-Flow System

Date: 2019-05-03 10:36:33

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name Development  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 642531  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 110 ft

Pump placement from TOC 104.5 ft

Well Information:

Well ID BGWC-37D  
Well diameter 2 in  
Well Total Depth 109.5 ft  
Screen Length 10 ft  
Depth to Water 26.15 ft

Pumping Information:

Final Pumping Rate 105 mL/min  
Total System Volume 0.6809765 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 43.8 in  
Total Volume Pumped 3.76 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:17:10	960.02	19.68	7.50	1297.89	4.04	29.35	0.17	59.31
Last 5	10:21:10	1200.01	19.96	7.50	1289.08	3.50	29.64	0.16	35.46
Last 5	10:25:10	1440.01	19.88	7.51	1277.23	3.34	29.71	0.16	20.44
Last 5	10:29:10	1680.01	19.99	7.51	1268.63	2.81	29.78	0.16	9.85
Last 5	10:33:10	1920.01	20.03	7.51	1260.35	2.07	29.80	0.16	2.05
Variance 0			-0.08	0.01	-11.85			0.00	-15.03
Variance 1			0.11	0.00	-8.60			-0.01	-10.59
Variance 2			0.04	0.00	-8.28			0.00	-7.80

Notes

Prepurged 1.5 L

Grab Samples

BGWC-37D  
Metals

Product Name: Low-Flow System

Date: 2019-05-02 16:06:46

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name Development  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 642531  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 129 ft

Pump placement from TOC 123.2 ft

Well Information:

Well ID BGWC-38D  
Well diameter 2 in  
Well Total Depth 128.2 ft  
Screen Length 10 ft  
Depth to Water 19.88 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 1.060781 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 7.28 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:48:56	2400.00	22.70	7.32	1831.32	4.28	19.91	0.64	12.90
Last 5	15:52:56	2640.00	22.76	7.32	1823.14	4.29	19.92	0.53	10.96
Last 5	15:56:56	2879.99	22.89	7.32	1825.04	4.14	19.92	0.46	9.96
Last 5	16:00:56	3119.99	23.02	7.32	1824.04	4.32	19.85	0.42	8.82
Last 5	16:04:56	3359.99	22.98	7.32	1905.47	3.57	19.85	0.35	-61.53
Variance 0			0.13	0.00	1.91			-0.07	-1.00
Variance 1			0.13	-0.00	-1.00			-0.04	-1.14
Variance 2			-0.04	0.01	81.43			-0.07	-70.35

Notes

Prepurged 1.5L

Grab Samples

BGWC-38D

Metals

DUP-01

Metals

Product Name: Low-Flow System

Date: 2019-07-09 11:56:50

Project Information:

Operator Name Audrey Crafton  
Company Name Resolute Env  
Project Name July 2019 Ash Pond Resample  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 501336  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Bladder pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 85 ft

Pump placement from TOC 79.8 ft

Well Information:

Well ID BGWA-33  
Well diameter 2 in  
Well Total Depth 80.84 ft  
Screen Length 10 ft  
Depth to Water 73.88 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.569391 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 45 in  
Total Volume Pumped 6.03 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:29:26	2646.93	22.53	7.81	473.22	6.70	77.17	1.13	18.11
Last 5	11:33:26	2886.93	22.76	7.83	447.44	6.59	77.42	0.90	15.41
Last 5	11:37:28	3128.93	22.66	7.84	444.35	5.15	77.56	0.69	14.70
Last 5	11:41:38	3378.93	23.11	7.83	448.11	4.23	77.79	0.56	13.97
Last 5	11:45:38	3618.93	23.21	7.83	450.48	4.81	77.97	0.50	13.84
Variance 0			-0.10	0.00	-3.09			-0.21	-0.71
Variance 1			0.45	-0.01	3.76			-0.13	-0.73
Variance 2			0.10	-0.00	2.37			-0.06	-0.13

Notes

Water level started below top of screen. Pre purged 0.5L

Decreased pump rate from 110 to 100 ml/min after 480sec. Water level still continued to drop too fast. TG from Resolute said to go ahead and sample after 1 stable (all but DTW) reading



Grab Samples  
BGWA-33  
Metals (B and Mo only)

# APPENDIX D

## Statistical Analyses

**Table D-1**  
 Detection Monitoring Prediction Limit Comparison  
 Plant Bowen, Bartow County, Georgia

Parameter	Well ID	Upper PL	Lower PL	Apr 1-5, 2019
Boron (mg/L)	BGWC-7	0.04	-	1.4
Boron (mg/L)	BGWC-8	0.04	-	0.046 J
Boron (mg/L)	BGWC-9	0.04	-	0.50
Boron (mg/L)	BGWC-10	0.04	-	0.51 J <sup>(3)</sup>
Boron (mg/L)	BGWC-12	0.04	-	0.86 J <sup>(3)</sup>
Boron (mg/L)	BGWC-14	0.04	-	0.79 J <sup>(3)</sup>
Boron (mg/L)	BGWC-16	0.04	-	1.1
Boron (mg/L)	BGWC-17	0.04	-	0.95 J <sup>(3)</sup>
Boron (mg/L)	BGWC-18	0.04	-	0.56 J <sup>(3)</sup>
Boron (mg/L)	BGWC-19	0.04	-	0.51
Boron (mg/L)	BGWC-20	0.04	-	2.6
Boron (mg/L)	BGWC-21	0.04	-	0.12
Boron (mg/L)	BGWC-22	0.04	-	7.9
Boron (mg/L)	BGWC-23	0.04	-	6.5
Boron (mg/L)	BGWC-24	0.04	-	23.3
Boron (mg/L)	BGWC-25	0.04	-	0.02 J
Boron (mg/L)	BGWC-30	0.04	-	6.1 J <sup>(3)</sup>
Calcium (mg/L)	BGWC-7	48.1	-	140
Calcium (mg/L)	BGWC-8	48.1	-	47.2
Calcium (mg/L)	BGWC-9	48.1	-	59.3
Calcium (mg/L)	BGWC-10	48.1	-	57.8
Calcium (mg/L)	BGWC-12	48.1	-	94.8
Calcium (mg/L)	BGWC-14	48.1	-	98
Calcium (mg/L)	BGWC-16	48.1	-	117
Calcium (mg/L)	BGWC-17	48.1	-	63.9
Calcium (mg/L)	BGWC-18	48.1	-	53.3
Calcium (mg/L)	BGWC-19	48.1	-	51.3
Calcium (mg/L)	BGWC-20	48.1	-	220
Calcium (mg/L)	BGWC-21	48.1	-	43.4
Calcium (mg/L)	BGWC-22	48.1	-	458
Calcium (mg/L)	BGWC-23	48.1	-	396
Calcium (mg/L)	BGWC-24	48.1	-	945
Calcium (mg/L)	BGWC-25	48.1	-	54.8
Calcium (mg/L)	BGWC-30	48.1	-	181
Chloride (mg/L)	BGWC-7	4.37	-	9.4
Chloride (mg/L)	BGWC-8	4.37	-	1.8
Chloride (mg/L)	BGWC-9	4.37	-	13.4
Chloride (mg/L)	BGWC-10	4.37	-	24.1
Chloride (mg/L)	BGWC-12	4.37	-	24.1
Chloride (mg/L)	BGWC-14	4.37	-	33.7
Chloride (mg/L)	BGWC-16	4.37	-	20.3
Chloride (mg/L)	BGWC-17	4.37	-	18.7
Chloride (mg/L)	BGWC-18	4.37	-	4.5
Chloride (mg/L)	BGWC-19	4.37	-	9.7
Chloride (mg/L)	BGWC-20	4.37	-	144
Chloride (mg/L)	BGWC-21	4.37	-	5
Chloride (mg/L)	BGWC-22	3.85	-	856

**Table D-1**  
Detection Monitoring Prediction Limit Comparison  
Plant Bowen, Bartow County, Georgia

Parameter	Well ID	Upper PL	Lower PL	Apr 1-5, 2019
Chloride (mg/L)	BGWC-23	3.85	-	679
Chloride (mg/L)	BGWC-24	3.85	-	1890
Chloride (mg/L)	BGWC-25	3.85	-	3.8
Chloride (mg/L)	BGWC-30	3.85	-	333
Fluoride (mg/L)	BGWC-7	0.213	-	0.22 J
Fluoride (mg/L)	BGWC-8	0.213	-	ND
Fluoride (mg/L)	BGWC-9	0.213	-	0.33
Fluoride (mg/L)	BGWC-10	0.213	-	0.044 J
Fluoride (mg/L)	BGWC-12	0.213	-	0.065 J
Fluoride (mg/L)	BGWC-14	0.213	-	0.44
Fluoride (mg/L)	BGWC-16	0.213	-	0.23 J
Fluoride (mg/L)	BGWC-17	0.213	-	0.14 J
Fluoride (mg/L)	BGWC-18	0.213	-	0.044 J
Fluoride (mg/L)	BGWC-19	0.213	-	0.051 J
Fluoride (mg/L)	BGWC-20	0.213	-	0.072 J
Fluoride (mg/L)	BGWC-21	0.213	-	0.032 J
Fluoride (mg/L)	BGWC-22	0.213	-	0.23 J
Fluoride (mg/L)	BGWC-23	0.213	-	0.1 J
Fluoride (mg/L)	BGWC-24	0.213	-	3
Fluoride (mg/L)	BGWC-25	0.213	-	ND
Fluoride (mg/L)	BGWC-30	0.213	-	0.68
pH (s.u.)	BGWC-7	8.2	7.5	7.0
pH (s.u.)	BGWC-8	8.2	7.5	7.6
pH (s.u.)	BGWC-9	8.2	7.5	7.0
pH (s.u.)	BGWC-10	8.2	7.5	7.5
pH (s.u.)	BGWC-12	8.2	7.5	7.2
pH (s.u.)	BGWC-14	8.2	7.5	7.3
pH (s.u.)	BGWC-16	8.2	7.5	6.8
pH (s.u.)	BGWC-17	8.2	7.5	7.2
pH (s.u.)	BGWC-18	8.2	7.5	6.5
pH (s.u.)	BGWC-19	8.2	7.5	6.6
pH (s.u.)	BGWC-20	8.2	7.5	7.1
pH (s.u.)	BGWC-21	8.2	7.5	7.7
pH (s.u.)	BGWC-22	8.2	7.5	6.8
pH (s.u.)	BGWC-23	8.2	7.5	7.0
pH (s.u.)	BGWC-24	8.2	7.5	6.6
pH (s.u.)	BGWC-25	8.2	7.5	7.4
pH (s.u.)	BGWC-30	8.2	7.5	7.2
Sulfate (mg/L)	BGWC-7	10.4	-	334
Sulfate (mg/L)	BGWC-8	10.4	-	30.5
Sulfate (mg/L)	BGWC-9	10.4	-	81.4
Sulfate (mg/L)	BGWC-10	10.4	-	105
Sulfate (mg/L)	BGWC-12	10.4	-	239
Sulfate (mg/L)	BGWC-14	10.4	-	255
Sulfate (mg/L)	BGWC-16	10.4	-	272
Sulfate (mg/L)	BGWC-17	10.4	-	86.9
Sulfate (mg/L)	BGWC-18	10.4	-	70.1
Sulfate (mg/L)	BGWC-19	10.4	-	90.6

**Table D-1**  
 Detection Monitoring Prediction Limit Comparison  
 Plant Bowen, Bartow County, Georgia

Parameter	Well ID	Upper PL	Lower PL	Apr 1-5, 2019
Sulfate (mg/L)	BGWC-20	10.4	-	593
Sulfate (mg/L)	BGWC-21	10.4	-	61.9
Sulfate (mg/L)	BGWC-22	10.4	-	720
Sulfate (mg/L)	BGWC-23	10.4	-	603
Sulfate (mg/L)	BGWC-24	10.4	-	648
Sulfate (mg/L)	BGWC-25	10.4	-	11.4
Sulfate (mg/L)	BGWC-30	10.4	-	153
TDS (mg/L)	BGWC-7	301	-	728
TDS (mg/L)	BGWC-8	301	-	191
TDS (mg/L)	BGWC-9	301	-	326
TDS (mg/L)	BGWC-10	301	-	355
TDS (mg/L)	BGWC-12	301	-	191
TDS (mg/L)	BGWC-14	301	-	617
TDS (mg/L)	BGWC-16	301	-	604
TDS (mg/L)	BGWC-17	301	-	321
TDS (mg/L)	BGWC-18	301	-	258
TDS (mg/L)	BGWC-19	301	-	259
TDS (mg/L)	BGWC-20	301	-	1090
TDS (mg/L)	BGWC-21	301	-	244
TDS (mg/L)	BGWC-22	301	-	2180
TDS (mg/L)	BGWC-23	301	-	1990
TDS (mg/L)	BGWC-24	301	-	13
TDS (mg/L)	BGWC-25	301	-	196
TDS (mg/L)	BGWC-30	301	-	773

Notes:

- = Not applicable

J = Indicates that analyte was estimated and detected between the laboratory Method Detection Limit (MDL) and Reporting Limit (RL).

mg/L = milligrams per liter

ND = Indicates the parameter was not detected above the laboratory MDL.

PL = Prediction Limit

s.u. = standard unit

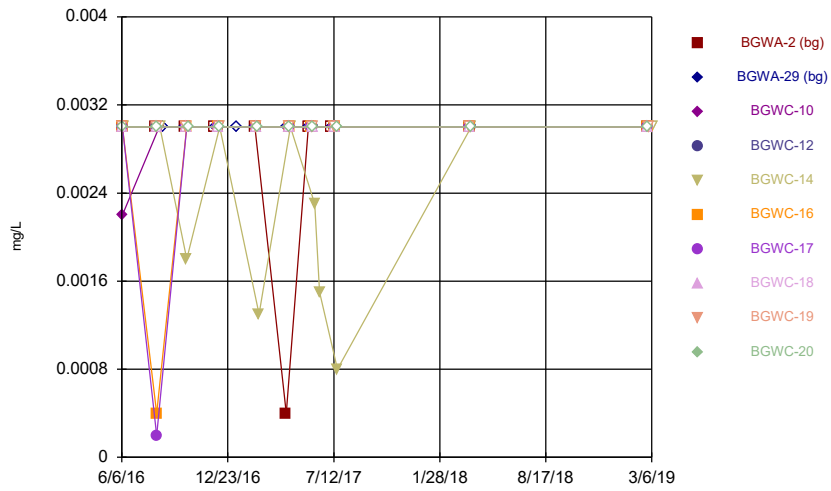
TDS = Total Dissolved Solids

(1) Shaded values indicate an exceedance of the statistically derived PL.

(2) The pH value presented was recorded at the time of sample collection in the field. This is the only parameter in which the field result is compared to both the upper and lower PL.

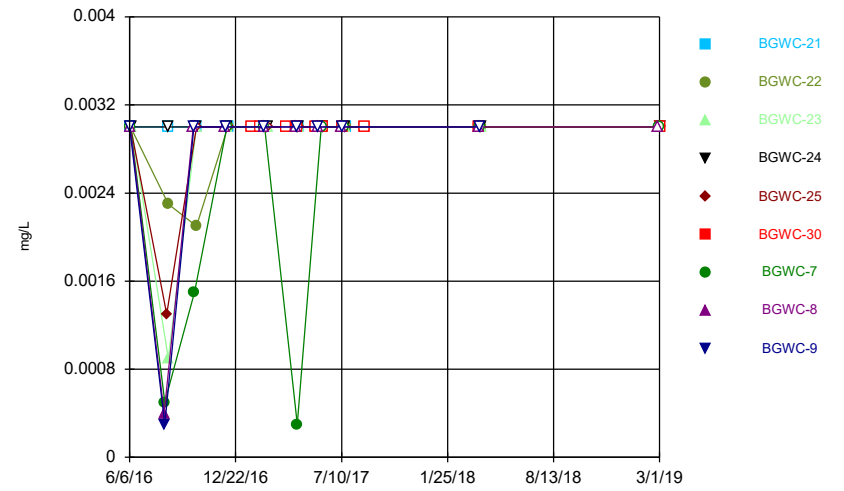
(3) Value J-flagged by the laboratory as estimated with an elevated RL due to an elevated Dilution Factor. The concentration reported for the April 2019 event is consistent with historical data and therefore deemed an exceedance in spite of the assigned J-flag.

### Time Series



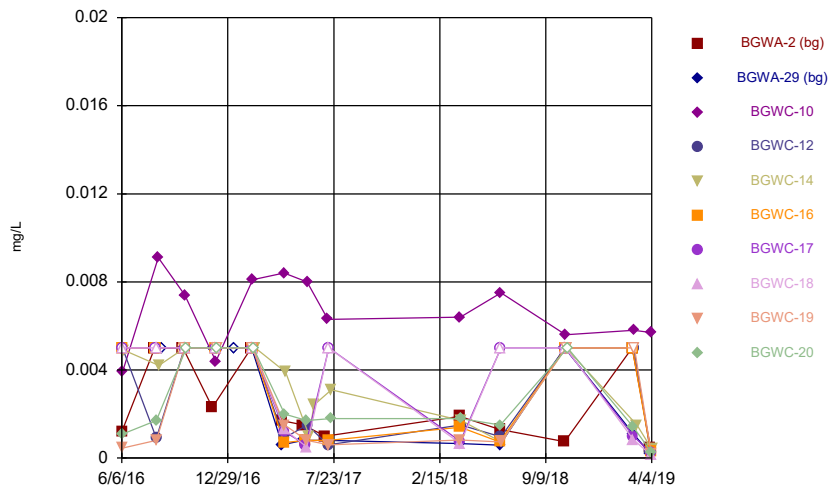
Constituent: Antimony Analysis Run 7/18/2019 4:37 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



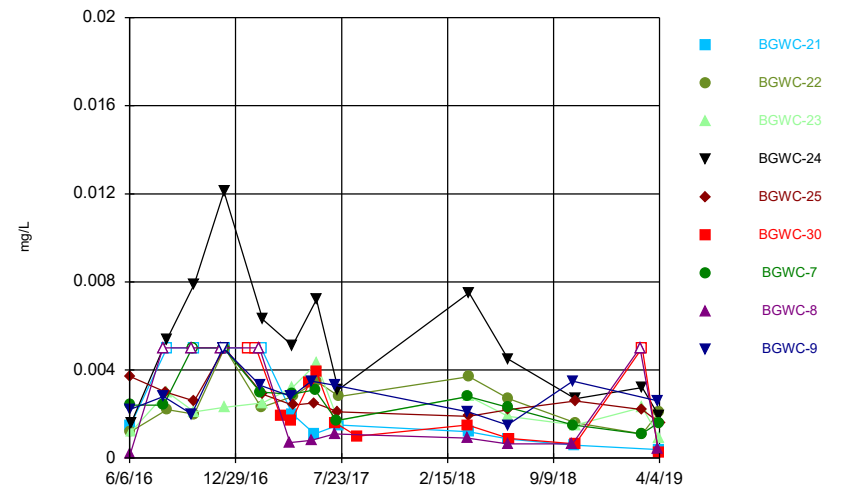
Constituent: Antimony Analysis Run 7/18/2019 4:37 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



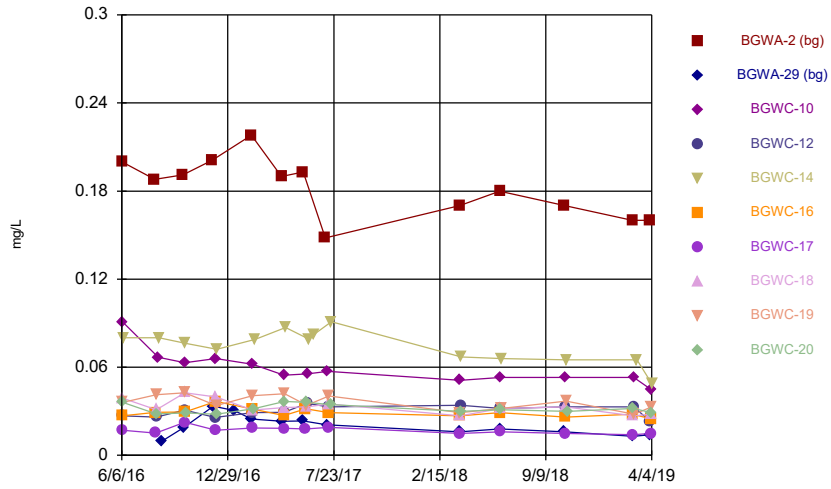
Constituent: Arsenic Analysis Run 7/18/2019 4:37 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



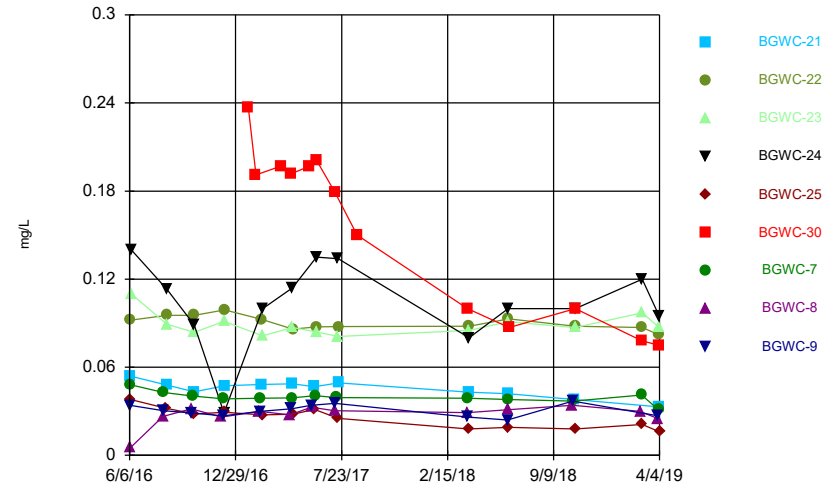
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Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



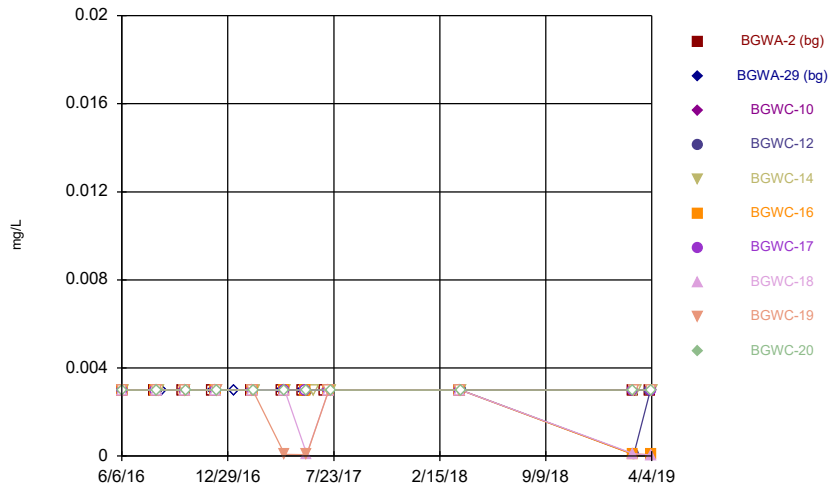
Constituent: Barium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



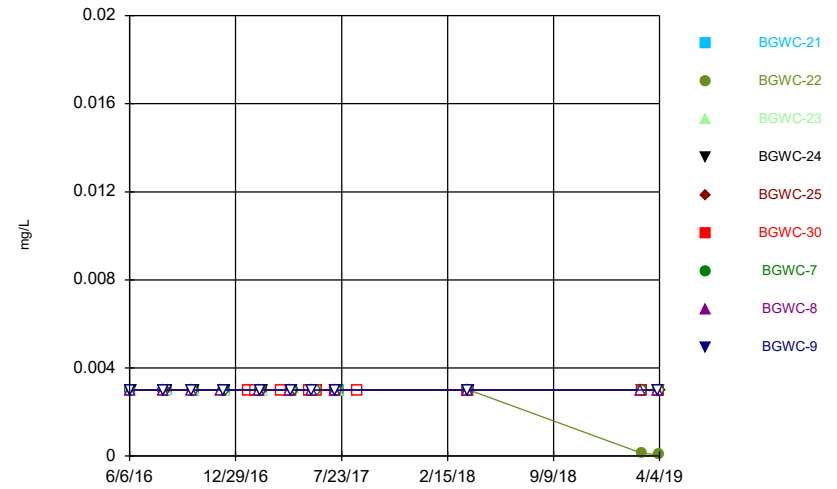
Constituent: Barium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



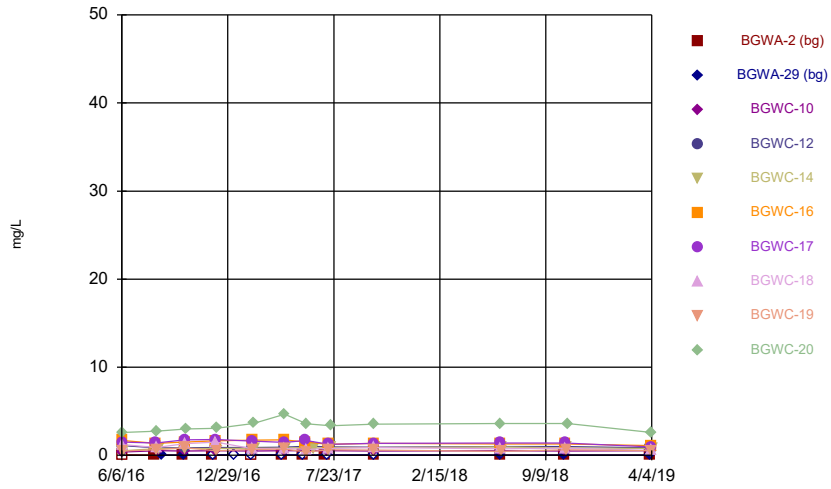
Constituent: Beryllium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



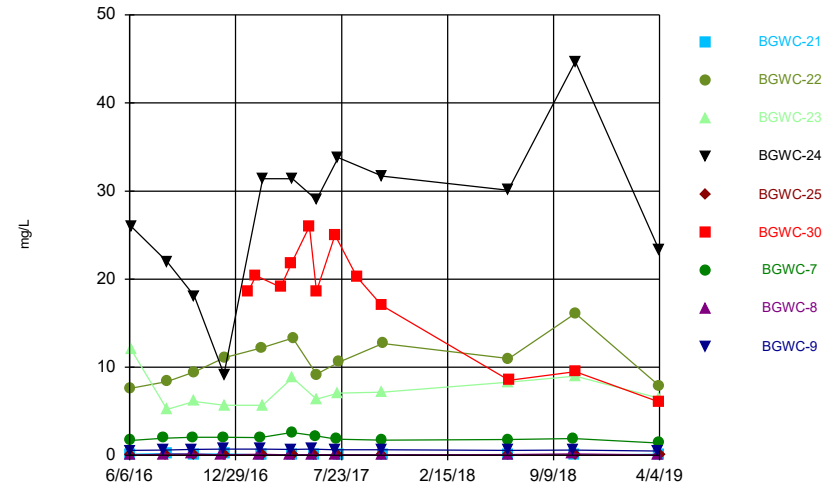
Constituent: Beryllium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



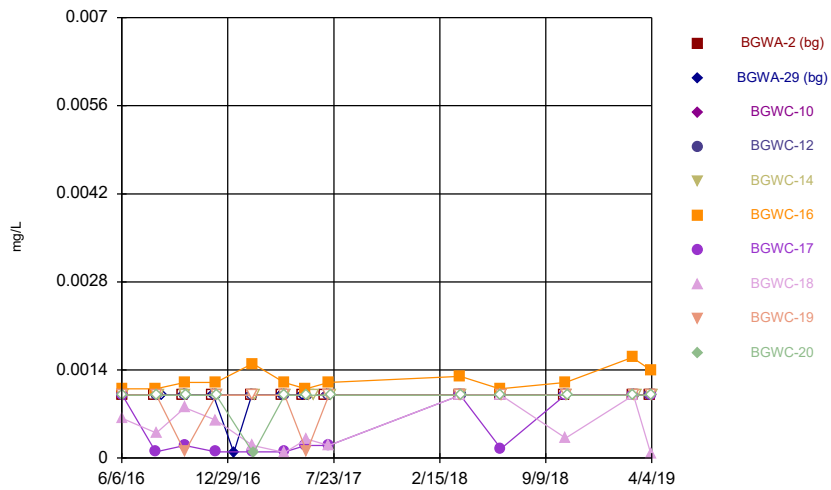
Constituent: Boron Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



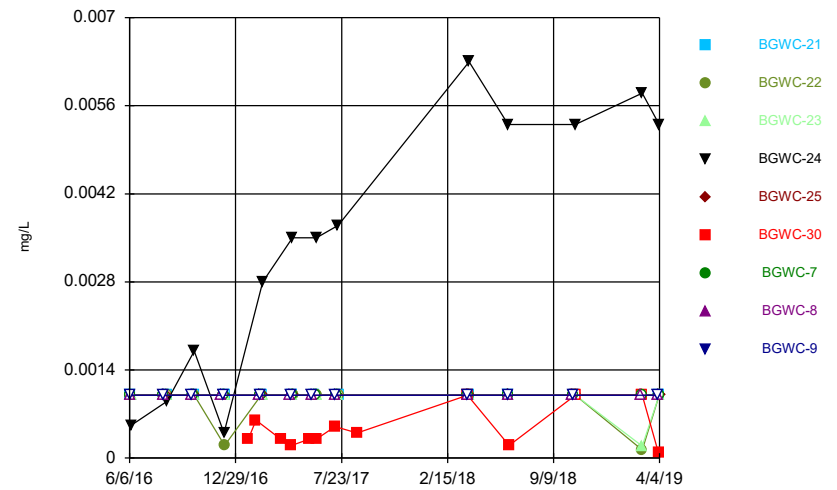
Constituent: Boron Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



Constituent: Cadmium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

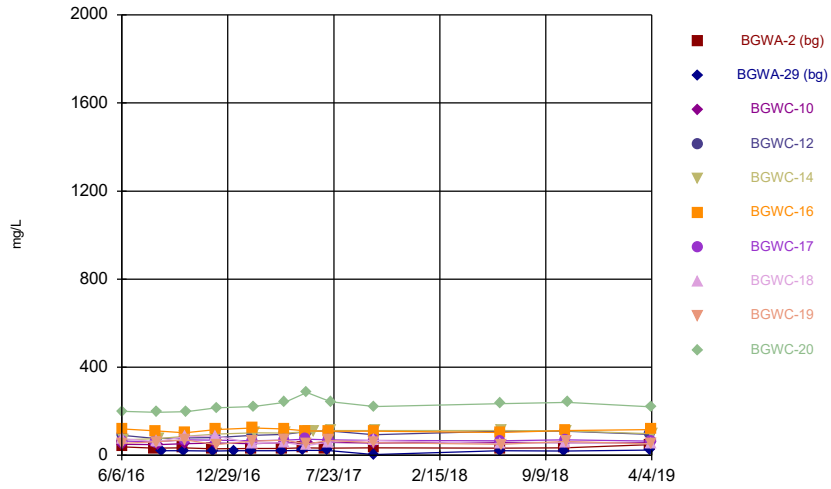
Time Series



Constituent: Cadmium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

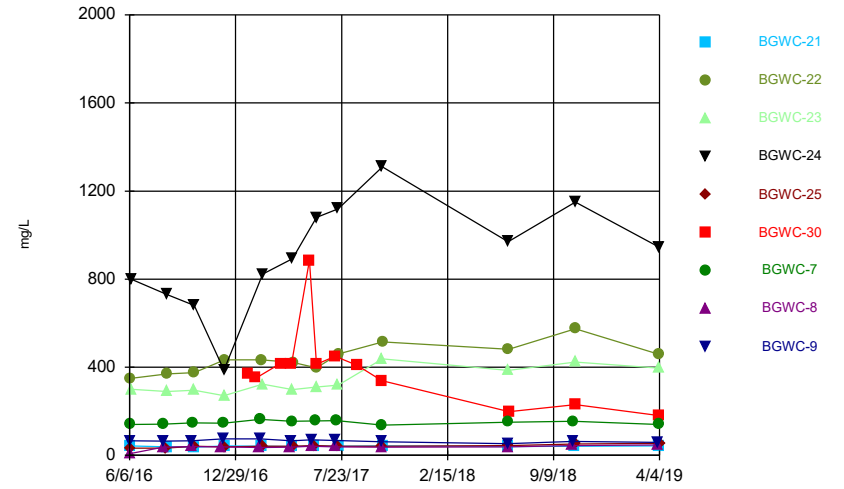


Time Series



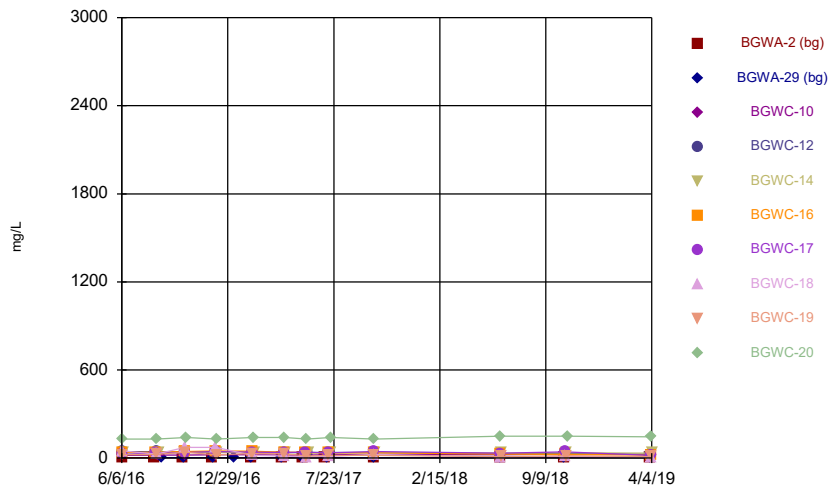
Constituent: Calcium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



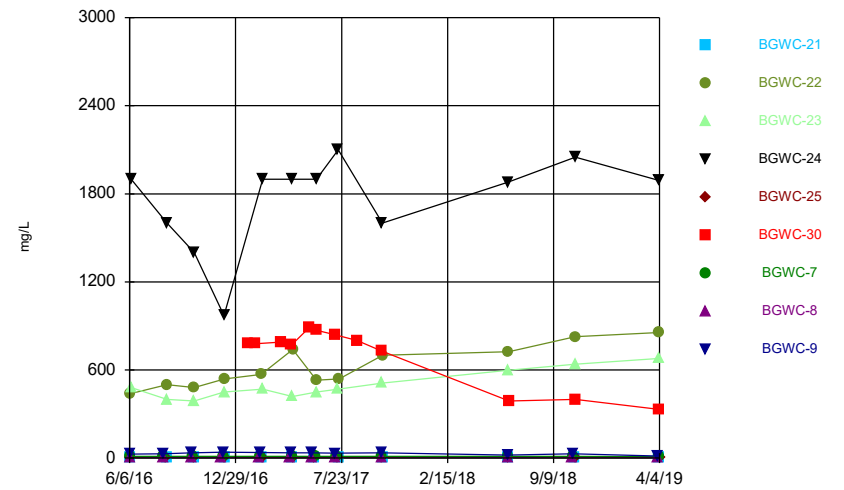
Constituent: Calcium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



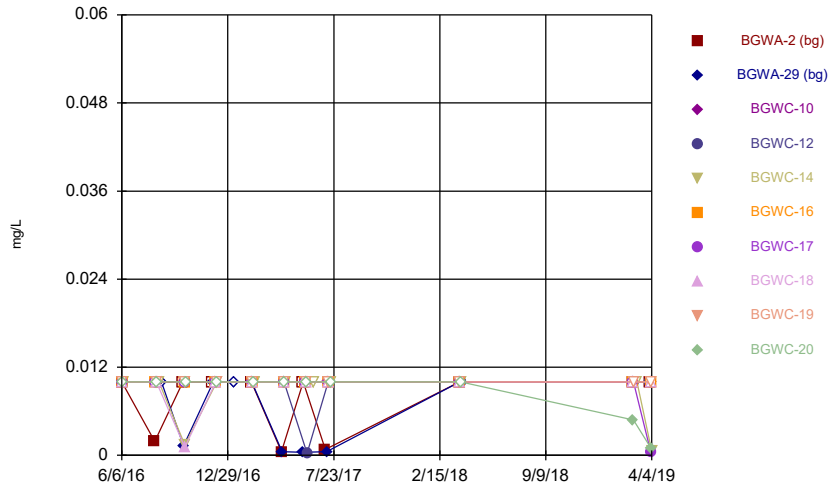
Constituent: Chloride Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



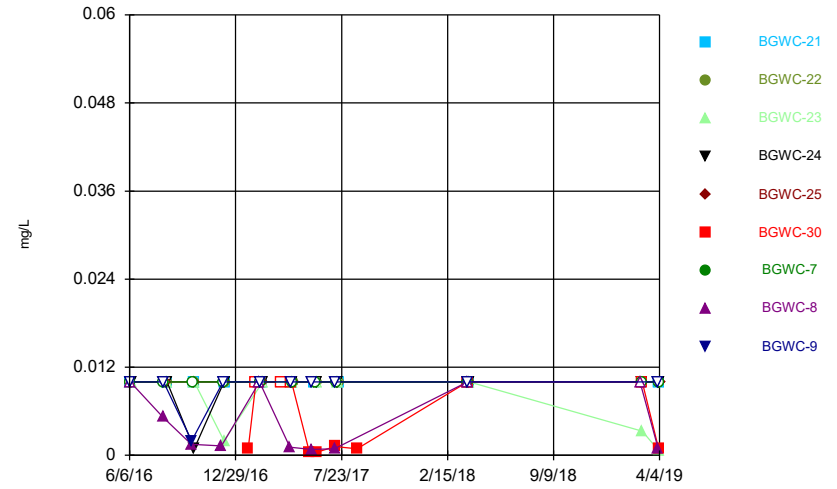
Constituent: Chloride Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



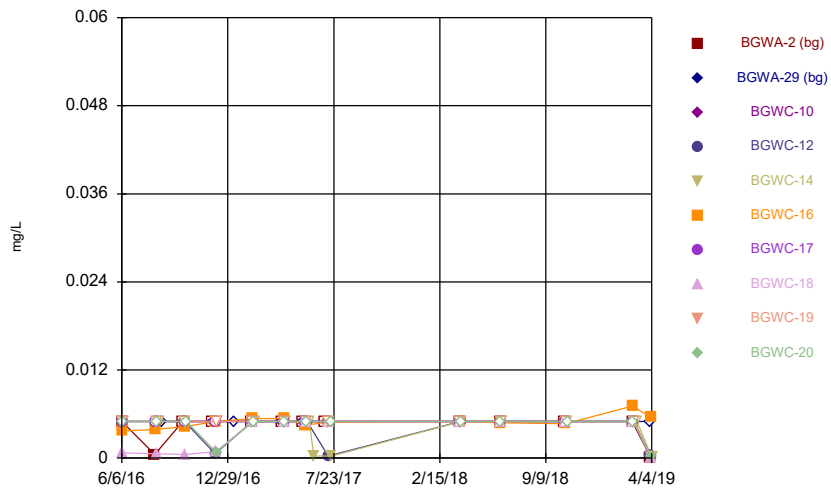
Constituent: Chromium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



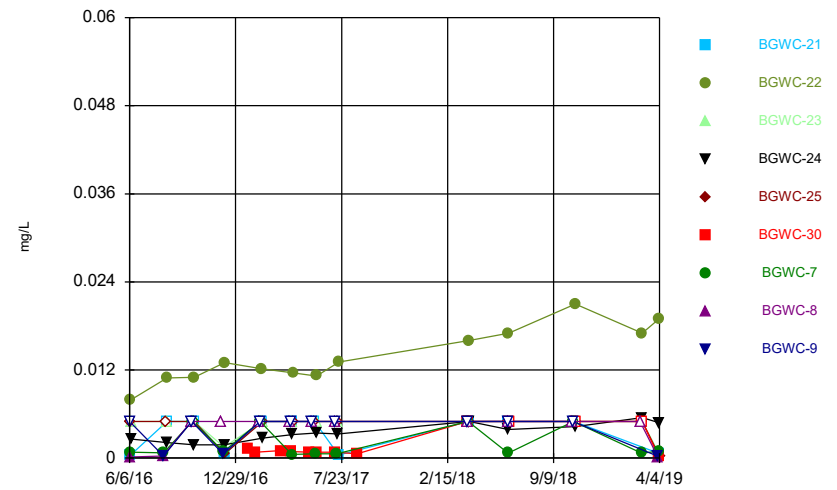
Constituent: Chromium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



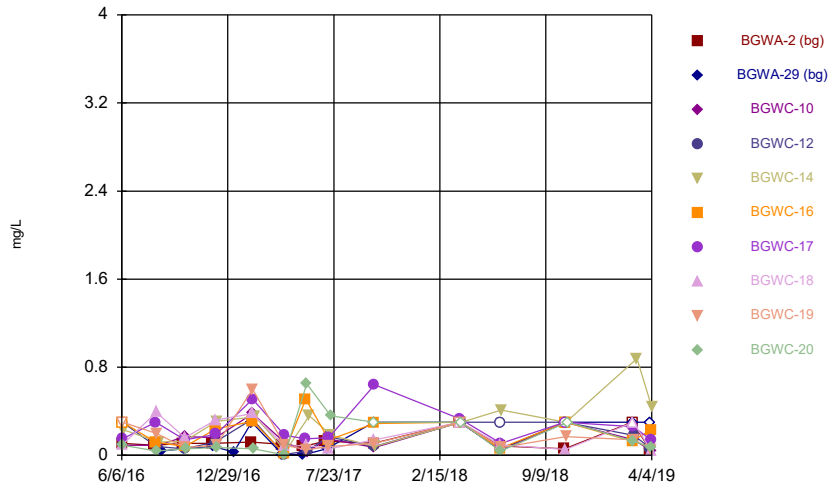
Constituent: Cobalt Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



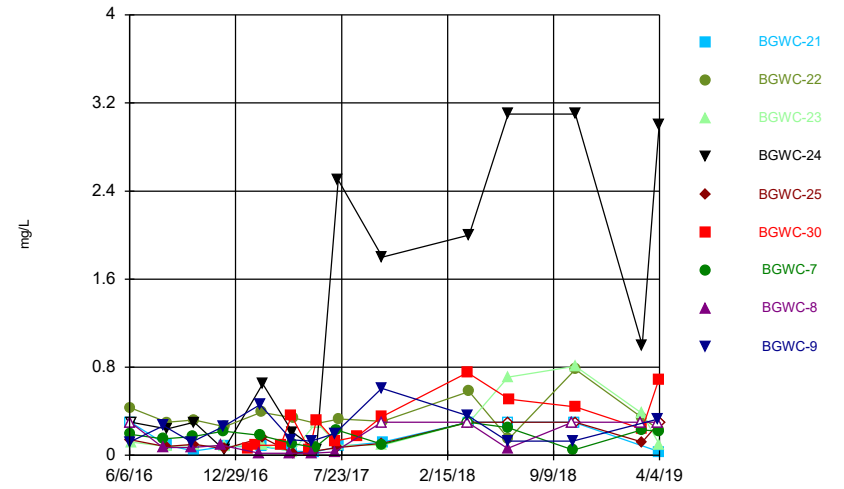
Constituent: Cobalt Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



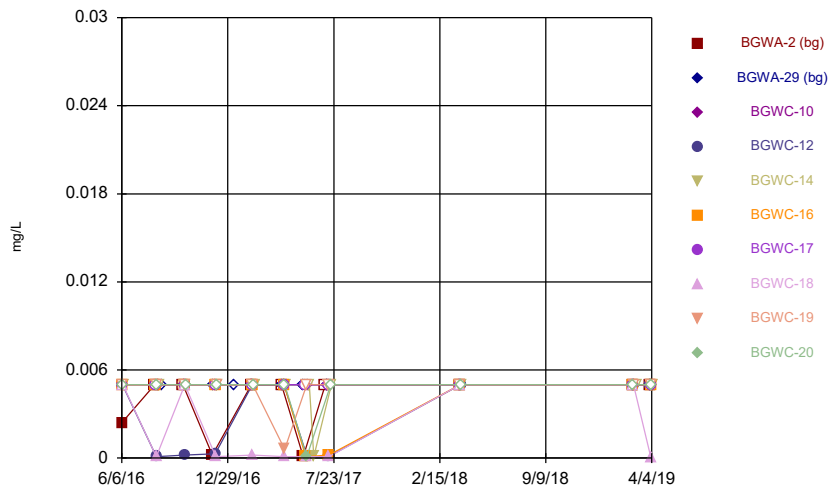
Constituent: Fluoride Analysis Run 7/18/2019 4:37 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



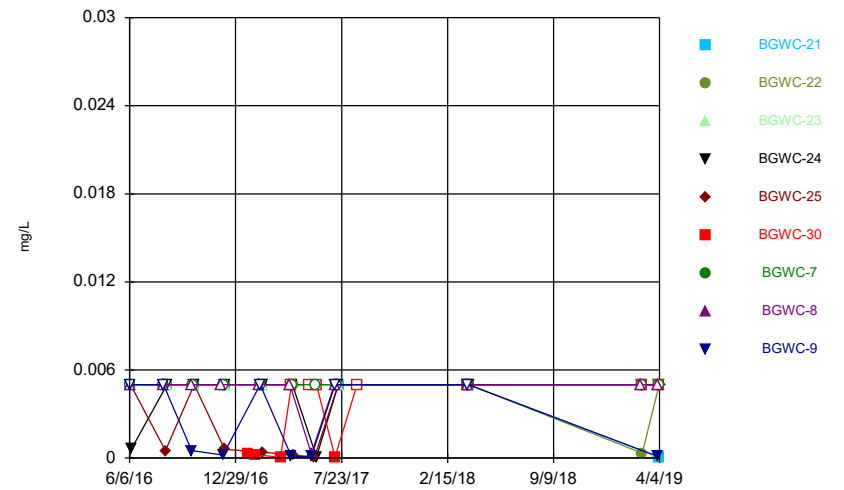
Constituent: Fluoride Analysis Run 7/18/2019 4:37 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



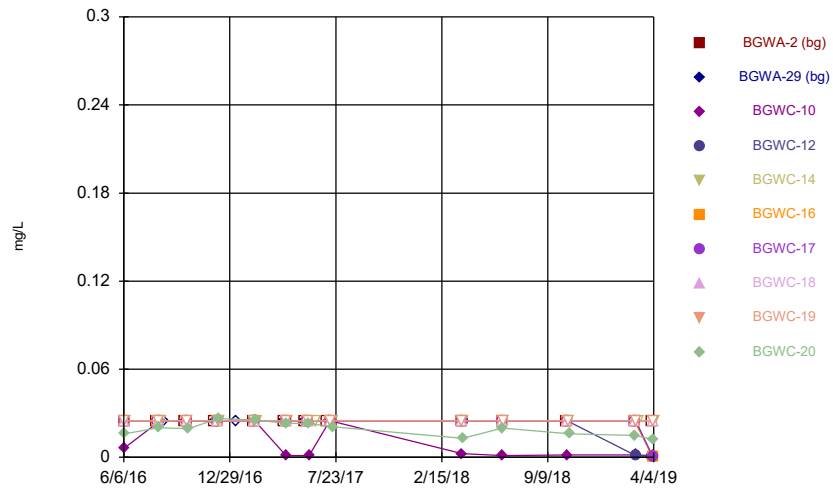
Constituent: Lead Analysis Run 7/18/2019 4:37 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



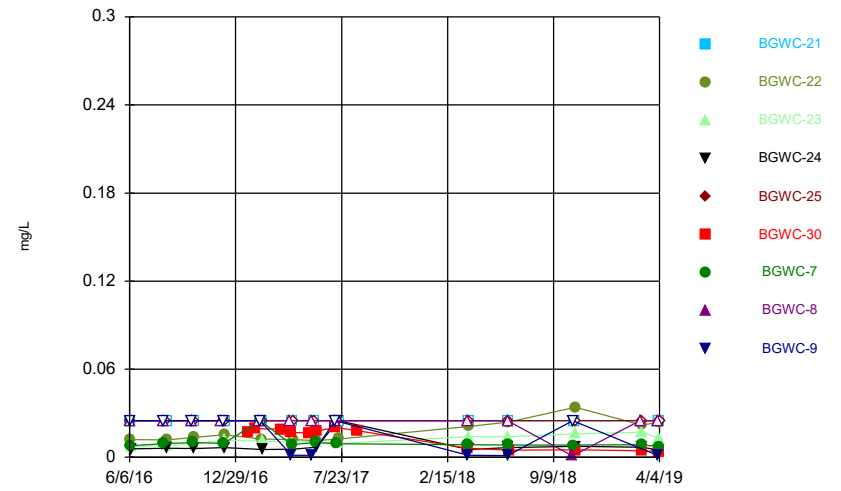
Constituent: Lead Analysis Run 7/18/2019 4:37 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



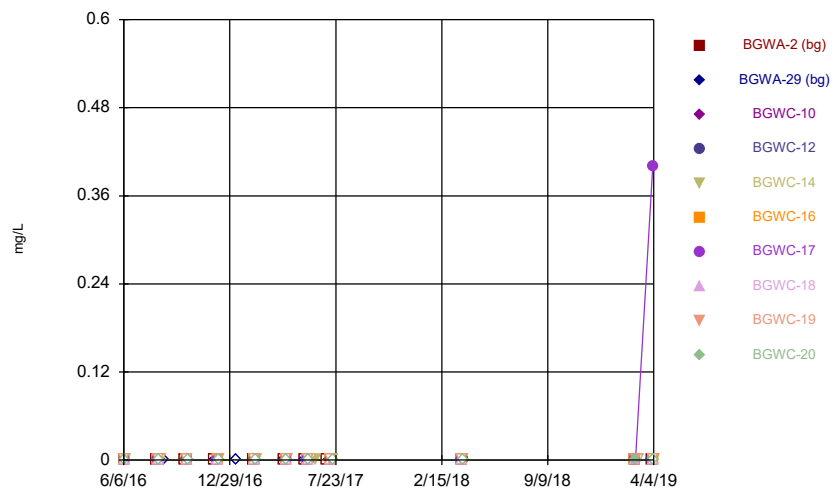
Constituent: Lithium Analysis Run 7/18/2019 4:37 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



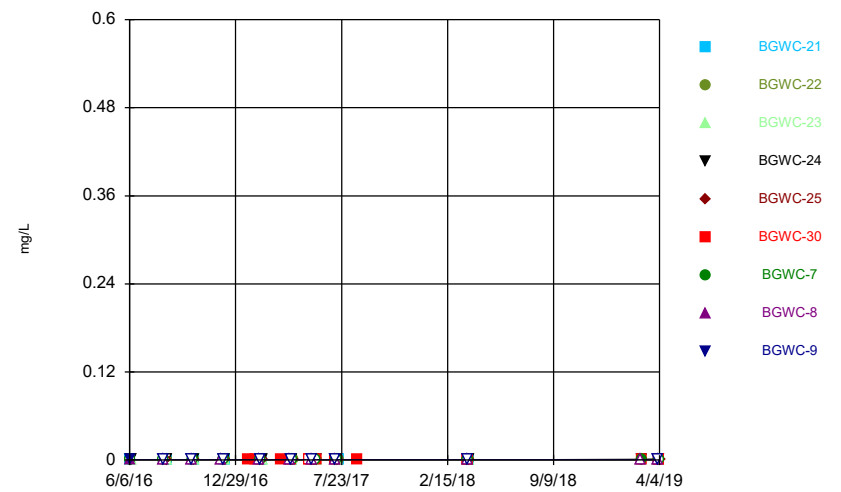
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Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



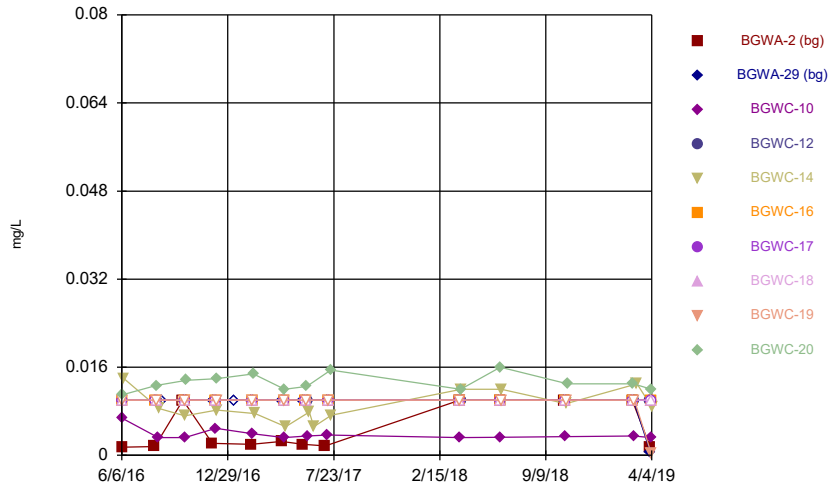
Constituent: Mercury Analysis Run 7/18/2019 4:37 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



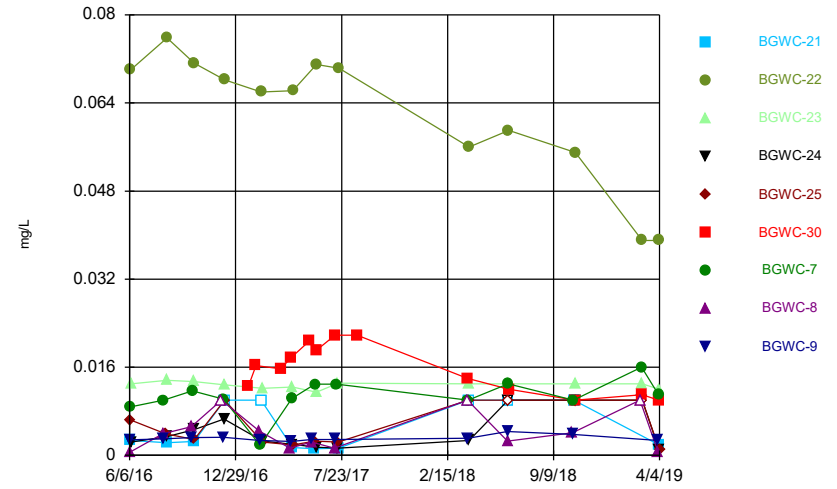
Constituent: Mercury Analysis Run 7/18/2019 4:37 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



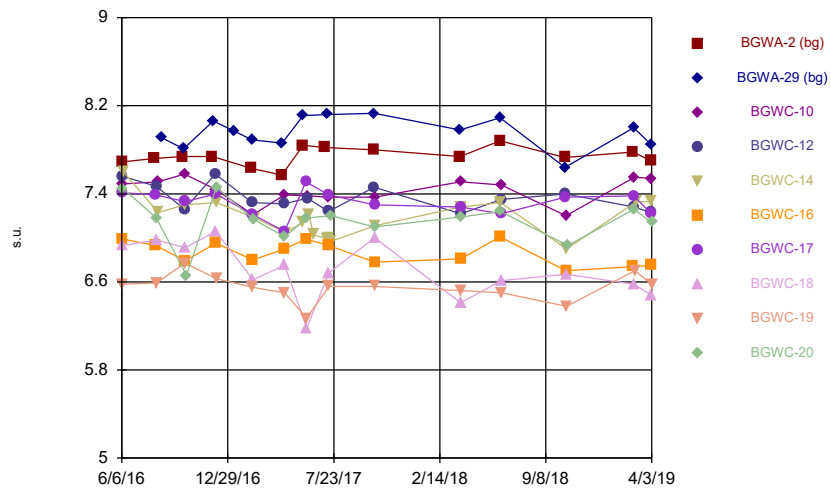
Constituent: Molybdenum Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



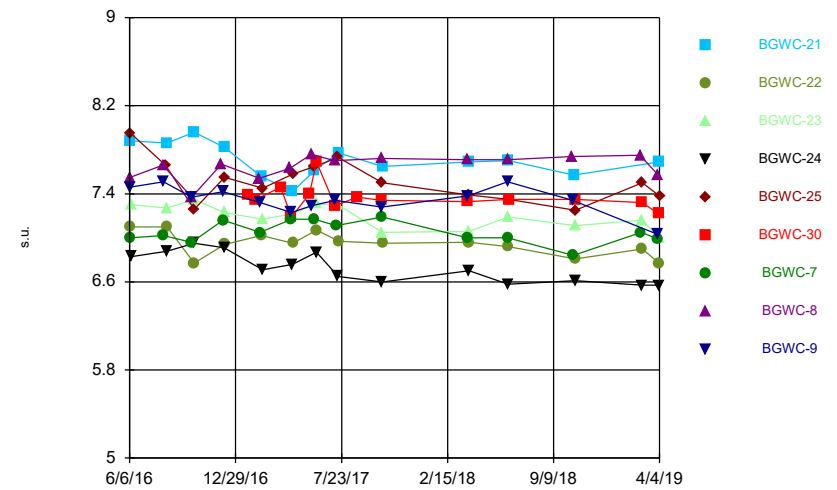
Constituent: Molybdenum Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



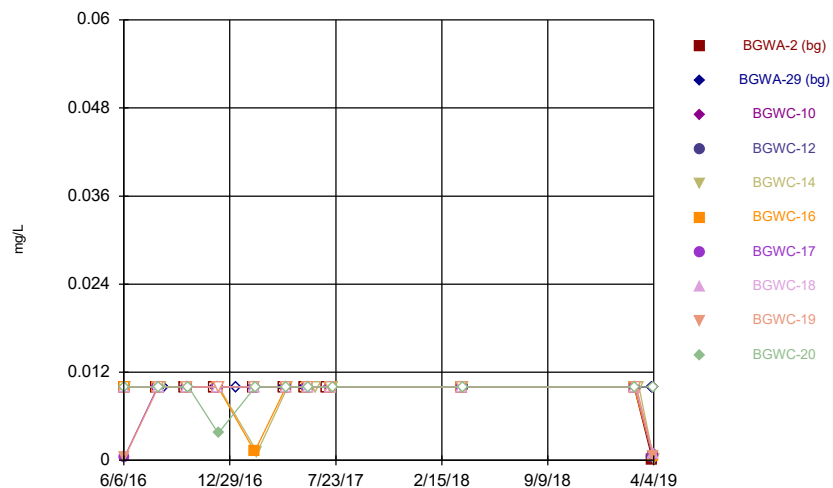
Constituent: pH Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



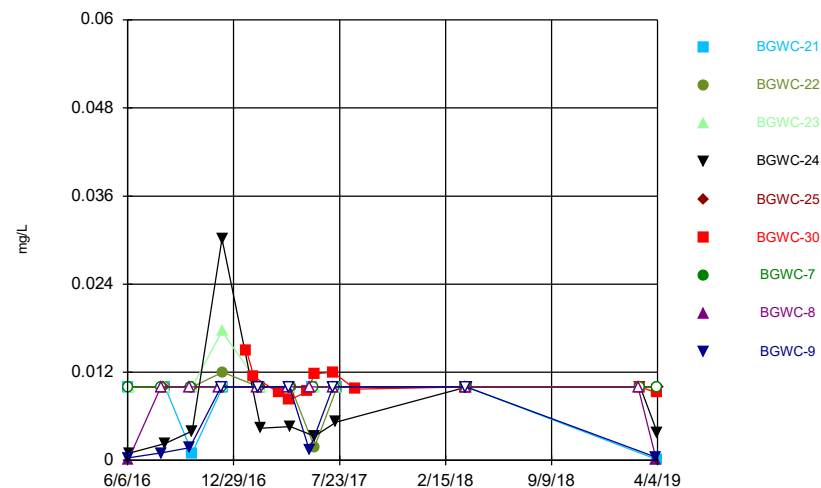
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 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



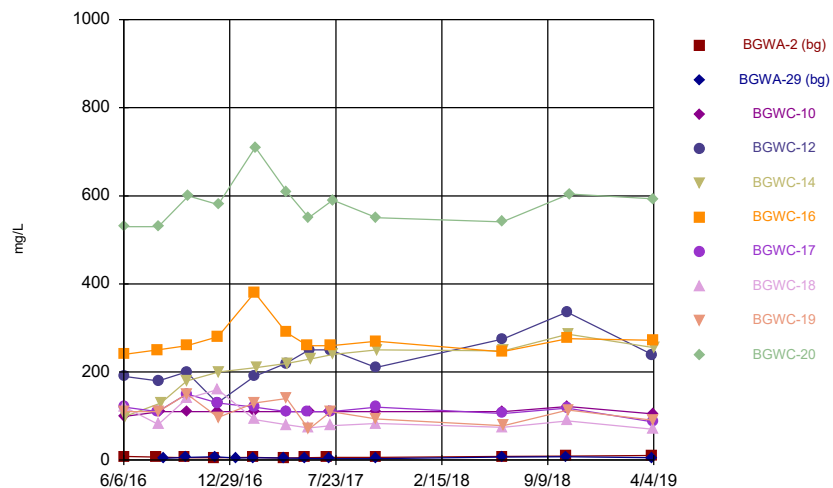
Constituent: Selenium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



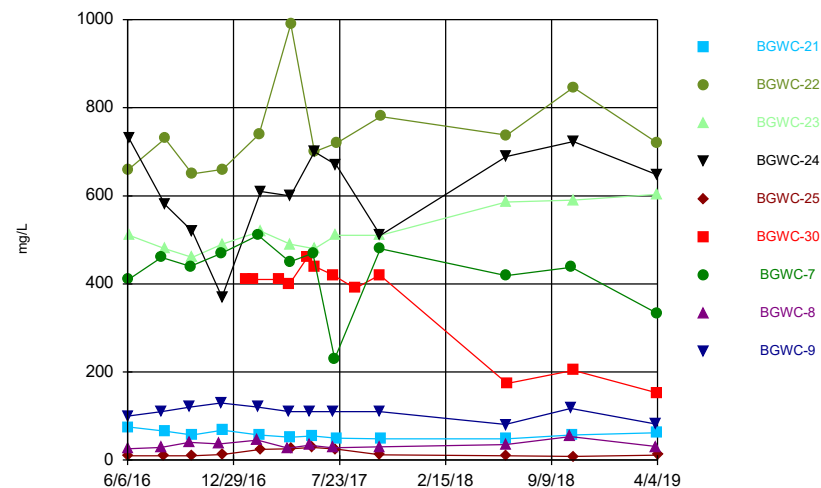
Constituent: Selenium Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



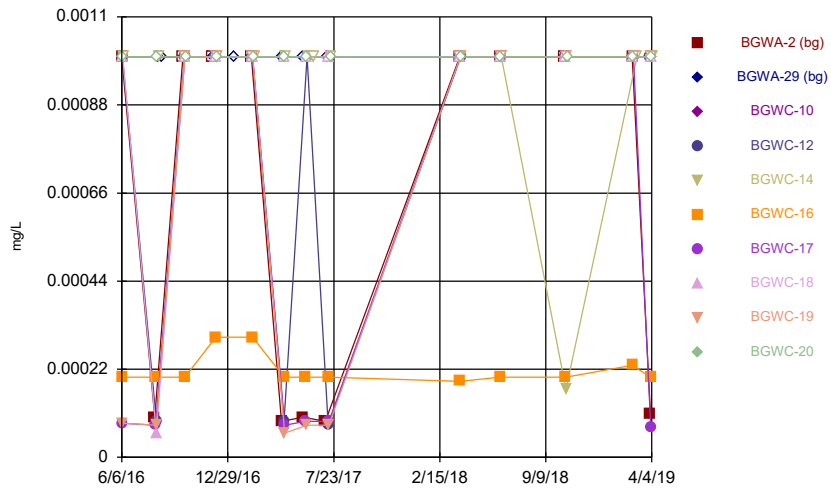
Constituent: Sulfate Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Time Series



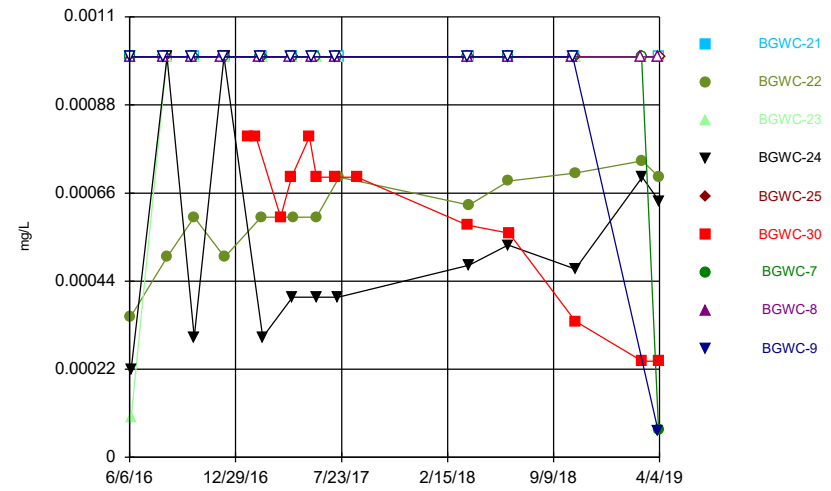
Constituent: Sulfate Analysis Run 7/18/2019 4:37 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



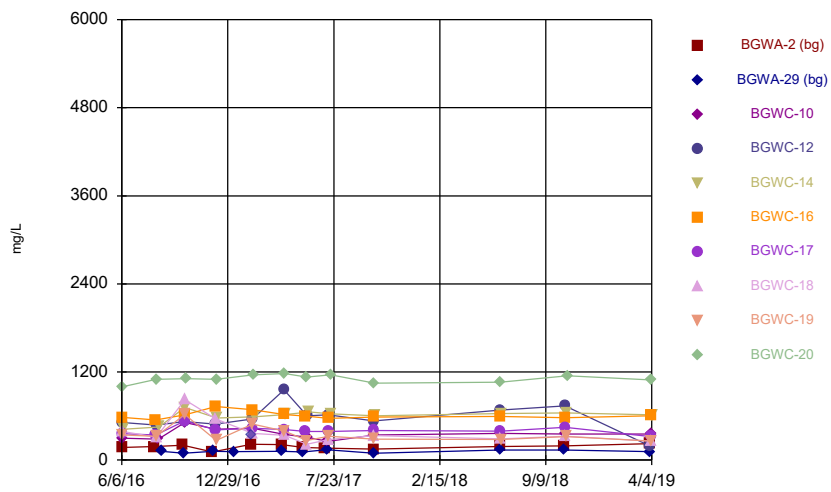
Constituent: Thallium Analysis Run 7/18/2019 4:38 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



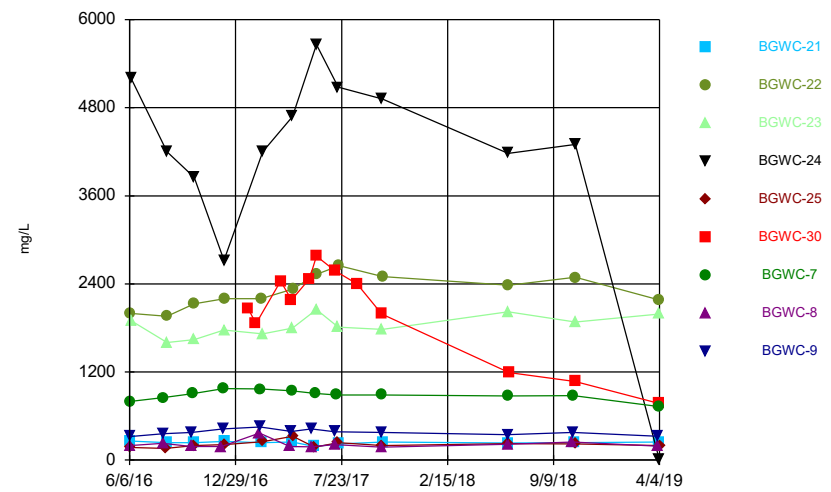
Constituent: Thallium Analysis Run 7/18/2019 4:38 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



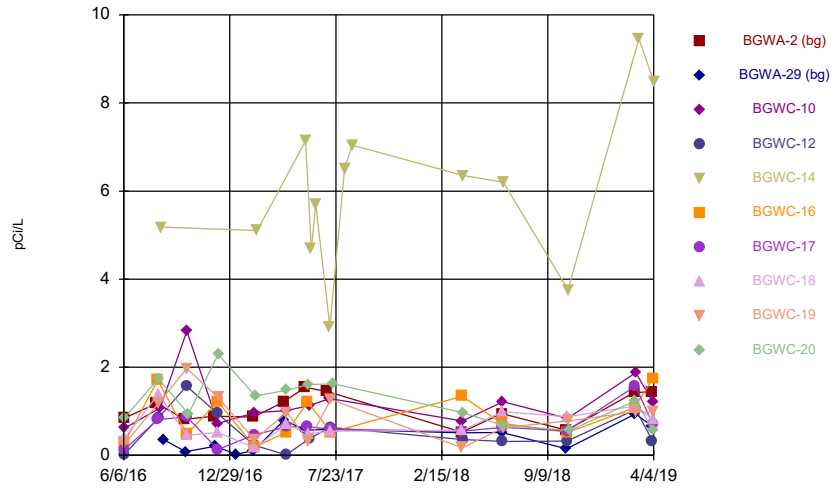
Constituent: Total Dissolved Solids Analysis Run 7/18/2019 4:38 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



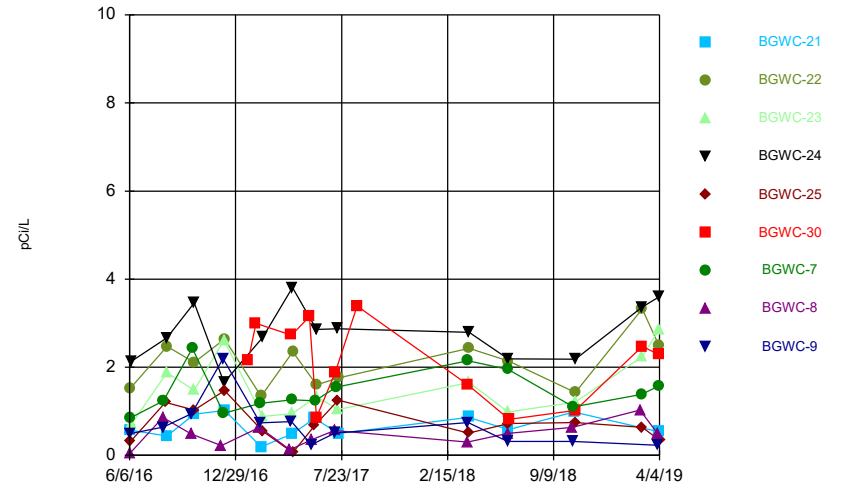
Constituent: Total Dissolved Solids Analysis Run 7/18/2019 4:38 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



Constituent: Total Radium Analysis Run 7/18/2019 4:38 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Time Series



Constituent: Total Radium Analysis Run 7/18/2019 4:38 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1



Assessment Monitoring Program  
Statistical Analysis Package  
Plant Bowen Ash Pond 1 (AP-1)  
April 2019 event (AM 01)

EPD Based Groundwater Protection  
Standards Statistical Analysis Package

AM 01

# Tolerance Limit

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 3:30 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	20	95	n/a	0.3585	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	26	38.46	n/a	0.2635	NP Inter(normal...
Barium (mg/L)	n/a	0.218	n/a	n/a	n/a	26	0	n/a	0.2635	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	22	100	n/a	0.3235	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	26	96.15	n/a	0.2635	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	22	68.18	n/a	0.3235	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.01	n/a	n/a	n/a	26	92.31	n/a	0.2635	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.2073	n/a	n/a	n/a	28	28.57	x^(1/3)	0.05	Inter
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	22	86.36	n/a	0.3235	NP Inter(NDs)
Lithium (mg/L)	n/a	0.05	n/a	n/a	n/a	26	96.15	n/a	0.2635	NP Inter(NDs)
Mercury (mg/L)	n/a	0.0002	n/a	n/a	n/a	22	90.91	n/a	0.3235	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	26	65.38	n/a	0.2635	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	22	95.45	n/a	0.3235	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	26	80.77	n/a	0.2635	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.761	n/a	n/a	n/a	26	0	No	0.05	Inter

**Table D-2**  
**EPD Based Groundwater Protection Standards**  
**Plant Bowen - Ash Pond 1**  
**Bartow County, Georgia**

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limits for Background	GWPS <sup>1</sup>
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.218	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt <sup>2</sup>	7440-48-4	mg/L	N/A	0.01	0.01
Fluoride	16984-48-8	mg/L	4	0.2073	4
Lead <sup>2</sup>	7439-92-1	mg/L	N/A	0.005	0.005
Lithium <sup>2</sup>	7439-93-2	mg/L	N/A	0.05	0.05
Mercury	7439-97-6	mg/L	0.002	0.0002	0.002
Molybdenum <sup>2</sup>	7439-98-7	mg/L	N/A	0.01	0.01
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	1.761	5

**Notes:**

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

N/A - Not Available

pCi/L - Picocuries per liter

<sup>1</sup>GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

<sup>2</sup>Constituent without established EPA MCL.

# Confidence Interval - Significant Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 3:41 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	BGWC-22	0.01672	0.01111	0.01	Yes	13	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-20	0.01433	0.01213	0.01	Yes	13	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-22	0.07094	0.05317	0.01	Yes	13	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-23	0.01321	0.01233	0.01	Yes	13	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-30	0.01886	0.01234	0.01	Yes	13	0	No	0.01	Param.

# Confidence Interval - All Results

Plant Bowen    Client: Georgia Power Company    Data: Bowen AP-1    Printed 7/18/2019, 3:41 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	BGWC-10	0.007834	0.00549	0.01	No	13	0	No	0.01	Param.
Arsenic (mg/L)	BGWC-12	0.001051	0.0004674	0.01	No	13	46.15	No	0.01	Param.
Arsenic (mg/L)	BGWC-14	0.00344	0.00133	0.01	No	14	28.57	No	0.01	Param.
Arsenic (mg/L)	BGWC-16	0.0025	0.0007	0.01	No	13	53.85	No	0.01	NP (NDs)
Arsenic (mg/L)	BGWC-17	0.0025	0.0006	0.01	No	13	61.54	No	0.01	NP (NDs)
Arsenic (mg/L)	BGWC-18	0.0025	0.0005	0.01	No	13	61.54	No	0.01	NP (NDs)
Arsenic (mg/L)	BGWC-19	0.0009461	0.0004034	0.01	No	13	38.46	sqrt(x)	0.01	Param.
Arsenic (mg/L)	BGWC-20	0.001734	0.0009353	0.01	No	13	30.77	No	0.01	Param.
Arsenic (mg/L)	BGWC-21	0.001447	0.0006695	0.01	No	12	33.33	No	0.01	Param.
Arsenic (mg/L)	BGWC-22	0.002928	0.001764	0.01	No	13	7.692	No	0.01	Param.
Arsenic (mg/L)	BGWC-23	0.002961	0.001612	0.01	No	13	0	No	0.01	Param.
Arsenic (mg/L)	BGWC-24	0.007462	0.003076	0.01	No	13	0	No	0.01	Param.
Arsenic (mg/L)	BGWC-25	0.002872	0.002082	0.01	No	13	7.692	No	0.01	Param.
Arsenic (mg/L)	BGWC-30	0.002499	0.0008552	0.01	No	13	23.08	No	0.01	Param.
Arsenic (mg/L)	BGWC-7	0.002693	0.001678	0.01	No	13	15.38	No	0.01	Param.
Arsenic (mg/L)	BGWC-8	0.0008728	0.000443	0.01	No	13	38.46	sqrt(x)	0.01	Param.
Arsenic (mg/L)	BGWC-9	0.003183	0.002167	0.01	No	12	8.333	No	0.01	Param.
Barium (mg/L)	BGWC-10	0.06779	0.05083	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-12	0.03289	0.02731	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-14	0.08196	0.06645	2	No	14	0	No	0.01	Param.
Barium (mg/L)	BGWC-16	0.03123	0.02673	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-17	0.01872	0.01525	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-18	0.03678	0.02951	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-19	0.03986	0.03245	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-20	0.03404	0.02935	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-21	0.04957	0.04071	2	No	12	0	No	0.01	Param.
Barium (mg/L)	BGWC-22	0.0938	0.08677	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-23	0.09456	0.08307	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-24	0.1254	0.08209	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-25	0.03046	0.02056	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-30	0.1948	0.1105	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-7	0.04234	0.03674	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-8	0.03195	0.0245	2	No	13	0	x^2	0.01	Param.
Barium (mg/L)	BGWC-9	0.03368	0.02725	2	No	12	0	No	0.01	Param.
Beryllium (mg/L)	BGWC-10	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-12	0.0015	0.000076	0.004	No	11	90.91	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-14	0.0015	0.0015	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	BGWC-16	0.0015	0.000063	0.004	No	11	81.82	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-17	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-18	0.0015	0.000052	0.004	No	11	72.73	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-19	0.0015	0.00007	0.004	No	11	81.82	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-20	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-21	0.0015	0.0015	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	BGWC-22	0.0015	0.000067	0.004	No	11	81.82	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-23	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-24	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-25	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-30	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-7	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-8	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)

## Confidence Interval - All Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 3:41 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Beryllium (mg/L)	BGWC-9	0.0015	0.0015	0.004	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	BGWC-10	0.0005	0.0005	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-12	0.0005	0.0005	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-14	0.0005	0.0005	0.005	No	14	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-16	0.001366	0.001126	0.005	No	13	0	No	0.01	Param.
Cadmium (mg/L)	BGWC-17	0.0005	0.0001	0.005	No	13	38.46	No	0.01	NP (normality)
Cadmium (mg/L)	BGWC-18	0.0005298	0.0001691	0.005	No	13	23.08	No	0.01	Param.
Cadmium (mg/L)	BGWC-19	0.0005	0.0001	0.005	No	13	84.62	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-20	0.0005	0.00008	0.005	No	13	92.31	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-21	0.0005	0.0005	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-22	0.0005	0.0002	0.005	No	13	84.62	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-23	0.0005	0.00019	0.005	No	13	92.31	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-24	0.005009	0.001917	0.005	No	13	0	No	0.01	Param.
Cadmium (mg/L)	BGWC-25	0.0005	0.0005	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-30	0.0003871	0.0001161	0.005	No	13	23.08	No	0.01	Param.
Cadmium (mg/L)	BGWC-7	0.0005	0.0005	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-8	0.0005	0.0005	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-9	0.0005	0.0005	0.005	No	12	100	No	0.01	NP (NDs)
Chromium (mg/L)	BGWC-10	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-12	0.005	0.0003	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-14	0.005	0.0014	0.1	No	12	83.33	No	0.01	NP (NDs)
Chromium (mg/L)	BGWC-16	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-17	0.005	0.00044	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-18	0.005	0.0011	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-19	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-20	0.005	0.00088	0.1	No	11	81.82	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-21	0.005	0.005	0.1	No	10	100	No	0.011	NP (NDs)
Chromium (mg/L)	BGWC-22	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-23	0.005	0.00057	0.1	No	11	72.73	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-24	0.005	0.0009	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-25	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-30	0.001071	0.0005112	0.1	No	11	45.45	ln(x)	0.01	Param.
Chromium (mg/L)	BGWC-7	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-8	0.005	0.0008	0.1	No	11	36.36	No	0.006	NP (normality)
Chromium (mg/L)	BGWC-9	0.005	0.002	0.1	No	10	90	No	0.011	NP (NDs)
Cobalt (mg/L)	BGWC-10	0.005	0.00027	0.01	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-12	0.005	0.00034	0.01	No	13	76.92	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-14	0.005	0.0003	0.01	No	14	78.57	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-16	0.005584	0.004308	0.01	No	13	7.692	No	0.01	Param.
Cobalt (mg/L)	BGWC-17	0.005	0.00015	0.01	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-18	0.005	0.0005	0.01	No	13	61.54	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-19	0.005	0.000072	0.01	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-20	0.005	0.0008	0.01	No	13	84.62	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-21	0.005	0.00041	0.01	No	12	66.67	No	0.01	NP (NDs)
<b>Cobalt (mg/L)</b>	<b>BGWC-22</b>	<b>0.01672</b>	<b>0.01111</b>	<b>0.01</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Cobalt (mg/L)	BGWC-23	0.005	0.0015	0.01	No	13	84.62	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-24	0.004325	0.002505	0.01	No	13	7.692	No	0.01	Param.
Cobalt (mg/L)	BGWC-25	0.005	0.0006	0.01	No	13	84.62	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-30	0.0008892	0.0003534	0.01	No	13	30.77	ln(x)	0.01	Param.
Cobalt (mg/L)	BGWC-7	0.005	0.0006	0.01	No	13	30.77	No	0.01	NP (normality)

## Confidence Interval - All Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 3:41 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Cobalt (mg/L)	BGWC-8	0.005	0.00013	0.01	No	13	76.92	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-9	0.005	0.0003	0.01	No	12	75	No	0.01	NP (NDs)
Fluoride (mg/L)	BGWC-10	0.1765	0.0685	4	No	14	14.29	sqrt(x)	0.01	Param.
Fluoride (mg/L)	BGWC-12	0.1616	0.04315	4	No	14	28.57	No	0.01	Param.
Fluoride (mg/L)	BGWC-14	0.4265	0.1206	4	No	14	14.29	No	0.01	Param.
Fluoride (mg/L)	BGWC-16	0.2735	0.09333	4	No	14	21.43	No	0.01	Param.
Fluoride (mg/L)	BGWC-17	0.321	0.143	4	No	14	7.143	x^(1/3)	0.01	Param.
Fluoride (mg/L)	BGWC-18	0.2229	0.07721	4	No	14	14.29	sqrt(x)	0.01	Param.
Fluoride (mg/L)	BGWC-19	0.1793	0.07155	4	No	14	14.29	ln(x)	0.01	Param.
Fluoride (mg/L)	BGWC-20	0.184	0.02696	4	No	14	21.43	sqrt(x)	0.01	Param.
Fluoride (mg/L)	BGWC-21	0.07791	0.03087	4	No	13	30.77	No	0.01	Param.
Fluoride (mg/L)	BGWC-22	0.4711	0.2503	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	BGWC-23	0.2581	0.07169	4	No	14	14.29	ln(x)	0.01	Param.
Fluoride (mg/L)	BGWC-24	2.171	0.4218	4	No	14	7.143	No	0.01	Param.
Fluoride (mg/L)	BGWC-25	0.1197	0.06028	4	No	14	28.57	No	0.01	Param.
Fluoride (mg/L)	BGWC-30	0.4642	0.1415	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	BGWC-7	0.2108	0.1202	4	No	14	7.143	No	0.01	Param.
Fluoride (mg/L)	BGWC-8	0.15	0.02	4	No	14	42.86	No	0.01	NP (normality)
Fluoride (mg/L)	BGWC-9	0.3652	0.1363	4	No	13	0	No	0.01	Param.
Lead (mg/L)	BGWC-10	0.0025	0.0025	0.005	No	11	100	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-12	0.0025	0.0001	0.005	No	11	54.55	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-14	0.0025	0.00009	0.005	No	12	91.67	No	0.01	NP (NDs)
Lead (mg/L)	BGWC-16	0.0025	0.0001	0.005	No	11	81.82	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-17	0.0025	0.0025	0.005	No	11	100	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-18	0.0025	0.000081	0.005	No	11	36.36	No	0.006	NP (normality)
Lead (mg/L)	BGWC-19	0.0025	0.0006	0.005	No	11	90.91	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-20	0.0025	0.0001	0.005	No	11	90.91	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-21	0.0025	0.000068	0.005	No	10	90	No	0.011	NP (NDs)
Lead (mg/L)	BGWC-22	0.0025	0.00033	0.005	No	11	90.91	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-23	0.0025	0.0025	0.005	No	11	100	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-24	0.0025	0.00007	0.005	No	11	81.82	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-25	0.0025	0.00007	0.005	No	11	54.55	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-30	0.0025	0.00008	0.005	No	11	63.64	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-7	0.0025	0.0025	0.005	No	11	100	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-8	0.0025	0.0003	0.005	No	11	90.91	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-9	0.0025	0.000092	0.005	No	10	50	No	0.011	NP (normality)
Lithium (mg/L)	BGWC-10	0.025	0.0011	0.05	No	13	38.46	No	0.01	NP (normality)
Lithium (mg/L)	BGWC-12	0.025	0.0011	0.05	No	13	84.62	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-14	0.025	0.025	0.05	No	14	100	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-16	0.025	0.00049	0.05	No	13	92.31	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-17	0.025	0.00069	0.05	No	13	92.31	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-18	0.025	0.025	0.05	No	13	100	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-19	0.025	0.025	0.05	No	13	100	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-20	0.02268	0.01584	0.05	No	13	0	No	0.01	Param.
Lithium (mg/L)	BGWC-21	0.025	0.025	0.05	No	12	100	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-22	0.02199	0.01238	0.05	No	13	0	sqrt(x)	0.01	Param.
Lithium (mg/L)	BGWC-23	0.0139	0.009483	0.05	No	13	0	No	0.01	Param.
Lithium (mg/L)	BGWC-24	0.0075	0.0053	0.05	No	13	7.692	No	0.01	NP (normality)
Lithium (mg/L)	BGWC-25	0.025	0.025	0.05	No	13	100	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-30	0.01838	0.01127	0.05	No	13	0	x^3	0.01	Param.



## Confidence Interval - All Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 3:41 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Lithium (mg/L)	BGWC-7	0.0102	0.0079	0.05	No	13	7.692	No	0.01	NP (normality)
Lithium (mg/L)	BGWC-8	0.025	0.001	0.05	No	13	92.31	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-9	0.025	0.0012	0.05	No	12	58.33	No	0.01	NP (NDs)
Mercury (mg/L)	BGWC-10	0.0001	0.000048	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-12	0.0001	0.000058	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-14	0.0001	0.000062	0.002	No	12	91.67	No	0.01	NP (NDs)
Mercury (mg/L)	BGWC-16	0.0001	0.000098	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-17	0.00029	0.0001	0.002	No	11	9.091	No	0.006	NP (normality)
Mercury (mg/L)	BGWC-18	0.0001	0.000079	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-19	0.0001	0.00005	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-20	0.0001	0.000066	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-21	0.0001	0.0001	0.002	No	10	100	No	0.011	NP (NDs)
Mercury (mg/L)	BGWC-22	0.0001	0.000042	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-23	0.0001	0.000044	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-24	0.0003115	0.00004586	0.002	No	11	27.27	ln(x)	0.01	Param.
Mercury (mg/L)	BGWC-25	0.0001	0.000047	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-30	0.00009315	0.0000521	0.002	No	11	27.27	No	0.01	Param.
Mercury (mg/L)	BGWC-7	0.0001	0.000053	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-8	0.0001	0.000097	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-9	0.0001	0.00008	0.002	No	10	90	No	0.011	NP (NDs)
Molybdenum (mg/L)	BGWC-10	0.0049	0.0032	0.01	No	13	0	No	0.01	NP (normality)
Molybdenum (mg/L)	BGWC-12	0.005	0.005	0.01	No	13	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BGWC-14	0.01097	0.007074	0.01	No	14	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-16	0.005	0.005	0.01	No	13	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BGWC-17	0.005	0.005	0.01	No	13	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BGWC-18	0.005	0.005	0.01	No	13	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BGWC-19	0.005	0.00023	0.01	No	13	92.31	No	0.01	NP (NDs)
<b>Molybdenum (mg/L)</b>	<b>BGWC-20</b>	<b>0.01433</b>	<b>0.01213</b>	<b>0.01</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Molybdenum (mg/L)	BGWC-21	0.002329	0.001438	0.01	No	12	41.67	sqrt(x)	0.01	Param.
<b>Molybdenum (mg/L)</b>	<b>BGWC-22</b>	<b>0.07094</b>	<b>0.05317</b>	<b>0.01</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>Molybdenum (mg/L)</b>	<b>BGWC-23</b>	<b>0.01321</b>	<b>0.01233</b>	<b>0.01</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Molybdenum (mg/L)	BGWC-24	0.004028	0.001602	0.01	No	13	23.08	No	0.01	Param.
Molybdenum (mg/L)	BGWC-25	0.004007	0.001616	0.01	No	13	38.46	No	0.01	Param.
<b>Molybdenum (mg/L)</b>	<b>BGWC-30</b>	<b>0.01886</b>	<b>0.01234</b>	<b>0.01</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Molybdenum (mg/L)	BGWC-7	0.0131	0.008225	0.01	No	13	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-8	0.003806	0.001325	0.01	No	13	23.08	No	0.01	Param.
Molybdenum (mg/L)	BGWC-9	0.003499	0.002701	0.01	No	12	0	No	0.01	Param.
Selenium (mg/L)	BGWC-10	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-12	0.005	0.0004	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-14	0.005	0.0011	0.05	No	12	83.33	No	0.01	NP (NDs)
Selenium (mg/L)	BGWC-16	0.005	0.0006	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-17	0.005	0.0004	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-18	0.005	0.001	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-19	0.005	0.00043	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-20	0.005	0.0037	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-21	0.005	0.00012	0.05	No	10	80	No	0.011	NP (NDs)
Selenium (mg/L)	BGWC-22	0.005	0.0018	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-23	0.005	0.005	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-24	0.007735	0.002032	0.05	No	11	18.18	ln(x)	0.01	Param.
Selenium (mg/L)	BGWC-25	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)

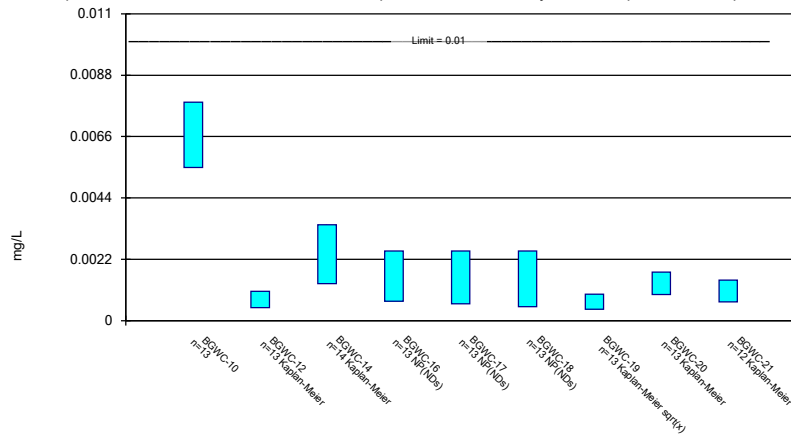
## Confidence Interval - All Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 3:41 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Selenium (mg/L)	BGWC-30	0.01219	0.007972	0.05	No	11	9.091	No	0.01	Param.
Selenium (mg/L)	BGWC-7	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-8	0.005	0.000048	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-9	0.001437	0.0004511	0.05	No	10	50	sqrt(x)	0.01	Param.
Thallium (mg/L)	BGWC-10	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-12	0.0005	0.00009	0.002	No	13	76.92	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-14	0.0005	0.00017	0.002	No	14	92.86	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-16	0.00023	0.00019	0.002	No	13	0	No	0.01	NP (normality)
Thallium (mg/L)	BGWC-17	0.0005	0.00008	0.002	No	13	53.85	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-18	0.0005	0.00006	0.002	No	13	92.31	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-19	0.0005	0.00008	0.002	No	13	61.54	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-20	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-21	0.0005	0.0005	0.002	No	12	100	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-22	0.0006901	0.0005283	0.002	No	13	0	No	0.01	Param.
Thallium (mg/L)	BGWC-23	0.0005	0.0001	0.002	No	13	92.31	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-24	0.0005277	0.000282	0.002	No	13	15.38	No	0.01	Param.
Thallium (mg/L)	BGWC-25	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-30	0.000747	0.0004469	0.002	No	13	0	No	0.01	Param.
Thallium (mg/L)	BGWC-7	0.0005	0.00007	0.002	No	13	92.31	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-8	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-9	0.0005	0.000065	0.002	No	12	91.67	No	0.01	NP (NDs)
Total Radium (pCi/L)	BGWC-10	1.552	0.8002	5	No	13	0	sqrt(x)	0.01	Param.
Total Radium (pCi/L)	BGWC-12	0.8748	0.2053	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-14	7.375	4.703	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-16	1.277	0.4997	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-17	0.9052	0.3771	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-18	0.9428	0.4489	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-19	1.244	0.4784	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-20	1.611	0.8391	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-21	0.8645	0.4594	5	No	12	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-22	2.549	1.697	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-23	2.037	1.012	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-24	3.269	2.31	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-25	1.033	0.4268	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-30	2.816	1.413	5	No	12	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-7	1.8	1.102	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-8	0.6856	0.2722	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-9	0.9916	0.318	5	No	12	0	sqrt(x)	0.01	Param.

### Parametric and Non-Parametric (NP) Confidence Interval

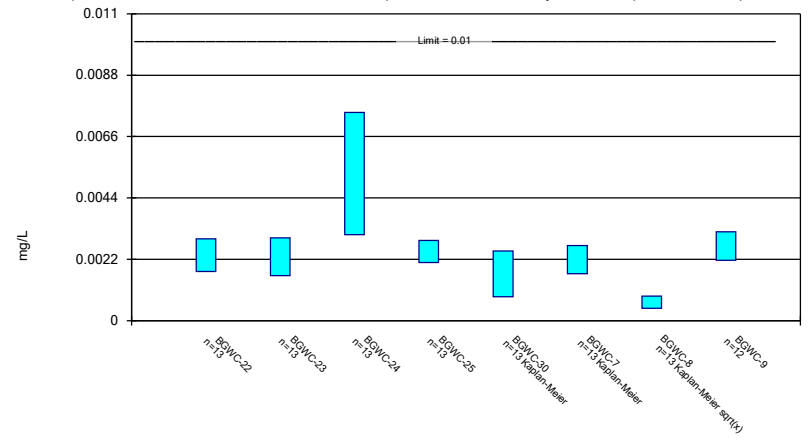
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

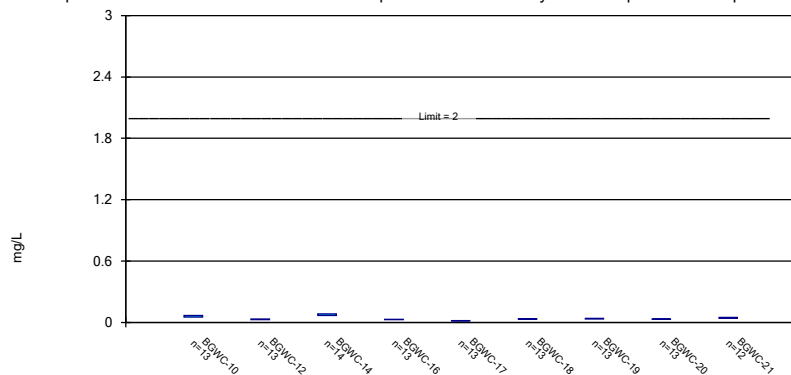
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

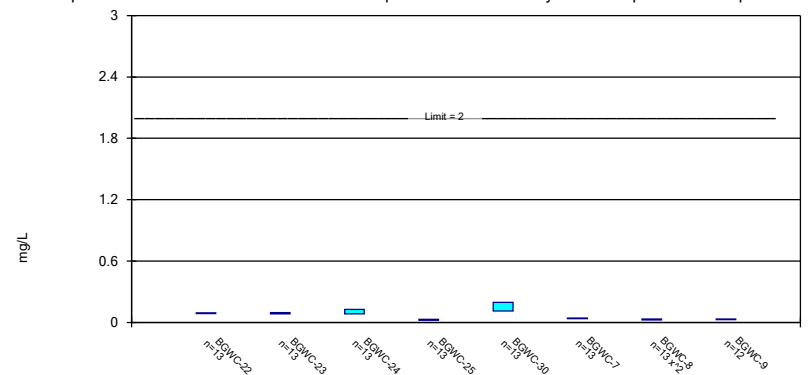
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 7/18/2019 3:41 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.0039	<0.005		<0.005	<0.005				
6/8/2016						<0.005	0.00046 (J)	0.0011 (J)	0.0015
6/10/2016			0.0049						
8/11/2016				<0.005	<0.005				
8/12/2016		0.0009 (J)				<0.005	0.0008 (J)	0.0017 (J)	
8/16/2016	0.0091								
8/17/2016			0.0042 (J)						
8/18/2016									<0.005
10/6/2016		<0.005							
10/7/2016	0.0074		<0.005	<0.005	<0.005	<0.005	<0.005		
10/10/2016								<0.005	<0.005
12/5/2016		<0.005							
12/6/2016	0.0044 (J)			<0.005	<0.005	<0.005			
12/7/2016							<0.005	<0.005	
12/8/2016			<0.005						<0.005
2/15/2017		<0.005							
2/16/2017	0.0081			<0.005	<0.005	<0.005	<0.005		
2/17/2017								<0.005	<0.005
2/21/2017			<0.005						
4/18/2017	0.0084	0.0009 (J)		0.0007 (J)					
4/19/2017					0.0012 (J)	0.0013 (J)	0.0015 (J)	0.002 (J)	0.002 (J)
4/21/2017			0.0039 (J)						
5/30/2017				0.0008 (J)	0.0006 (J)				
6/1/2017						0.0005 (J)	0.0008 (J)	0.0017 (J)	0.0011 (J)
6/2/2017	0.008	0.0015 (J)							
6/6/2017			0.001 (J)						
6/15/2017			0.0024 (J)						
7/12/2017	0.0063								
7/13/2017		0.0006 (J)							
7/14/2017				0.0008 (J)	<0.005	<0.005	0.0006 (J)		
7/18/2017								0.0018 (J)	0.0015 (J)
7/19/2017			0.0031 (J)						
3/27/2018	0.0064			0.0014 (J)	0.00076 (J)	0.00066 (J)	0.00082 (J)		
3/28/2018		0.0015 (J)						0.0018 (J)	0.0012 (J)
3/29/2018			0.0017 (J)						
6/12/2018				0.00073 (J)					
6/13/2018								0.0015 (J)	
6/14/2018	0.0075	0.00096 (J)			<0.005	<0.005			0.00087 (J)
6/15/2018			0.00074 (J)				0.00074 (J)		
10/17/2018		<0.005			<0.005				
10/18/2018	0.0056			<0.005		<0.005			
10/19/2018			<0.005				<0.005		0.00059 (J)
10/22/2018								<0.005	
2/25/2019				<0.005					
2/27/2019					0.001 (J)	0.00083 (J)		0.0014 (J)	
2/28/2019	0.0058	<0.005							
3/1/2019							<0.005		
3/6/2019			0.0015 (J)						
4/1/2019		0.00028 (J)							
4/2/2019	0.0057			0.0003 (J)	0.00024 (J)	0.00015 (J)			
4/3/2019							0.00017 (J)	0.00027 (J)	0.00038 (J)
4/4/2019			0.00041 (J)						

# Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 7/18/2019 3:41 AM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.006662	0.001665	0.002418	0.00171	0.001831	0.001803	0.001415	0.00179	0.001595
Std. Dev.	0.001576	0.000864	0.001308	0.000917	0.0009066	0.0009497	0.0009392	0.0006519	0.0007903
Upper Lim.	0.007834	0.001051	0.00344	0.0025	0.0025	0.0025	0.0009461	0.001734	0.001447
Lower Lim.	0.00549	0.0004674	0.00133	0.0007	0.0006	0.0005	0.0004034	0.0009353	0.0006695

# Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 7/18/2019 3:41 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.0022
6/7/2016							0.00018 (J)	
6/8/2016	0.0012 (J)			0.0037		0.0024		
6/9/2016		0.0012 (J)	0.0016					
8/10/2016							<0.005	
8/11/2016						0.0024 (J)		0.0028 (J)
8/15/2016				0.003 (J)				
8/18/2016	0.0022 (J)	0.003 (J)	0.0054					
10/4/2016							<0.005	
10/5/2016								0.002 (J)
10/6/2016						<0.005		
10/10/2016	0.002 (J)	0.0021 (J)	0.0079	0.0026 (J)				
12/2/2016							<0.005	
12/5/2016								<0.005
12/6/2016						<0.005		
12/7/2016		0.0023 (J)	0.0121					
12/8/2016	<0.005			<0.005				
1/23/2017					<0.005			
2/7/2017					<0.005			
2/14/2017							<0.005	
2/15/2017						0.003 (J)		0.0033 (J)
2/17/2017	0.0023 (J)							
2/20/2017		0.0025 (J)	0.0063	0.0029 (J)				
3/27/2017					0.0019 (J)			
4/14/2017							0.0007 (J)	
4/17/2017					0.0017 (J)			0.0028 (J)
4/18/2017						0.0029 (J)		
4/19/2017		0.0032 (J)	0.0051					
4/20/2017	0.0028 (J)			0.0024 (J)				
5/22/2017					0.0034 (J)			
5/26/2017							0.0008 (J)	0.0035 (J)
6/1/2017				0.0025 (J)				
6/2/2017						0.0031 (J)		
6/5/2017	0.0035 (J)	0.0043 (J)	0.0072		0.0039 (J)			
7/10/2017							0.0011 (J)	
7/11/2017					0.0016 (J)			0.0033 (J)
7/14/2017						0.0017 (J)		
7/17/2017		0.0017 (J)	0.0031 (J)	0.0021 (J)				
7/19/2017	0.0028 (J)							
8/23/2017					0.001 (J)			
3/26/2018					0.0015 (J)		0.0009 (J)	
3/27/2018						0.0028 (J)		0.0021 (J)
3/28/2018				0.0019 (J)				
3/29/2018	0.0037 (J)	0.0028 (J)	0.0075 (J)					
6/12/2018							0.00065 (J)	0.0015 (J)
6/13/2018		0.0019 (J)	0.0045 (J)			0.0023 (J)		
6/14/2018	0.0027 (J)			0.0022 (J)				
6/15/2018					0.00089 (J)			
10/16/2018							0.00064 (J)	
10/17/2018								0.0035 (J)
10/18/2018						0.0015 (J)		
10/22/2018	0.0016 (J)	0.0015 (J)	0.0027 (J)	0.0026 (J)	0.00064 (J)			

# Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 7/18/2019 3:41 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.005	
2/28/2019						0.0011 (J)		
3/1/2019	0.0011 (J)	0.0023 (J)	0.0032 (J)	0.0022 (J)	<0.005			
4/1/2019							0.00041 (J)	0.0026 (J)
4/2/2019					0.00024 (J)	0.0016 (J)		
4/3/2019	0.0021 (J)	0.00093 (J)	0.0019 (J)					
4/4/2019				0.0016 (J)				
Mean	0.002346	0.002287	0.005269	0.002477	0.001867	0.002292	0.001375	0.002675
Std. Dev.	0.0007827	0.0009071	0.002949	0.000531	0.001072	0.0006304	0.0009505	0.0006468
Upper Lim.	0.002928	0.002961	0.007462	0.002872	0.002499	0.002693	0.0008728	0.003183
Lower Lim.	0.001764	0.001612	0.003076	0.002082	0.0008552	0.001678	0.000443	0.002167

# Confidence Interval

Constituent: Barium (mg/L) Analysis Run 7/18/2019 3:41 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.091	0.027		0.027	0.017				
6/8/2016						0.039	0.036	0.036	0.054
6/10/2016			0.08						
8/11/2016				0.0292	0.0152				
8/12/2016		0.026				0.031	0.0412	0.0283	
8/16/2016	0.0667								
8/17/2016			0.0801						
8/18/2016									0.0479
10/6/2016		0.0308							
10/7/2016	0.0631		0.0764	0.0295	0.0225	0.0427	0.0427		
10/10/2016								0.0288	0.0433
12/5/2016		0.0258							
12/6/2016	0.0659			0.0367	0.0171	0.0398			
12/7/2016							0.0338	0.0279	
12/8/2016			0.0723						0.0474
2/15/2017		0.029							
2/16/2017	0.0621			0.0315	0.0187	0.0309	0.0407		
2/17/2017								0.0316	0.0483
2/21/2017			0.0789						
4/18/2017	0.0545	0.0294		0.0272					
4/19/2017					0.0183	0.0325	0.042	0.0367	0.0486
4/21/2017			0.0871						
5/30/2017				0.0316	0.0179				
6/1/2017						0.0331	0.0341	0.0361	0.0468
6/2/2017	0.0555	0.0354							
6/6/2017			0.0789						
6/15/2017			0.0822						
7/12/2017	0.0572								
7/13/2017		0.0329							
7/14/2017				0.029	0.0191	0.0349	0.0405		
7/18/2017								0.0346	0.0494
7/19/2017			0.091						
3/27/2018	0.051			0.027	0.015	0.027	0.029		
3/28/2018		0.034						0.03	0.043
3/29/2018			0.067						
6/12/2018				0.029					
6/13/2018								0.031	
6/14/2018	0.053	0.032			0.016	0.032			0.042
6/15/2018			0.066				0.032		
10/17/2018		0.033			0.015				
10/18/2018	0.053			0.026		0.033			
10/19/2018			0.065				0.037		0.038
10/22/2018								0.03	
2/25/2019				0.028					
2/27/2019					0.014	0.027		0.032	
2/28/2019	0.053	0.033							
3/1/2019							0.028		
3/6/2019			0.065						
4/1/2019		0.023							
4/2/2019	0.045			0.025	0.015	0.028			
4/3/2019							0.033	0.029	0.033
4/4/2019			0.049						



# Confidence Interval

Constituent: Barium (mg/L) Analysis Run 7/18/2019 3:41 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.05931	0.0301	0.07421	0.02898	0.01698	0.03315	0.03615	0.03169	0.04514
Std. Dev.	0.0114	0.003754	0.01094	0.003025	0.002333	0.004885	0.004978	0.003153	0.005643
Upper Lim.	0.06779	0.03289	0.08196	0.03123	0.01872	0.03678	0.03986	0.03404	0.04957
Lower Lim.	0.05083	0.02731	0.06645	0.02673	0.01525	0.02951	0.03245	0.02935	0.04071

# Confidence Interval

Constituent: Barium (mg/L) Analysis Run 7/18/2019 3:41 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.034
6/7/2016							0.0051	
6/8/2016	0.092			0.038		0.048		
6/9/2016		0.11	0.14					
8/10/2016							0.0264	
8/11/2016						0.0428		0.0305
8/15/2016				0.0321				
8/18/2016	0.0953	0.0893	0.113					
10/4/2016							0.0316	
10/5/2016								0.0289
10/6/2016						0.0404		
10/10/2016	0.0954	0.0839	0.0888	0.0283				
12/2/2016							0.026	
12/5/2016								0.0269
12/6/2016						0.0385		
12/7/2016		0.0912	0.0289					
12/8/2016	0.0991			0.0294				
1/23/2017					0.237			
2/7/2017					0.191			
2/14/2017							0.0299	
2/15/2017						0.039		0.0299
2/17/2017	0.0927							
2/20/2017		0.0813	0.0999	0.0275				
3/27/2017					0.197			
4/14/2017							0.0275	
4/17/2017					0.192			0.0318
4/18/2017						0.0392		
4/19/2017		0.087	0.114					
4/20/2017	0.086			0.0279				
5/22/2017					0.197			
5/26/2017							0.0328	0.0341
6/1/2017				0.0313				
6/2/2017						0.0407		
6/5/2017	0.0875	0.084	0.135		0.201			
7/10/2017							0.0305	
7/11/2017					0.179			0.0355
7/14/2017						0.0394		
7/17/2017		0.0809	0.134	0.0251				
7/19/2017	0.0877							
8/23/2017					0.15			
3/26/2018					0.1		0.029	
3/27/2018						0.039		0.026
3/28/2018				0.018				
3/29/2018	0.088	0.085	0.08					
6/12/2018							0.031	0.024
6/13/2018		0.091	0.1			0.038		
6/14/2018	0.093			0.019				
6/15/2018					0.087			
10/16/2018							0.034	
10/17/2018								0.037
10/18/2018						0.037		
10/22/2018	0.088	0.087	0.1	0.018	0.1			

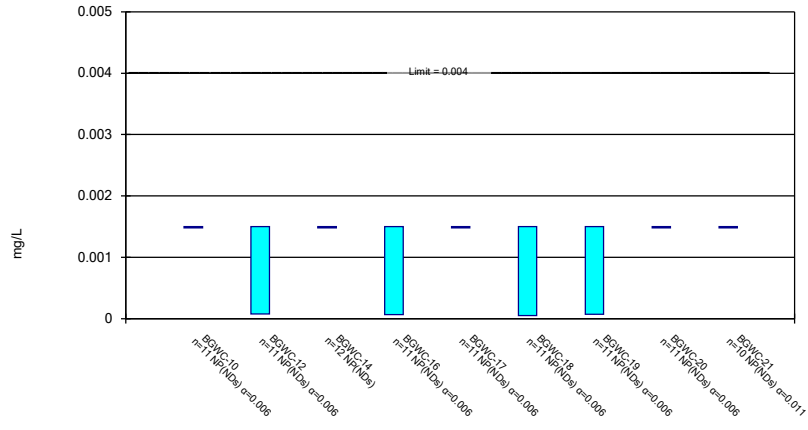
# Confidence Interval

Constituent: Barium (mg/L) Analysis Run 7/18/2019 3:41 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							0.03	
2/28/2019						0.041		
3/1/2019	0.087	0.097	0.12	0.021	0.078			
4/1/2019							0.025	0.027
4/2/2019					0.075	0.031		
4/3/2019	0.082	0.087	0.095					
4/4/2019				0.016				
Mean	0.09028	0.08882	0.1037	0.02551	0.1526	0.03954	0.0276	0.03047
Std. Dev.	0.004724	0.007732	0.02911	0.006656	0.05669	0.003764	0.007269	0.004098
Upper Lim.	0.0938	0.09456	0.1254	0.03046	0.1948	0.04234	0.03195	0.03368
Lower Lim.	0.08677	0.08307	0.08209	0.02056	0.1105	0.03674	0.0245	0.02725

### Non-Parametric Confidence Interval

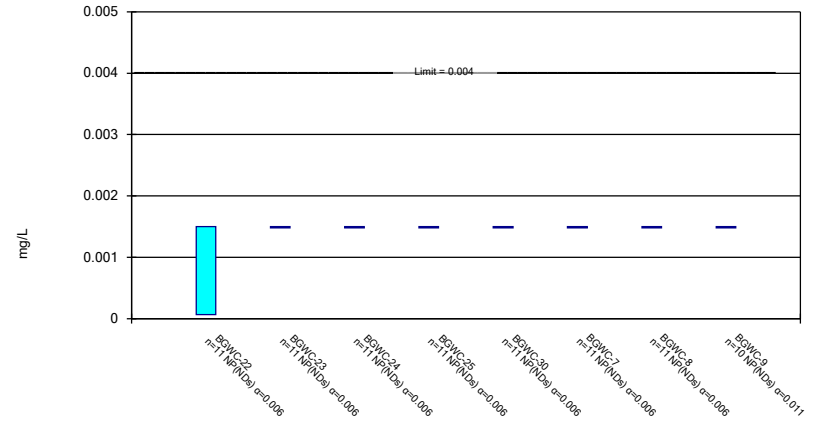
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Beryllium Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Non-Parametric Confidence Interval

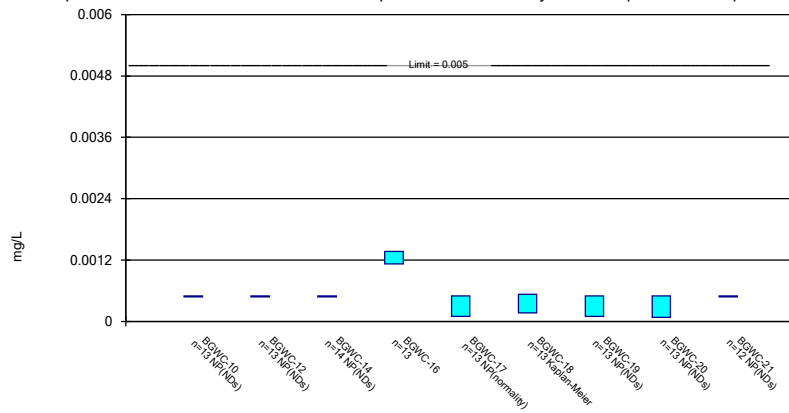
Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

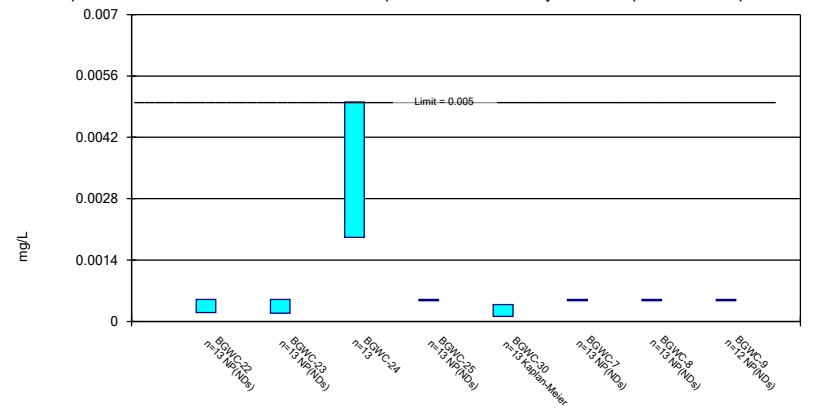
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Beryllium (mg/L) Analysis Run 7/18/2019 3:41 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.003	<0.003		<0.003	<0.003				
6/8/2016						<0.003	<0.003	<0.003	<0.003
6/10/2016			<0.003						
8/11/2016				<0.003	<0.003				
8/12/2016		<0.003				<0.003	<0.003	<0.003	
8/16/2016	<0.003								
8/17/2016			<0.003						
8/18/2016									<0.003
10/6/2016		<0.003							
10/7/2016	<0.003		<0.003	<0.003	<0.003	<0.003	<0.003		
10/10/2016								<0.003	<0.003
12/5/2016		<0.003							
12/6/2016	<0.003			<0.003	<0.003	<0.003			
12/7/2016							<0.003	<0.003	
12/8/2016			<0.003						<0.003
2/15/2017		<0.003							
2/16/2017	<0.003			<0.003	<0.003	<0.003	<0.003		
2/17/2017								<0.003	<0.003
2/21/2017			<0.003						
4/18/2017	<0.003	<0.003		<0.003					
4/19/2017					<0.003	<0.003	8E-05 (J)	<0.003	<0.003
4/21/2017			<0.003						
5/30/2017				<0.003	<0.003				
6/1/2017						9E-05 (J)	7E-05 (J)	<0.003	<0.003
6/2/2017	<0.003	<0.003							
6/6/2017			<0.003						
6/15/2017			<0.003						
7/12/2017	<0.003								
7/13/2017		<0.003							
7/14/2017				<0.003	<0.003	<0.003	<0.003		
7/18/2017								<0.003	<0.003
7/19/2017			<0.003						
3/27/2018	<0.003			<0.003	<0.003	<0.003	<0.003		
3/28/2018		<0.003						<0.003	<0.003
3/29/2018			<0.003						
2/25/2019				8.7E-05 (J)					
2/27/2019					<0.003	0.00011 (J)		<0.003	
2/28/2019	<0.003	7.6E-05 (J)							
3/1/2019							<0.003		
3/6/2019			<0.003						
4/1/2019		<0.003							
4/2/2019	<0.003			6.3E-05 (J)	<0.003	5.2E-05 (J)			
4/3/2019							<0.003	<0.003	<0.003
4/4/2019			<0.003						
Mean	0.0015	0.001371	0.0015	0.001241	0.0015	0.001114	0.001241	0.0015	0.0015
Std. Dev.	0	0.0004294	0	0.0005765	0	0.0006615	0.0005764	0	0
Upper Lim.	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Lower Lim.	0.0015	7.6E-05	0.0015	6.3E-05	0.0015	5.2E-05	7E-05	0.0015	0.0015





# Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 7/18/2019 3:41 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.001	<0.001		0.0011 (J)	<0.001				
6/8/2016						0.00063 (J)	<0.001	<0.001	<0.001
6/10/2016			<0.001						
8/11/2016				0.0011	0.0001 (J)				
8/12/2016		<0.001				0.0004 (J)	<0.001	<0.001	
8/16/2016	<0.001								
8/17/2016			<0.001						
8/18/2016									<0.001
10/6/2016		<0.001							
10/7/2016	<0.001		<0.001	0.0012	0.0002 (J)	0.0008 (J)	0.0001 (J)		
10/10/2016								<0.001	<0.001
12/5/2016		<0.001							
12/6/2016	<0.001			0.0012	0.0001 (J)	0.0006 (J)			
12/7/2016							<0.001	<0.001	
12/8/2016			<0.001						<0.001
2/15/2017		<0.001							
2/16/2017	<0.001			0.0015	0.0001 (J)	0.0002 (J)	<0.001		
2/17/2017								8E-05 (J)	<0.001
2/21/2017			<0.001						
4/18/2017	<0.001	<0.001		0.0012					
4/19/2017					0.0001 (J)	9E-05 (J)	<0.001	<0.001	<0.001
4/21/2017			<0.001						
5/30/2017				0.0011	0.0002 (J)				
6/1/2017						0.0003 (J)	0.0001 (J)	<0.001	<0.001
6/2/2017	<0.001	<0.001							
6/6/2017			<0.001						
6/15/2017			<0.001						
7/12/2017	<0.001								
7/13/2017		<0.001							
7/14/2017				0.0012	0.0002 (J)	0.0002 (J)	<0.001		
7/18/2017								<0.001	<0.001
7/19/2017			<0.001						
3/27/2018	<0.001			0.0013	<0.001	<0.001	<0.001		
3/28/2018		<0.001						<0.001	<0.001
3/29/2018			<0.001						
6/12/2018				0.0011					
6/13/2018								<0.001	
6/14/2018	<0.001	<0.001			0.00015 (J)	<0.001			<0.001
6/15/2018			<0.001				<0.001		
10/17/2018		<0.001			<0.001				
10/18/2018	<0.001			0.0012		0.00032 (J)			
10/19/2018			<0.001				<0.001		<0.001
10/22/2018								<0.001	
2/25/2019				0.0016					
2/27/2019					<0.001	<0.001		<0.001	
2/28/2019	<0.001	<0.001							
3/1/2019							<0.001		
3/6/2019			<0.001						
4/1/2019		<0.001							
4/2/2019	<0.001			0.0014	<0.001	7.3E-05 (J)			
4/3/2019							<0.001	<0.001	<0.001
4/4/2019			<0.001						



# Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 7/18/2019 3:41 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.0005	0.0005	0.0005	0.001246	0.0002808	0.0003933	0.0004385	0.0004677	0.0005
Std. Dev.	0	0	0	0.0001613	0.0001843	0.0002202	0.0001502	0.0001165	0
Upper Lim.	0.0005	0.0005	0.0005	0.001366	0.0005	0.0005298	0.0005	0.0005	0.0005
Lower Lim.	0.0005	0.0005	0.0005	0.001126	0.0001	0.0001691	0.0001	8E-05	0.0005

# Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 7/18/2019 3:41 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.001
6/7/2016							<0.001	
6/8/2016	<0.001			<0.001		<0.001		
6/9/2016		<0.001	0.00052 (J)					
8/10/2016							<0.001	
8/11/2016						<0.001		<0.001
8/15/2016				<0.001				
8/18/2016	<0.001	<0.001	0.0009 (J)					
10/4/2016							<0.001	
10/5/2016								<0.001
10/6/2016						<0.001		
10/10/2016	<0.001	<0.001	0.0017	<0.001				
12/2/2016							<0.001	
12/5/2016								<0.001
12/6/2016						<0.001		
12/7/2016		<0.001	0.0004 (J)					
12/8/2016	0.0002 (J)			<0.001				
1/23/2017					0.0003 (J)			
2/7/2017					0.0006 (J)			
2/14/2017							<0.001	
2/15/2017						<0.001		<0.001
2/17/2017	<0.001							
2/20/2017		<0.001	0.0028	<0.001				
3/27/2017					0.0003 (J)			
4/14/2017							<0.001	
4/17/2017					0.0002 (J)			<0.001
4/18/2017						<0.001		
4/19/2017		<0.001	0.0035					
4/20/2017	<0.001			<0.001				
5/22/2017					0.0003 (J)			
5/26/2017							<0.001	<0.001
6/1/2017				<0.001				
6/2/2017						<0.001		
6/5/2017	<0.001	<0.001	0.0035		0.0003 (J)			
7/10/2017							<0.001	
7/11/2017					0.0005 (J)			<0.001
7/14/2017						<0.001		
7/17/2017		<0.001	0.0037	<0.001				
7/19/2017	<0.001							
8/23/2017					0.0004 (J)			
3/26/2018					<0.001		<0.001	
3/27/2018						<0.001		<0.001
3/28/2018				<0.001				
3/29/2018	<0.001	<0.001	0.0063					
6/12/2018							<0.001	<0.001
6/13/2018		<0.001	0.0053			<0.001		
6/14/2018	<0.001			<0.001				
6/15/2018					0.0002 (J)			
10/16/2018							<0.001	
10/17/2018								<0.001
10/18/2018						<0.001		
10/22/2018	<0.001	<0.001	0.0053	<0.001	<0.001			

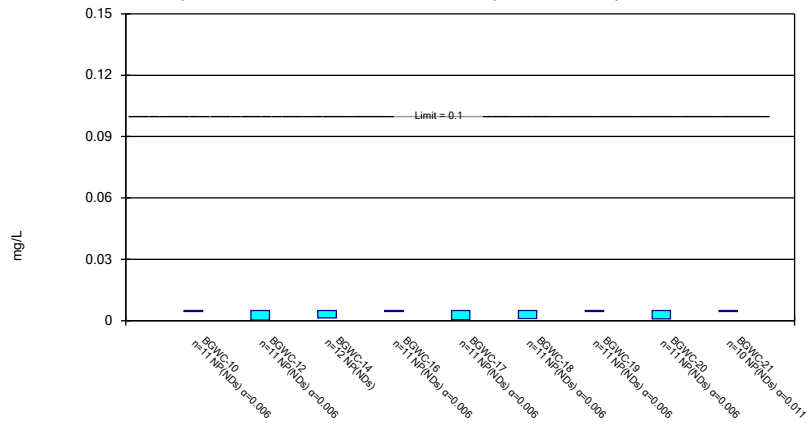
# Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 7/18/2019 3:41 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.001	
2/28/2019						<0.001		
3/1/2019	0.00013 (J)	0.00019 (J)	0.0058	<0.001	<0.001			
4/1/2019							<0.001	<0.001
4/2/2019					7.9E-05 (J)	<0.001		
4/3/2019	<0.001	<0.001	0.0053					
4/4/2019				<0.001				
Mean	0.0004485	0.0004762	0.003463	0.0005	0.0003599	0.0005	0.0005	0.0005
Std. Dev.	0.0001266	8.598E-05	0.002079	0	0.0001533	0	0	0
Upper Lim.	0.0005	0.0005	0.005009	0.0005	0.0003871	0.0005	0.0005	0.0005
Lower Lim.	0.0002	0.00019	0.001917	0.0005	0.0001161	0.0005	0.0005	0.0005

### Non-Parametric Confidence Interval

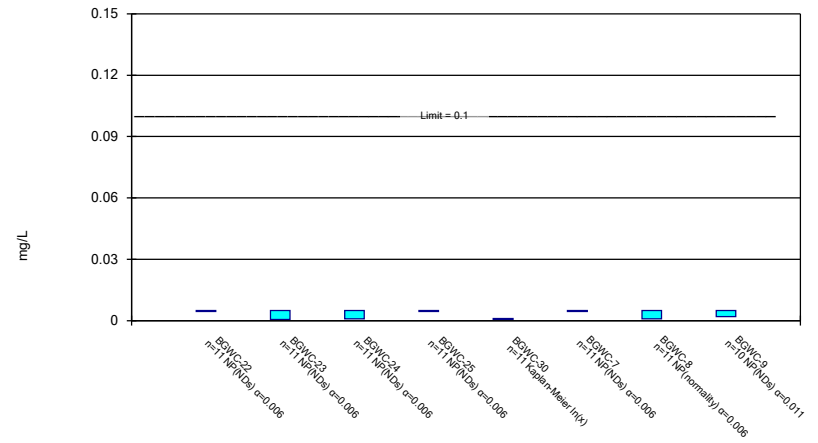
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Chromium Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

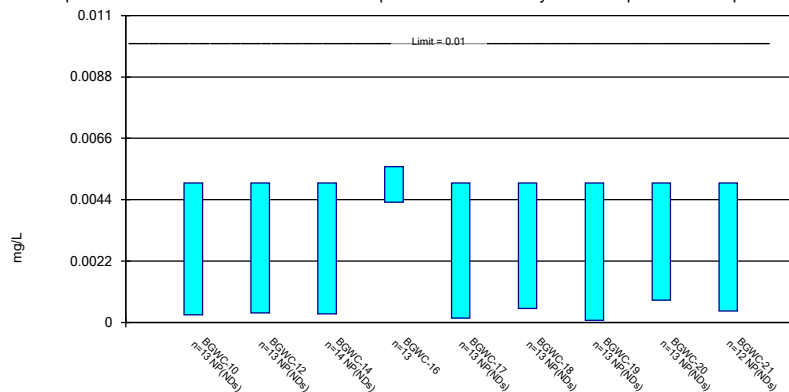
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Chromium Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

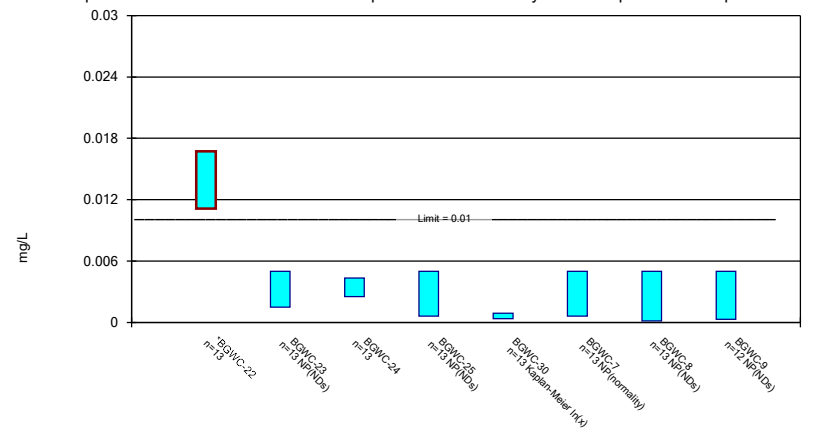
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 7/18/2019 3:41 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.01	<0.01		<0.01	<0.01				
6/8/2016						<0.01	<0.01	<0.01	<0.01
6/10/2016			<0.01						
8/11/2016				<0.01	<0.01				
8/12/2016		<0.01				<0.01	<0.01	<0.01	
8/16/2016	<0.01								
8/17/2016			<0.01						
8/18/2016									<0.01
10/6/2016		<0.01							
10/7/2016	<0.01		0.0014 (J)	<0.01	<0.01	0.0011 (J)	<0.01		
10/10/2016								<0.01	<0.01
12/5/2016		<0.01							
12/6/2016	<0.01			<0.01	<0.01	<0.01			
12/7/2016							<0.01	<0.01	
12/8/2016			<0.01						<0.01
2/15/2017		<0.01							
2/16/2017	<0.01			<0.01	<0.01	<0.01	<0.01		
2/17/2017								<0.01	<0.01
2/21/2017			<0.01						
4/18/2017	<0.01	<0.01		<0.01					
4/19/2017					<0.01	<0.01	<0.01	<0.01	<0.01
4/21/2017			<0.01						
5/30/2017				<0.01	<0.01				
6/1/2017						<0.01	<0.01	<0.01	<0.01
6/2/2017	<0.01	0.0003 (J)							
6/6/2017			<0.01						
6/15/2017			<0.01						
7/12/2017	<0.01								
7/13/2017		<0.01							
7/14/2017				<0.01	<0.01	<0.01	<0.01		
7/18/2017								<0.01	<0.01
7/19/2017			<0.01						
3/27/2018	<0.01			<0.01	<0.01	<0.01	<0.01		
3/28/2018		<0.01						<0.01	<0.01
3/29/2018			<0.01						
2/25/2019				<0.01					
2/27/2019					<0.01	<0.01		0.0048 (J)	
2/28/2019	<0.01	<0.01							
3/1/2019							<0.01		
3/6/2019			<0.01						
4/1/2019		<0.01							
4/2/2019	<0.01			<0.01	0.00044 (J)	<0.01			
4/3/2019							<0.01	0.00088 (J)	<0.01
4/4/2019			0.00057 (J)						
Mean	0.005	0.004573	0.004331	0.005	0.004585	0.004645	0.005	0.004607	0.005
Std. Dev.	0	0.001417	0.001573	0	0.001375	0.001176	0	0.001238	0
Upper Lim.	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.005	0.0003	0.0014	0.005	0.00044	0.0011	0.005	0.00088	0.005

# Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 7/18/2019 3:41 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.01
6/7/2016							<0.01	
6/8/2016	<0.01			<0.01		<0.01		
6/9/2016		<0.01	<0.01					
8/10/2016							0.0052 (J)	
8/11/2016						<0.01		<0.01
8/15/2016				<0.01				
8/18/2016	<0.01	<0.01	<0.01					
10/4/2016							0.0015 (J)	
10/5/2016								0.002 (J)
10/6/2016						<0.01		
10/10/2016	<0.01	<0.01	0.0009 (J)	<0.01				
12/2/2016							0.0013 (J)	
12/5/2016								<0.01
12/6/2016						<0.01		
12/7/2016		0.002 (J)	<0.01					
12/8/2016	<0.01			<0.01				
1/23/2017					0.001 (J)			
2/7/2017					<0.01			
2/14/2017							<0.01	
2/15/2017						<0.01		<0.01
2/17/2017	<0.01							
2/20/2017		<0.01	<0.01	<0.01				
3/27/2017					<0.01			
4/14/2017							0.0011 (J)	
4/17/2017					<0.01			<0.01
4/18/2017						<0.01		
4/19/2017		<0.01	<0.01					
4/20/2017	<0.01			<0.01				
5/22/2017					0.0004 (J)			
5/26/2017							0.0008 (J)	<0.01
6/1/2017				<0.01				
6/2/2017						<0.01		
6/5/2017	<0.01	<0.01	<0.01		0.0004 (J)			
7/10/2017							0.0009 (J)	
7/11/2017					0.0012 (J)			<0.01
7/14/2017						<0.01		
7/17/2017		<0.01	<0.01	<0.01				
7/19/2017	<0.01							
8/23/2017					0.0009 (J)			
3/26/2018					<0.01		<0.01	
3/27/2018						<0.01		<0.01
3/28/2018				<0.01				
3/29/2018	<0.01	<0.01	<0.01					
2/25/2019							<0.01	
2/28/2019						<0.01		
3/1/2019	<0.01	0.0033 (J)	<0.01	<0.01	<0.01			
4/1/2019							0.00091 (J)	<0.01
4/2/2019					0.00095 (J)	<0.01		
4/3/2019	<0.01	0.00057 (J)	<0.01					
4/4/2019				<0.01				
Mean	0.005	0.00417	0.004627	0.005	0.002714	0.005	0.002883	0.0047

# Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 7/18/2019 3:41 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

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	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
Std. Dev.	0	0.001547	0.001236	0	0.002202	0	0.002075	0.0009487
Upper Lim.	0.005	0.005	0.005	0.005	0.001071	0.005	0.005	0.005
Lower Lim.	0.005	0.00057	0.0009	0.005	0.0005112	0.005	0.0008	0.002

# Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 7/18/2019 3:41 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.01	<0.01		0.0037	<0.01				
6/8/2016						0.00071 (J)	<0.01	<0.01	0.00041 (J)
6/10/2016			<0.01						
8/11/2016				0.0039 (J)	<0.01				
8/12/2016		<0.01				0.0006 (J)	<0.01	<0.01	
8/16/2016	<0.01								
8/17/2016			<0.01						
8/18/2016									<0.01
10/6/2016		<0.01							
10/7/2016	<0.01		<0.01	0.0043 (J)	<0.01	0.0005 (J)	<0.01		
10/10/2016								<0.01	<0.01
12/5/2016		0.0006 (J)							
12/6/2016	<0.01			0.005 (J)	<0.01	0.0009 (J)			
12/7/2016							<0.01	0.0008 (J)	
12/8/2016			<0.01						0.0006 (J)
2/15/2017		<0.01							
2/16/2017	<0.01			0.0054 (J)	<0.01	<0.01	<0.01		
2/17/2017								<0.01	<0.01
2/21/2017			<0.01						
4/18/2017	<0.01	<0.01		0.0054 (J)					
4/19/2017					<0.01	<0.01	<0.01	<0.01	<0.01
4/21/2017			<0.01						
5/30/2017				0.0045 (J)	<0.01				
6/1/2017						<0.01	<0.01	<0.01	<0.01
6/2/2017	<0.01	<0.01							
6/6/2017			<0.01						
6/15/2017			0.0003 (J)						
7/12/2017	<0.01								
7/13/2017		0.0003 (J)							
7/14/2017				0.0049 (J)	<0.01	<0.01	<0.01		
7/18/2017								<0.01	0.0004 (J)
7/19/2017			0.0003 (J)						
3/27/2018	<0.01			<0.01	<0.01	<0.01	<0.01		
3/28/2018		<0.01						<0.01	<0.01
3/29/2018			<0.01						
6/12/2018				0.0048 (J)					
6/13/2018								<0.01	
6/14/2018	<0.01	<0.01			<0.01	<0.01			<0.01
6/15/2018			<0.01				<0.01		
10/17/2018		<0.01			<0.01				
10/18/2018	<0.01			0.0047 (J)		<0.01			
10/19/2018			<0.01				<0.01		<0.01
10/22/2018								<0.01	
2/25/2019				0.0071 (J)					
2/27/2019					<0.01	<0.01		<0.01	
2/28/2019	<0.01	<0.01							
3/1/2019							<0.01		
3/6/2019			<0.01						
4/1/2019		0.00034 (J)							
4/2/2019	0.00027 (J)			0.0056 (J)	0.00015 (J)	0.00012 (J)			
4/3/2019							7.2E-05 (J)	0.00024 (J)	0.00064 (J)
4/4/2019			0.00015 (J)						



# Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 7/18/2019 3:41 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.004636	0.003942	0.003982	0.004946	0.004627	0.003295	0.004621	0.004311	0.003504
Std. Dev.	0.001312	0.002012	0.002023	0.0008579	0.001345	0.002251	0.001367	0.001686	0.00221
Upper Lim.	0.005	0.005	0.005	0.005584	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.00027	0.00034	0.0003	0.004308	0.00015	0.0005	7.2E-05	0.0008	0.00041

# Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.01
6/7/2016							0.00013 (J)	
6/8/2016	0.0079			<0.01		0.00081 (J)		
6/9/2016		<0.01	0.0026					
8/10/2016							0.0003 (J)	
8/11/2016						0.0007 (J)		0.0003 (J)
8/15/2016				<0.01				
8/18/2016	0.0109	<0.01	0.0021 (J)					
10/4/2016							<0.01	
10/5/2016								<0.01
10/6/2016						<0.01		
10/10/2016	0.011	<0.01	0.0018 (J)	<0.01				
12/2/2016							<0.01	
12/5/2016								0.0006 (J)
12/6/2016						0.0009 (J)		
12/7/2016		0.0015 (J)	0.0018 (J)					
12/8/2016	0.013			0.0006 (J)				
1/23/2017					0.0012 (J)			
2/7/2017					0.0008 (J)			
2/14/2017							<0.01	
2/15/2017						<0.01		<0.01
2/17/2017	0.0122							
2/20/2017		<0.01	0.0027 (J)	<0.01				
3/27/2017					0.001 (J)			
4/14/2017							<0.01	
4/17/2017					0.0009 (J)			<0.01
4/18/2017						0.0005 (J)		
4/19/2017		<0.01	0.0032 (J)					
4/20/2017	0.0116			<0.01				
5/22/2017					0.0008 (J)			
5/26/2017							<0.01	<0.01
6/1/2017				<0.01				
6/2/2017						0.0006 (J)		
6/5/2017	0.0112	<0.01	0.0034 (J)		0.0008 (J)			
7/10/2017							<0.01	
7/11/2017					0.0008 (J)			<0.01
7/14/2017						0.0006 (J)		
7/17/2017		<0.01	0.0033 (J)	<0.01				
7/19/2017	0.0131							
8/23/2017					0.0006 (J)			
3/26/2018					<0.01		<0.01	
3/27/2018						<0.01		<0.01
3/28/2018				<0.01				
3/29/2018	0.016	<0.01	<0.01					
6/12/2018							<0.01	<0.01
6/13/2018		<0.01	0.0039 (J)			0.00068 (J)		
6/14/2018	0.017			<0.01				
6/15/2018					<0.01			
10/16/2018							<0.01	
10/17/2018								<0.01
10/18/2018						<0.01		
10/22/2018	0.021	<0.01	0.0043 (J)	<0.01	<0.01			

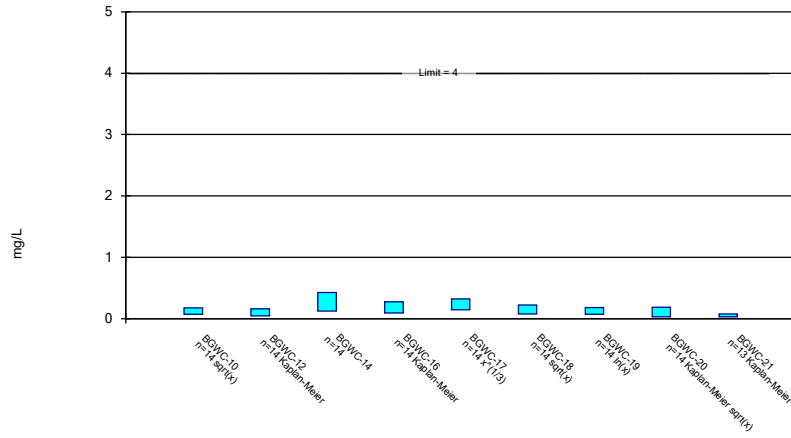
# Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.01	
2/28/2019						0.00067 (J)		
3/1/2019	0.017	<0.01	0.0055 (J)	<0.01	<0.01			
4/1/2019							5.6E-05 (J)	0.00024 (J)
4/2/2019					0.00022 (J)	0.00094 (J)		
4/3/2019	0.019	0.00058 (J)	0.0048 (J)					
4/4/2019				0.00022 (J)				
Mean	0.01392	0.004391	0.003415	0.004294	0.002086	0.002031	0.003884	0.003845
Std. Dev.	0.003768	0.001499	0.001224	0.001725	0.002034	0.002064	0.002122	0.002091
Upper Lim.	0.01672	0.005	0.004325	0.005	0.008892	0.005	0.005	0.005
Lower Lim.	0.01111	0.0015	0.002505	0.0006	0.0003534	0.0006	0.00013	0.0003

### Parametric Confidence Interval

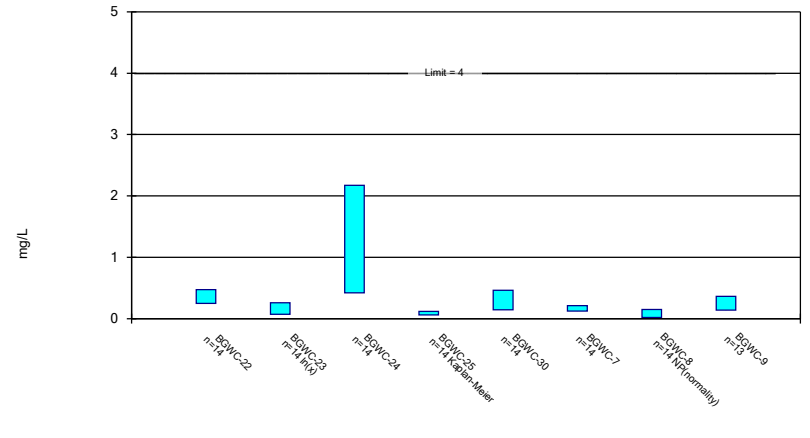
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

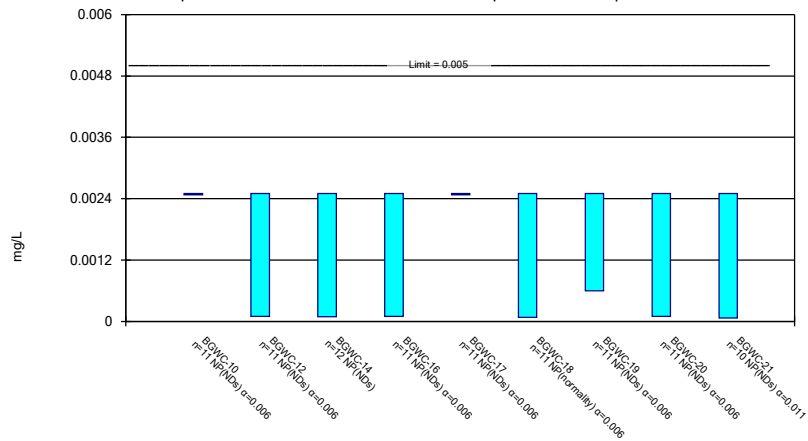
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Non-Parametric Confidence Interval

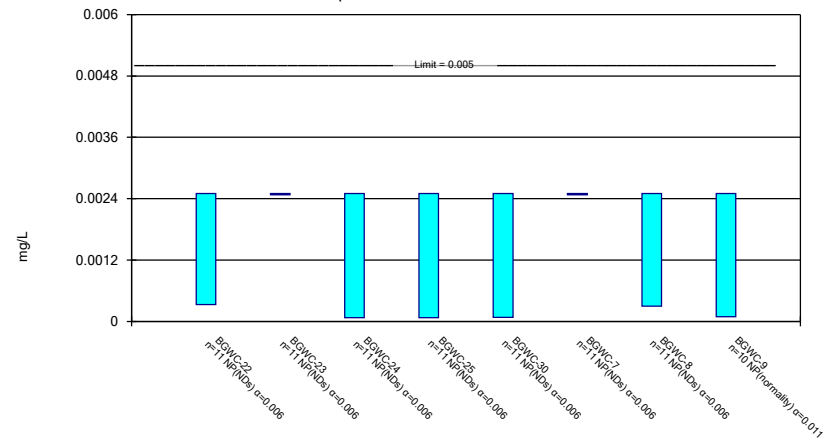
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Lead Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 7/18/2019 3:39 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.09 (J)	<0.3		<0.3	0.15 (J)				
6/8/2016						0.1 (J)	<0.3	0.09 (J)	<0.3
6/10/2016			0.23						
8/11/2016				0.12 (J)	0.3 (J)				
8/12/2016		0.08 (J)				0.39	0.2 (J)	0.04 (J)	
8/16/2016	0.09 (J)								
8/17/2016			0.12 (J)						
8/18/2016									0.09 (J)
10/6/2016		0.06 (J)							
10/7/2016	0.17 (J)		0.13 (J)	0.08 (J)	0.14 (J)	0.16 (J)	0.07 (J)		
10/10/2016								0.06 (J)	0.04 (J)
12/5/2016		0.12 (J)							
12/6/2016	0.16 (J)			0.24 (J)	0.19 (J)	0.32			
12/7/2016							0.09 (J)	0.07 (J)	
12/8/2016			0.31						0.08 (J)
2/15/2017		0.33							
2/16/2017	0.38			0.31	0.51	0.38	0.6		
2/17/2017								0.06 (J)	0.08 (J)
2/21/2017			0.35						
4/18/2017	0.12 (J)	0.006 (J)		0.02 (J)					
4/19/2017					0.18 (J)	0.08 (J)	0.09 (J)	0.005 (J)	0.04 (J)
4/21/2017			0.04 (J)						
5/30/2017				0.51	0.15 (J)				
6/1/2017						0.09 (J)	0.05 (J)	0.65	0.03 (J)
6/2/2017	0.03 (J)	0.04 (J)							
6/6/2017			0.36						
7/12/2017	0.15 (J)								
7/13/2017		0.17 (J)							
7/14/2017				0.14 (J)	0.16 (J)	0.06 (J)	0.08 (J)		
7/18/2017								0.36	0.08 (J)
7/19/2017			0.18 (J)						
10/10/2017		0.08 (J)							
10/11/2017	0.07 (J)			0.29 (J)	0.64	0.14 (J)	0.11 (J)	<0.3	
10/12/2017			0.08 (J)						0.12 (J)
3/27/2018	<0.3			<0.3	0.33	<0.3	<0.3		
3/28/2018		<0.3						<0.3	<0.3
3/29/2018			<0.3						
6/12/2018				0.061 (J)					
6/13/2018								0.038 (J)	
6/14/2018	0.046 (J)	<0.3			0.11 (J)	0.095 (J)			<0.3
6/15/2018			0.41				0.07 (J)		
10/17/2018		<0.3			<0.3				
10/18/2018	<0.3			<0.3		0.054 (J)			
10/19/2018			<0.3				0.17 (J)		<0.3
10/22/2018								<0.3	
2/25/2019				0.13 (J)					
2/27/2019					0.26 (J)	<0.3		0.13 (J)	
2/28/2019	0.14 (J)	0.18 (J)							
3/1/2019							0.14 (J)		
3/6/2019			0.88						
4/1/2019		0.065 (J)							
4/2/2019	0.044 (J)			0.23 (J)	0.14 (J)	0.044 (J)			

# Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 7/18/2019 3:42 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
4/3/2019							0.051 (J)	0.072 (J)	0.032 (J)
4/4/2019			0.44						
Mean	0.1279	0.1236	0.2736	0.1844	0.2436	0.1581	0.1444	0.1446	0.09169
Std. Dev.	0.08664	0.07982	0.2159	0.1252	0.1565	0.1181	0.1391	0.1692	0.04789
Upper Lim.	0.1765	0.1616	0.4265	0.2735	0.321	0.2229	0.1793	0.184	0.07791
Lower Lim.	0.0685	0.04315	0.1206	0.09333	0.143	0.07721	0.07155	0.02696	0.03087

# Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.12 (J)
6/7/2016							<0.3	
6/8/2016	0.43			0.14 (J)		0.19 (J)		
6/9/2016		0.12 (J)	<0.3					
8/10/2016							0.07 (J)	
8/11/2016						0.15 (J)		0.27 (J)
8/15/2016				0.08 (J)				
8/18/2016	0.3 (J)	0.08 (J)	0.24 (J)					
10/4/2016							0.07 (J)	
10/5/2016								0.12 (J)
10/6/2016						0.17 (J)		
10/10/2016	0.32	0.09 (J)	0.3	0.1 (J)				
12/2/2016							0.09 (J)	
12/5/2016								0.26 (J)
12/6/2016						0.22 (J)		
12/7/2016		0.08 (J)	0.05 (J)					
12/8/2016	0.26 (J)			0.06 (J)				
1/23/2017					0.06 (J)			
2/7/2017					0.09 (J)			
2/14/2017							0.02 (J)	
2/15/2017						0.18 (J)		0.46
2/17/2017	0.39							
2/20/2017		0.09 (J)	0.65	0.16 (J)				
3/27/2017					0.09 (J)			
4/14/2017							0.02 (J)	
4/17/2017					0.36			0.14 (J)
4/18/2017						0.11 (J)		
4/19/2017		0.03 (J)	0.21 (J)					
4/20/2017	0.34			0.02 (J)				
5/22/2017					0.05 (J)			
5/26/2017							0.02 (J)	0.13 (J)
6/1/2017				0.04 (J)				
6/2/2017						0.07 (J)		
6/5/2017	0.29 (J)	<0.3	0.05 (J)		0.32			
7/10/2017							0.03 (J)	
7/11/2017					0.13 (J)			0.2 (J)
7/14/2017						0.23 (J)		
7/17/2017		0.09 (J)	2.5	0.07 (J)				
7/19/2017	0.33							
8/23/2017					0.17 (J)			
10/10/2017					0.35		<0.3	0.61
10/11/2017		0.09 (J)	1.8	0.11 (J)		0.1 (J)		
10/12/2017	0.31							
3/26/2018					0.75		<0.3	
3/27/2018						<0.3		0.36
3/28/2018				<0.3				
3/29/2018	0.58	<0.3	2					
6/12/2018							0.061 (J)	0.13 (J)
6/13/2018		0.71	3.1			0.25 (J)		
6/14/2018	0.15 (J)			<0.3				
6/15/2018					0.51			
10/16/2018							<0.3	

# Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
10/17/2018								0.13 (J)
10/18/2018						0.047 (J)		
10/22/2018	0.78	0.81	3.1	<0.3	0.44			
2/25/2019							<0.3	
2/28/2019						0.23 (J)		
3/1/2019	0.34	0.38	1	0.12 (J)	0.24 (J)			
4/1/2019							<0.3	0.33
4/2/2019					0.68	0.22 (J)		
4/3/2019	0.23 (J)	0.1 (J)	3					
4/4/2019				<0.3				
Mean	0.3607	0.2121	1.296	0.1071	0.3029	0.1655	0.0915	0.2508
Std. Dev.	0.1559	0.2465	1.235	0.04631	0.2278	0.064	0.05651	0.1539
Upper Lim.	0.4711	0.2581	2.171	0.1197	0.4642	0.2108	0.15	0.3652
Lower Lim.	0.2503	0.07169	0.4218	0.06028	0.1415	0.1202	0.02	0.1363



# Confidence Interval

Constituent: Lead (mg/L) Analysis Run 7/18/2019 3:42 AM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.005	<0.005		<0.005	<0.005				
6/8/2016						<0.005	<0.005	<0.005	<0.005
6/10/2016			<0.005						
8/11/2016				<0.005	<0.005				
8/12/2016		0.0001 (J)				0.0001 (J)	<0.005	<0.005	
8/16/2016	<0.005								
8/17/2016			<0.005						
8/18/2016									<0.005
10/6/2016		0.0002 (J)							
10/7/2016	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005		
10/10/2016								<0.005	<0.005
12/5/2016		0.0003 (J)							
12/6/2016	<0.005			<0.005	<0.005	0.0001 (J)			
12/7/2016							<0.005	<0.005	
12/8/2016			<0.005						<0.005
2/15/2017		<0.005							
2/16/2017	<0.005			<0.005	<0.005	0.0002 (J)	<0.005		
2/17/2017								<0.005	<0.005
2/21/2017			<0.005						
4/18/2017	<0.005	<0.005		<0.005					
4/19/2017					<0.005	0.0001 (J)	0.0006 (J)	<0.005	<0.005
4/21/2017			<0.005						
5/30/2017				0.0001 (J)	<0.005				
6/1/2017						9E-05 (J)	<0.005	0.0001 (J)	<0.005
6/2/2017	<0.005	0.0001 (J)							
6/6/2017			<0.005						
6/15/2017			9E-05 (J)						
7/12/2017	<0.005								
7/13/2017		0.0001 (J)							
7/14/2017				0.0002 (J)	<0.005	0.0001 (J)	<0.005		
7/18/2017								<0.005	<0.005
7/19/2017			<0.005						
3/27/2018	<0.005			<0.005	<0.005	<0.005	<0.005		
3/28/2018		<0.005						<0.005	<0.005
3/29/2018			<0.005						
2/25/2019				<0.005					
2/27/2019					<0.005	<0.005		<0.005	
2/28/2019	<0.005	<0.005							
3/1/2019							<0.005		
3/6/2019			<0.005						
4/1/2019		<0.005							
4/2/2019	<0.005			<0.005	<0.005	8.1E-05 (J)			
4/3/2019							<0.005	<0.005	6.8E-05 (J)
4/4/2019			<0.005						
Mean	0.0025	0.001436	0.002299	0.002073	0.0025	0.0009792	0.002327	0.002282	0.002257
Std. Dev.	0	0.001223	0.0006957	0.0009509	0	0.001206	0.0005729	0.0007236	0.0007691
Upper Lim.	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
Lower Lim.	0.0025	0.0001	9E-05	0.0001	0.0025	8.1E-05	0.0006	0.0001	6.8E-05

# Confidence Interval

Constituent: Lead (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.005
6/7/2016							<0.005	
6/8/2016	<0.005			<0.005		<0.005		
6/9/2016		<0.005	0.00059 (J)					
8/10/2016							<0.005	
8/11/2016						<0.005		<0.005
8/15/2016				0.0005 (J)				
8/18/2016	<0.005	<0.005	<0.005					
10/4/2016							<0.005	
10/5/2016								0.0005 (J)
10/6/2016						<0.005		
10/10/2016	<0.005	<0.005	<0.005	<0.005				
12/2/2016							<0.005	
12/5/2016								0.0002 (J)
12/6/2016						<0.005		
12/7/2016		<0.005	<0.005					
12/8/2016	<0.005			0.0006 (J)				
1/23/2017					0.0003 (J)			
2/7/2017					0.0002 (J)			
2/14/2017							<0.005	
2/15/2017						<0.005		<0.005
2/17/2017	<0.005							
2/20/2017		<0.005	<0.005	0.0004 (J)				
3/27/2017					8E-05 (J)			
4/14/2017							<0.005	
4/17/2017					<0.005			0.0001 (J)
4/18/2017						<0.005		
4/19/2017		<0.005	<0.005					
4/20/2017	<0.005			0.0002 (J)				
5/22/2017					<0.005			
5/26/2017							0.0003 (J)	0.0001 (J)
6/1/2017				7E-05 (J)				
6/2/2017						<0.005		
6/5/2017	<0.005	<0.005	7E-05 (J)		<0.005			
7/10/2017							<0.005	
7/11/2017					8E-05 (J)			<0.005
7/14/2017						<0.005		
7/17/2017		<0.005	<0.005	<0.005				
7/19/2017	<0.005							
8/23/2017					<0.005			
3/26/2018					<0.005		<0.005	
3/27/2018						<0.005		<0.005
3/28/2018				<0.005				
3/29/2018	<0.005	<0.005	<0.005					
2/25/2019							<0.005	
2/28/2019						<0.005		
3/1/2019	0.00033 (J)	<0.005	<0.005	<0.005	<0.005			
4/1/2019							<0.005	9.2E-05 (J)
4/2/2019					<0.005	<0.005		
4/3/2019	<0.005	<0.005	<0.005					
4/4/2019				<0.005				
Mean	0.002303	0.0025	0.002105	0.001525	0.001651	0.0025	0.0023	0.001349

# Confidence Interval

Constituent: Lead (mg/L) Analysis Run 7/18/2019 3:42 AM

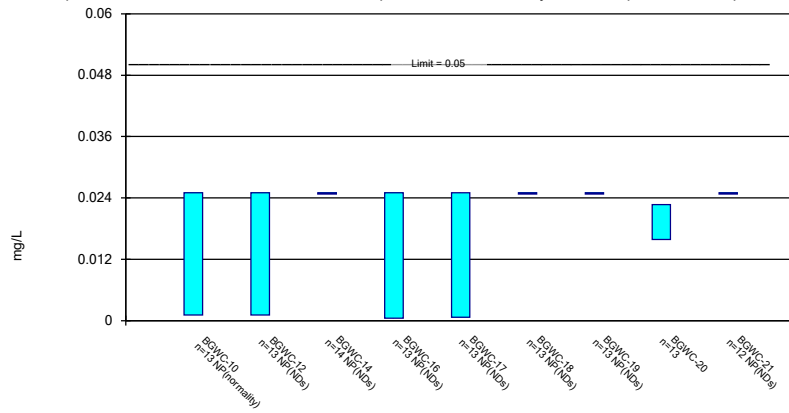
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

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	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
Std. Dev.	0.0006543	0	0.0008855	0.001129	0.00118	0	0.0006633	0.001219
Upper Lim.	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
Lower Lim.	0.00033	0.0025	7E-05	7E-05	8E-05	0.0025	0.0003	9.2E-05

### Parametric and Non-Parametric (NP) Confidence Interval

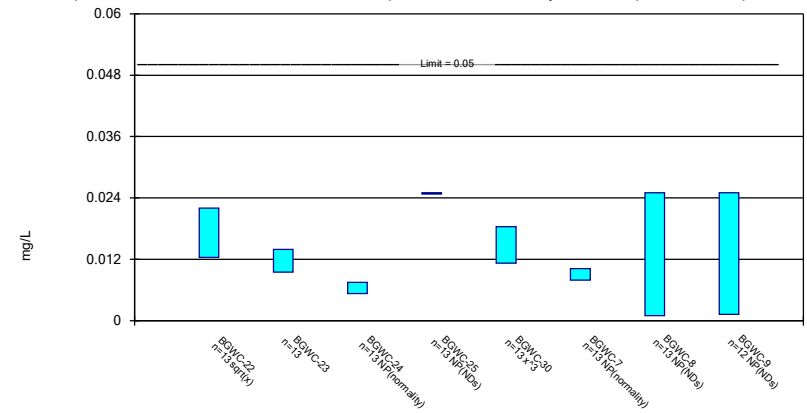
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

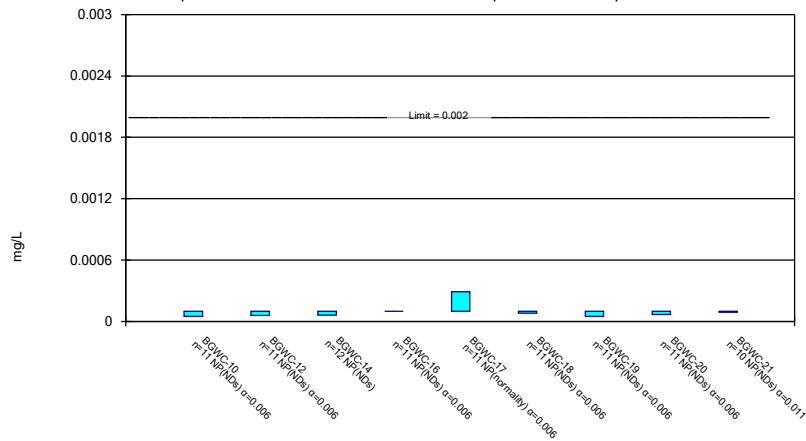
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Non-Parametric Confidence Interval

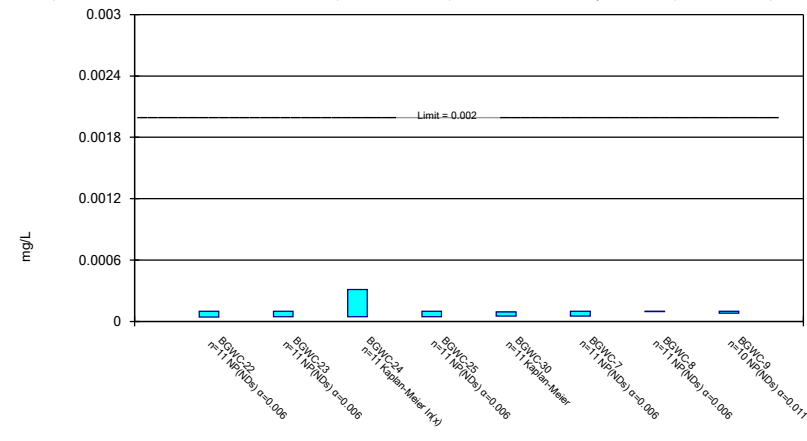
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Mercury Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Mercury Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.0065	<0.05		<0.05	<0.05				
6/8/2016						<0.05	<0.05	0.016	<0.05
6/10/2016			<0.05						
8/11/2016				<0.05	<0.05				
8/12/2016		<0.05				<0.05	<0.05	0.0202 (J)	
8/16/2016	<0.05								
8/17/2016			<0.05						
8/18/2016									<0.05
10/6/2016		<0.05							
10/7/2016	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05		
10/10/2016								0.0194 (J)	<0.05
12/5/2016		<0.05							
12/6/2016	<0.05			<0.05	<0.05	<0.05			
12/7/2016							<0.05	0.0265 (J)	
12/8/2016			<0.05						<0.05
2/15/2017		<0.05							
2/16/2017	<0.05			<0.05	<0.05	<0.05	<0.05		
2/17/2017								0.0253 (J)	<0.05
2/21/2017			<0.05						
4/18/2017	0.0011 (J)	<0.05		<0.05					
4/19/2017					<0.05	<0.05	<0.05	0.0233 (J)	<0.05
4/21/2017			<0.05						
5/30/2017				<0.05	<0.05				
6/1/2017						<0.05	<0.05	0.023 (J)	<0.05
6/2/2017	0.0011 (J)	<0.05							
6/6/2017			<0.05						
6/15/2017			<0.05						
7/12/2017	<0.05								
7/13/2017		<0.05							
7/14/2017				<0.05	<0.05	<0.05	<0.05		
7/18/2017								0.0207 (J)	<0.05
7/19/2017			<0.05						
3/27/2018	0.0025 (J)			<0.05	<0.05	<0.05	<0.05		
3/28/2018		<0.05						0.013 (J)	<0.05
3/29/2018			<0.05						
6/12/2018				<0.05					
6/13/2018								0.02 (J)	
6/14/2018	0.0011 (J)	<0.05			<0.05	<0.05			<0.05
6/15/2018			<0.05				<0.05		
10/17/2018		<0.05			<0.05				
10/18/2018	0.0016 (J)			<0.05		<0.05			
10/19/2018			<0.05				<0.05		<0.05
10/22/2018								0.016 (J)	
2/25/2019				<0.05					
2/27/2019					<0.05	<0.05		0.015 (J)	
2/28/2019	0.0017 (J)	0.0011 (J)							
3/1/2019							<0.05		
3/6/2019			<0.05						
4/1/2019		0.00078 (J)							
4/2/2019	0.0012 (J)			0.00049 (J)	0.00069 (J)	<0.05			
4/3/2019							<0.05	0.012 (J)	<0.05
4/4/2019			<0.05						

# Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 7/18/2019 3:42 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.01091	0.0213	0.025	0.02311	0.02313	0.025	0.025	0.01926	0.025
Std. Dev.	0.01168	0.009036	0	0.006798	0.006742	0	0	0.004601	0
Upper Lim.	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.02268	0.025
Lower Lim.	0.0011	0.0011	0.025	0.00049	0.00069	0.025	0.025	0.01584	0.025

# Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.05
6/7/2016							<0.05	
6/8/2016	0.012			<0.05		0.0079		
6/9/2016		0.0074	0.0057					
8/10/2016							<0.05	
8/11/2016						0.0093 (J)		<0.05
8/15/2016				<0.05				
8/18/2016	0.0118 (J)	0.0078 (J)	0.0061 (J)					
10/4/2016							<0.05	
10/5/2016								<0.05
10/6/2016						0.0102 (J)		
10/10/2016	0.0137 (J)	0.0093 (J)	0.006 (J)	<0.05				
12/2/2016							<0.05	
12/5/2016								<0.05
12/6/2016						0.0094 (J)		
12/7/2016		0.0117 (J)	0.0066 (J)					
12/8/2016	0.0154 (J)			<0.05				
1/23/2017					0.0171 (J)			
2/7/2017					0.0196 (J)			
2/14/2017							<0.05	
2/15/2017						<0.05		<0.05
2/17/2017	0.0125 (J)							
2/20/2017		0.011 (J)	0.0053 (J)	<0.05				
3/27/2017					0.0192 (J)			
4/14/2017							<0.05	
4/17/2017					0.0169 (J)			0.0013 (J)
4/18/2017						0.0086 (J)		
4/19/2017		0.0105 (J)	0.0055 (J)					
4/20/2017	0.012 (J)			<0.05				
5/22/2017					0.0167 (J)			
5/26/2017							<0.05	0.0013 (J)
6/1/2017				<0.05				
6/2/2017						0.0102 (J)		
6/5/2017	0.0114 (J)	0.0108 (J)	0.0068 (J)		0.0177 (J)			
7/10/2017							<0.05	
7/11/2017					0.0203 (J)			<0.05
7/14/2017						0.0092 (J)		
7/17/2017		0.0095 (J)	<0.05	<0.05				
7/19/2017	0.0126 (J)							
8/23/2017					0.0182 (J)			
3/26/2018					0.0063 (J)		<0.05	
3/27/2018						0.0087 (J)		0.0014 (J)
3/28/2018				<0.05				
3/29/2018	0.021 (J)	0.014 (J)	0.0053 (J)					
6/12/2018							<0.05	0.0012 (J)
6/13/2018		0.014 (J)	0.0067 (J)			0.0084 (J)		
6/14/2018	0.024 (J)			<0.05				
6/15/2018					0.0049 (J)			
10/16/2018							0.001 (J)	
10/17/2018								<0.05
10/18/2018						0.0083 (J)		
10/22/2018	0.034 (J)	0.016 (J)	0.0075 (J)	<0.05	0.005 (J)			

# Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.05	
2/28/2019						0.0086 (J)		
3/1/2019	0.022 (J)	0.017 (J)	0.0068 (J)	<0.05	0.0044 (J)			
4/1/2019							<0.05	0.0012 (J)
4/2/2019					0.0041 (J)	0.0073 (J)		
4/3/2019	0.024 (J)	0.013 (J)	0.0048 (J)					
4/4/2019				<0.05				
Mean	0.01742	0.01169	0.007546	0.025	0.01311	0.01008	0.02315	0.01512
Std. Dev.	0.006995	0.002971	0.0053	0	0.006817	0.004557	0.006656	0.01221
Upper Lim.	0.02199	0.0139	0.0075	0.025	0.01838	0.0102	0.025	0.025
Lower Lim.	0.01238	0.009483	0.0053	0.025	0.01127	0.0079	0.001	0.0012



# Confidence Interval

Constituent: Mercury (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.0001 (J)	0.0001 (J)		9.8E-05 (J)	0.00017 (J)				
6/8/2016						<0.0002	<0.0002	<0.0002	<0.0002
6/10/2016			<0.0002						
8/11/2016				<0.0002	0.00019 (J)				
8/12/2016		<0.0002				<0.0002	<0.0002	<0.0002	
8/16/2016	<0.0002								
8/17/2016			<0.0002						
8/18/2016									<0.0002
10/6/2016		<0.0002							
10/7/2016	<0.0002		<0.0002	<0.0002	0.00014 (J)	<0.0002	<0.0002		
10/10/2016								<0.0002	<0.0002
12/5/2016		<0.0002							
12/6/2016	<0.0002			<0.0002	0.00016 (J)	<0.0002			
12/7/2016							8E-05 (J)	<0.0002	
12/8/2016			<0.0002						<0.0002
2/15/2017		<0.0002							
2/16/2017	<0.0002			<0.0002	0.00017 (J)	<0.0002	<0.0002		
2/17/2017								<0.0002	<0.0002
2/21/2017			<0.0002						
4/18/2017	<0.0002	<0.0002		<0.0002					
4/19/2017					0.00014 (J)	<0.0002	<0.0002	<0.0002	<0.0002
4/21/2017			<0.0002						
5/30/2017				<0.0002	0.00023 (J)				
6/1/2017						<0.0002	<0.0002	<0.0002	<0.0002
6/2/2017	<0.0002	<0.0002							
6/6/2017			<0.0002						
6/15/2017			6.2E-05 (J)						
7/12/2017	<0.0002								
7/13/2017		<0.0002							
7/14/2017				<0.0002	0.00016 (J)	<0.0002	<0.0002		
7/18/2017								<0.0002	<0.0002
7/19/2017			<0.0002						
3/27/2018	<0.0002			<0.0002	<0.0002	<0.0002	<0.0002		
3/28/2018		<0.0002						<0.0002	<0.0002
3/29/2018			<0.0002						
2/25/2019				<0.0002					
2/27/2019					0.00029 (J)	7.9E-05 (J)		6.6E-05 (J)	
2/28/2019	4.8E-05 (J)	5.8E-05 (J)							
3/1/2019							5E-05 (J)		
3/6/2019			<0.0002						
4/1/2019		<0.0002							
4/2/2019	<0.0002			<0.0002	0.4 (J)	<0.0002			
4/3/2019							<0.0002	<0.0002	<0.0002
4/4/2019			<0.0002						
Mean	9.527E-05	9.618E-05	9.683E-05	9.982E-05	0.03652	9.809E-05	9.364E-05	9.691E-05	0.0001
Std. Dev.	1.568E-05	1.266E-05	1.097E-05	6E-07	0.1206	6.332E-06	1.567E-05	1.025E-05	0
Upper Lim.	0.0001	0.0001	0.0001	0.0001	0.00029	0.0001	0.0001	0.0001	0.0001
Lower Lim.	4.8E-05	5.8E-05	6.2E-05	9.8E-05	0.0001	7.9E-05	5E-05	6.6E-05	0.0001

# Confidence Interval

Constituent: Mercury (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								8E-05 (J)
6/7/2016							9.7E-05 (J)	
6/8/2016	9.2E-05 (J)			<0.0002		<0.0002		
6/9/2016		<0.0002	<0.0002					
8/10/2016							<0.0002	
8/11/2016						<0.0002		<0.0002
8/15/2016				<0.0002				
8/18/2016	<0.0002	<0.0002	<0.0002					
10/4/2016							<0.0002	
10/5/2016								<0.0002
10/6/2016						<0.0002		
10/10/2016	<0.0002	<0.0002	4E-05 (J)	<0.0002				
12/2/2016							<0.0002	
12/5/2016								<0.0002
12/6/2016						<0.0002		
12/7/2016		5E-05 (J)	7E-05 (J)					
12/8/2016	<0.0002			<0.0002				
1/23/2017					8E-05 (J)			
2/7/2017					0.00011 (J)			
2/14/2017							<0.0002	
2/15/2017						<0.0002		<0.0002
2/17/2017	<0.0002							
2/20/2017		<0.0002	5E-05 (J)	<0.0002				
3/27/2017					8E-05 (J)			
4/14/2017							<0.0002	
4/17/2017					4E-05 (J)			<0.0002
4/18/2017						<0.0002		
4/19/2017		<0.0002	0.00016 (J)					
4/20/2017	<0.0002			<0.0002				
5/22/2017					<0.0002			
5/26/2017							<0.0002	<0.0002
6/1/2017				<0.0002				
6/2/2017						<0.0002		
6/5/2017	<0.0002	<0.0002	0.00013 (J)		6E-05 (J)			
7/10/2017							<0.0002	
7/11/2017					9.1E-05 (J)			<0.0002
7/14/2017						<0.0002		
7/17/2017		<0.0002	0.00013 (J)	<0.0002				
7/19/2017	<0.0002							
8/23/2017					5E-05 (J)			
3/26/2018					<0.0002		<0.0002	
3/27/2018						<0.0002		<0.0002
3/28/2018				<0.0002				
3/29/2018	<0.0002	<0.0002	<0.0002					
2/25/2019							<0.0002	
2/28/2019						5.3E-05 (J)		
3/1/2019	4.2E-05 (J)	4.4E-05 (J)	0.00093	4.7E-05 (J)	0.0001 (J)			
4/1/2019							<0.0002	<0.0002
4/2/2019					<0.0002	<0.0002		
4/3/2019	<0.0002	<0.0002	0.0013					
4/4/2019				<0.0002				
Mean	9.4E-05	9.036E-05	0.0002827	9.518E-05	8.282E-05	9.573E-05	9.973E-05	9.8E-05

# Confidence Interval

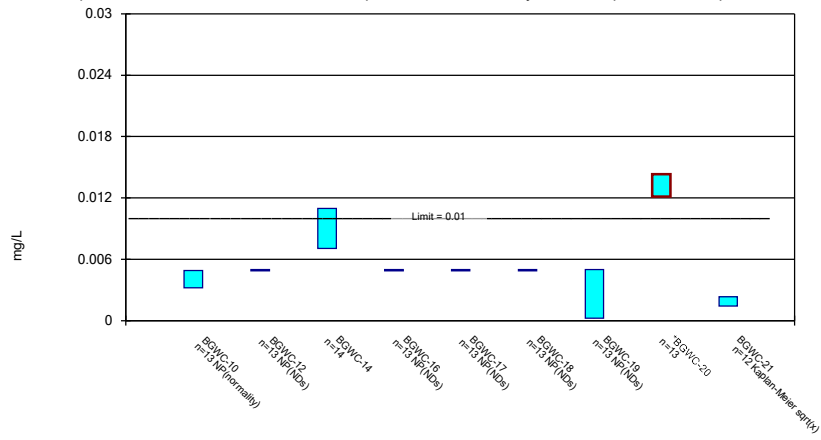
Constituent: Mercury (mg/L) Analysis Run 7/18/2019 3:42 AM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
Std. Dev.	1.741E-05	2.148E-05	0.0004212	1.598E-05	2.331E-05	1.417E-05	9E-07	6.325E-06
Upper Lim.	0.0001	0.0001	0.0003115	0.0001	9.315E-05	0.0001	0.0001	0.0001
Lower Lim.	4.2E-05	4.4E-05	4.586E-05	4.7E-05	5.21E-05	5.3E-05	9.7E-05	8E-05

### Parametric and Non-Parametric (NP) Confidence Interval

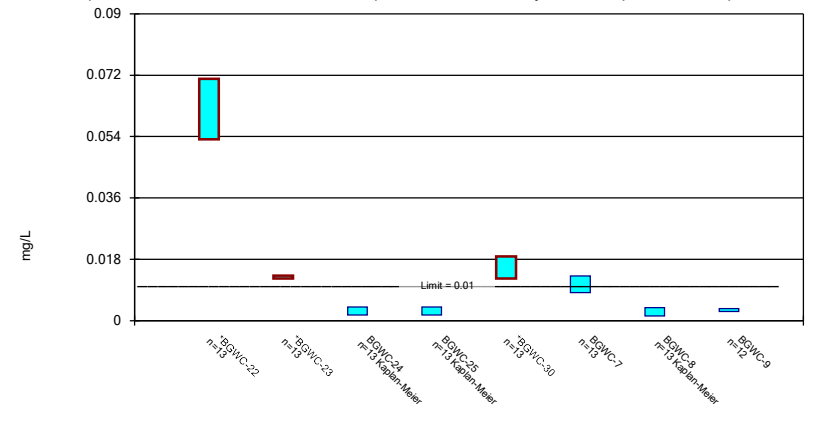
Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

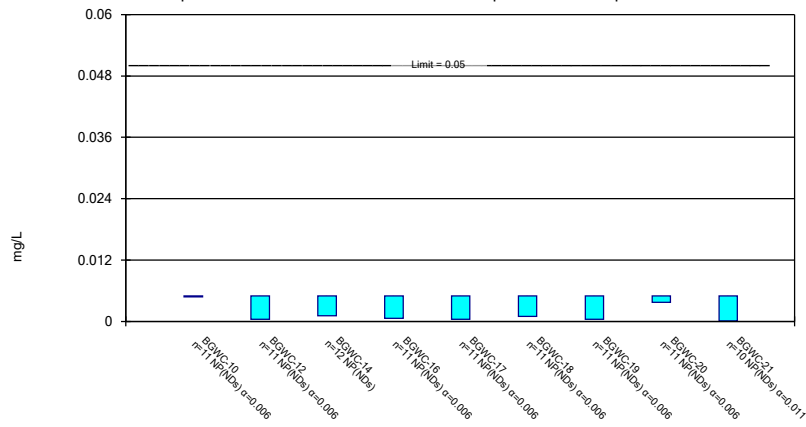
Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Non-Parametric Confidence Interval

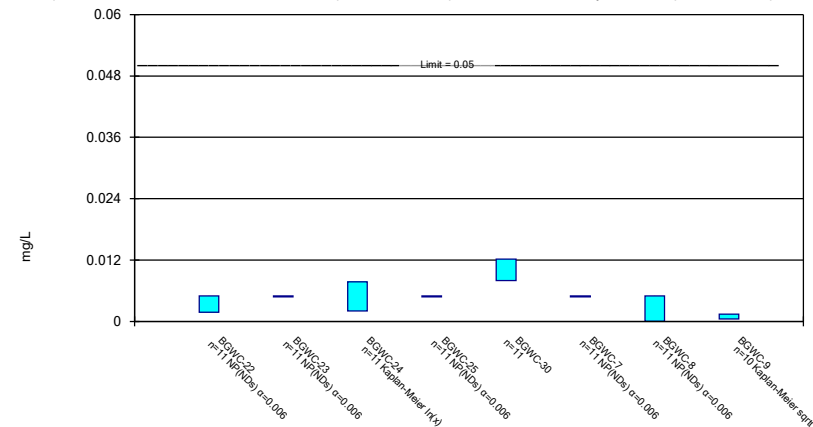
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Selenium Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 7/18/2019 3:42 AM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.0067 (J)	<0.01		<0.01	<0.01				
6/8/2016						<0.01	<0.01	0.011 (J)	0.0027 (J)
6/10/2016			0.014 (J)						
8/11/2016				<0.01	<0.01				
8/12/2016		<0.01				<0.01	<0.01	0.0127	
8/16/2016	0.0032 (J)								
8/17/2016			0.0085 (J)						
8/18/2016									0.0023 (J)
10/6/2016		<0.01							
10/7/2016	0.0032 (J)		0.0072 (J)	<0.01	<0.01	<0.01	<0.01		
10/10/2016								0.0136	0.0025 (J)
12/5/2016		<0.01							
12/6/2016	0.0049 (J)			<0.01	<0.01	<0.01			
12/7/2016							<0.01	0.0139	
12/8/2016			0.0082 (J)						<0.01
2/15/2017		<0.01							
2/16/2017	0.0039 (J)			<0.01	<0.01	<0.01	<0.01		
2/17/2017								0.0148	<0.01
2/21/2017			0.0076 (J)						
4/18/2017	0.0032 (J)	<0.01		<0.01					
4/19/2017					<0.01	<0.01	<0.01	0.012	0.0014 (J)
4/21/2017			0.0052 (J)						
5/30/2017				<0.01	<0.01				
6/1/2017						<0.01	<0.01	0.0125	0.0012 (J)
6/2/2017	0.0035 (J)	<0.01							
6/6/2017			0.0079 (J)						
6/15/2017			0.0052 (J)						
7/12/2017	0.0037 (J)								
7/13/2017		<0.01							
7/14/2017				<0.01	<0.01	<0.01	<0.01		
7/18/2017								0.0155	0.0013 (J)
7/19/2017			0.0073 (J)						
3/27/2018	0.0032 (J)			<0.01	<0.01	<0.01	<0.01		
3/28/2018		<0.01						0.012	<0.01
3/29/2018			0.012						
6/12/2018				<0.01					
6/13/2018								0.016	
6/14/2018	0.0033 (J)	<0.01			<0.01	<0.01			<0.01
6/15/2018			0.012				<0.01		
10/17/2018		<0.01			<0.01				
10/18/2018	0.0034 (J)			<0.01		<0.01			
10/19/2018			0.0094 (J)				<0.01		<0.01
10/22/2018								0.013	
2/25/2019				<0.01					
2/27/2019					<0.01	<0.01		0.013	
2/28/2019	0.0035 (J)	<0.01							
3/1/2019							<0.01		
3/6/2019			0.013						
4/1/2019		<0.01							
4/2/2019	0.0032 (J)			<0.01	<0.01	<0.01			
4/3/2019							0.00023 (J)	0.012	0.0019 (J)
4/4/2019			0.0088 (J)						

# Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 7/18/2019 3:42 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.003762	0.005	0.009021	0.005	0.005	0.005	0.004633	0.01323	0.003192
Std. Dev.	0.001	0	0.002749	0	0	0	0.001323	0.001481	0.001659
Upper Lim.	0.0049	0.005	0.01097	0.005	0.005	0.005	0.005	0.01433	0.002329
Lower Lim.	0.0032	0.005	0.007074	0.005	0.005	0.005	0.00023	0.01213	0.001438

# Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 7/18/2019 3:42 AM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.0028 (J)
6/7/2016							0.00063 (J)	
6/8/2016	0.07			0.0064 (J)		0.0088 (J)		
6/9/2016		0.013 (J)	0.0024 (J)					
8/10/2016							0.0039 (J)	
8/11/2016						0.01		0.003 (J)
8/15/2016				0.0039 (J)				
8/18/2016	0.0758	0.0136	0.0034 (J)					
10/4/2016							0.0052 (J)	
10/5/2016								0.0032 (J)
10/6/2016						0.0117		
10/10/2016	0.0712	0.0134	0.0047 (J)	0.0029 (J)				
12/2/2016							<0.01	
12/5/2016								0.0033 (J)
12/6/2016						0.0102		
12/7/2016		0.0128	0.0066 (J)					
12/8/2016	0.0682			<0.01				
1/23/2017					0.0125			
2/7/2017					0.0163			
2/14/2017							0.0044 (J)	
2/15/2017						0.0018 (J)		0.0027 (J)
2/17/2017	0.066							
2/20/2017		0.0122	0.0026 (J)	0.0024 (J)				
3/27/2017					0.0157			
4/14/2017							0.0013 (J)	
4/17/2017					0.0178			0.0025 (J)
4/18/2017						0.0103		
4/19/2017		0.0124	0.002 (J)					
4/20/2017	0.0662			0.0019 (J)				
5/22/2017					0.0208			
5/26/2017							0.0024 (J)	0.0029 (J)
6/1/2017				0.0026 (J)				
6/2/2017						0.0129		
6/5/2017	0.071	0.0115	0.0015 (J)		0.0191			
7/10/2017							0.0013 (J)	
7/11/2017					0.0218			0.0029 (J)
7/14/2017						0.0129		
7/17/2017		0.0131	0.0013 (J)	0.0024 (J)				
7/19/2017	0.0703							
8/23/2017					0.0218			
3/26/2018					0.014		<0.01	
3/27/2018						0.01		0.0031 (J)
3/28/2018				<0.01				
3/29/2018	0.056	0.013	0.0027 (J)					
6/12/2018							0.0026 (J)	0.0043 (J)
6/13/2018		0.013	<0.01			0.013		
6/14/2018	0.059			<0.01				
6/15/2018					0.012			
10/16/2018							0.0041 (J)	
10/17/2018								0.0038 (J)
10/18/2018						0.01 (J)		
10/22/2018	0.055	0.013	<0.01	<0.01	0.01			

# Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.01	
2/28/2019						0.016		
3/1/2019	0.039	0.013	<0.01	<0.01	0.011			
4/1/2019							0.00054 (J)	0.0027 (J)
4/2/2019					0.01	0.011		
4/3/2019	0.039	0.012	0.00095 (J)					
4/4/2019				0.00096 (J)				
Mean	0.06205	0.01277	0.003319	0.003728	0.0156	0.01066	0.003182	0.0031
Std. Dev.	0.01195	0.0005865	0.001771	0.001627	0.004383	0.003277	0.001788	0.0005081
Upper Lim.	0.07094	0.01321	0.004028	0.004007	0.01886	0.0131	0.003806	0.003499
Lower Lim.	0.05317	0.01233	0.001602	0.001616	0.01234	0.008225	0.001325	0.002701



# Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.01	<0.01		<0.01	0.0004 (J)				
6/8/2016						<0.01	0.00043 (J)	<0.01	<0.01
6/10/2016			<0.01						
8/11/2016				<0.01	<0.01				
8/12/2016		<0.01				<0.01	<0.01	<0.01	
8/16/2016	<0.01								
8/17/2016			<0.01						
8/18/2016									<0.01
10/6/2016		<0.01							
10/7/2016	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01		
10/10/2016								<0.01	0.001 (J)
12/5/2016		<0.01							
12/6/2016	<0.01			<0.01	<0.01	<0.01			
12/7/2016							<0.01	0.0037 (J)	
12/8/2016			<0.01						<0.01
2/15/2017		<0.01							
2/16/2017	<0.01			0.0012 (J)	<0.01	<0.01	<0.01		
2/17/2017								<0.01	<0.01
2/21/2017			0.0011 (J)						
4/18/2017	<0.01	<0.01		<0.01					
4/19/2017					<0.01	<0.01	<0.01	<0.01	<0.01
4/21/2017			<0.01						
5/30/2017				<0.01	<0.01				
6/1/2017						<0.01	<0.01	<0.01	<0.01
6/2/2017	<0.01	<0.01							
6/6/2017			<0.01						
6/15/2017			<0.01						
7/12/2017	<0.01								
7/13/2017		<0.01							
7/14/2017				<0.01	<0.01	<0.01	<0.01		
7/18/2017								<0.01	<0.01
7/19/2017			<0.01						
3/27/2018	<0.01			<0.01	<0.01	<0.01	<0.01		
3/28/2018		<0.01						<0.01	<0.01
3/29/2018			<0.01						
2/25/2019				<0.01					
2/27/2019					<0.01	<0.01		<0.01	
2/28/2019	<0.01	<0.01							
3/1/2019							<0.01		
3/6/2019			<0.01						
4/1/2019		0.0004 (J)							
4/2/2019	<0.01			0.0006 (J)	0.00077 (J)	0.001 (J)			
4/3/2019							0.00058 (J)	<0.01	0.00012 (J)
4/4/2019			0.00014 (J)						
Mean	0.005	0.004582	0.00427	0.004255	0.004197	0.004636	0.004183	0.004882	0.004112
Std. Dev.	0	0.001387	0.001717	0.001664	0.001788	0.001206	0.001819	0.000392	0.001884
Upper Lim.	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.005	0.0004	0.0011	0.0006	0.0004	0.001	0.00043	0.0037	0.00012

# Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.00031 (J)
6/7/2016							4.8E-05 (J)	
6/8/2016	<0.01			<0.01		<0.01		
6/9/2016		<0.01	0.00099 (J)					
8/10/2016							<0.01	
8/11/2016						<0.01		0.001 (J)
8/15/2016				<0.01				
8/18/2016	<0.01	<0.01	0.0023 (J)					
10/4/2016							<0.01	
10/5/2016								0.0017 (J)
10/6/2016						<0.01		
10/10/2016	<0.01	<0.01	0.004 (J)	<0.01				
12/2/2016							<0.01	
12/5/2016								<0.01
12/6/2016						<0.01		
12/7/2016		0.0176	0.0302					
12/8/2016	0.012			<0.01				
1/23/2017					0.015			
2/7/2017					0.0114			
2/14/2017							<0.01	
2/15/2017						<0.01		<0.01
2/17/2017	<0.01							
2/20/2017		<0.01	0.0044 (J)	<0.01				
3/27/2017					0.0092 (J)			
4/14/2017							<0.01	
4/17/2017					0.0082 (J)			<0.01
4/18/2017						<0.01		
4/19/2017		<0.01	0.0046 (J)					
4/20/2017	<0.01			<0.01				
5/22/2017					0.0094 (J)			
5/26/2017							<0.01	0.0014 (J)
6/1/2017				<0.01				
6/2/2017						<0.01		
6/5/2017	0.0018 (J)	<0.01	0.0033 (J)		0.0118			
7/10/2017							<0.01	
7/11/2017					0.012			<0.01
7/14/2017						<0.01		
7/17/2017		<0.01	0.0052 (J)	<0.01				
7/19/2017	<0.01							
8/23/2017					0.0097 (J)			
3/26/2018					<0.01		<0.01	
3/27/2018						<0.01		<0.01
3/28/2018				<0.01				
3/29/2018	<0.01	<0.01	<0.01					
2/25/2019							<0.01	
2/28/2019						<0.01		
3/1/2019	<0.01	<0.01	<0.01	<0.01	0.01 (J)			
4/1/2019							0.00015 (J)	0.0004 (J)
4/2/2019					0.0092 (J)	<0.01		
4/3/2019	<0.01	<0.01	0.0038 (J)					
4/4/2019				<0.01				
Mean	0.005345	0.006145	0.006254	0.005	0.01008	0.005	0.004109	0.002981

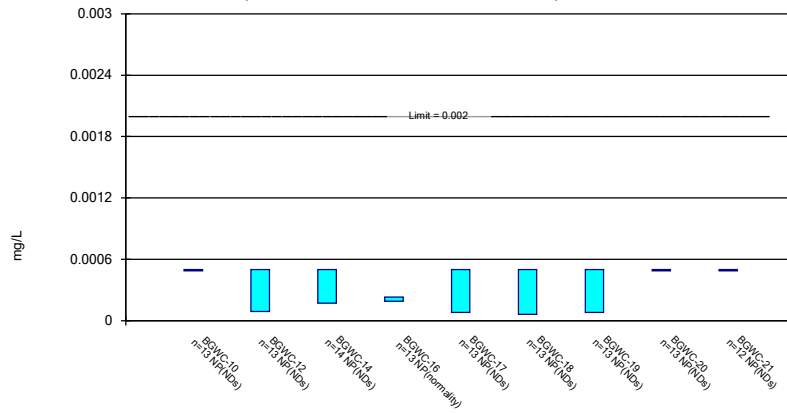
# Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 7/18/2019 3:42 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
Std. Dev.	0.002407	0.003799	0.008044	0	0.002532	0	0.001983	0.002166
Upper Lim.	0.005	0.005	0.007735	0.005	0.01219	0.005	0.005	0.001437
Lower Lim.	0.0018	0.005	0.002032	0.005	0.007972	0.005	4.8E-05	0.0004511

### Non-Parametric Confidence Interval

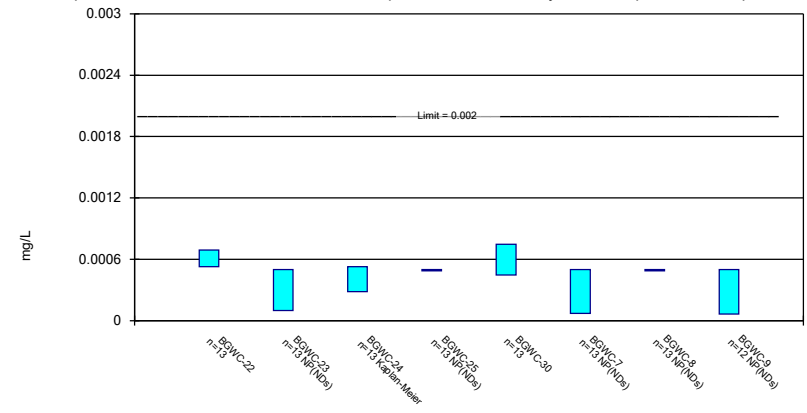
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

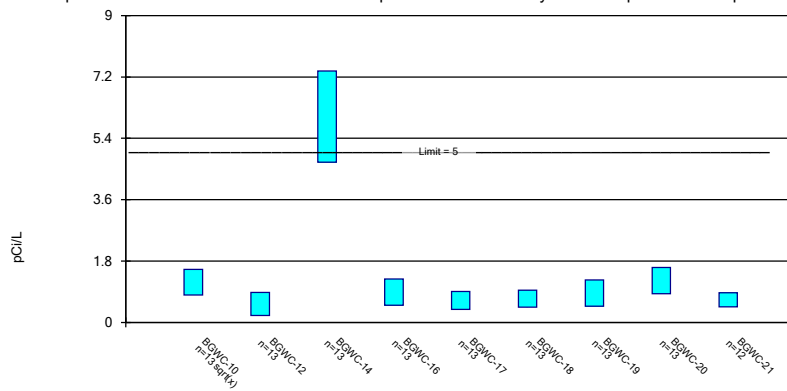
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Thallium Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

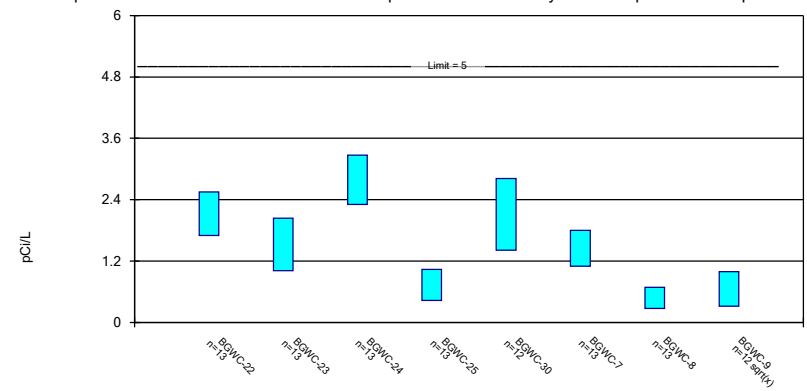
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Total Radium Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Total Radium Analysis Run 7/18/2019 3:40 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.001	<0.001		0.0002 (J)	8.5E-05 (J)				
6/8/2016						<0.001	8.5E-05 (J)	<0.001	<0.001
6/10/2016			<0.001						
8/11/2016				0.0002 (J)	8E-05 (J)				
8/12/2016		9E-05 (J)				6E-05 (J)	8E-05 (J)	<0.001	
8/16/2016	<0.001								
8/17/2016			<0.001						
8/18/2016									<0.001
10/6/2016		<0.001							
10/7/2016	<0.001		<0.001	0.0002 (J)	<0.001	<0.001	<0.001		
10/10/2016								<0.001	<0.001
12/5/2016		<0.001							
12/6/2016	<0.001			0.0003 (J)	<0.001	<0.001			
12/7/2016							<0.001	<0.001	
12/8/2016			<0.001						<0.001
2/15/2017		<0.001							
2/16/2017	<0.001			0.0003 (J)	<0.001	<0.001	<0.001		
2/17/2017								<0.001	<0.001
2/21/2017			<0.001						
4/18/2017	<0.001	9E-05 (J)		0.0002 (J)					
4/19/2017					8E-05 (J)	<0.001	6E-05 (J)	<0.001	<0.001
4/21/2017			<0.001						
5/30/2017				0.0002 (J)	9E-05 (J)				
6/1/2017						<0.001	8E-05 (J)	<0.001	<0.001
6/2/2017	<0.001	<0.001							
6/6/2017			<0.001						
6/15/2017			<0.001						
7/12/2017	<0.001								
7/13/2017		8E-05 (J)							
7/14/2017				0.0002 (J)	9E-05 (J)	<0.001	8E-05 (J)		
7/18/2017								<0.001	<0.001
7/19/2017			<0.001						
3/27/2018	<0.001			0.00019 (J)	<0.001	<0.001	<0.001		
3/28/2018		<0.001						<0.001	<0.001
3/29/2018			<0.001						
6/12/2018				0.0002 (J)					
6/13/2018								<0.001	
6/14/2018	<0.001	<0.001			<0.001	<0.001			<0.001
6/15/2018			<0.001				<0.001		
10/17/2018		<0.001			<0.001				
10/18/2018	<0.001			0.0002 (J)		<0.001			
10/19/2018			0.00017 (J)				<0.001		<0.001
10/22/2018								<0.001	
2/25/2019				0.00023 (J)					
2/27/2019					<0.001	<0.001		<0.001	
2/28/2019	<0.001	<0.001							
3/1/2019							<0.001		
3/6/2019			<0.001						
4/1/2019		<0.001							
4/2/2019	<0.001			0.0002 (J)	7.5E-05 (J)	<0.001			
4/3/2019							<0.001	<0.001	<0.001
4/4/2019			<0.001						

# Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 7/18/2019 3:42 AM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.0005	0.0004046	0.0004764	0.0002169	0.0003077	0.0004662	0.0003373	0.0005	0.0005
Std. Dev.	0	0.0001813	8.82E-05	3.794E-05	0.0002162	0.000122	0.0002143	0	0
Upper Lim.	0.0005	0.0005	0.0005	0.00023	0.0005	0.0005	0.0005	0.0005	0.0005
Lower Lim.	0.0005	9E-05	0.00017	0.00019	8E-05	6E-05	8E-05	0.0005	0.0005

# Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.001
6/7/2016							<0.001	
6/8/2016	0.00035 (J)			<0.001		<0.001		
6/9/2016		0.0001 (J)	0.00022 (J)					
8/10/2016							<0.001	
8/11/2016						<0.001		<0.001
8/15/2016				<0.001				
8/18/2016	0.0005 (J)	<0.001	<0.001					
10/4/2016							<0.001	
10/5/2016								<0.001
10/6/2016						<0.001		
10/10/2016	0.0006 (J)	<0.001	0.0003 (J)	<0.001				
12/2/2016							<0.001	
12/5/2016								<0.001
12/6/2016						<0.001		
12/7/2016		<0.001	<0.001					
12/8/2016	0.0005 (J)			<0.001				
1/23/2017					0.0008 (J)			
2/7/2017					0.0008 (J)			
2/14/2017							<0.001	
2/15/2017						<0.001		<0.001
2/17/2017	0.0006 (J)							
2/20/2017		<0.001	0.0003 (J)	<0.001				
3/27/2017					0.0006 (J)			
4/14/2017							<0.001	
4/17/2017					0.0007 (J)			<0.001
4/18/2017						<0.001		
4/19/2017		<0.001	0.0004 (J)					
4/20/2017	0.0006 (J)			<0.001				
5/22/2017					0.0008 (J)			
5/26/2017							<0.001	<0.001
6/1/2017				<0.001				
6/2/2017						<0.001		
6/5/2017	0.0006 (J)	<0.001	0.0004 (J)		0.0007 (J)			
7/10/2017							<0.001	
7/11/2017					0.0007 (J)			<0.001
7/14/2017						<0.001		
7/17/2017		<0.001	0.0004 (J)	<0.001				
7/19/2017	0.0007 (J)							
8/23/2017					0.0007 (J)			
3/26/2018					0.00058 (J)		<0.001	
3/27/2018						<0.001		<0.001
3/28/2018				<0.001				
3/29/2018	0.00063 (J)	<0.001	0.00048 (J)					
6/12/2018							<0.001	<0.001
6/13/2018		<0.001	0.00053 (J)			<0.001		
6/14/2018	0.00069 (J)			<0.001				
6/15/2018					0.00056 (J)			
10/16/2018							<0.001	
10/17/2018								<0.001
10/18/2018						<0.001		
10/22/2018	0.00071 (J)	<0.001	0.00047 (J)	<0.001	0.00034 (J)			

# Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 7/18/2019 3:42 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.001	
2/28/2019						<0.001		
3/1/2019	0.00074 (J)	<0.001	0.0007 (J)	<0.001	0.00024 (J)			
4/1/2019							<0.001	6.5E-05 (J)
4/2/2019					0.00024 (J)	7E-05 (J)		
4/3/2019	0.0007 (J)	<0.001	0.00064 (J)					
4/4/2019				<0.001				
Mean	0.0006092	0.0004692	0.0004492	0.0005	0.0005969	0.0004669	0.0005	0.0004638
Std. Dev.	0.0001088	0.0001109	0.0001344	0	0.0002018	0.0001193	0	0.0001256
Upper Lim.	0.0006901	0.0005	0.0005277	0.0005	0.000747	0.0005	0.0005	0.0005
Lower Lim.	0.0005283	0.0001	0.000282	0.0005	0.0004469	7E-05	0.0005	6.5E-05



# Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 7/18/2019 3:42 AM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.616	0.024 (U)		0.284 (U)	0.135 (U)				
6/8/2016						0.406	0.264 (U)	0.863 (U)	0.573
8/11/2016				1.71	0.808				
8/12/2016		0.849				1.39	1.18	1.74	
8/16/2016	1.08								
8/17/2016			5.18						
8/18/2016									0.44 (U)
10/6/2016		1.57							
10/7/2016	2.82			0.485 (U)	0.874 (U)	0.451 (U)	1.97		
10/10/2016								0.944 (U)	0.933 (U)
12/5/2016		0.956							
12/6/2016	0.719 (U)			1.22	0.131 (U)	0.516 (U)			
12/7/2016							1.31 (U)	2.29	
12/8/2016									1.02 (U)
2/15/2017		0.229 (U)							
2/16/2017	0.966 (U)			0.19 (U)	0.471 (U)	0.172 (U)	0.35 (U)		
2/17/2017								1.35 (U)	0.193 (U)
2/21/2017			5.1						
4/18/2017	1.01 (U)	0.0114 (U)		0.52 (U)					
4/19/2017					0.65 (U)	0.704 (U)	0.974 (U)	1.48	0.488 (U)
5/26/2017			7.14						
5/30/2017				1.21 (U)	0.65 (U)				
6/1/2017						0.493 (U)	0.332 (U)	1.61	0.837 (U)
6/2/2017	1.13 (U)	0.375 (U)							
6/6/2017			4.68						
6/15/2017			5.69						
7/12/2017	1.29		2.92						
7/13/2017		0.636 (U)							
7/14/2017				0.526 (U)	0.592 (U)	0.547 (U)	1.27		
7/18/2017									0.498 (U)
7/19/2017								1.626	
8/10/2017			6.51						
8/25/2017			7.04						
3/27/2018	0.779 (U)			1.34	0.551 (U)	0.569 (U)	0.169 (U)		
3/28/2018		0.36 (U)						0.97 (U)	0.864 (U)
3/29/2018			6.35						
6/12/2018				0.732 (U)					
6/13/2018								0.686 (U)	
6/14/2018	1.22 (U)	0.316 (U)			0.638 (U)	0.989 (U)			0.583 (U)
6/15/2018			6.2				0.625 (U)		
10/17/2018		0.326 (U)			0.555 (U)				
10/18/2018	0.841 (U)			0.522 (U)		0.875 (U)			
10/19/2018			3.76				0.784 (U)		0.982 (U)
10/22/2018								0.559 (U)	
2/25/2019				1.08					
2/27/2019					1.57	1.12		1.24	
2/28/2019	1.88	1.04							
3/1/2019							0.989 (U)		
3/6/2019			9.46						
4/1/2019		0.328 (U)							
4/2/2019	1.21 (U)			1.73	0.71 (U)	0.814 (U)			
4/3/2019							0.98 (U)	0.567 (U)	0.532 (U)

# Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 7/18/2019 3:42 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
4/4/2019			8.48						
Mean	1.197	0.54	6.039	0.8884	0.6412	0.6958	0.8613	1.225	0.6619
Std. Dev.	0.5834	0.4501	1.797	0.5227	0.3551	0.3322	0.5149	0.5189	0.2581
Upper Lim.	1.552	0.8748	7.375	1.277	0.9052	0.9428	1.244	1.611	0.8645
Lower Lim.	0.8002	0.2053	4.703	0.4997	0.3771	0.4489	0.4784	0.8391	0.4594

# Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 7/18/2019 3:42 AM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.488
6/7/2016							0.0507 (U)	
6/8/2016	1.53			0.314 (U)		0.854		
6/9/2016		0.704	2.13					
8/10/2016							0.862 (U)	
8/11/2016						1.24		0.639 (U)
8/15/2016				1.2				
8/18/2016	2.47	1.88	2.67					
10/4/2016							0.48 (U)	
10/5/2016								0.945 (U)
10/6/2016						2.43		
10/10/2016	2.11	1.48	3.46	1.03 (U)				
12/2/2016							0.219 (U)	
12/5/2016								2.2
12/6/2016						0.958 (U)		
12/7/2016		2.61	1.65					
12/8/2016	2.64			1.47 (U)				
1/23/2017					2.17			
2/7/2017					3			
2/14/2017							0.636 (U)	
2/15/2017						1.18		0.74 (U)
2/17/2017	1.34							
2/20/2017		0.884 (U)	2.68	0.547 (U)				
4/14/2017							0.13 (U)	
4/17/2017					2.73			0.764 (U)
4/18/2017						1.26		
4/19/2017		0.948 (U)	3.81					
4/20/2017	2.35			0.0595 (U)				
5/22/2017					3.15			
5/26/2017							0.349 (U)	0.245 (U)
6/1/2017				0.67 (U)				
6/2/2017						1.24 (U)		
6/5/2017	1.6	1.33	2.86		0.86 (U)			
7/10/2017							0.565 (U)	
7/11/2017					1.87			0.502 (U)
7/14/2017						1.55		
7/17/2017		1.04	2.87	1.25 (U)				
7/19/2017	1.76							
8/23/2017					3.39			
3/26/2018					1.61		0.303 (U)	
3/27/2018						2.15		0.745 (U)
3/28/2018				0.507 (U)				
3/29/2018	2.43	1.65	2.79					
6/12/2018							0.494 (U)	0.319 (U)
6/13/2018		0.983 (U)	2.19			1.95		
6/14/2018	2.14			0.721 (U)				
6/15/2018					0.815 (U)			
10/16/2018							0.633 (U)	
10/17/2018								0.319 (U)
10/18/2018						1.1		
10/22/2018	1.43	1.21	2.18	0.741 (U)	1.02 (U)			
2/25/2019							1.03 (U)	

# Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 7/18/2019 3:42 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/28/2019						1.38		
3/1/2019	3.32	2.24	3.37	0.634 (U)	2.47			
4/1/2019							0.474 (U)	0.225 (U)
4/2/2019					2.29	1.57		
4/3/2019	2.48	2.86	3.6					
4/4/2019				0.346 (U)				
Mean	2.123	1.525	2.789	0.73	2.115	1.451	0.4789	0.6776
Std. Dev.	0.5733	0.6891	0.6447	0.4078	0.8943	0.4696	0.2779	0.5328
Upper Lim.	2.549	2.037	3.269	1.033	2.816	1.8	0.6856	0.9916
Lower Lim.	1.697	1.012	2.31	0.4268	1.413	1.102	0.2722	0.318

# USEPA Based Groundwater Protection Standards Statistical Analysis Package

AM 01

# Tolerance Limit

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 1:48 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	20	95	n/a	0.3585	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	26	38.46	n/a	0.2635	NP Inter(normal...
Barium (mg/L)	n/a	0.218	n/a	n/a	n/a	26	0	n/a	0.2635	NP Inter(normal...
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	22	100	n/a	0.3235	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.001	n/a	n/a	n/a	26	96.15	n/a	0.2635	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01	n/a	n/a	n/a	22	68.18	n/a	0.3235	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.005	n/a	n/a	n/a	26	92.31	n/a	0.2635	NP Inter(NDs)
Fluoride (mg/L)	n/a	0.2073	n/a	n/a	n/a	28	28.57	x^(1/3)	0.05	Inter
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	22	86.36	n/a	0.3235	NP Inter(NDs)
Lithium (mg/L)	n/a	0.025	n/a	n/a	n/a	26	96.15	n/a	0.2635	NP Inter(NDs)
Mercury (mg/L)	n/a	0.0002	n/a	n/a	n/a	22	90.91	n/a	0.3235	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	26	65.38	n/a	0.2635	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	22	95.45	n/a	0.3235	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	26	80.77	n/a	0.2635	NP Inter(NDs)
Total Radium (pCi/L)	n/a	1.761	n/a	n/a	n/a	26	0	No	0.05	Inter

**Table D-2**  
**USEPA Based Groundwater Protection Standards**  
**Plant Bowen - Ash Pond 1**  
**Bartow County, Georgia**

Constituent	CAS	Units	EPA MCL	Statistically Derived Upper Tolerance Limit for Background	GWPS <sup>1</sup>
Antimony	7440-36-0	mg/L	0.006	0.003	0.006
Arsenic	7440-38-2	mg/L	0.01	0.005	0.01
Barium	7440-39-3	mg/L	2	0.218	2
Beryllium	7440-41-7	mg/L	0.004	0.003	0.004
Cadmium	7440-43-9	mg/L	0.005	0.001	0.005
Chromium	7440-47-3	mg/L	0.1	0.01	0.1
Cobalt <sup>2</sup>	7440-48-4	mg/L	0.006	0.005	0.006
Fluoride	16984-48-8	mg/L	4	0.2073	4
Lead <sup>3</sup>	7439-92-1	mg/L	0.015	0.005	0.015
Lithium <sup>2</sup>	7439-93-2	mg/L	0.04	0.025	0.04
Mercury	7439-97-6	mg/L	0.002	0.0002	0.002
Molybdenum <sup>2</sup>	7439-98-7	mg/L	0.1	0.01	0.1
Selenium	7782-49-2	mg/L	0.05	0.01	0.05
Thallium	7440-28-0	mg/L	0.002	0.001	0.002
Total Radium	7440-14-4	pCi/L	5	1.761	5

**Notes:**

EPA MCL - U.S. Environmental Protection Agency, Maximum Contaminant Level

GWPS - Groundwater Protection Standards

mg/L - milligram per liter

pCi/L - Picocuries per liter

<sup>1</sup>GWPS selected as the greater value between the EPA MCL and the background Upper Tolerance Limit.

<sup>2</sup>Regional Screening Level applied for constituent per CCR Rule Amendment, July 30, 2018.

<sup>3</sup>Currently, there is no EPA MCL established for lead. The value listed is the established EPA Action Level for drinking water.

# Confidence Interval - Significant Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 2:25 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
<b>Cobalt (mg/L)</b>	<b>BGWC-22</b>	<b>0.01672</b>	<b>0.01111</b>	<b>0.006</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>



# Confidence Interval - All Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 2:25 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	BGWC-10	0.007834	0.00549	0.01	No	13	0	No	0.01	Param.
Arsenic (mg/L)	BGWC-12	0.001051	0.0004674	0.01	No	13	46.15	No	0.01	Param.
Arsenic (mg/L)	BGWC-14	0.00344	0.00133	0.01	No	14	28.57	No	0.01	Param.
Arsenic (mg/L)	BGWC-16	0.0025	0.0007	0.01	No	13	53.85	No	0.01	NP (NDs)
Arsenic (mg/L)	BGWC-17	0.0025	0.0006	0.01	No	13	61.54	No	0.01	NP (NDs)
Arsenic (mg/L)	BGWC-18	0.0025	0.0005	0.01	No	13	61.54	No	0.01	NP (NDs)
Arsenic (mg/L)	BGWC-19	0.0009461	0.0004034	0.01	No	13	38.46	sqrt(x)	0.01	Param.
Arsenic (mg/L)	BGWC-20	0.001734	0.0009353	0.01	No	13	30.77	No	0.01	Param.
Arsenic (mg/L)	BGWC-21	0.001447	0.0006695	0.01	No	12	33.33	No	0.01	Param.
Arsenic (mg/L)	BGWC-22	0.002928	0.001764	0.01	No	13	7.692	No	0.01	Param.
Arsenic (mg/L)	BGWC-23	0.002961	0.001612	0.01	No	13	0	No	0.01	Param.
Arsenic (mg/L)	BGWC-24	0.007462	0.003076	0.01	No	13	0	No	0.01	Param.
Arsenic (mg/L)	BGWC-25	0.002872	0.002082	0.01	No	13	7.692	No	0.01	Param.
Arsenic (mg/L)	BGWC-30	0.002499	0.0008552	0.01	No	13	23.08	No	0.01	Param.
Arsenic (mg/L)	BGWC-7	0.002693	0.001678	0.01	No	13	15.38	No	0.01	Param.
Arsenic (mg/L)	BGWC-8	0.0008728	0.000443	0.01	No	13	38.46	sqrt(x)	0.01	Param.
Arsenic (mg/L)	BGWC-9	0.003183	0.002167	0.01	No	12	8.333	No	0.01	Param.
Barium (mg/L)	BGWC-10	0.06779	0.05083	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-12	0.03289	0.02731	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-14	0.08196	0.06645	2	No	14	0	No	0.01	Param.
Barium (mg/L)	BGWC-16	0.03123	0.02673	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-17	0.01872	0.01525	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-18	0.03678	0.02951	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-19	0.03986	0.03245	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-20	0.03404	0.02935	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-21	0.04957	0.04071	2	No	12	0	No	0.01	Param.
Barium (mg/L)	BGWC-22	0.0938	0.08677	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-23	0.09456	0.08307	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-24	0.1254	0.08209	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-25	0.03046	0.02056	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-30	0.1948	0.1105	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-7	0.04234	0.03674	2	No	13	0	No	0.01	Param.
Barium (mg/L)	BGWC-8	0.03195	0.0245	2	No	13	0	x^2	0.01	Param.
Barium (mg/L)	BGWC-9	0.03368	0.02725	2	No	12	0	No	0.01	Param.
Beryllium (mg/L)	BGWC-10	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-12	0.0015	0.000076	0.004	No	11	90.91	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-14	0.0015	0.0015	0.004	No	12	100	No	0.01	NP (NDs)
Beryllium (mg/L)	BGWC-16	0.0015	0.000063	0.004	No	11	81.82	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-17	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-18	0.0015	0.000052	0.004	No	11	72.73	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-19	0.0015	0.00007	0.004	No	11	81.82	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-20	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-21	0.0015	0.0015	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	BGWC-22	0.0015	0.000067	0.004	No	11	81.82	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-23	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-24	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-25	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-30	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-7	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BGWC-8	0.0015	0.0015	0.004	No	11	100	No	0.006	NP (NDs)

## Confidence Interval - All Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 2:25 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Beryllium (mg/L)	BGWC-9	0.0015	0.0015	0.004	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	BGWC-10	0.0005	0.0005	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-12	0.0005	0.0005	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-14	0.0005	0.0005	0.005	No	14	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-16	0.001366	0.001126	0.005	No	13	0	No	0.01	Param.
Cadmium (mg/L)	BGWC-17	0.0005	0.0001	0.005	No	13	38.46	No	0.01	NP (normality)
Cadmium (mg/L)	BGWC-18	0.0005298	0.0001691	0.005	No	13	23.08	No	0.01	Param.
Cadmium (mg/L)	BGWC-19	0.0005	0.0001	0.005	No	13	84.62	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-20	0.0005	0.00008	0.005	No	13	92.31	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-21	0.0005	0.0005	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-22	0.0005	0.0002	0.005	No	13	84.62	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-23	0.0005	0.00019	0.005	No	13	92.31	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-24	0.005009	0.001917	0.005	No	13	0	No	0.01	Param.
Cadmium (mg/L)	BGWC-25	0.0005	0.0005	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-30	0.0003871	0.0001161	0.005	No	13	23.08	No	0.01	Param.
Cadmium (mg/L)	BGWC-7	0.0005	0.0005	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-8	0.0005	0.0005	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	BGWC-9	0.0005	0.0005	0.005	No	12	100	No	0.01	NP (NDs)
Chromium (mg/L)	BGWC-10	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-12	0.005	0.0003	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-14	0.005	0.0014	0.1	No	12	83.33	No	0.01	NP (NDs)
Chromium (mg/L)	BGWC-16	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-17	0.005	0.00044	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-18	0.005	0.0011	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-19	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-20	0.005	0.00088	0.1	No	11	81.82	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-21	0.005	0.005	0.1	No	10	100	No	0.011	NP (NDs)
Chromium (mg/L)	BGWC-22	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-23	0.005	0.00057	0.1	No	11	72.73	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-24	0.005	0.0009	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-25	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-30	0.001071	0.0005112	0.1	No	11	45.45	ln(x)	0.01	Param.
Chromium (mg/L)	BGWC-7	0.005	0.005	0.1	No	11	100	No	0.006	NP (NDs)
Chromium (mg/L)	BGWC-8	0.005	0.0008	0.1	No	11	36.36	No	0.006	NP (normality)
Chromium (mg/L)	BGWC-9	0.005	0.002	0.1	No	10	90	No	0.011	NP (NDs)
Cobalt (mg/L)	BGWC-10	0.0025	0.00027	0.006	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-12	0.0025	0.00034	0.006	No	13	76.92	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-14	0.0025	0.0003	0.006	No	14	78.57	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-16	0.005566	0.003941	0.006	No	13	7.692	No	0.01	Param.
Cobalt (mg/L)	BGWC-17	0.0025	0.00015	0.006	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-18	0.0025	0.0005	0.006	No	13	61.54	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-19	0.0025	0.000072	0.006	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-20	0.0025	0.0008	0.006	No	13	84.62	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-21	0.0025	0.00041	0.006	No	12	66.67	No	0.01	NP (NDs)
<b>Cobalt (mg/L)</b>	<b>BGWC-22</b>	<b>0.01672</b>	<b>0.01111</b>	<b>0.006</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Cobalt (mg/L)	BGWC-23	0.0025	0.0015	0.006	No	13	84.62	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-24	0.004077	0.002369	0.006	No	13	7.692	No	0.01	Param.
Cobalt (mg/L)	BGWC-25	0.0025	0.0006	0.006	No	13	84.62	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-30	0.0008946	0.0003848	0.006	No	13	30.77	sqrt(x)	0.01	Param.
Cobalt (mg/L)	BGWC-7	0.0025	0.0006	0.006	No	13	30.77	No	0.01	NP (normality)

## Confidence Interval - All Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 2:25 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Cobalt (mg/L)	BGWC-8	0.0025	0.00013	0.006	No	13	76.92	No	0.01	NP (NDs)
Cobalt (mg/L)	BGWC-9	0.0025	0.0003	0.006	No	12	75	No	0.01	NP (NDs)
Fluoride (mg/L)	BGWC-10	0.1765	0.0685	4	No	14	14.29	sqrt(x)	0.01	Param.
Fluoride (mg/L)	BGWC-12	0.1616	0.04315	4	No	14	28.57	No	0.01	Param.
Fluoride (mg/L)	BGWC-14	0.4265	0.1206	4	No	14	14.29	No	0.01	Param.
Fluoride (mg/L)	BGWC-16	0.2735	0.09333	4	No	14	21.43	No	0.01	Param.
Fluoride (mg/L)	BGWC-17	0.321	0.143	4	No	14	7.143	x^(1/3)	0.01	Param.
Fluoride (mg/L)	BGWC-18	0.2229	0.07721	4	No	14	14.29	sqrt(x)	0.01	Param.
Fluoride (mg/L)	BGWC-19	0.1793	0.07155	4	No	14	14.29	ln(x)	0.01	Param.
Fluoride (mg/L)	BGWC-20	0.184	0.02696	4	No	14	21.43	sqrt(x)	0.01	Param.
Fluoride (mg/L)	BGWC-21	0.07791	0.03087	4	No	13	30.77	No	0.01	Param.
Fluoride (mg/L)	BGWC-22	0.4711	0.2503	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	BGWC-23	0.2581	0.07169	4	No	14	14.29	ln(x)	0.01	Param.
Fluoride (mg/L)	BGWC-24	2.171	0.4218	4	No	14	7.143	No	0.01	Param.
Fluoride (mg/L)	BGWC-25	0.1197	0.06028	4	No	14	28.57	No	0.01	Param.
Fluoride (mg/L)	BGWC-30	0.4642	0.1415	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	BGWC-7	0.2108	0.1202	4	No	14	7.143	No	0.01	Param.
Fluoride (mg/L)	BGWC-8	0.15	0.02	4	No	14	42.86	No	0.01	NP (normality)
Fluoride (mg/L)	BGWC-9	0.3652	0.1363	4	No	13	0	No	0.01	Param.
Lead (mg/L)	BGWC-10	0.0025	0.0025	0.015	No	11	100	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-12	0.0025	0.0001	0.015	No	11	54.55	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-14	0.0025	0.00009	0.015	No	12	91.67	No	0.01	NP (NDs)
Lead (mg/L)	BGWC-16	0.0025	0.0001	0.015	No	11	81.82	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-17	0.0025	0.0025	0.015	No	11	100	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-18	0.0025	0.000081	0.015	No	11	36.36	No	0.006	NP (normality)
Lead (mg/L)	BGWC-19	0.0025	0.0006	0.015	No	11	90.91	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-20	0.0025	0.0001	0.015	No	11	90.91	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-21	0.0025	0.000068	0.015	No	10	90	No	0.011	NP (NDs)
Lead (mg/L)	BGWC-22	0.0025	0.00033	0.015	No	11	90.91	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-23	0.0025	0.0025	0.015	No	11	100	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-24	0.0025	0.00007	0.015	No	11	81.82	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-25	0.0025	0.00007	0.015	No	11	54.55	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-30	0.0025	0.00008	0.015	No	11	63.64	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-7	0.0025	0.0025	0.015	No	11	100	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-8	0.0025	0.0003	0.015	No	11	90.91	No	0.006	NP (NDs)
Lead (mg/L)	BGWC-9	0.0025	0.000092	0.015	No	10	50	No	0.011	NP (normality)
Lithium (mg/L)	BGWC-10	0.0125	0.0011	0.04	No	13	38.46	No	0.01	NP (normality)
Lithium (mg/L)	BGWC-12	0.0125	0.0011	0.04	No	13	84.62	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-14	0.0125	0.0125	0.04	No	14	100	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-16	0.0125	0.00049	0.04	No	13	92.31	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-17	0.0125	0.00069	0.04	No	13	92.31	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-18	0.0125	0.0125	0.04	No	13	100	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-19	0.0125	0.0125	0.04	No	13	100	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-20	0.02268	0.01584	0.04	No	13	0	No	0.01	Param.
Lithium (mg/L)	BGWC-21	0.0125	0.0125	0.04	No	12	100	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-22	0.02199	0.01238	0.04	No	13	0	sqrt(x)	0.01	Param.
Lithium (mg/L)	BGWC-23	0.0139	0.009483	0.04	No	13	0	No	0.01	Param.
Lithium (mg/L)	BGWC-24	0.007629	0.005354	0.04	No	13	7.692	ln(x)	0.01	Param.
Lithium (mg/L)	BGWC-25	0.0125	0.0125	0.04	No	13	100	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-30	0.01838	0.01127	0.04	No	13	0	x^3	0.01	Param.

## Confidence Interval - All Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 2:25 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Lithium (mg/L)	BGWC-7	0.0101	0.008149	0.04	No	13	7.692	No	0.01	Param.
Lithium (mg/L)	BGWC-8	0.0125	0.001	0.04	No	13	92.31	No	0.01	NP (NDs)
Lithium (mg/L)	BGWC-9	0.0125	0.0012	0.04	No	12	58.33	No	0.01	NP (NDs)
Mercury (mg/L)	BGWC-10	0.0001	0.000048	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-12	0.0001	0.000058	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-14	0.0001	0.000062	0.002	No	12	91.67	No	0.01	NP (NDs)
Mercury (mg/L)	BGWC-16	0.0001	0.000098	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-17	0.00029	0.0001	0.002	No	11	9.091	No	0.006	NP (normality)
Mercury (mg/L)	BGWC-18	0.0001	0.000079	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-19	0.0001	0.00005	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-20	0.0001	0.000066	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-21	0.0001	0.0001	0.002	No	10	100	No	0.011	NP (NDs)
Mercury (mg/L)	BGWC-22	0.0001	0.000042	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-23	0.0001	0.000044	0.002	No	11	81.82	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-24	0.0003115	0.00004586	0.002	No	11	27.27	ln(x)	0.01	Param.
Mercury (mg/L)	BGWC-25	0.0001	0.000047	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-30	0.00009315	0.0000521	0.002	No	11	27.27	No	0.01	Param.
Mercury (mg/L)	BGWC-7	0.0001	0.000053	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-8	0.0001	0.000097	0.002	No	11	90.91	No	0.006	NP (NDs)
Mercury (mg/L)	BGWC-9	0.0001	0.00008	0.002	No	10	90	No	0.011	NP (NDs)
Molybdenum (mg/L)	BGWC-10	0.0049	0.0032	0.1	No	13	0	No	0.01	NP (normality)
Molybdenum (mg/L)	BGWC-12	0.005	0.005	0.1	No	13	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BGWC-14	0.01097	0.007074	0.1	No	14	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-16	0.005	0.005	0.1	No	13	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BGWC-17	0.005	0.005	0.1	No	13	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BGWC-18	0.005	0.005	0.1	No	13	100	No	0.01	NP (NDs)
Molybdenum (mg/L)	BGWC-19	0.005	0.00023	0.1	No	13	92.31	No	0.01	NP (NDs)
Molybdenum (mg/L)	BGWC-20	0.01433	0.01213	0.1	No	13	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-21	0.002329	0.001438	0.1	No	12	41.67	sqrt(x)	0.01	Param.
Molybdenum (mg/L)	BGWC-22	0.07094	0.05317	0.1	No	13	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-23	0.01321	0.01233	0.1	No	13	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-24	0.004028	0.001602	0.1	No	13	23.08	No	0.01	Param.
Molybdenum (mg/L)	BGWC-25	0.004007	0.001616	0.1	No	13	38.46	No	0.01	Param.
Molybdenum (mg/L)	BGWC-30	0.01886	0.01234	0.1	No	13	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-7	0.0131	0.008225	0.1	No	13	0	No	0.01	Param.
Molybdenum (mg/L)	BGWC-8	0.003806	0.001325	0.1	No	13	23.08	No	0.01	Param.
Molybdenum (mg/L)	BGWC-9	0.003499	0.002701	0.1	No	12	0	No	0.01	Param.
Selenium (mg/L)	BGWC-10	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-12	0.005	0.0004	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-14	0.005	0.0011	0.05	No	12	83.33	No	0.01	NP (NDs)
Selenium (mg/L)	BGWC-16	0.005	0.0006	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-17	0.005	0.0004	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-18	0.005	0.001	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-19	0.005	0.00043	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-20	0.005	0.0037	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-21	0.005	0.00012	0.05	No	10	80	No	0.011	NP (NDs)
Selenium (mg/L)	BGWC-22	0.005	0.0018	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-23	0.005	0.005	0.05	No	11	90.91	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-24	0.007735	0.002032	0.05	No	11	18.18	ln(x)	0.01	Param.
Selenium (mg/L)	BGWC-25	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)

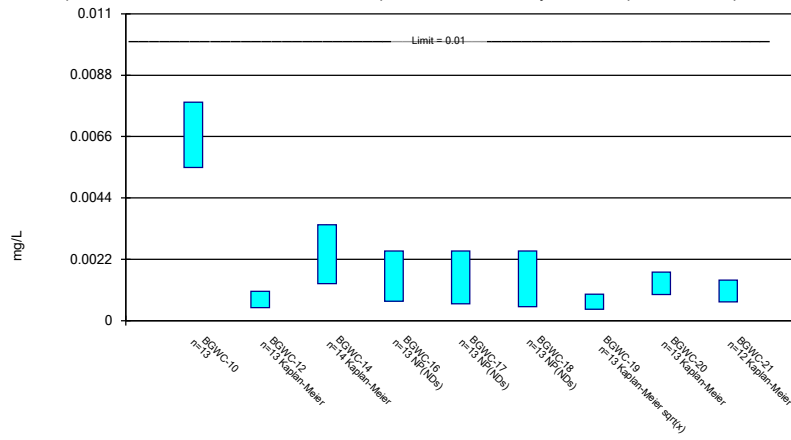
## Confidence Interval - All Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 2:25 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Selenium (mg/L)	BGWC-30	0.01219	0.007972	0.05	No	11	9.091	No	0.01	Param.
Selenium (mg/L)	BGWC-7	0.005	0.005	0.05	No	11	100	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-8	0.005	0.000048	0.05	No	11	81.82	No	0.006	NP (NDs)
Selenium (mg/L)	BGWC-9	0.001437	0.0004511	0.05	No	10	50	sqrt(x)	0.01	Param.
Thallium (mg/L)	BGWC-10	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-12	0.0005	0.00009	0.002	No	13	76.92	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-14	0.0005	0.00017	0.002	No	14	92.86	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-16	0.00023	0.00019	0.002	No	13	0	No	0.01	NP (normality)
Thallium (mg/L)	BGWC-17	0.0005	0.00008	0.002	No	13	53.85	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-18	0.0005	0.00006	0.002	No	13	92.31	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-19	0.0005	0.00008	0.002	No	13	61.54	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-20	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-21	0.0005	0.0005	0.002	No	12	100	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-22	0.0006901	0.0005283	0.002	No	13	0	No	0.01	Param.
Thallium (mg/L)	BGWC-23	0.0005	0.0001	0.002	No	13	92.31	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-24	0.0005277	0.000282	0.002	No	13	15.38	No	0.01	Param.
Thallium (mg/L)	BGWC-25	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-30	0.000747	0.0004469	0.002	No	13	0	No	0.01	Param.
Thallium (mg/L)	BGWC-7	0.0005	0.00007	0.002	No	13	92.31	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-8	0.0005	0.0005	0.002	No	13	100	No	0.01	NP (NDs)
Thallium (mg/L)	BGWC-9	0.0005	0.000065	0.002	No	12	91.67	No	0.01	NP (NDs)
Total Radium (pCi/L)	BGWC-10	1.552	0.8002	5	No	13	0	sqrt(x)	0.01	Param.
Total Radium (pCi/L)	BGWC-12	0.8748	0.2053	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-14	7.375	4.703	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-16	1.277	0.4997	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-17	0.9052	0.3771	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-18	0.9428	0.4489	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-19	1.244	0.4784	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-20	1.611	0.8391	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-21	0.8645	0.4594	5	No	12	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-22	2.549	1.697	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-23	2.037	1.012	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-24	3.269	2.31	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-25	1.033	0.4268	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-30	2.816	1.413	5	No	12	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-7	1.8	1.102	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-8	0.6856	0.2722	5	No	13	0	No	0.01	Param.
Total Radium (pCi/L)	BGWC-9	0.9916	0.318	5	No	12	0	sqrt(x)	0.01	Param.

### Parametric and Non-Parametric (NP) Confidence Interval

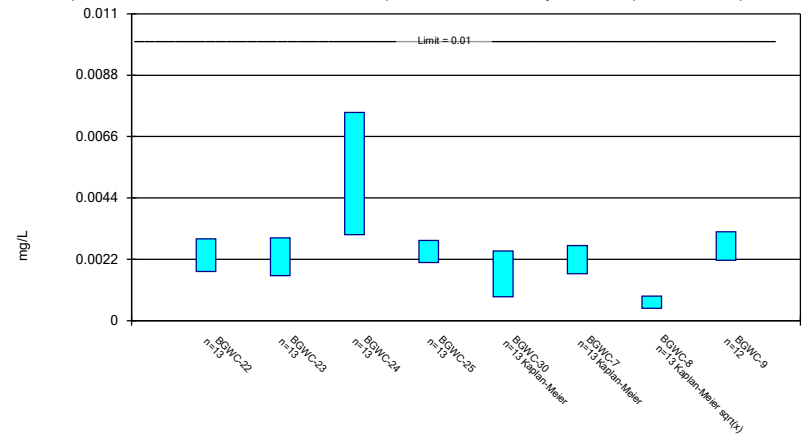
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 7/18/2019 2:22 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

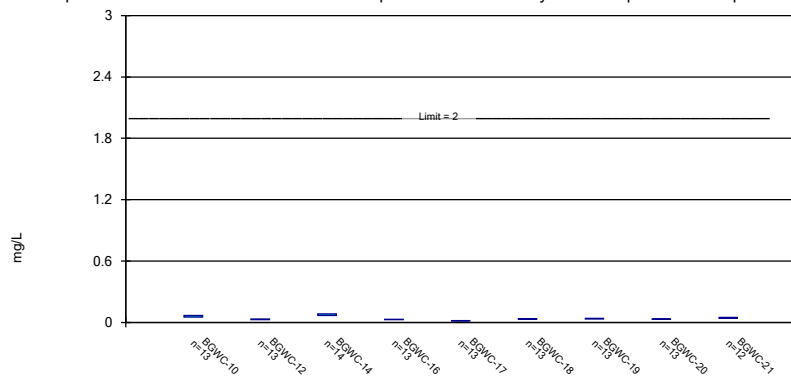
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 7/18/2019 2:22 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

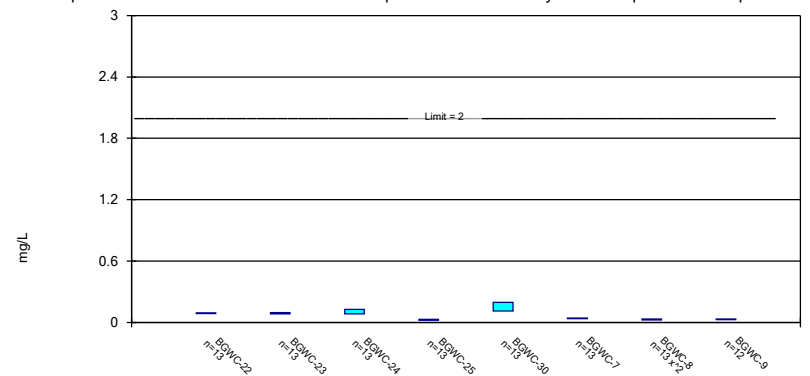
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.0039	<0.005		<0.005	<0.005				
6/8/2016						<0.005	0.00046 (J)	0.0011 (J)	0.0015
6/10/2016			0.0049						
8/11/2016				<0.005	<0.005				
8/12/2016		0.0009 (J)				<0.005	0.0008 (J)	0.0017 (J)	
8/16/2016	0.0091								
8/17/2016			0.0042 (J)						
8/18/2016									<0.005
10/6/2016		<0.005							
10/7/2016	0.0074		<0.005	<0.005	<0.005	<0.005	<0.005		
10/10/2016								<0.005	<0.005
12/5/2016		<0.005							
12/6/2016	0.0044 (J)			<0.005	<0.005	<0.005			
12/7/2016							<0.005	<0.005	
12/8/2016			<0.005						<0.005
2/15/2017		<0.005							
2/16/2017	0.0081			<0.005	<0.005	<0.005	<0.005		
2/17/2017								<0.005	<0.005
2/21/2017			<0.005						
4/18/2017	0.0084	0.0009 (J)		0.0007 (J)					
4/19/2017					0.0012 (J)	0.0013 (J)	0.0015 (J)	0.002 (J)	0.002 (J)
4/21/2017			0.0039 (J)						
5/30/2017				0.0008 (J)	0.0006 (J)				
6/1/2017						0.0005 (J)	0.0008 (J)	0.0017 (J)	0.0011 (J)
6/2/2017	0.008	0.0015 (J)							
6/6/2017			0.001 (J)						
6/15/2017			0.0024 (J)						
7/12/2017	0.0063								
7/13/2017		0.0006 (J)							
7/14/2017				0.0008 (J)	<0.005	<0.005	0.0006 (J)		
7/18/2017								0.0018 (J)	0.0015 (J)
7/19/2017			0.0031 (J)						
3/27/2018	0.0064			0.0014 (J)	0.00076 (J)	0.00066 (J)	0.00082 (J)		
3/28/2018		0.0015 (J)						0.0018 (J)	0.0012 (J)
3/29/2018			0.0017 (J)						
6/12/2018				0.00073 (J)					
6/13/2018								0.0015 (J)	
6/14/2018	0.0075	0.00096 (J)			<0.005	<0.005			0.00087 (J)
6/15/2018			0.00074 (J)				0.00074 (J)		
10/17/2018		<0.005			<0.005				
10/18/2018	0.0056			<0.005		<0.005			
10/19/2018			<0.005				<0.005		0.00059 (J)
10/22/2018								<0.005	
2/25/2019				<0.005					
2/27/2019					0.001 (J)	0.00083 (J)		0.0014 (J)	
2/28/2019	0.0058	<0.005							
3/1/2019							<0.005		
3/6/2019			0.0015 (J)						
4/1/2019		0.00028 (J)							
4/2/2019	0.0057			0.0003 (J)	0.00024 (J)	0.00015 (J)			
4/3/2019							0.00017 (J)	0.00027 (J)	0.00038 (J)
4/4/2019			0.00041 (J)						

# Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 7/18/2019 2:25 PM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.006662	0.001665	0.002418	0.00171	0.001831	0.001803	0.001415	0.00179	0.001595
Std. Dev.	0.001576	0.000864	0.001308	0.000917	0.0009066	0.0009497	0.0009392	0.0006519	0.0007903
Upper Lim.	0.007834	0.001051	0.00344	0.0025	0.0025	0.0025	0.0009461	0.001734	0.001447
Lower Lim.	0.00549	0.0004674	0.00133	0.0007	0.0006	0.0005	0.0004034	0.0009353	0.0006695



# Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.0022
6/7/2016							0.00018 (J)	
6/8/2016	0.0012 (J)			0.0037		0.0024		
6/9/2016		0.0012 (J)	0.0016					
8/10/2016							<0.005	
8/11/2016						0.0024 (J)		0.0028 (J)
8/15/2016				0.003 (J)				
8/18/2016	0.0022 (J)	0.003 (J)	0.0054					
10/4/2016							<0.005	
10/5/2016								0.002 (J)
10/6/2016						<0.005		
10/10/2016	0.002 (J)	0.0021 (J)	0.0079	0.0026 (J)				
12/2/2016							<0.005	
12/5/2016								<0.005
12/6/2016						<0.005		
12/7/2016		0.0023 (J)	0.0121					
12/8/2016	<0.005			<0.005				
1/23/2017					<0.005			
2/7/2017					<0.005			
2/14/2017							<0.005	
2/15/2017						0.003 (J)		0.0033 (J)
2/17/2017	0.0023 (J)							
2/20/2017		0.0025 (J)	0.0063	0.0029 (J)				
3/27/2017					0.0019 (J)			
4/14/2017							0.0007 (J)	
4/17/2017					0.0017 (J)			0.0028 (J)
4/18/2017						0.0029 (J)		
4/19/2017		0.0032 (J)	0.0051					
4/20/2017	0.0028 (J)			0.0024 (J)				
5/22/2017					0.0034 (J)			
5/26/2017							0.0008 (J)	0.0035 (J)
6/1/2017				0.0025 (J)				
6/2/2017						0.0031 (J)		
6/5/2017	0.0035 (J)	0.0043 (J)	0.0072		0.0039 (J)			
7/10/2017							0.0011 (J)	
7/11/2017					0.0016 (J)			0.0033 (J)
7/14/2017						0.0017 (J)		
7/17/2017		0.0017 (J)	0.0031 (J)	0.0021 (J)				
7/19/2017	0.0028 (J)							
8/23/2017					0.001 (J)			
3/26/2018					0.0015 (J)		0.0009 (J)	
3/27/2018						0.0028 (J)		0.0021 (J)
3/28/2018				0.0019 (J)				
3/29/2018	0.0037 (J)	0.0028 (J)	0.0075 (J)					
6/12/2018							0.00065 (J)	0.0015 (J)
6/13/2018		0.0019 (J)	0.0045 (J)			0.0023 (J)		
6/14/2018	0.0027 (J)			0.0022 (J)				
6/15/2018					0.00089 (J)			
10/16/2018							0.00064 (J)	
10/17/2018								0.0035 (J)
10/18/2018						0.0015 (J)		
10/22/2018	0.0016 (J)	0.0015 (J)	0.0027 (J)	0.0026 (J)	0.00064 (J)			

# Confidence Interval

Constituent: Arsenic (mg/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.005	
2/28/2019						0.0011 (J)		
3/1/2019	0.0011 (J)	0.0023 (J)	0.0032 (J)	0.0022 (J)	<0.005			
4/1/2019							0.00041 (J)	0.0026 (J)
4/2/2019					0.00024 (J)	0.0016 (J)		
4/3/2019	0.0021 (J)	0.00093 (J)	0.0019 (J)					
4/4/2019				0.0016 (J)				
Mean	0.002346	0.002287	0.005269	0.002477	0.001867	0.002292	0.001375	0.002675
Std. Dev.	0.0007827	0.0009071	0.002949	0.000531	0.001072	0.0006304	0.0009505	0.0006468
Upper Lim.	0.002928	0.002961	0.007462	0.002872	0.002499	0.002693	0.0008728	0.003183
Lower Lim.	0.001764	0.001612	0.003076	0.002082	0.0008552	0.001678	0.000443	0.002167

# Confidence Interval

Constituent: Barium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.091	0.027		0.027	0.017				
6/8/2016						0.039	0.036	0.036	0.054
6/10/2016			0.08						
8/11/2016				0.0292	0.0152				
8/12/2016		0.026				0.031	0.0412	0.0283	
8/16/2016	0.0667								
8/17/2016			0.0801						
8/18/2016									0.0479
10/6/2016		0.0308							
10/7/2016	0.0631		0.0764	0.0295	0.0225	0.0427	0.0427		
10/10/2016								0.0288	0.0433
12/5/2016		0.0258							
12/6/2016	0.0659			0.0367	0.0171	0.0398			
12/7/2016							0.0338	0.0279	
12/8/2016			0.0723						0.0474
2/15/2017		0.029							
2/16/2017	0.0621			0.0315	0.0187	0.0309	0.0407		
2/17/2017								0.0316	0.0483
2/21/2017			0.0789						
4/18/2017	0.0545	0.0294		0.0272					
4/19/2017					0.0183	0.0325	0.042	0.0367	0.0486
4/21/2017			0.0871						
5/30/2017				0.0316	0.0179				
6/1/2017						0.0331	0.0341	0.0361	0.0468
6/2/2017	0.0555	0.0354							
6/6/2017			0.0789						
6/15/2017			0.0822						
7/12/2017	0.0572								
7/13/2017		0.0329							
7/14/2017				0.029	0.0191	0.0349	0.0405		
7/18/2017								0.0346	0.0494
7/19/2017			0.091						
3/27/2018	0.051			0.027	0.015	0.027	0.029		
3/28/2018		0.034						0.03	0.043
3/29/2018			0.067						
6/12/2018				0.029					
6/13/2018								0.031	
6/14/2018	0.053	0.032			0.016	0.032			0.042
6/15/2018			0.066				0.032		
10/17/2018		0.033			0.015				
10/18/2018	0.053			0.026		0.033			
10/19/2018			0.065				0.037		0.038
10/22/2018								0.03	
2/25/2019				0.028					
2/27/2019					0.014	0.027		0.032	
2/28/2019	0.053	0.033							
3/1/2019							0.028		
3/6/2019			0.065						
4/1/2019		0.023							
4/2/2019	0.045			0.025	0.015	0.028			
4/3/2019							0.033	0.029	0.033
4/4/2019			0.049						

# Confidence Interval

Constituent: Barium (mg/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.05931	0.0301	0.07421	0.02898	0.01698	0.03315	0.03615	0.03169	0.04514
Std. Dev.	0.0114	0.003754	0.01094	0.003025	0.002333	0.004885	0.004978	0.003153	0.005643
Upper Lim.	0.06779	0.03289	0.08196	0.03123	0.01872	0.03678	0.03986	0.03404	0.04957
Lower Lim.	0.05083	0.02731	0.06645	0.02673	0.01525	0.02951	0.03245	0.02935	0.04071

# Confidence Interval

Constituent: Barium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.034
6/7/2016							0.0051	
6/8/2016	0.092			0.038		0.048		
6/9/2016		0.11	0.14					
8/10/2016							0.0264	
8/11/2016						0.0428		0.0305
8/15/2016				0.0321				
8/18/2016	0.0953	0.0893	0.113					
10/4/2016							0.0316	
10/5/2016								0.0289
10/6/2016						0.0404		
10/10/2016	0.0954	0.0839	0.0888	0.0283				
12/2/2016							0.026	
12/5/2016								0.0269
12/6/2016						0.0385		
12/7/2016		0.0912	0.0289					
12/8/2016	0.0991			0.0294				
1/23/2017					0.237			
2/7/2017					0.191			
2/14/2017							0.0299	
2/15/2017						0.039		0.0299
2/17/2017	0.0927							
2/20/2017		0.0813	0.0999	0.0275				
3/27/2017					0.197			
4/14/2017							0.0275	
4/17/2017					0.192			0.0318
4/18/2017						0.0392		
4/19/2017		0.087	0.114					
4/20/2017	0.086			0.0279				
5/22/2017					0.197			
5/26/2017							0.0328	0.0341
6/1/2017				0.0313				
6/2/2017						0.0407		
6/5/2017	0.0875	0.084	0.135		0.201			
7/10/2017							0.0305	
7/11/2017					0.179			0.0355
7/14/2017						0.0394		
7/17/2017		0.0809	0.134	0.0251				
7/19/2017	0.0877							
8/23/2017					0.15			
3/26/2018					0.1		0.029	
3/27/2018						0.039		0.026
3/28/2018				0.018				
3/29/2018	0.088	0.085	0.08					
6/12/2018							0.031	0.024
6/13/2018		0.091	0.1			0.038		
6/14/2018	0.093			0.019				
6/15/2018					0.087			
10/16/2018							0.034	
10/17/2018								0.037
10/18/2018						0.037		
10/22/2018	0.088	0.087	0.1	0.018	0.1			

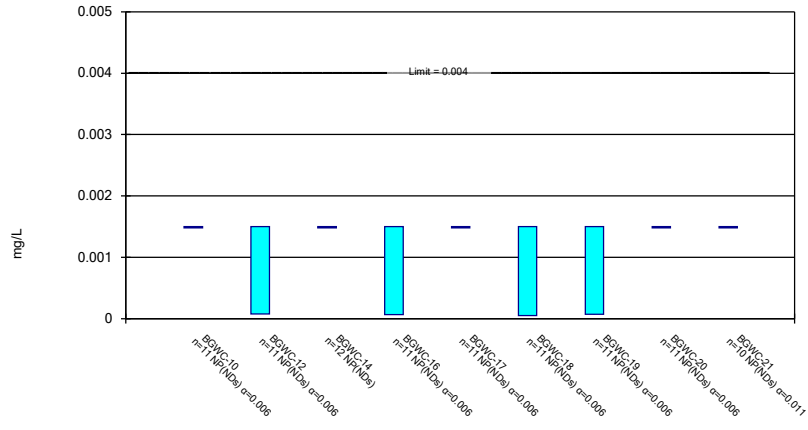
# Confidence Interval

Constituent: Barium (mg/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							0.03	
2/28/2019						0.041		
3/1/2019	0.087	0.097	0.12	0.021	0.078			
4/1/2019							0.025	0.027
4/2/2019					0.075	0.031		
4/3/2019	0.082	0.087	0.095					
4/4/2019				0.016				
Mean	0.09028	0.08882	0.1037	0.02551	0.1526	0.03954	0.0276	0.03047
Std. Dev.	0.004724	0.007732	0.02911	0.006656	0.05669	0.003764	0.007269	0.004098
Upper Lim.	0.0938	0.09456	0.1254	0.03046	0.1948	0.04234	0.03195	0.03368
Lower Lim.	0.08677	0.08307	0.08209	0.02056	0.1105	0.03674	0.0245	0.02725

### Non-Parametric Confidence Interval

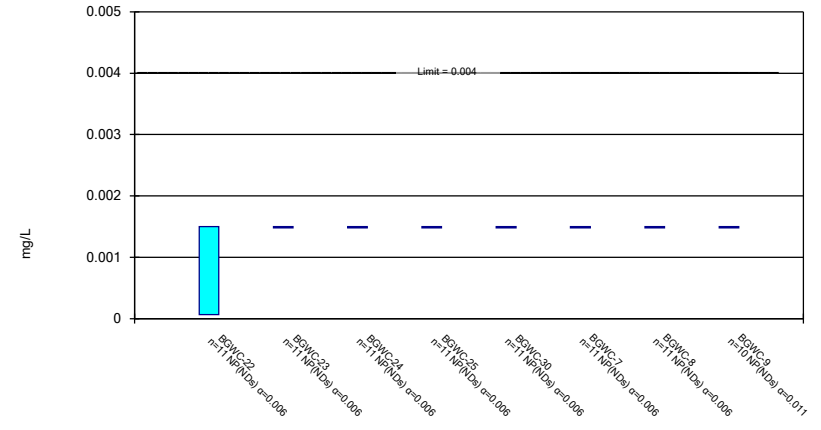
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Beryllium Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Non-Parametric Confidence Interval

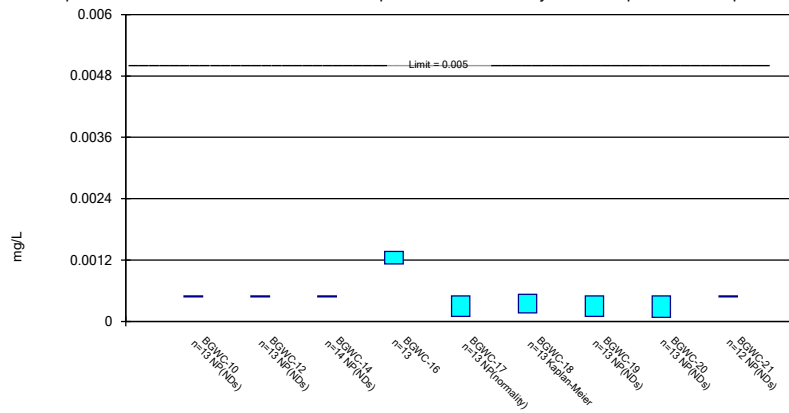
Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

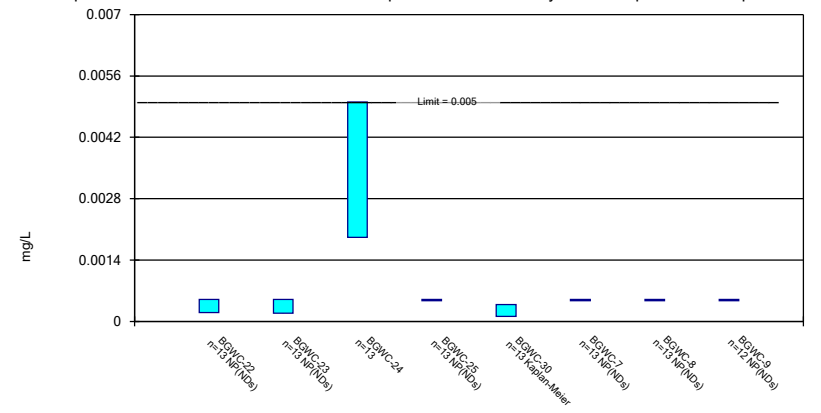
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Beryllium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.003	<0.003		<0.003	<0.003				
6/8/2016						<0.003	<0.003	<0.003	<0.003
6/10/2016			<0.003						
8/11/2016				<0.003	<0.003				
8/12/2016		<0.003				<0.003	<0.003	<0.003	
8/16/2016	<0.003								
8/17/2016			<0.003						
8/18/2016									<0.003
10/6/2016		<0.003							
10/7/2016	<0.003		<0.003	<0.003	<0.003	<0.003	<0.003		
10/10/2016								<0.003	<0.003
12/5/2016		<0.003							
12/6/2016	<0.003			<0.003	<0.003	<0.003			
12/7/2016							<0.003	<0.003	
12/8/2016			<0.003						<0.003
2/15/2017		<0.003							
2/16/2017	<0.003			<0.003	<0.003	<0.003	<0.003		
2/17/2017								<0.003	<0.003
2/21/2017			<0.003						
4/18/2017	<0.003	<0.003		<0.003					
4/19/2017					<0.003	<0.003	8E-05 (J)	<0.003	<0.003
4/21/2017			<0.003						
5/30/2017				<0.003	<0.003				
6/1/2017						9E-05 (J)	7E-05 (J)	<0.003	<0.003
6/2/2017	<0.003	<0.003							
6/6/2017			<0.003						
6/15/2017			<0.003						
7/12/2017	<0.003								
7/13/2017		<0.003							
7/14/2017				<0.003	<0.003	<0.003	<0.003		
7/18/2017								<0.003	<0.003
7/19/2017			<0.003						
3/27/2018	<0.003			<0.003	<0.003	<0.003	<0.003		
3/28/2018		<0.003						<0.003	<0.003
3/29/2018			<0.003						
2/25/2019				8.7E-05 (J)					
2/27/2019					<0.003	0.00011 (J)		<0.003	
2/28/2019	<0.003	7.6E-05 (J)							
3/1/2019							<0.003		
3/6/2019			<0.003						
4/1/2019		<0.003							
4/2/2019	<0.003			6.3E-05 (J)	<0.003	5.2E-05 (J)			
4/3/2019							<0.003	<0.003	<0.003
4/4/2019			<0.003						
Mean	0.0015	0.001371	0.0015	0.001241	0.0015	0.001114	0.001241	0.0015	0.0015
Std. Dev.	0	0.0004294	0	0.0005765	0	0.0006615	0.0005764	0	0
Upper Lim.	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Lower Lim.	0.0015	7.6E-05	0.0015	6.3E-05	0.0015	5.2E-05	7E-05	0.0015	0.0015







# Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.001	<0.001		0.0011 (J)	<0.001				
6/8/2016						0.00063 (J)	<0.001	<0.001	<0.001
6/10/2016			<0.001						
8/11/2016				0.0011	0.0001 (J)				
8/12/2016		<0.001				0.0004 (J)	<0.001	<0.001	
8/16/2016	<0.001								
8/17/2016			<0.001						
8/18/2016									<0.001
10/6/2016		<0.001							
10/7/2016	<0.001		<0.001	0.0012	0.0002 (J)	0.0008 (J)	0.0001 (J)		
10/10/2016								<0.001	<0.001
12/5/2016		<0.001							
12/6/2016	<0.001			0.0012	0.0001 (J)	0.0006 (J)			
12/7/2016							<0.001	<0.001	
12/8/2016			<0.001						<0.001
2/15/2017		<0.001							
2/16/2017	<0.001			0.0015	0.0001 (J)	0.0002 (J)	<0.001		
2/17/2017								8E-05 (J)	<0.001
2/21/2017			<0.001						
4/18/2017	<0.001	<0.001		0.0012					
4/19/2017					0.0001 (J)	9E-05 (J)	<0.001	<0.001	<0.001
4/21/2017			<0.001						
5/30/2017				0.0011	0.0002 (J)				
6/1/2017						0.0003 (J)	0.0001 (J)	<0.001	<0.001
6/2/2017	<0.001	<0.001							
6/6/2017			<0.001						
6/15/2017			<0.001						
7/12/2017	<0.001								
7/13/2017		<0.001							
7/14/2017				0.0012	0.0002 (J)	0.0002 (J)	<0.001		
7/18/2017								<0.001	<0.001
7/19/2017			<0.001						
3/27/2018	<0.001			0.0013	<0.001	<0.001	<0.001		
3/28/2018		<0.001						<0.001	<0.001
3/29/2018			<0.001						
6/12/2018				0.0011					
6/13/2018								<0.001	
6/14/2018	<0.001	<0.001			0.00015 (J)	<0.001			<0.001
6/15/2018			<0.001				<0.001		
10/17/2018		<0.001			<0.001				
10/18/2018	<0.001			0.0012		0.00032 (J)			
10/19/2018			<0.001				<0.001		<0.001
10/22/2018								<0.001	
2/25/2019				0.0016					
2/27/2019					<0.001	<0.001		<0.001	
2/28/2019	<0.001	<0.001							
3/1/2019							<0.001		
3/6/2019			<0.001						
4/1/2019		<0.001							
4/2/2019	<0.001			0.0014	<0.001	7.3E-05 (J)			
4/3/2019							<0.001	<0.001	<0.001
4/4/2019			<0.001						

# Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.0005	0.0005	0.0005	0.001246	0.0002808	0.0003933	0.0004385	0.0004677	0.0005
Std. Dev.	0	0	0	0.0001613	0.0001843	0.0002202	0.0001502	0.0001165	0
Upper Lim.	0.0005	0.0005	0.0005	0.001366	0.0005	0.0005298	0.0005	0.0005	0.0005
Lower Lim.	0.0005	0.0005	0.0005	0.001126	0.0001	0.0001691	0.0001	8E-05	0.0005

# Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.001
6/7/2016							<0.001	
6/8/2016	<0.001			<0.001		<0.001		
6/9/2016		<0.001	0.00052 (J)					
8/10/2016							<0.001	
8/11/2016						<0.001		<0.001
8/15/2016				<0.001				
8/18/2016	<0.001	<0.001	0.0009 (J)					
10/4/2016							<0.001	
10/5/2016								<0.001
10/6/2016						<0.001		
10/10/2016	<0.001	<0.001	0.0017	<0.001				
12/2/2016							<0.001	
12/5/2016								<0.001
12/6/2016						<0.001		
12/7/2016		<0.001	0.0004 (J)					
12/8/2016	0.0002 (J)			<0.001				
1/23/2017					0.0003 (J)			
2/7/2017					0.0006 (J)			
2/14/2017							<0.001	
2/15/2017						<0.001		<0.001
2/17/2017	<0.001							
2/20/2017		<0.001	0.0028	<0.001				
3/27/2017					0.0003 (J)			
4/14/2017							<0.001	
4/17/2017					0.0002 (J)			<0.001
4/18/2017						<0.001		
4/19/2017		<0.001	0.0035					
4/20/2017	<0.001			<0.001				
5/22/2017					0.0003 (J)			
5/26/2017							<0.001	<0.001
6/1/2017				<0.001				
6/2/2017						<0.001		
6/5/2017	<0.001	<0.001	0.0035		0.0003 (J)			
7/10/2017							<0.001	
7/11/2017					0.0005 (J)			<0.001
7/14/2017						<0.001		
7/17/2017		<0.001	0.0037	<0.001				
7/19/2017	<0.001							
8/23/2017					0.0004 (J)			
3/26/2018					<0.001		<0.001	
3/27/2018						<0.001		<0.001
3/28/2018				<0.001				
3/29/2018	<0.001	<0.001	0.0063					
6/12/2018							<0.001	<0.001
6/13/2018		<0.001	0.0053			<0.001		
6/14/2018	<0.001			<0.001				
6/15/2018					0.0002 (J)			
10/16/2018							<0.001	
10/17/2018								<0.001
10/18/2018						<0.001		
10/22/2018	<0.001	<0.001	0.0053	<0.001	<0.001			

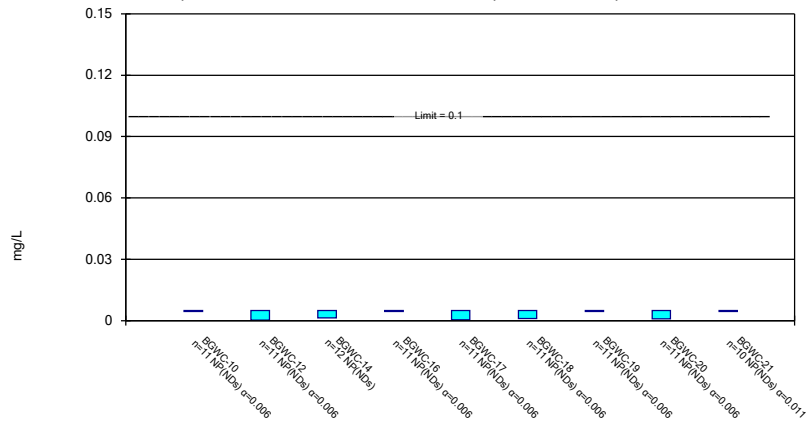
# Confidence Interval

Constituent: Cadmium (mg/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.001	
2/28/2019						<0.001		
3/1/2019	0.00013 (J)	0.00019 (J)	0.0058	<0.001	<0.001			
4/1/2019							<0.001	<0.001
4/2/2019					7.9E-05 (J)	<0.001		
4/3/2019	<0.001	<0.001	0.0053					
4/4/2019				<0.001				
Mean	0.0004485	0.0004762	0.003463	0.0005	0.0003599	0.0005	0.0005	0.0005
Std. Dev.	0.0001266	8.598E-05	0.002079	0	0.0001533	0	0	0
Upper Lim.	0.0005	0.0005	0.005009	0.0005	0.0003871	0.0005	0.0005	0.0005
Lower Lim.	0.0002	0.00019	0.001917	0.0005	0.0001161	0.0005	0.0005	0.0005

### Non-Parametric Confidence Interval

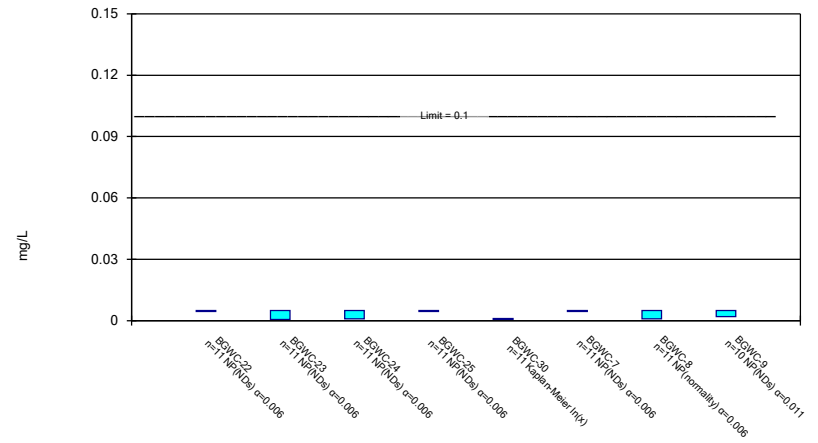
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Chromium Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

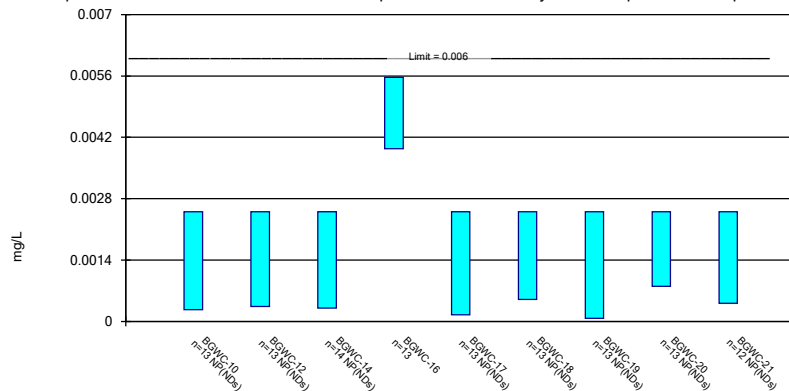
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Chromium Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

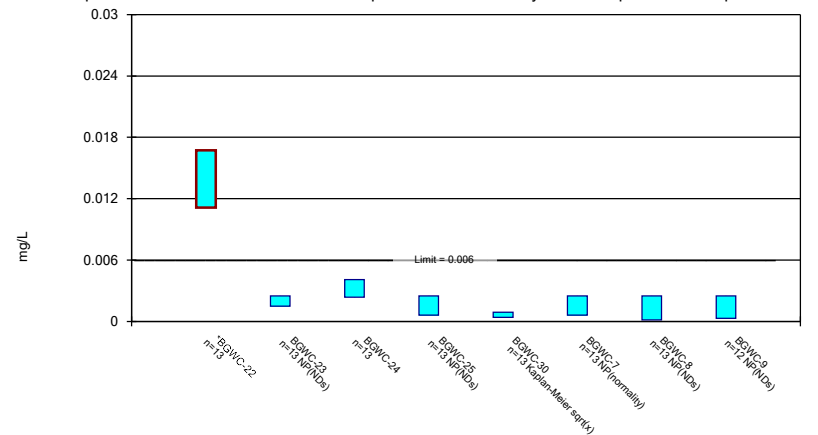
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.01	<0.01		<0.01	<0.01				
6/8/2016						<0.01	<0.01	<0.01	<0.01
6/10/2016			<0.01						
8/11/2016				<0.01	<0.01				
8/12/2016		<0.01				<0.01	<0.01	<0.01	
8/16/2016	<0.01								
8/17/2016			<0.01						
8/18/2016									<0.01
10/6/2016		<0.01							
10/7/2016	<0.01		0.0014 (J)	<0.01	<0.01	0.0011 (J)	<0.01		
10/10/2016								<0.01	<0.01
12/5/2016		<0.01							
12/6/2016	<0.01			<0.01	<0.01	<0.01			
12/7/2016							<0.01	<0.01	
12/8/2016			<0.01						<0.01
2/15/2017		<0.01							
2/16/2017	<0.01			<0.01	<0.01	<0.01	<0.01		
2/17/2017								<0.01	<0.01
2/21/2017			<0.01						
4/18/2017	<0.01	<0.01		<0.01					
4/19/2017					<0.01	<0.01	<0.01	<0.01	<0.01
4/21/2017			<0.01						
5/30/2017				<0.01	<0.01				
6/1/2017						<0.01	<0.01	<0.01	<0.01
6/2/2017	<0.01	0.0003 (J)							
6/6/2017			<0.01						
6/15/2017			<0.01						
7/12/2017	<0.01								
7/13/2017		<0.01							
7/14/2017				<0.01	<0.01	<0.01	<0.01		
7/18/2017								<0.01	<0.01
7/19/2017			<0.01						
3/27/2018	<0.01			<0.01	<0.01	<0.01	<0.01		
3/28/2018		<0.01						<0.01	<0.01
3/29/2018			<0.01						
2/25/2019				<0.01					
2/27/2019					<0.01	<0.01		0.0048 (J)	
2/28/2019	<0.01	<0.01							
3/1/2019							<0.01		
3/6/2019			<0.01						
4/1/2019		<0.01							
4/2/2019	<0.01			<0.01	0.00044 (J)	<0.01			
4/3/2019							<0.01	0.00088 (J)	<0.01
4/4/2019			0.00057 (J)						
Mean	0.005	0.004573	0.004331	0.005	0.004585	0.004645	0.005	0.004607	0.005
Std. Dev.	0	0.001417	0.001573	0	0.001375	0.001176	0	0.001238	0
Upper Lim.	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.005	0.0003	0.0014	0.005	0.00044	0.0011	0.005	0.00088	0.005



# Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.01
6/7/2016							<0.01	
6/8/2016	<0.01			<0.01		<0.01		
6/9/2016		<0.01	<0.01					
8/10/2016							0.0052 (J)	
8/11/2016						<0.01		<0.01
8/15/2016				<0.01				
8/18/2016	<0.01	<0.01	<0.01					
10/4/2016							0.0015 (J)	
10/5/2016								0.002 (J)
10/6/2016						<0.01		
10/10/2016	<0.01	<0.01	0.0009 (J)	<0.01				
12/2/2016							0.0013 (J)	
12/5/2016								<0.01
12/6/2016						<0.01		
12/7/2016		0.002 (J)	<0.01					
12/8/2016	<0.01			<0.01				
1/23/2017					0.001 (J)			
2/7/2017					<0.01			
2/14/2017							<0.01	
2/15/2017						<0.01		<0.01
2/17/2017	<0.01							
2/20/2017		<0.01	<0.01	<0.01				
3/27/2017					<0.01			
4/14/2017							0.0011 (J)	
4/17/2017					<0.01			<0.01
4/18/2017						<0.01		
4/19/2017		<0.01	<0.01					
4/20/2017	<0.01			<0.01				
5/22/2017					0.0004 (J)			
5/26/2017							0.0008 (J)	<0.01
6/1/2017				<0.01				
6/2/2017						<0.01		
6/5/2017	<0.01	<0.01	<0.01		0.0004 (J)			
7/10/2017							0.0009 (J)	
7/11/2017					0.0012 (J)			<0.01
7/14/2017						<0.01		
7/17/2017		<0.01	<0.01	<0.01				
7/19/2017	<0.01							
8/23/2017					0.0009 (J)			
3/26/2018					<0.01		<0.01	
3/27/2018						<0.01		<0.01
3/28/2018				<0.01				
3/29/2018	<0.01	<0.01	<0.01					
2/25/2019							<0.01	
2/28/2019						<0.01		
3/1/2019	<0.01	0.0033 (J)	<0.01	<0.01	<0.01			
4/1/2019							0.00091 (J)	<0.01
4/2/2019					0.00095 (J)	<0.01		
4/3/2019	<0.01	0.00057 (J)	<0.01					
4/4/2019				<0.01				
Mean	0.005	0.00417	0.004627	0.005	0.002714	0.005	0.002883	0.0047

# Confidence Interval

Constituent: Chromium (mg/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
Std. Dev.	0	0.001547	0.001236	0	0.002202	0	0.002075	0.0009487
Upper Lim.	0.005	0.005	0.005	0.005	0.001071	0.005	0.005	0.005
Lower Lim.	0.005	0.00057	0.0009	0.005	0.0005112	0.005	0.0008	0.002

# Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.005	<0.005		0.0037	<0.005				
6/8/2016						0.00071 (J)	<0.005	<0.005	0.00041 (J)
6/10/2016			<0.005						
8/11/2016				0.0039 (J)	<0.005				
8/12/2016		<0.005				0.0006 (J)	<0.005	<0.005	
8/16/2016	<0.005								
8/17/2016			<0.005						
8/18/2016									<0.005
10/6/2016		<0.005							
10/7/2016	<0.005		<0.005	0.0043 (J)	<0.005	0.0005 (J)	<0.005		
10/10/2016								<0.005	<0.005
12/5/2016		0.0006 (J)							
12/6/2016	<0.005			0.005 (J)	<0.005	0.0009 (J)			
12/7/2016							<0.005	0.0008 (J)	
12/8/2016			<0.005						0.0006 (J)
2/15/2017		<0.005							
2/16/2017	<0.005			0.0054 (J)	<0.005	<0.005	<0.005		
2/17/2017								<0.005	<0.005
2/21/2017			<0.005						
4/18/2017	<0.005	<0.005		0.0054 (J)					
4/19/2017					<0.005	<0.005	<0.005	<0.005	<0.005
4/21/2017			<0.005						
5/30/2017				0.0045 (J)	<0.005				
6/1/2017						<0.005	<0.005	<0.005	<0.005
6/2/2017	<0.005	<0.005							
6/6/2017			<0.005						
6/15/2017			0.0003 (J)						
7/12/2017	<0.005								
7/13/2017		0.0003 (J)							
7/14/2017				0.0049 (J)	<0.005	<0.005	<0.005		
7/18/2017								<0.005	0.0004 (J)
7/19/2017			0.0003 (J)						
3/27/2018	<0.005			<0.005	<0.005	<0.005	<0.005		
3/28/2018		<0.005						<0.005	<0.005
3/29/2018			<0.005						
6/12/2018				0.0048 (J)					
6/13/2018								<0.005	
6/14/2018	<0.005	<0.005			<0.005	<0.005			<0.005
6/15/2018			<0.005				<0.005		
10/17/2018		<0.005			<0.005				
10/18/2018	<0.005			0.0047 (J)		<0.005			
10/19/2018			<0.005				<0.005		<0.005
10/22/2018								<0.005	
2/25/2019				0.0071 (J)					
2/27/2019					<0.005	<0.005		<0.005	
2/28/2019	<0.005	<0.005							
3/1/2019							<0.005		
3/6/2019			<0.005						
4/1/2019		0.00034 (J)							
4/2/2019	0.00027 (J)			0.0056 (J)	0.00015 (J)	0.00012 (J)			
4/3/2019							7.2E-05 (J)	0.00024 (J)	0.00064 (J)
4/4/2019			0.00015 (J)						

# Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.002328	0.002018	0.002018	0.004754	0.002319	0.001756	0.002313	0.002195	0.001837
Std. Dev.	0.0006185	0.0009175	0.0009587	0.001093	0.0006518	0.0009935	0.0006734	0.0007523	0.0009808
Upper Lim.	0.0025	0.0025	0.0025	0.005566	0.0025	0.0025	0.0025	0.0025	0.0025
Lower Lim.	0.00027	0.00034	0.0003	0.003941	0.00015	0.0005	7.2E-05	0.0008	0.00041

# Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.005
6/7/2016							0.00013 (J)	
6/8/2016	0.0079			<0.005		0.00081 (J)		
6/9/2016		<0.005	0.0026					
8/10/2016							0.0003 (J)	
8/11/2016						0.0007 (J)		0.0003 (J)
8/15/2016				<0.005				
8/18/2016	0.0109	<0.005	0.0021 (J)					
10/4/2016							<0.005	
10/5/2016								<0.005
10/6/2016						<0.005		
10/10/2016	0.011	<0.005	0.0018 (J)	<0.005				
12/2/2016							<0.005	
12/5/2016								0.0006 (J)
12/6/2016						0.0009 (J)		
12/7/2016		0.0015 (J)	0.0018 (J)					
12/8/2016	0.013			0.0006 (J)				
1/23/2017					0.0012 (J)			
2/7/2017					0.0008 (J)			
2/14/2017							<0.005	
2/15/2017						<0.005		<0.005
2/17/2017	0.0122							
2/20/2017		<0.005	0.0027 (J)	<0.005				
3/27/2017					0.001 (J)			
4/14/2017							<0.005	
4/17/2017					0.0009 (J)			<0.005
4/18/2017						0.0005 (J)		
4/19/2017		<0.005	0.0032 (J)					
4/20/2017	0.0116			<0.005				
5/22/2017					0.0008 (J)			
5/26/2017							<0.005	<0.005
6/1/2017				<0.005				
6/2/2017						0.0006 (J)		
6/5/2017	0.0112	<0.005	0.0034 (J)		0.0008 (J)			
7/10/2017							<0.005	
7/11/2017					0.0008 (J)			<0.005
7/14/2017						0.0006 (J)		
7/17/2017		<0.005	0.0033 (J)	<0.005				
7/19/2017	0.0131							
8/23/2017					0.0006 (J)			
3/26/2018					<0.005		<0.005	
3/27/2018						<0.005		<0.005
3/28/2018				<0.005				
3/29/2018	0.016	<0.005	<0.005					
6/12/2018							<0.005	<0.005
6/13/2018		<0.005	0.0039 (J)			0.00068 (J)		
6/14/2018	0.017			<0.005				
6/15/2018					<0.005			
10/16/2018							<0.005	
10/17/2018								<0.005
10/18/2018						<0.005		
10/22/2018	0.021	<0.005	0.0043 (J)	<0.005	<0.005			

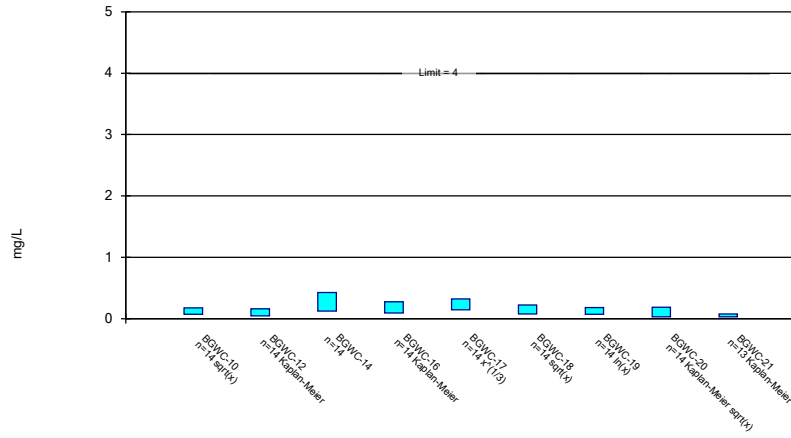
# Confidence Interval

Constituent: Cobalt (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.005	
2/28/2019						0.00067 (J)		
3/1/2019	0.017	<0.005	0.0055 (J)	<0.005	<0.005			
4/1/2019							5.6E-05 (J)	0.00024 (J)
4/2/2019					0.00022 (J)	0.00094 (J)		
4/3/2019	0.019	0.00058 (J)	0.0048 (J)					
4/4/2019				0.00022 (J)				
Mean	0.01392	0.002275	0.003223	0.002178	0.001317	0.001262	0.00196	0.00197
Std. Dev.	0.003768	0.0005795	0.001148	0.0007887	0.0008501	0.0008676	0.001027	0.0009623
Upper Lim.	0.01672	0.0025	0.004077	0.0025	0.0008946	0.0025	0.0025	0.0025
Lower Lim.	0.01111	0.0015	0.002369	0.0006	0.0003848	0.0006	0.00013	0.0003

### Parametric Confidence Interval

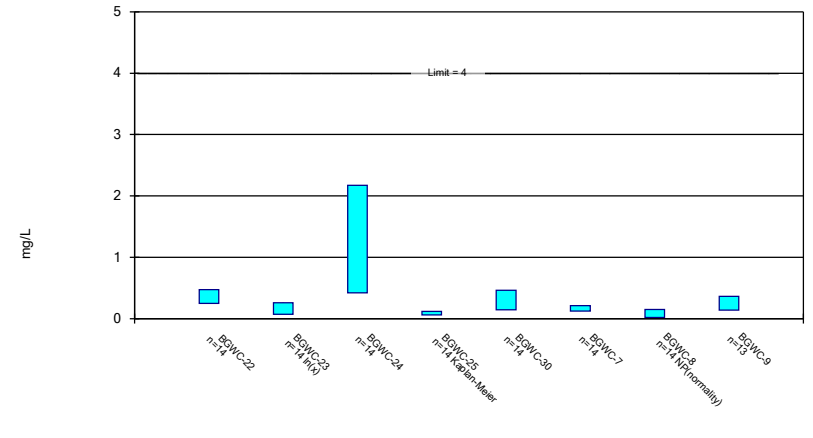
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

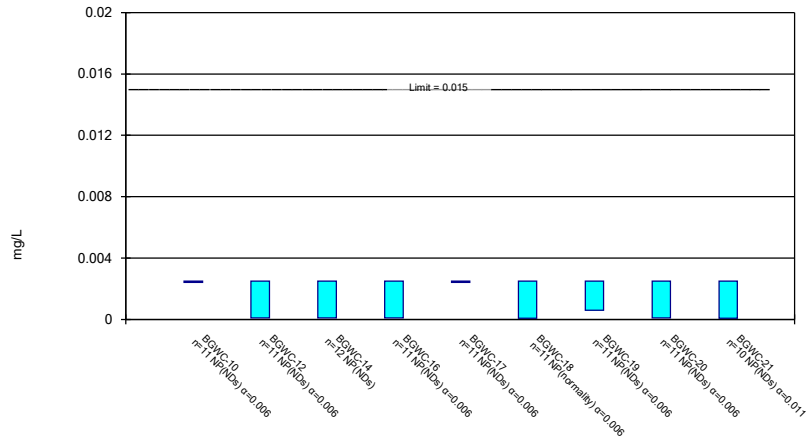
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Non-Parametric Confidence Interval

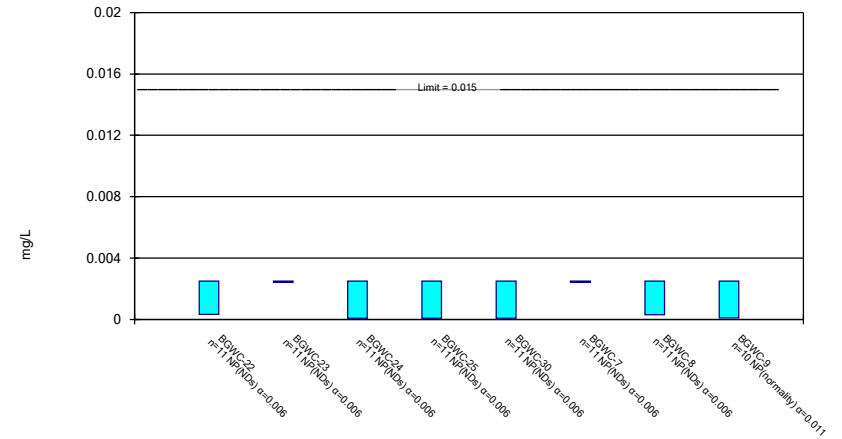
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Lead Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.09 (J)	<0.3		<0.3	0.15 (J)				
6/8/2016						0.1 (J)	<0.3	0.09 (J)	<0.3
6/10/2016			0.23						
8/11/2016				0.12 (J)	0.3 (J)				
8/12/2016		0.08 (J)				0.39	0.2 (J)	0.04 (J)	
8/16/2016	0.09 (J)								
8/17/2016			0.12 (J)						
8/18/2016									0.09 (J)
10/6/2016		0.06 (J)							
10/7/2016	0.17 (J)		0.13 (J)	0.08 (J)	0.14 (J)	0.16 (J)	0.07 (J)		
10/10/2016								0.06 (J)	0.04 (J)
12/5/2016		0.12 (J)							
12/6/2016	0.16 (J)			0.24 (J)	0.19 (J)	0.32			
12/7/2016							0.09 (J)	0.07 (J)	
12/8/2016			0.31						0.08 (J)
2/15/2017		0.33							
2/16/2017	0.38			0.31	0.51	0.38	0.6		
2/17/2017								0.06 (J)	0.08 (J)
2/21/2017			0.35						
4/18/2017	0.12 (J)	0.006 (J)		0.02 (J)					
4/19/2017					0.18 (J)	0.08 (J)	0.09 (J)	0.005 (J)	0.04 (J)
4/21/2017			0.04 (J)						
5/30/2017				0.51	0.15 (J)				
6/1/2017						0.09 (J)	0.05 (J)	0.65	0.03 (J)
6/2/2017	0.03 (J)	0.04 (J)							
6/6/2017			0.36						
7/12/2017	0.15 (J)								
7/13/2017		0.17 (J)							
7/14/2017				0.14 (J)	0.16 (J)	0.06 (J)	0.08 (J)		
7/18/2017								0.36	0.08 (J)
7/19/2017			0.18 (J)						
10/10/2017		0.08 (J)							
10/11/2017	0.07 (J)			0.29 (J)	0.64	0.14 (J)	0.11 (J)	<0.3	
10/12/2017			0.08 (J)						0.12 (J)
3/27/2018	<0.3			<0.3	0.33	<0.3	<0.3		
3/28/2018		<0.3						<0.3	<0.3
3/29/2018			<0.3						
6/12/2018				0.061 (J)					
6/13/2018								0.038 (J)	
6/14/2018	0.046 (J)	<0.3			0.11 (J)	0.095 (J)			<0.3
6/15/2018			0.41				0.07 (J)		
10/17/2018		<0.3			<0.3				
10/18/2018	<0.3			<0.3		0.054 (J)			
10/19/2018			<0.3				0.17 (J)		<0.3
10/22/2018								<0.3	
2/25/2019				0.13 (J)					
2/27/2019					0.26 (J)	<0.3		0.13 (J)	
2/28/2019	0.14 (J)	0.18 (J)							
3/1/2019							0.14 (J)		
3/6/2019			0.88						
4/1/2019		0.065 (J)							
4/2/2019	0.044 (J)			0.23 (J)	0.14 (J)	0.044 (J)			



# Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 7/18/2019 2:25 PM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
4/3/2019							0.051 (J)	0.072 (J)	0.032 (J)
4/4/2019			0.44						
Mean	0.1279	0.1236	0.2736	0.1844	0.2436	0.1581	0.1444	0.1446	0.09169
Std. Dev.	0.08664	0.07982	0.2159	0.1252	0.1565	0.1181	0.1391	0.1692	0.04789
Upper Lim.	0.1765	0.1616	0.4265	0.2735	0.321	0.2229	0.1793	0.184	0.07791
Lower Lim.	0.0685	0.04315	0.1206	0.09333	0.143	0.07721	0.07155	0.02696	0.03087

# Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.12 (J)
6/7/2016							<0.3	
6/8/2016	0.43			0.14 (J)		0.19 (J)		
6/9/2016		0.12 (J)	<0.3					
8/10/2016							0.07 (J)	
8/11/2016						0.15 (J)		0.27 (J)
8/15/2016				0.08 (J)				
8/18/2016	0.3 (J)	0.08 (J)	0.24 (J)					
10/4/2016							0.07 (J)	
10/5/2016								0.12 (J)
10/6/2016						0.17 (J)		
10/10/2016	0.32	0.09 (J)	0.3	0.1 (J)				
12/2/2016							0.09 (J)	
12/5/2016								0.26 (J)
12/6/2016						0.22 (J)		
12/7/2016		0.08 (J)	0.05 (J)					
12/8/2016	0.26 (J)			0.06 (J)				
1/23/2017					0.06 (J)			
2/7/2017					0.09 (J)			
2/14/2017							0.02 (J)	
2/15/2017						0.18 (J)		0.46
2/17/2017	0.39							
2/20/2017		0.09 (J)	0.65	0.16 (J)				
3/27/2017					0.09 (J)			
4/14/2017							0.02 (J)	
4/17/2017					0.36			0.14 (J)
4/18/2017						0.11 (J)		
4/19/2017		0.03 (J)	0.21 (J)					
4/20/2017	0.34			0.02 (J)				
5/22/2017					0.05 (J)			
5/26/2017							0.02 (J)	0.13 (J)
6/1/2017				0.04 (J)				
6/2/2017						0.07 (J)		
6/5/2017	0.29 (J)	<0.3	0.05 (J)		0.32			
7/10/2017							0.03 (J)	
7/11/2017					0.13 (J)			0.2 (J)
7/14/2017						0.23 (J)		
7/17/2017		0.09 (J)	2.5	0.07 (J)				
7/19/2017	0.33							
8/23/2017					0.17 (J)			
10/10/2017					0.35		<0.3	0.61
10/11/2017		0.09 (J)	1.8	0.11 (J)		0.1 (J)		
10/12/2017	0.31							
3/26/2018					0.75		<0.3	
3/27/2018						<0.3		0.36
3/28/2018				<0.3				
3/29/2018	0.58	<0.3	2					
6/12/2018							0.061 (J)	0.13 (J)
6/13/2018		0.71	3.1			0.25 (J)		
6/14/2018	0.15 (J)			<0.3				
6/15/2018					0.51			
10/16/2018							<0.3	

# Confidence Interval

Constituent: Fluoride (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
10/17/2018								0.13 (J)
10/18/2018						0.047 (J)		
10/22/2018	0.78	0.81	3.1	<0.3	0.44			
2/25/2019							<0.3	
2/28/2019						0.23 (J)		
3/1/2019	0.34	0.38	1	0.12 (J)	0.24 (J)			
4/1/2019							<0.3	0.33
4/2/2019					0.68	0.22 (J)		
4/3/2019	0.23 (J)	0.1 (J)	3					
4/4/2019				<0.3				
Mean	0.3607	0.2121	1.296	0.1071	0.3029	0.1655	0.0915	0.2508
Std. Dev.	0.1559	0.2465	1.235	0.04631	0.2278	0.064	0.05651	0.1539
Upper Lim.	0.4711	0.2581	2.171	0.1197	0.4642	0.2108	0.15	0.3652
Lower Lim.	0.2503	0.07169	0.4218	0.06028	0.1415	0.1202	0.02	0.1363

# Confidence Interval

Constituent: Lead (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.005	<0.005		<0.005	<0.005				
6/8/2016						<0.005	<0.005	<0.005	<0.005
6/10/2016			<0.005						
8/11/2016				<0.005	<0.005				
8/12/2016		0.0001 (J)				0.0001 (J)	<0.005	<0.005	
8/16/2016	<0.005								
8/17/2016			<0.005						
8/18/2016									<0.005
10/6/2016		0.0002 (J)							
10/7/2016	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005		
10/10/2016								<0.005	<0.005
12/5/2016		0.0003 (J)							
12/6/2016	<0.005			<0.005	<0.005	0.0001 (J)			
12/7/2016							<0.005	<0.005	
12/8/2016			<0.005						<0.005
2/15/2017		<0.005							
2/16/2017	<0.005			<0.005	<0.005	0.0002 (J)	<0.005		
2/17/2017								<0.005	<0.005
2/21/2017			<0.005						
4/18/2017	<0.005	<0.005		<0.005					
4/19/2017					<0.005	0.0001 (J)	0.0006 (J)	<0.005	<0.005
4/21/2017			<0.005						
5/30/2017				0.0001 (J)	<0.005				
6/1/2017						9E-05 (J)	<0.005	0.0001 (J)	<0.005
6/2/2017	<0.005	0.0001 (J)							
6/6/2017			<0.005						
6/15/2017			9E-05 (J)						
7/12/2017	<0.005								
7/13/2017		0.0001 (J)							
7/14/2017				0.0002 (J)	<0.005	0.0001 (J)	<0.005		
7/18/2017								<0.005	<0.005
7/19/2017			<0.005						
3/27/2018	<0.005			<0.005	<0.005	<0.005	<0.005		
3/28/2018		<0.005						<0.005	<0.005
3/29/2018			<0.005						
2/25/2019				<0.005					
2/27/2019					<0.005	<0.005		<0.005	
2/28/2019	<0.005	<0.005							
3/1/2019							<0.005		
3/6/2019			<0.005						
4/1/2019		<0.005							
4/2/2019	<0.005			<0.005	<0.005	8.1E-05 (J)			
4/3/2019							<0.005	<0.005	6.8E-05 (J)
4/4/2019			<0.005						
Mean	0.0025	0.001436	0.002299	0.002073	0.0025	0.0009792	0.002327	0.002282	0.002257
Std. Dev.	0	0.001223	0.0006957	0.0009509	0	0.001206	0.0005729	0.0007236	0.0007691
Upper Lim.	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
Lower Lim.	0.0025	0.0001	9E-05	0.0001	0.0025	8.1E-05	0.0006	0.0001	6.8E-05

# Confidence Interval

Constituent: Lead (mg/L) Analysis Run 7/18/2019 2:25 PM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.005
6/7/2016							<0.005	
6/8/2016	<0.005			<0.005		<0.005		
6/9/2016		<0.005	0.00059 (J)					
8/10/2016							<0.005	
8/11/2016						<0.005		<0.005
8/15/2016				0.0005 (J)				
8/18/2016	<0.005	<0.005	<0.005					
10/4/2016							<0.005	
10/5/2016								0.0005 (J)
10/6/2016						<0.005		
10/10/2016	<0.005	<0.005	<0.005	<0.005				
12/2/2016							<0.005	
12/5/2016								0.0002 (J)
12/6/2016						<0.005		
12/7/2016		<0.005	<0.005					
12/8/2016	<0.005			0.0006 (J)				
1/23/2017					0.0003 (J)			
2/7/2017					0.0002 (J)			
2/14/2017							<0.005	
2/15/2017						<0.005		<0.005
2/17/2017	<0.005							
2/20/2017		<0.005	<0.005	0.0004 (J)				
3/27/2017					8E-05 (J)			
4/14/2017							<0.005	
4/17/2017					<0.005			0.0001 (J)
4/18/2017						<0.005		
4/19/2017		<0.005	<0.005					
4/20/2017	<0.005			0.0002 (J)				
5/22/2017					<0.005			
5/26/2017							0.0003 (J)	0.0001 (J)
6/1/2017				7E-05 (J)				
6/2/2017						<0.005		
6/5/2017	<0.005	<0.005	7E-05 (J)		<0.005			
7/10/2017							<0.005	
7/11/2017					8E-05 (J)			<0.005
7/14/2017						<0.005		
7/17/2017		<0.005	<0.005	<0.005				
7/19/2017	<0.005							
8/23/2017					<0.005			
3/26/2018					<0.005		<0.005	
3/27/2018						<0.005		<0.005
3/28/2018				<0.005				
3/29/2018	<0.005	<0.005	<0.005					
2/25/2019							<0.005	
2/28/2019						<0.005		
3/1/2019	0.00033 (J)	<0.005	<0.005	<0.005	<0.005			
4/1/2019							<0.005	9.2E-05 (J)
4/2/2019					<0.005	<0.005		
4/3/2019	<0.005	<0.005	<0.005					
4/4/2019				<0.005				
Mean	0.002303	0.0025	0.002105	0.001525	0.001651	0.0025	0.0023	0.001349

# Confidence Interval

Constituent: Lead (mg/L) Analysis Run 7/18/2019 2:25 PM

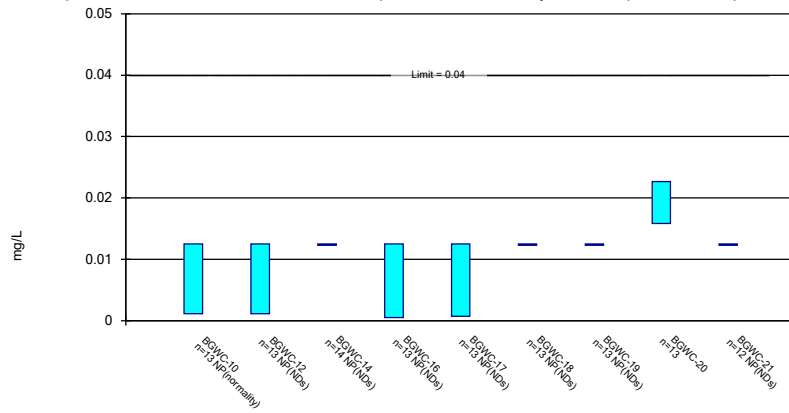
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

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	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
Std. Dev.	0.0006543	0	0.0008855	0.001129	0.00118	0	0.0006633	0.001219
Upper Lim.	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
Lower Lim.	0.00033	0.0025	7E-05	7E-05	8E-05	0.0025	0.0003	9.2E-05

### Parametric and Non-Parametric (NP) Confidence Interval

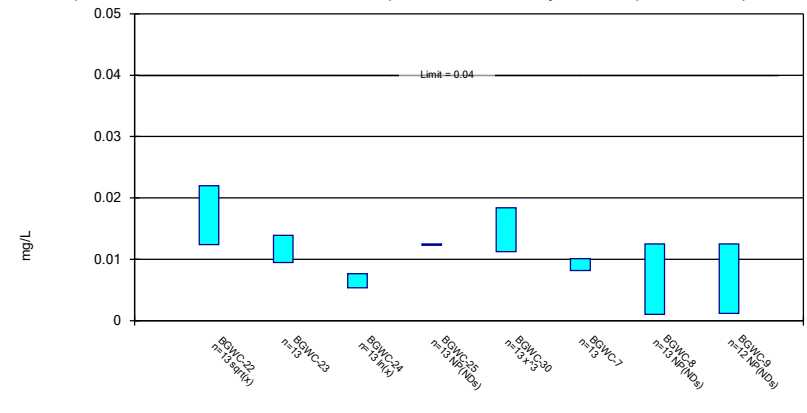
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

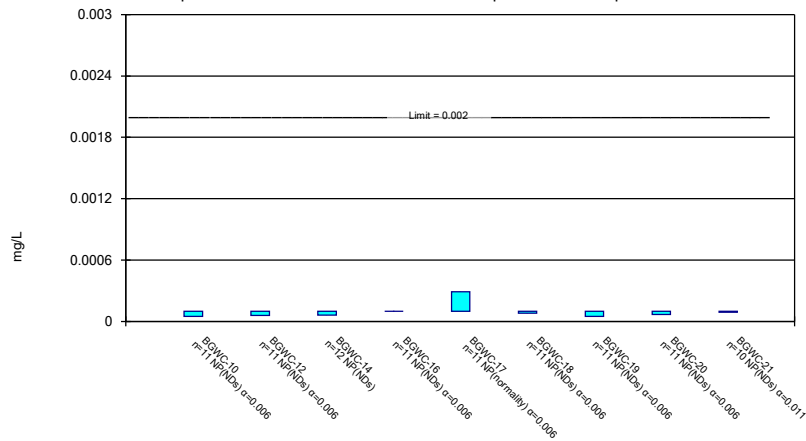
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lithium Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Non-Parametric Confidence Interval

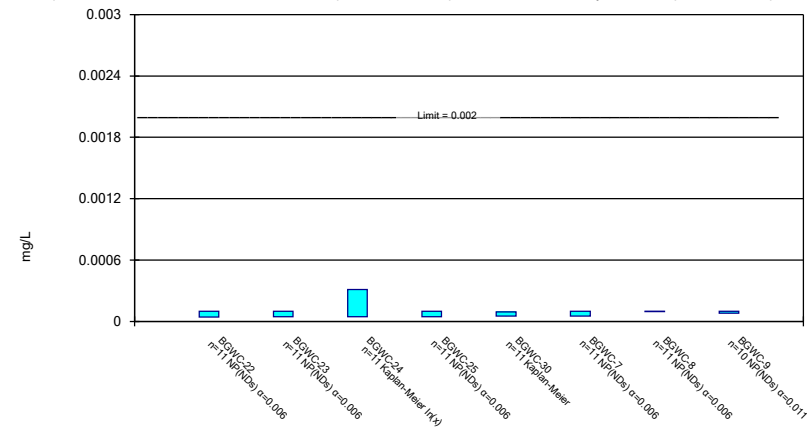
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Mercury Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Mercury Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.0065	<0.025		<0.025	<0.025				
6/8/2016						<0.025	<0.025	0.016	<0.025
6/10/2016			<0.025						
8/11/2016				<0.025	<0.025				
8/12/2016		<0.025				<0.025	<0.025	0.0202 (J)	
8/16/2016	<0.025								
8/17/2016			<0.025						
8/18/2016									<0.025
10/6/2016		<0.025							
10/7/2016	<0.025		<0.025	<0.025	<0.025	<0.025	<0.025		
10/10/2016								0.0194 (J)	<0.025
12/5/2016		<0.025							
12/6/2016	<0.025			<0.025	<0.025	<0.025			
12/7/2016							<0.025	0.0265 (J)	
12/8/2016			<0.025						<0.025
2/15/2017		<0.025							
2/16/2017	<0.025			<0.025	<0.025	<0.025	<0.025		
2/17/2017								0.0253 (J)	<0.025
2/21/2017			<0.025						
4/18/2017	0.0011 (J)	<0.025		<0.025					
4/19/2017					<0.025	<0.025	<0.025	0.0233 (J)	<0.025
4/21/2017			<0.025						
5/30/2017				<0.025	<0.025				
6/1/2017						<0.025	<0.025	0.023 (J)	<0.025
6/2/2017	0.0011 (J)	<0.025							
6/6/2017			<0.025						
6/15/2017			<0.025						
7/12/2017	<0.025								
7/13/2017		<0.025							
7/14/2017				<0.025	<0.025	<0.025	<0.025		
7/18/2017								0.0207 (J)	<0.025
7/19/2017			<0.025						
3/27/2018	0.0025 (J)			<0.025	<0.025	<0.025	<0.025		
3/28/2018		<0.025						0.013 (J)	<0.025
3/29/2018			<0.025						
6/12/2018				<0.025					
6/13/2018								0.02 (J)	
6/14/2018	0.0011 (J)	<0.025			<0.025	<0.025			<0.025
6/15/2018			<0.025				<0.025		
10/17/2018		<0.025			<0.025				
10/18/2018	0.0016 (J)			<0.025		<0.025			
10/19/2018			<0.025				<0.025		<0.025
10/22/2018								0.016 (J)	
2/25/2019				<0.025					
2/27/2019					<0.025	<0.025		0.015 (J)	
2/28/2019	0.0017 (J)	0.0011 (J)							
3/1/2019							<0.025		
3/6/2019			<0.025						
4/1/2019		0.00078 (J)							
4/2/2019	0.0012 (J)			0.00049 (J)	0.00069 (J)	<0.025			
4/3/2019							<0.025	0.012 (J)	<0.025
4/4/2019			<0.025						



# Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.0061	0.01072	0.0125	0.01158	0.01159	0.0125	0.0125	0.01926	0.0125
Std. Dev.	0.005451	0.004342	0	0.003331	0.003276	0	0	0.004601	0
Upper Lim.	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.0125	0.02268	0.0125
Lower Lim.	0.0011	0.0011	0.0125	0.00049	0.00069	0.0125	0.0125	0.01584	0.0125

# Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.025
6/7/2016							<0.025	
6/8/2016	0.012			<0.025		0.0079		
6/9/2016		0.0074	0.0057					
8/10/2016							<0.025	
8/11/2016						0.0093 (J)		<0.025
8/15/2016				<0.025				
8/18/2016	0.0118 (J)	0.0078 (J)	0.0061 (J)					
10/4/2016							<0.025	
10/5/2016								<0.025
10/6/2016						0.0102 (J)		
10/10/2016	0.0137 (J)	0.0093 (J)	0.006 (J)	<0.025				
12/2/2016							<0.025	
12/5/2016								<0.025
12/6/2016						0.0094 (J)		
12/7/2016		0.0117 (J)	0.0066 (J)					
12/8/2016	0.0154 (J)			<0.025				
1/23/2017					0.0171 (J)			
2/7/2017					0.0196 (J)			
2/14/2017							<0.025	
2/15/2017						<0.025		<0.025
2/17/2017	0.0125 (J)							
2/20/2017		0.011 (J)	0.0053 (J)	<0.025				
3/27/2017					0.0192 (J)			
4/14/2017							<0.025	
4/17/2017					0.0169 (J)			0.0013 (J)
4/18/2017						0.0086 (J)		
4/19/2017		0.0105 (J)	0.0055 (J)					
4/20/2017	0.012 (J)			<0.025				
5/22/2017					0.0167 (J)			
5/26/2017							<0.025	0.0013 (J)
6/1/2017				<0.025				
6/2/2017						0.0102 (J)		
6/5/2017	0.0114 (J)	0.0108 (J)	0.0068 (J)		0.0177 (J)			
7/10/2017							<0.025	
7/11/2017					0.0203 (J)			<0.025
7/14/2017						0.0092 (J)		
7/17/2017		0.0095 (J)	<0.025	<0.025				
7/19/2017	0.0126 (J)							
8/23/2017					0.0182 (J)			
3/26/2018					0.0063 (J)		<0.025	
3/27/2018						0.0087 (J)		0.0014 (J)
3/28/2018				<0.025				
3/29/2018	0.021 (J)	0.014 (J)	0.0053 (J)					
6/12/2018							<0.025	0.0012 (J)
6/13/2018		0.014 (J)	0.0067 (J)			0.0084 (J)		
6/14/2018	0.024 (J)			<0.025				
6/15/2018					0.0049 (J)			
10/16/2018							0.001 (J)	
10/17/2018								<0.025
10/18/2018						0.0083 (J)		
10/22/2018	0.034 (J)	0.016 (J)	0.0075 (J)	<0.025	0.005 (J)			

# Confidence Interval

Constituent: Lithium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.025	
2/28/2019						0.0086 (J)		
3/1/2019	0.022 (J)	0.017 (J)	0.0068 (J)	<0.025	0.0044 (J)			
4/1/2019							<0.025	0.0012 (J)
4/2/2019					0.0041 (J)	0.0073 (J)		
4/3/2019	0.024 (J)	0.013 (J)	0.0048 (J)					
4/4/2019				<0.025				
Mean	0.01742	0.01169	0.006585	0.0125	0.01311	0.009123	0.01162	0.007825
Std. Dev.	0.006995	0.002971	0.001936	0	0.006817	0.00131	0.00319	0.005778
Upper Lim.	0.02199	0.0139	0.007629	0.0125	0.01838	0.0101	0.0125	0.0125
Lower Lim.	0.01238	0.009483	0.005354	0.0125	0.01127	0.008149	0.001	0.0012

# Confidence Interval

Constituent: Mercury (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.0001 (J)	0.0001 (J)		9.8E-05 (J)	0.00017 (J)				
6/8/2016						<0.0002	<0.0002	<0.0002	<0.0002
6/10/2016			<0.0002						
8/11/2016				<0.0002	0.00019 (J)				
8/12/2016		<0.0002				<0.0002	<0.0002	<0.0002	
8/16/2016	<0.0002								
8/17/2016			<0.0002						
8/18/2016									<0.0002
10/6/2016		<0.0002							
10/7/2016	<0.0002		<0.0002	<0.0002	0.00014 (J)	<0.0002	<0.0002		
10/10/2016								<0.0002	<0.0002
12/5/2016		<0.0002							
12/6/2016	<0.0002			<0.0002	0.00016 (J)	<0.0002			
12/7/2016							8E-05 (J)	<0.0002	
12/8/2016			<0.0002						<0.0002
2/15/2017		<0.0002							
2/16/2017	<0.0002			<0.0002	0.00017 (J)	<0.0002	<0.0002		
2/17/2017								<0.0002	<0.0002
2/21/2017			<0.0002						
4/18/2017	<0.0002	<0.0002		<0.0002					
4/19/2017					0.00014 (J)	<0.0002	<0.0002	<0.0002	<0.0002
4/21/2017			<0.0002						
5/30/2017				<0.0002	0.00023 (J)				
6/1/2017						<0.0002	<0.0002	<0.0002	<0.0002
6/2/2017	<0.0002	<0.0002							
6/6/2017			<0.0002						
6/15/2017			6.2E-05 (J)						
7/12/2017	<0.0002								
7/13/2017		<0.0002							
7/14/2017				<0.0002	0.00016 (J)	<0.0002	<0.0002		
7/18/2017								<0.0002	<0.0002
7/19/2017			<0.0002						
3/27/2018	<0.0002			<0.0002	<0.0002	<0.0002	<0.0002		
3/28/2018		<0.0002						<0.0002	<0.0002
3/29/2018			<0.0002						
2/25/2019				<0.0002					
2/27/2019					0.00029 (J)	7.9E-05 (J)		6.6E-05 (J)	
2/28/2019	4.8E-05 (J)	5.8E-05 (J)							
3/1/2019							5E-05 (J)		
3/6/2019			<0.0002						
4/1/2019		<0.0002							
4/2/2019	<0.0002			<0.0002	0.4 (J)	<0.0002			
4/3/2019							<0.0002	<0.0002	<0.0002
4/4/2019			<0.0002						
Mean	9.527E-05	9.618E-05	9.683E-05	9.982E-05	0.03652	9.809E-05	9.364E-05	9.691E-05	0.0001
Std. Dev.	1.568E-05	1.266E-05	1.097E-05	6E-07	0.1206	6.332E-06	1.567E-05	1.025E-05	0
Upper Lim.	0.0001	0.0001	0.0001	0.0001	0.00029	0.0001	0.0001	0.0001	0.0001
Lower Lim.	4.8E-05	5.8E-05	6.2E-05	9.8E-05	0.0001	7.9E-05	5E-05	6.6E-05	0.0001

# Confidence Interval

Constituent: Mercury (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								8E-05 (J)
6/7/2016							9.7E-05 (J)	
6/8/2016	9.2E-05 (J)			<0.0002		<0.0002		
6/9/2016		<0.0002	<0.0002					
8/10/2016							<0.0002	
8/11/2016						<0.0002		<0.0002
8/15/2016				<0.0002				
8/18/2016	<0.0002	<0.0002	<0.0002					
10/4/2016							<0.0002	
10/5/2016								<0.0002
10/6/2016						<0.0002		
10/10/2016	<0.0002	<0.0002	4E-05 (J)	<0.0002				
12/2/2016							<0.0002	
12/5/2016								<0.0002
12/6/2016						<0.0002		
12/7/2016		5E-05 (J)	7E-05 (J)					
12/8/2016	<0.0002			<0.0002				
1/23/2017					8E-05 (J)			
2/7/2017					0.00011 (J)			
2/14/2017							<0.0002	
2/15/2017						<0.0002		<0.0002
2/17/2017	<0.0002							
2/20/2017		<0.0002	5E-05 (J)	<0.0002				
3/27/2017					8E-05 (J)			
4/14/2017							<0.0002	
4/17/2017					4E-05 (J)			<0.0002
4/18/2017						<0.0002		
4/19/2017		<0.0002	0.00016 (J)					
4/20/2017	<0.0002			<0.0002				
5/22/2017					<0.0002			
5/26/2017							<0.0002	<0.0002
6/1/2017				<0.0002				
6/2/2017						<0.0002		
6/5/2017	<0.0002	<0.0002	0.00013 (J)		6E-05 (J)			
7/10/2017							<0.0002	
7/11/2017					9.1E-05 (J)			<0.0002
7/14/2017						<0.0002		
7/17/2017		<0.0002	0.00013 (J)	<0.0002				
7/19/2017	<0.0002							
8/23/2017					5E-05 (J)			
3/26/2018					<0.0002		<0.0002	
3/27/2018						<0.0002		<0.0002
3/28/2018				<0.0002				
3/29/2018	<0.0002	<0.0002	<0.0002					
2/25/2019							<0.0002	
2/28/2019						5.3E-05 (J)		
3/1/2019	4.2E-05 (J)	4.4E-05 (J)	0.00093	4.7E-05 (J)	0.0001 (J)			
4/1/2019							<0.0002	<0.0002
4/2/2019					<0.0002	<0.0002		
4/3/2019	<0.0002	<0.0002	0.0013					
4/4/2019				<0.0002				
Mean	9.4E-05	9.036E-05	0.0002827	9.518E-05	8.282E-05	9.573E-05	9.973E-05	9.8E-05

# Confidence Interval

Constituent: Mercury (mg/L) Analysis Run 7/18/2019 2:25 PM

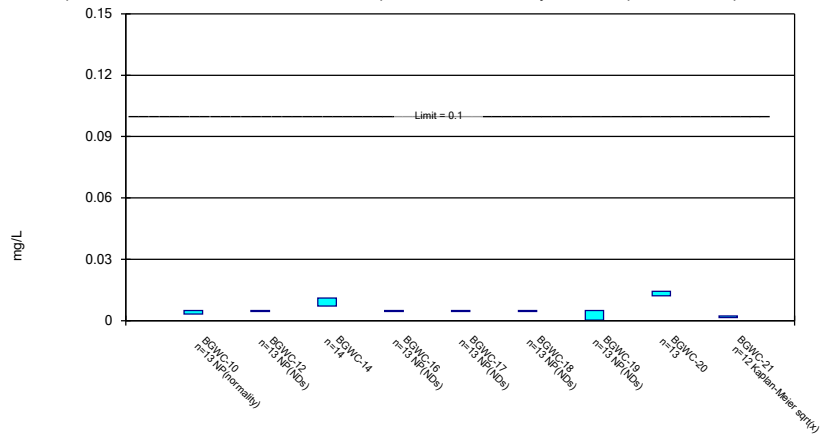
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

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	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
Std. Dev.	1.741E-05	2.148E-05	0.0004212	1.598E-05	2.331E-05	1.417E-05	9E-07	6.325E-06
Upper Lim.	0.0001	0.0001	0.0003115	0.0001	9.315E-05	0.0001	0.0001	0.0001
Lower Lim.	4.2E-05	4.4E-05	4.586E-05	4.7E-05	5.21E-05	5.3E-05	9.7E-05	8E-05

### Parametric and Non-Parametric (NP) Confidence Interval

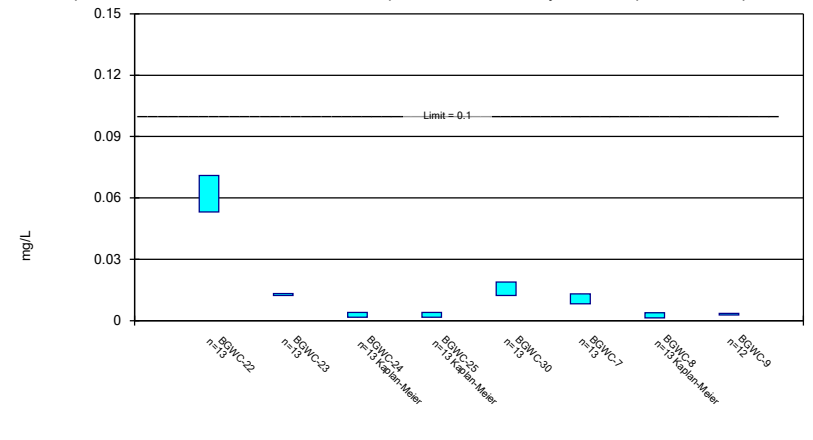
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

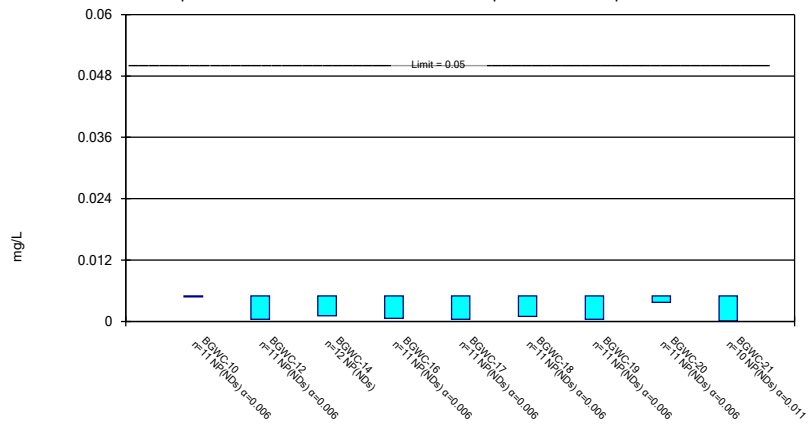
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 7/18/2019 2:23 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Non-Parametric Confidence Interval

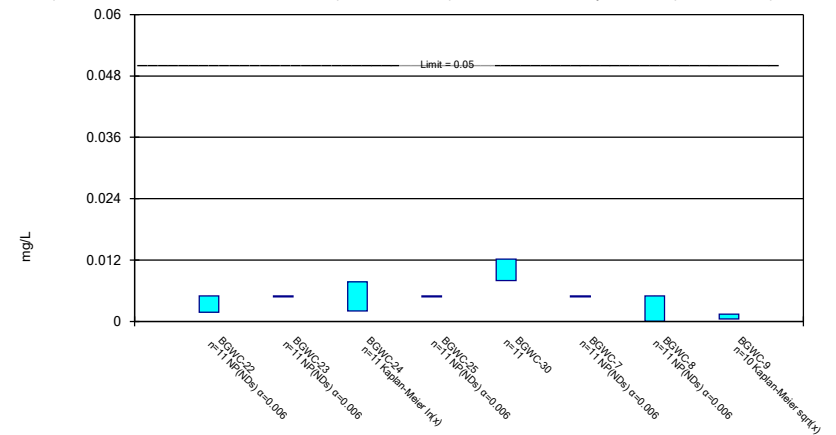
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Selenium Analysis Run 7/18/2019 2:24 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 7/18/2019 2:24 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 7/18/2019 2:25 PM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.0067 (J)	<0.01		<0.01	<0.01				
6/8/2016						<0.01	<0.01	0.011 (J)	0.0027 (J)
6/10/2016			0.014 (J)						
8/11/2016				<0.01	<0.01				
8/12/2016		<0.01				<0.01	<0.01	0.0127	
8/16/2016	0.0032 (J)								
8/17/2016			0.0085 (J)						
8/18/2016									0.0023 (J)
10/6/2016		<0.01							
10/7/2016	0.0032 (J)		0.0072 (J)	<0.01	<0.01	<0.01	<0.01		
10/10/2016								0.0136	0.0025 (J)
12/5/2016		<0.01							
12/6/2016	0.0049 (J)			<0.01	<0.01	<0.01			
12/7/2016							<0.01	0.0139	
12/8/2016			0.0082 (J)						<0.01
2/15/2017		<0.01							
2/16/2017	0.0039 (J)			<0.01	<0.01	<0.01	<0.01		
2/17/2017								0.0148	<0.01
2/21/2017			0.0076 (J)						
4/18/2017	0.0032 (J)	<0.01		<0.01					
4/19/2017					<0.01	<0.01	<0.01	0.012	0.0014 (J)
4/21/2017			0.0052 (J)						
5/30/2017				<0.01	<0.01				
6/1/2017						<0.01	<0.01	0.0125	0.0012 (J)
6/2/2017	0.0035 (J)	<0.01							
6/6/2017			0.0079 (J)						
6/15/2017			0.0052 (J)						
7/12/2017	0.0037 (J)								
7/13/2017		<0.01							
7/14/2017				<0.01	<0.01	<0.01	<0.01		
7/18/2017								0.0155	0.0013 (J)
7/19/2017			0.0073 (J)						
3/27/2018	0.0032 (J)			<0.01	<0.01	<0.01	<0.01		
3/28/2018		<0.01						0.012	<0.01
3/29/2018			0.012						
6/12/2018				<0.01					
6/13/2018								0.016	
6/14/2018	0.0033 (J)	<0.01			<0.01	<0.01			<0.01
6/15/2018			0.012				<0.01		
10/17/2018		<0.01			<0.01				
10/18/2018	0.0034 (J)			<0.01		<0.01			
10/19/2018			0.0094 (J)				<0.01		<0.01
10/22/2018								0.013	
2/25/2019				<0.01					
2/27/2019					<0.01	<0.01		0.013	
2/28/2019	0.0035 (J)	<0.01							
3/1/2019							<0.01		
3/6/2019			0.013						
4/1/2019		<0.01							
4/2/2019	0.0032 (J)			<0.01	<0.01	<0.01			
4/3/2019							0.00023 (J)	0.012	0.0019 (J)
4/4/2019			0.0088 (J)						



# Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.003762	0.005	0.009021	0.005	0.005	0.005	0.004633	0.01323	0.003192
Std. Dev.	0.001	0	0.002749	0	0	0	0.001323	0.001481	0.001659
Upper Lim.	0.0049	0.005	0.01097	0.005	0.005	0.005	0.005	0.01433	0.002329
Lower Lim.	0.0032	0.005	0.007074	0.005	0.005	0.005	0.00023	0.01213	0.001438

# Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 7/18/2019 2:25 PM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.0028 (J)
6/7/2016							0.00063 (J)	
6/8/2016	0.07			0.0064 (J)		0.0088 (J)		
6/9/2016		0.013 (J)	0.0024 (J)					
8/10/2016							0.0039 (J)	
8/11/2016						0.01		0.003 (J)
8/15/2016				0.0039 (J)				
8/18/2016	0.0758	0.0136	0.0034 (J)					
10/4/2016							0.0052 (J)	
10/5/2016								0.0032 (J)
10/6/2016						0.0117		
10/10/2016	0.0712	0.0134	0.0047 (J)	0.0029 (J)				
12/2/2016							<0.01	
12/5/2016								0.0033 (J)
12/6/2016						0.0102		
12/7/2016		0.0128	0.0066 (J)					
12/8/2016	0.0682			<0.01				
1/23/2017					0.0125			
2/7/2017					0.0163			
2/14/2017							0.0044 (J)	
2/15/2017						0.0018 (J)		0.0027 (J)
2/17/2017	0.066							
2/20/2017		0.0122	0.0026 (J)	0.0024 (J)				
3/27/2017					0.0157			
4/14/2017							0.0013 (J)	
4/17/2017					0.0178			0.0025 (J)
4/18/2017						0.0103		
4/19/2017		0.0124	0.002 (J)					
4/20/2017	0.0662			0.0019 (J)				
5/22/2017					0.0208			
5/26/2017							0.0024 (J)	0.0029 (J)
6/1/2017				0.0026 (J)				
6/2/2017						0.0129		
6/5/2017	0.071	0.0115	0.0015 (J)		0.0191			
7/10/2017							0.0013 (J)	
7/11/2017					0.0218			0.0029 (J)
7/14/2017						0.0129		
7/17/2017		0.0131	0.0013 (J)	0.0024 (J)				
7/19/2017	0.0703							
8/23/2017					0.0218			
3/26/2018					0.014		<0.01	
3/27/2018						0.01		0.0031 (J)
3/28/2018				<0.01				
3/29/2018	0.056	0.013	0.0027 (J)					
6/12/2018							0.0026 (J)	0.0043 (J)
6/13/2018		0.013	<0.01			0.013		
6/14/2018	0.059			<0.01				
6/15/2018					0.012			
10/16/2018							0.0041 (J)	
10/17/2018								0.0038 (J)
10/18/2018						0.01 (J)		
10/22/2018	0.055	0.013	<0.01	<0.01	0.01			

# Confidence Interval

Constituent: Molybdenum (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.01	
2/28/2019						0.016		
3/1/2019	0.039	0.013	<0.01	<0.01	0.011			
4/1/2019							0.00054 (J)	0.0027 (J)
4/2/2019					0.01	0.011		
4/3/2019	0.039	0.012	0.00095 (J)					
4/4/2019				0.00096 (J)				
Mean	0.06205	0.01277	0.003319	0.003728	0.0156	0.01066	0.003182	0.0031
Std. Dev.	0.01195	0.0005865	0.001771	0.001627	0.004383	0.003277	0.001788	0.0005081
Upper Lim.	0.07094	0.01321	0.004028	0.004007	0.01886	0.0131	0.003806	0.003499
Lower Lim.	0.05317	0.01233	0.001602	0.001616	0.01234	0.008225	0.001325	0.002701

# Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.01	<0.01		<0.01	0.0004 (J)				
6/8/2016						<0.01	0.00043 (J)	<0.01	<0.01
6/10/2016			<0.01						
8/11/2016				<0.01	<0.01				
8/12/2016		<0.01				<0.01	<0.01	<0.01	
8/16/2016	<0.01								
8/17/2016			<0.01						
8/18/2016									<0.01
10/6/2016		<0.01							
10/7/2016	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01		
10/10/2016								<0.01	0.001 (J)
12/5/2016		<0.01							
12/6/2016	<0.01			<0.01	<0.01	<0.01			
12/7/2016							<0.01	0.0037 (J)	
12/8/2016			<0.01						<0.01
2/15/2017		<0.01							
2/16/2017	<0.01			0.0012 (J)	<0.01	<0.01	<0.01		
2/17/2017								<0.01	<0.01
2/21/2017			0.0011 (J)						
4/18/2017	<0.01	<0.01		<0.01					
4/19/2017					<0.01	<0.01	<0.01	<0.01	<0.01
4/21/2017			<0.01						
5/30/2017				<0.01	<0.01				
6/1/2017						<0.01	<0.01	<0.01	<0.01
6/2/2017	<0.01	<0.01							
6/6/2017			<0.01						
6/15/2017			<0.01						
7/12/2017	<0.01								
7/13/2017		<0.01							
7/14/2017				<0.01	<0.01	<0.01	<0.01		
7/18/2017								<0.01	<0.01
7/19/2017			<0.01						
3/27/2018	<0.01			<0.01	<0.01	<0.01	<0.01		
3/28/2018		<0.01						<0.01	<0.01
3/29/2018			<0.01						
2/25/2019				<0.01					
2/27/2019					<0.01	<0.01		<0.01	
2/28/2019	<0.01	<0.01							
3/1/2019							<0.01		
3/6/2019			<0.01						
4/1/2019		0.0004 (J)							
4/2/2019	<0.01			0.0006 (J)	0.00077 (J)	0.001 (J)			
4/3/2019							0.00058 (J)	<0.01	0.00012 (J)
4/4/2019			0.00014 (J)						
Mean	0.005	0.004582	0.00427	0.004255	0.004197	0.004636	0.004183	0.004882	0.004112
Std. Dev.	0	0.001387	0.001717	0.001664	0.001788	0.001206	0.001819	0.000392	0.001884
Upper Lim.	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Lower Lim.	0.005	0.0004	0.0011	0.0006	0.0004	0.001	0.00043	0.0037	0.00012

# Confidence Interval

Constituent: Selenium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.00031 (J)
6/7/2016							4.8E-05 (J)	
6/8/2016	<0.01			<0.01		<0.01		
6/9/2016		<0.01	0.00099 (J)					
8/10/2016							<0.01	
8/11/2016						<0.01		0.001 (J)
8/15/2016				<0.01				
8/18/2016	<0.01	<0.01	0.0023 (J)					
10/4/2016							<0.01	
10/5/2016								0.0017 (J)
10/6/2016						<0.01		
10/10/2016	<0.01	<0.01	0.004 (J)	<0.01				
12/2/2016							<0.01	
12/5/2016								<0.01
12/6/2016						<0.01		
12/7/2016		0.0176	0.0302					
12/8/2016	0.012			<0.01				
1/23/2017					0.015			
2/7/2017					0.0114			
2/14/2017							<0.01	
2/15/2017						<0.01		<0.01
2/17/2017	<0.01							
2/20/2017		<0.01	0.0044 (J)	<0.01				
3/27/2017					0.0092 (J)			
4/14/2017							<0.01	
4/17/2017					0.0082 (J)			<0.01
4/18/2017						<0.01		
4/19/2017		<0.01	0.0046 (J)					
4/20/2017	<0.01			<0.01				
5/22/2017					0.0094 (J)			
5/26/2017							<0.01	0.0014 (J)
6/1/2017				<0.01				
6/2/2017						<0.01		
6/5/2017	0.0018 (J)	<0.01	0.0033 (J)		0.0118			
7/10/2017							<0.01	
7/11/2017					0.012			<0.01
7/14/2017						<0.01		
7/17/2017		<0.01	0.0052 (J)	<0.01				
7/19/2017	<0.01							
8/23/2017					0.0097 (J)			
3/26/2018					<0.01		<0.01	
3/27/2018						<0.01		<0.01
3/28/2018				<0.01				
3/29/2018	<0.01	<0.01	<0.01					
2/25/2019							<0.01	
2/28/2019						<0.01		
3/1/2019	<0.01	<0.01	<0.01	<0.01	0.01 (J)			
4/1/2019							0.00015 (J)	0.0004 (J)
4/2/2019					0.0092 (J)	<0.01		
4/3/2019	<0.01	<0.01	0.0038 (J)					
4/4/2019				<0.01				
Mean	0.005345	0.006145	0.006254	0.005	0.01008	0.005	0.004109	0.002981

# Confidence Interval

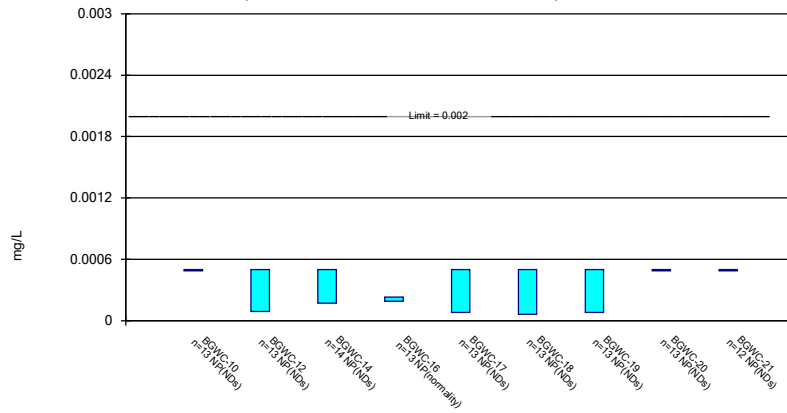
Constituent: Selenium (mg/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

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	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
Std. Dev.	0.002407	0.003799	0.008044	0	0.002532	0	0.001983	0.002166
Upper Lim.	0.005	0.005	0.007735	0.005	0.01219	0.005	0.005	0.001437
Lower Lim.	0.0018	0.005	0.002032	0.005	0.007972	0.005	4.8E-05	0.0004511

### Non-Parametric Confidence Interval

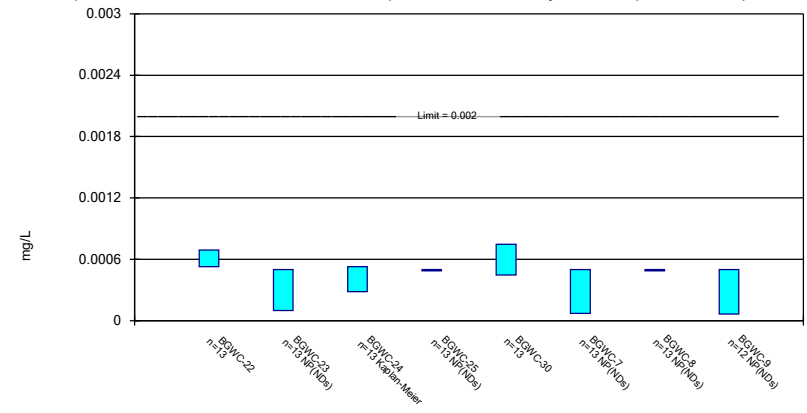
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium Analysis Run 7/18/2019 2:24 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric and Non-Parametric (NP) Confidence Interval

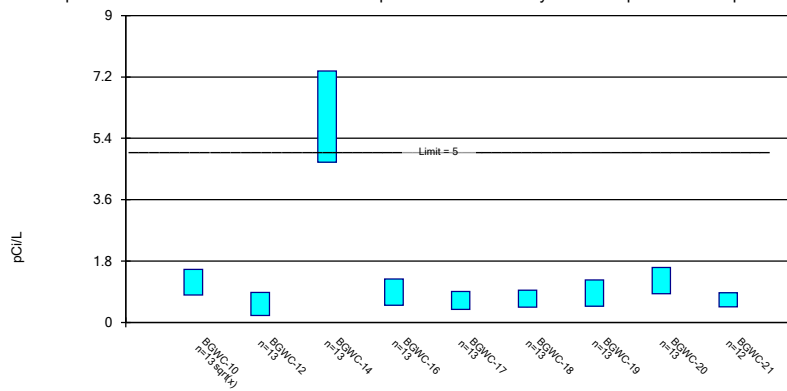
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Thallium Analysis Run 7/18/2019 2:24 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

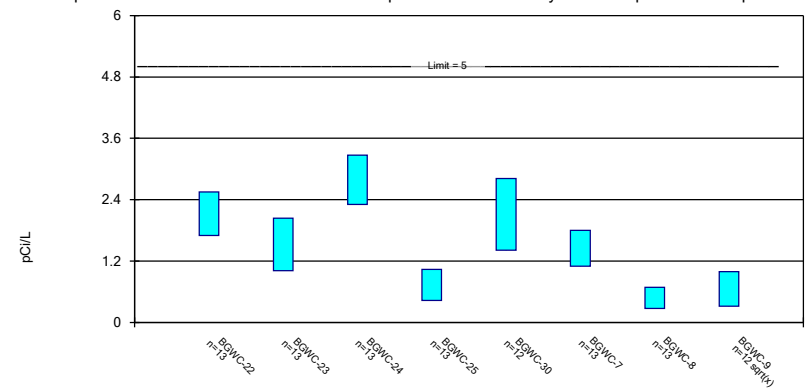
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Total Radium Analysis Run 7/18/2019 2:24 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Total Radium Analysis Run 7/18/2019 2:24 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	<0.001	<0.001		0.0002 (J)	8.5E-05 (J)				
6/8/2016						<0.001	8.5E-05 (J)	<0.001	<0.001
6/10/2016			<0.001						
8/11/2016				0.0002 (J)	8E-05 (J)				
8/12/2016		9E-05 (J)				6E-05 (J)	8E-05 (J)	<0.001	
8/16/2016	<0.001								
8/17/2016			<0.001						
8/18/2016									<0.001
10/6/2016		<0.001							
10/7/2016	<0.001		<0.001	0.0002 (J)	<0.001	<0.001	<0.001		
10/10/2016								<0.001	<0.001
12/5/2016		<0.001							
12/6/2016	<0.001			0.0003 (J)	<0.001	<0.001			
12/7/2016							<0.001	<0.001	
12/8/2016			<0.001						<0.001
2/15/2017		<0.001							
2/16/2017	<0.001			0.0003 (J)	<0.001	<0.001	<0.001		
2/17/2017								<0.001	<0.001
2/21/2017			<0.001						
4/18/2017	<0.001	9E-05 (J)		0.0002 (J)					
4/19/2017					8E-05 (J)	<0.001	6E-05 (J)	<0.001	<0.001
4/21/2017			<0.001						
5/30/2017				0.0002 (J)	9E-05 (J)				
6/1/2017						<0.001	8E-05 (J)	<0.001	<0.001
6/2/2017	<0.001	<0.001							
6/6/2017			<0.001						
6/15/2017			<0.001						
7/12/2017	<0.001								
7/13/2017		8E-05 (J)							
7/14/2017				0.0002 (J)	9E-05 (J)	<0.001	8E-05 (J)		
7/18/2017								<0.001	<0.001
7/19/2017			<0.001						
3/27/2018	<0.001			0.00019 (J)	<0.001	<0.001	<0.001		
3/28/2018		<0.001						<0.001	<0.001
3/29/2018			<0.001						
6/12/2018				0.0002 (J)					
6/13/2018								<0.001	
6/14/2018	<0.001	<0.001			<0.001	<0.001			<0.001
6/15/2018			<0.001				<0.001		
10/17/2018		<0.001			<0.001				
10/18/2018	<0.001			0.0002 (J)		<0.001			
10/19/2018			0.00017 (J)				<0.001		<0.001
10/22/2018								<0.001	
2/25/2019				0.00023 (J)					
2/27/2019					<0.001	<0.001		<0.001	
2/28/2019	<0.001	<0.001							
3/1/2019							<0.001		
3/6/2019			<0.001						
4/1/2019		<0.001							
4/2/2019	<0.001			0.0002 (J)	7.5E-05 (J)	<0.001			
4/3/2019							<0.001	<0.001	<0.001
4/4/2019			<0.001						



# Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 7/18/2019 2:25 PM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
Mean	0.0005	0.0004046	0.0004764	0.0002169	0.0003077	0.0004662	0.0003373	0.0005	0.0005
Std. Dev.	0	0.0001813	8.82E-05	3.794E-05	0.0002162	0.000122	0.0002143	0	0
Upper Lim.	0.0005	0.0005	0.0005	0.00023	0.0005	0.0005	0.0005	0.0005	0.0005
Lower Lim.	0.0005	9E-05	0.00017	0.00019	8E-05	6E-05	8E-05	0.0005	0.0005

# Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								<0.001
6/7/2016							<0.001	
6/8/2016	0.00035 (J)			<0.001		<0.001		
6/9/2016		0.0001 (J)	0.00022 (J)					
8/10/2016							<0.001	
8/11/2016						<0.001		<0.001
8/15/2016				<0.001				
8/18/2016	0.0005 (J)	<0.001	<0.001					
10/4/2016							<0.001	
10/5/2016								<0.001
10/6/2016						<0.001		
10/10/2016	0.0006 (J)	<0.001	0.0003 (J)	<0.001				
12/2/2016							<0.001	
12/5/2016								<0.001
12/6/2016						<0.001		
12/7/2016		<0.001	<0.001					
12/8/2016	0.0005 (J)			<0.001				
1/23/2017					0.0008 (J)			
2/7/2017					0.0008 (J)			
2/14/2017							<0.001	
2/15/2017						<0.001		<0.001
2/17/2017	0.0006 (J)							
2/20/2017		<0.001	0.0003 (J)	<0.001				
3/27/2017					0.0006 (J)			
4/14/2017							<0.001	
4/17/2017					0.0007 (J)			<0.001
4/18/2017						<0.001		
4/19/2017		<0.001	0.0004 (J)					
4/20/2017	0.0006 (J)			<0.001				
5/22/2017					0.0008 (J)			
5/26/2017							<0.001	<0.001
6/1/2017				<0.001				
6/2/2017						<0.001		
6/5/2017	0.0006 (J)	<0.001	0.0004 (J)		0.0007 (J)			
7/10/2017							<0.001	
7/11/2017					0.0007 (J)			<0.001
7/14/2017						<0.001		
7/17/2017		<0.001	0.0004 (J)	<0.001				
7/19/2017	0.0007 (J)							
8/23/2017					0.0007 (J)			
3/26/2018					0.00058 (J)		<0.001	
3/27/2018						<0.001		<0.001
3/28/2018				<0.001				
3/29/2018	0.00063 (J)	<0.001	0.00048 (J)					
6/12/2018							<0.001	<0.001
6/13/2018		<0.001	0.00053 (J)			<0.001		
6/14/2018	0.00069 (J)			<0.001				
6/15/2018					0.00056 (J)			
10/16/2018							<0.001	
10/17/2018								<0.001
10/18/2018						<0.001		
10/22/2018	0.00071 (J)	<0.001	0.00047 (J)	<0.001	0.00034 (J)			

# Confidence Interval

Constituent: Thallium (mg/L) Analysis Run 7/18/2019 2:25 PM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/25/2019							<0.001	
2/28/2019						<0.001		
3/1/2019	0.00074 (J)	<0.001	0.0007 (J)	<0.001	0.00024 (J)			
4/1/2019							<0.001	6.5E-05 (J)
4/2/2019					0.00024 (J)	7E-05 (J)		
4/3/2019	0.0007 (J)	<0.001	0.00064 (J)					
4/4/2019				<0.001				
Mean	0.0006092	0.0004692	0.0004492	0.0005	0.0005969	0.0004669	0.0005	0.0004638
Std. Dev.	0.0001088	0.0001109	0.0001344	0	0.0002018	0.0001193	0	0.0001256
Upper Lim.	0.0006901	0.0005	0.0005277	0.0005	0.000747	0.0005	0.0005	0.0005
Lower Lim.	0.0005283	0.0001	0.000282	0.0005	0.0004469	7E-05	0.0005	6.5E-05

# Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 7/18/2019 2:25 PM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
6/7/2016	0.616	0.024 (U)		0.284 (U)	0.135 (U)				
6/8/2016						0.406	0.264 (U)	0.863 (U)	0.573
8/11/2016				1.71	0.808				
8/12/2016		0.849				1.39	1.18	1.74	
8/16/2016	1.08								
8/17/2016			5.18						
8/18/2016									0.44 (U)
10/6/2016		1.57							
10/7/2016	2.82			0.485 (U)	0.874 (U)	0.451 (U)	1.97		
10/10/2016								0.944 (U)	0.933 (U)
12/5/2016		0.956							
12/6/2016	0.719 (U)			1.22	0.131 (U)	0.516 (U)			
12/7/2016							1.31 (U)	2.29	
12/8/2016									1.02 (U)
2/15/2017		0.229 (U)							
2/16/2017	0.966 (U)			0.19 (U)	0.471 (U)	0.172 (U)	0.35 (U)		
2/17/2017								1.35 (U)	0.193 (U)
2/21/2017			5.1						
4/18/2017	1.01 (U)	0.0114 (U)		0.52 (U)					
4/19/2017					0.65 (U)	0.704 (U)	0.974 (U)	1.48	0.488 (U)
5/26/2017			7.14						
5/30/2017				1.21 (U)	0.65 (U)				
6/1/2017						0.493 (U)	0.332 (U)	1.61	0.837 (U)
6/2/2017	1.13 (U)	0.375 (U)							
6/6/2017			4.68						
6/15/2017			5.69						
7/12/2017	1.29		2.92						
7/13/2017		0.636 (U)							
7/14/2017				0.526 (U)	0.592 (U)	0.547 (U)	1.27		
7/18/2017									0.498 (U)
7/19/2017								1.626	
8/10/2017			6.51						
8/25/2017			7.04						
3/27/2018	0.779 (U)			1.34	0.551 (U)	0.569 (U)	0.169 (U)		
3/28/2018		0.36 (U)						0.97 (U)	0.864 (U)
3/29/2018			6.35						
6/12/2018				0.732 (U)					
6/13/2018								0.686 (U)	
6/14/2018	1.22 (U)	0.316 (U)			0.638 (U)	0.989 (U)			0.583 (U)
6/15/2018			6.2				0.625 (U)		
10/17/2018		0.326 (U)			0.555 (U)				
10/18/2018	0.841 (U)			0.522 (U)		0.875 (U)			
10/19/2018			3.76				0.784 (U)		0.982 (U)
10/22/2018								0.559 (U)	
2/25/2019				1.08					
2/27/2019					1.57	1.12		1.24	
2/28/2019	1.88	1.04							
3/1/2019							0.989 (U)		
3/6/2019			9.46						
4/1/2019		0.328 (U)							
4/2/2019	1.21 (U)			1.73	0.71 (U)	0.814 (U)			
4/3/2019							0.98 (U)	0.567 (U)	0.532 (U)

# Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-10	BGWC-12	BGWC-14	BGWC-16	BGWC-17	BGWC-18	BGWC-19	BGWC-20	BGWC-21
4/4/2019			8.48						
Mean	1.197	0.54	6.039	0.8884	0.6412	0.6958	0.8613	1.225	0.6619
Std. Dev.	0.5834	0.4501	1.797	0.5227	0.3551	0.3322	0.5149	0.5189	0.2581
Upper Lim.	1.552	0.8748	7.375	1.277	0.9052	0.9428	1.244	1.611	0.8645
Lower Lim.	0.8002	0.2053	4.703	0.4997	0.3771	0.4489	0.4784	0.8391	0.4594

# Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 7/18/2019 2:25 PM

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
6/6/2016								0.488
6/7/2016							0.0507 (U)	
6/8/2016	1.53			0.314 (U)		0.854		
6/9/2016		0.704	2.13					
8/10/2016							0.862 (U)	
8/11/2016						1.24		0.639 (U)
8/15/2016				1.2				
8/18/2016	2.47	1.88	2.67					
10/4/2016							0.48 (U)	
10/5/2016								0.945 (U)
10/6/2016						2.43		
10/10/2016	2.11	1.48	3.46	1.03 (U)				
12/2/2016							0.219 (U)	
12/5/2016								2.2
12/6/2016						0.958 (U)		
12/7/2016		2.61	1.65					
12/8/2016	2.64			1.47 (U)				
1/23/2017					2.17			
2/7/2017					3			
2/14/2017							0.636 (U)	
2/15/2017						1.18		0.74 (U)
2/17/2017	1.34							
2/20/2017		0.884 (U)	2.68	0.547 (U)				
4/14/2017							0.13 (U)	
4/17/2017					2.73			0.764 (U)
4/18/2017						1.26		
4/19/2017		0.948 (U)	3.81					
4/20/2017	2.35			0.0595 (U)				
5/22/2017					3.15			
5/26/2017							0.349 (U)	0.245 (U)
6/1/2017				0.67 (U)				
6/2/2017						1.24 (U)		
6/5/2017	1.6	1.33	2.86		0.86 (U)			
7/10/2017							0.565 (U)	
7/11/2017					1.87			0.502 (U)
7/14/2017						1.55		
7/17/2017		1.04	2.87	1.25 (U)				
7/19/2017	1.76							
8/23/2017					3.39			
3/26/2018					1.61		0.303 (U)	
3/27/2018						2.15		0.745 (U)
3/28/2018				0.507 (U)				
3/29/2018	2.43	1.65	2.79					
6/12/2018							0.494 (U)	0.319 (U)
6/13/2018		0.983 (U)	2.19			1.95		
6/14/2018	2.14			0.721 (U)				
6/15/2018					0.815 (U)			
10/16/2018							0.633 (U)	
10/17/2018								0.319 (U)
10/18/2018						1.1		
10/22/2018	1.43	1.21	2.18	0.741 (U)	1.02 (U)			
2/25/2019							1.03 (U)	

# Confidence Interval

Constituent: Total Radium (pCi/L) Analysis Run 7/18/2019 2:25 PM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

	BGWC-22	BGWC-23	BGWC-24	BGWC-25	BGWC-30	BGWC-7	BGWC-8	BGWC-9
2/28/2019						1.38		
3/1/2019	3.32	2.24	3.37	0.634 (U)	2.47			
4/1/2019							0.474 (U)	0.225 (U)
4/2/2019					2.29	1.57		
4/3/2019	2.48	2.86	3.6					
4/4/2019				0.346 (U)				
Mean	2.123	1.525	2.789	0.73	2.115	1.451	0.4789	0.6776
Std. Dev.	0.5733	0.6891	0.6447	0.4078	0.8943	0.4696	0.2779	0.5328
Upper Lim.	2.549	2.037	3.269	1.033	2.816	1.8	0.6856	0.9916
Lower Lim.	1.697	1.012	2.31	0.4268	1.413	1.102	0.2722	0.318

# Outlier Summary - Bowen AP-1

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 12:41 AM

BGWA-29 Total Dissolved Solids (mg/L)

2/14/2017

345 (o)



# Outlier Analysis - Significant Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 12:18 AM

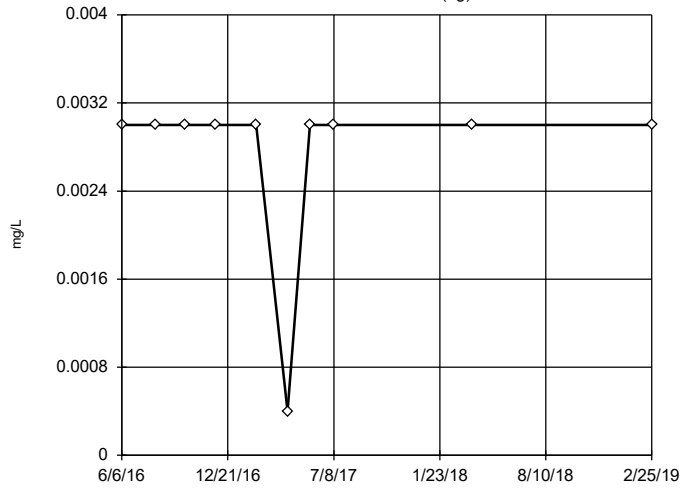
<u>Constituent Name</u>	<u>Well</u>	<u>Outlier Found</u>	<u>Outlier Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Distribution</u>	<u>Normality Test</u>
Calcium (mg/L)	BGWA-2 (bg)	Yes	48.2	4/1/2019	NP	NaN	12	34.37	4.962	In(x)	ShapiroWilk
Chloride (mg/L)	BGWA-29 (bg)	Yes	4.2	8/22/2016	NP	NaN	12	1.9	0.7471	In(x)	ShapiroWilk
Total Dissolved Solids (mg/L)	BGWA-29 (bg)	Yes	345	2/14/2017	NP	NaN	12	137.4	67.16	In(x)	ShapiroWilk

# Outlier Analysis - All Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 12:18 AM

Constituent Name	Well	Outlier Found	Outlier Value(s)	Date(s)	Method	Alpha N	Mean	Standard Deviation	Distribution	Normality Test
Antimony (mg/L)	BGWA-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 10	0.00274	0.0008222	unknown	ShapiroWilk
Antimony (mg/L)	BGWA-29 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 10	0.003	0	unknown	ShapiroWilk
Arsenic (mg/L)	BGWA-2 (bg)	No	n/a	n/a	NP	NaN 13	0.002472	0.001815	ln(x)	ShapiroWilk
Arsenic (mg/L)	BGWA-29 (bg)	No	n/a	n/a	NP (nrm)	NaN 13	0.002672	0.002252	unknown	ShapiroWilk
Barium (mg/L)	BGWA-2 (bg)	No	n/a	n/a	NP	NaN 13	0.1822	0.01979	normal	ShapiroWilk
Barium (mg/L)	BGWA-29 (bg)	No	n/a	n/a	NP	NaN 13	0.02009	0.006898	x^(1/3)	ShapiroWilk
Beryllium (mg/L)	BGWA-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 11	0.003	0	unknown	ShapiroWilk
Beryllium (mg/L)	BGWA-29 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 11	0.003	0	unknown	ShapiroWilk
Boron (mg/L)	BGWA-2 (bg)	No	n/a	n/a	NP (nrm)	NaN 12	0.01653	0.01368	unknown	ShapiroWilk
Boron (mg/L)	BGWA-29 (bg)	No	n/a	n/a	NP (nrm)	NaN 12	0.02643	0.01689	unknown	ShapiroWilk
Cadmium (mg/L)	BGWA-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 13	0.001	0	unknown	ShapiroWilk
Cadmium (mg/L)	BGWA-29 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 13	0.00093	0.0002524	unknown	ShapiroWilk
<b>Calcium (mg/L)</b>	<b>BGWA-2 (bg)</b>	<b>Yes</b>	<b>48.2</b>	<b>4/1/2019</b>	<b>NP</b>	<b>NaN 12</b>	<b>34.37</b>	<b>4.962</b>	<b>ln(x)</b>	<b>ShapiroWilk</b>
Calcium (mg/L)	BGWA-29 (bg)	No	n/a	n/a	NP	NaN 12	19.8	5.149	x^5	ShapiroWilk
Chloride (mg/L)	BGWA-2 (bg)	No	n/a	n/a	NP	NaN 12	2.65	0.6935	ln(x)	ShapiroWilk
<b>Chloride (mg/L)</b>	<b>BGWA-29 (bg)</b>	<b>Yes</b>	<b>4.2</b>	<b>8/22/2016</b>	<b>NP</b>	<b>NaN 12</b>	<b>1.9</b>	<b>0.7471</b>	<b>ln(x)</b>	<b>ShapiroWilk</b>
Chromium (mg/L)	BGWA-2 (bg)	No	n/a	n/a	NP (nrm)	NaN 11	0.007564	0.004186	unknown	ShapiroWilk
Chromium (mg/L)	BGWA-29 (bg)	No	n/a	n/a	NP (nrm)	NaN 11	0.006609	0.00471	unknown	ShapiroWilk
Cobalt (mg/L)	BGWA-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 13	0.008511	0.003636	unknown	ShapiroWilk
Cobalt (mg/L)	BGWA-29 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 13	0.01	0	unknown	ShapiroWilk
Fluoride (mg/L)	BGWA-2 (bg)	No	n/a	n/a	NP	NaN 14	0.1252	0.07741	ln(x)	ShapiroWilk
Fluoride (mg/L)	BGWA-29 (bg)	No	n/a	n/a	NP (nrm)	NaN 14	0.1527	0.1337	unknown	ShapiroWilk
Lead (mg/L)	BGWA-2 (bg)	No	n/a	n/a	NP (nrm)	NaN 11	0.003882	0.002001	unknown	ShapiroWilk
Lead (mg/L)	BGWA-29 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 11	0.005	0	unknown	ShapiroWilk
Lithium (mg/L)	BGWA-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 13	0.05	0	unknown	ShapiroWilk
Lithium (mg/L)	BGWA-29 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 13	0.0462	0.0137	unknown	ShapiroWilk
Mercury (mg/L)	BGWA-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 11	0.0001888	0.00003709	unknown	ShapiroWilk
Mercury (mg/L)	BGWA-29 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 11	0.0001877	0.0000407	unknown	ShapiroWilk
Molybdenum (mg/L)	BGWA-2 (bg)	No	n/a	n/a	NP (nrm)	NaN 13	0.004992	0.004131	unknown	ShapiroWilk
Molybdenum (mg/L)	BGWA-29 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 13	0.009272	0.002627	unknown	ShapiroWilk
pH (s.u.)	BGWA-2 (bg)	No	n/a	n/a	NP	NaN 14	7.741	0.0817	x^6	ShapiroWilk
pH (s.u.)	BGWA-29 (bg)	No	n/a	n/a	NP	NaN 14	7.959	0.1415	x^6	ShapiroWilk
Selenium (mg/L)	BGWA-2 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 11	0.009101	0.002982	unknown	ShapiroWilk
Selenium (mg/L)	BGWA-29 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 11	0.01	0	unknown	ShapiroWilk
Sulfate (mg/L)	BGWA-2 (bg)	No	n/a	n/a	NP	NaN 12	6.9	1.747	ln(x)	ShapiroWilk
Sulfate (mg/L)	BGWA-29 (bg)	No	n/a	n/a	NP	NaN 12	5.25	1.541	ln(x)	ShapiroWilk
Thallium (mg/L)	BGWA-2 (bg)	No	n/a	n/a	NP (nrm)	NaN 13	0.0006531	0.0004568	unknown	ShapiroWilk
Thallium (mg/L)	BGWA-29 (bg)	n/a	n/a	n/a	NP (nrm)	NaN 13	0.001	0	unknown	ShapiroWilk
Total Dissolved Solids (mg/L)	BGWA-2 (bg)	No	n/a	n/a	NP	NaN 12	181.8	31.84	x^3	ShapiroWilk
<b>Total Dissolved Solids (mg/L)</b>	<b>BGWA-29 (bg)</b>	<b>Yes</b>	<b>345</b>	<b>2/14/2017</b>	<b>NP</b>	<b>NaN 12</b>	<b>137.4</b>	<b>67.16</b>	<b>ln(x)</b>	<b>ShapiroWilk</b>
Total Radium (pCi/L)	BGWA-2 (bg)	No	n/a	n/a	NP	NaN 13	1.054	0.3429	sqrt(x)	ShapiroWilk
Total Radium (pCi/L)	BGWA-29 (bg)	No	n/a	n/a	NP	NaN 13	0.4241	0.2941	sqrt(x)	ShapiroWilk

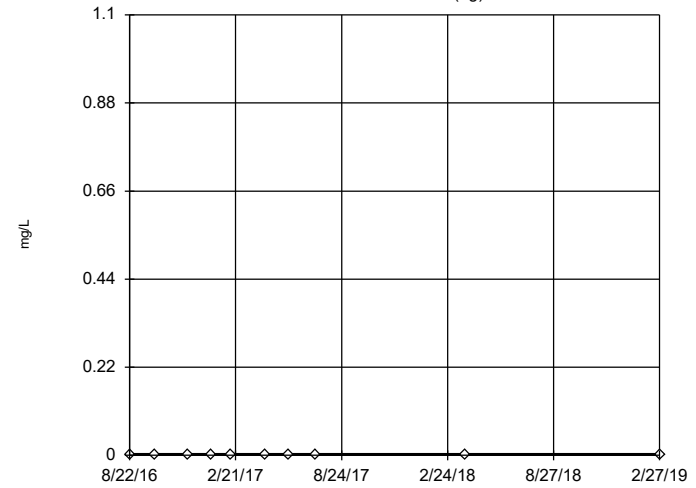
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 10  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were square root transformed to achieve best W statistic (graph shown in original units).  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Antimony Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

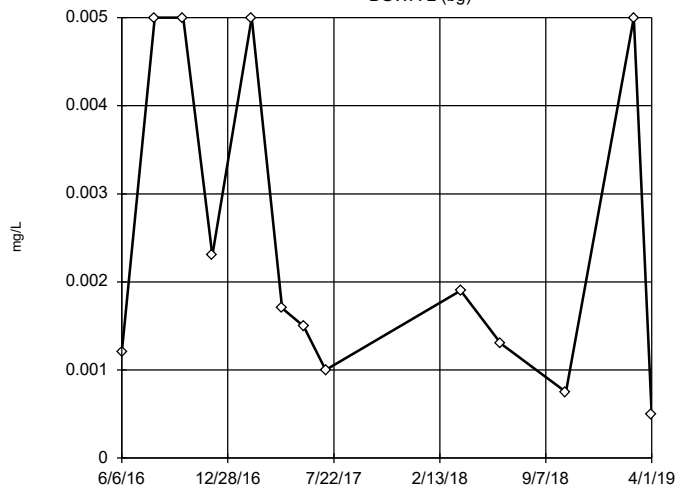
Tukey's Outlier Screening  
BGWA-29 (bg)



n = 10  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were square root transformed to achieve best W statistic (graph shown in original units).  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Antimony Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

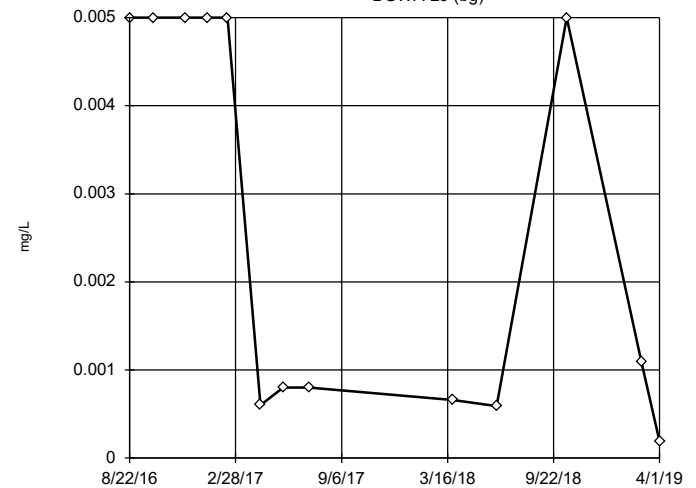
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 13  
No outliers found. Tukey's method selected by user.  
Data were natural log transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 0.4755, low cutoff = 0.00001152, based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

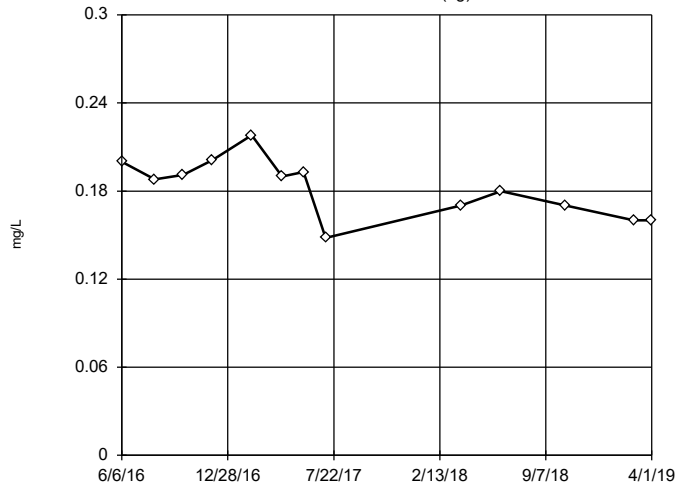
Tukey's Outlier Screening  
BGWA-29 (bg)



n = 13  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were natural log transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 2.508, low cutoff = 0.000001255, based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

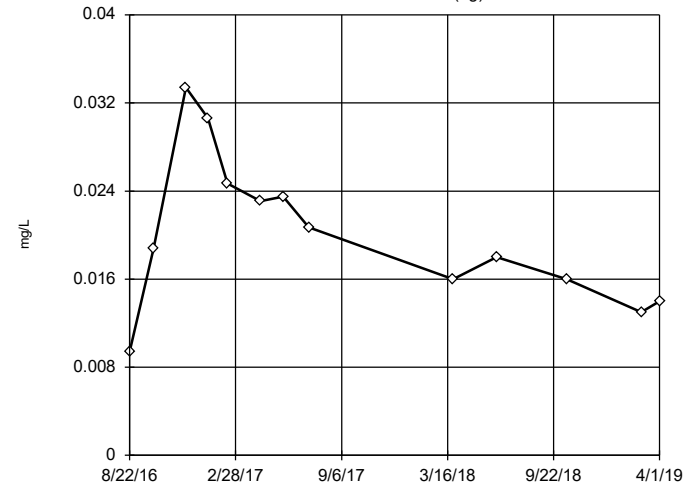
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 13  
No outliers found. Tukey's method selected by user.  
Ladder of Powers transformations did not improve normality; analysis run on raw data.  
High cutoff = 0.291, low cutoff = 0.0705, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

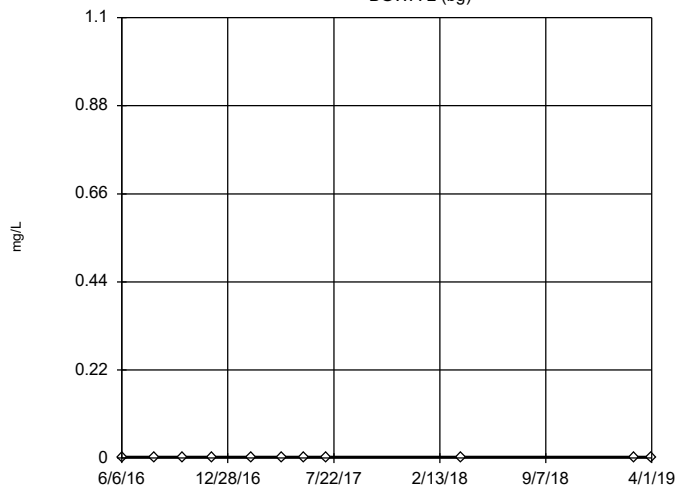
Tukey's Outlier Screening  
BGWA-29 (bg)



n = 13  
No outliers found. Tukey's method selected by user.  
Data were cube root transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 0.0719, low cutoff = 0.001707, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

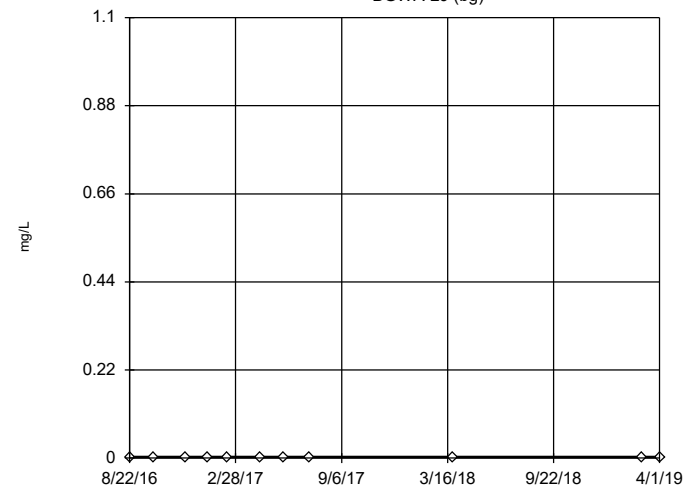
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 11  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were square root transformed to achieve best W statistic (graph shown in original units).  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Beryllium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

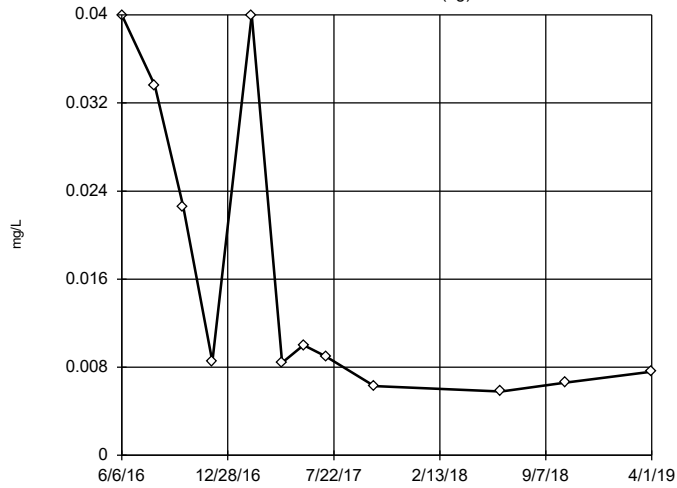
Tukey's Outlier Screening  
BGWA-29 (bg)



n = 11  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were square root transformed to achieve best W statistic (graph shown in original units).  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Beryllium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

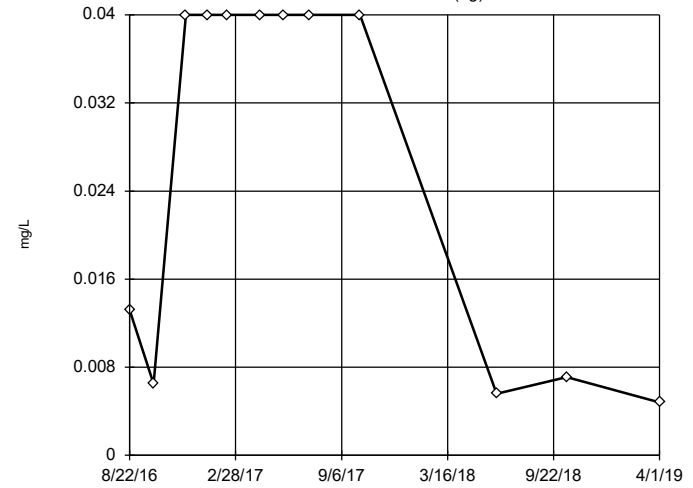
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 12  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were natural log transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 1.623, low cutoff = 0.0001202, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

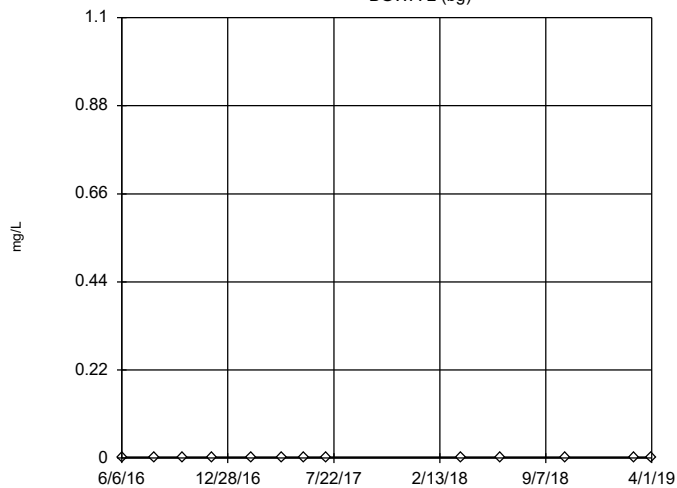
Tukey's Outlier Screening  
BGWA-29 (bg)



n = 12  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were natural log transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 8.165, low cutoff = 0.00003328, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

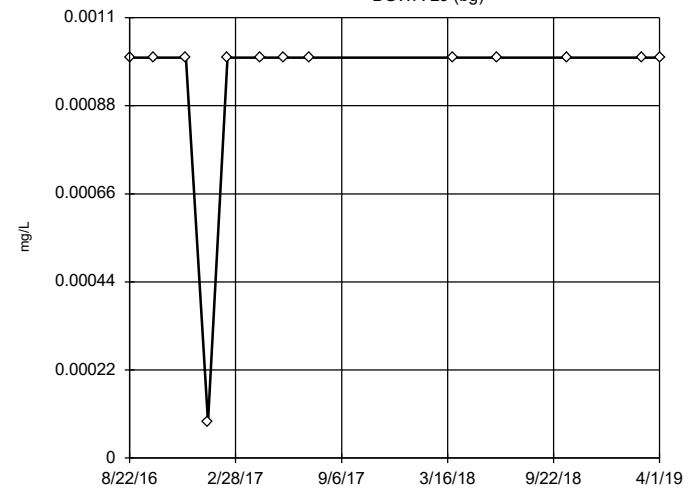
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 13  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were cube root transformed to achieve best W statistic (graph shown in original units).  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cadmium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

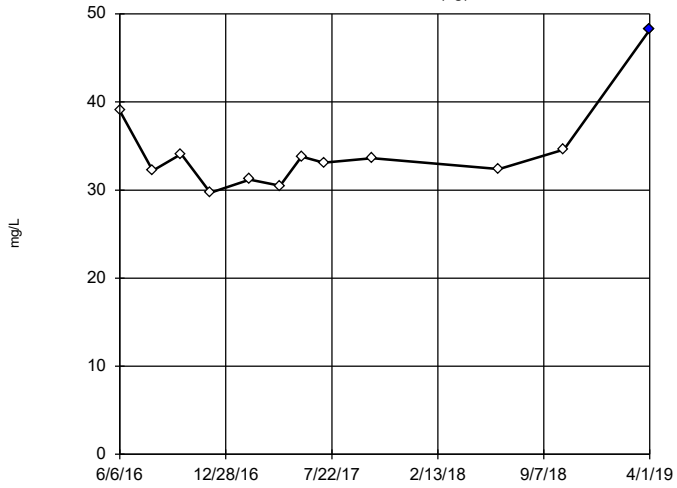
Tukey's Outlier Screening  
BGWA-29 (bg)



n = 13  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were square root transformed to achieve best W statistic (graph shown in original units).  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cadmium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

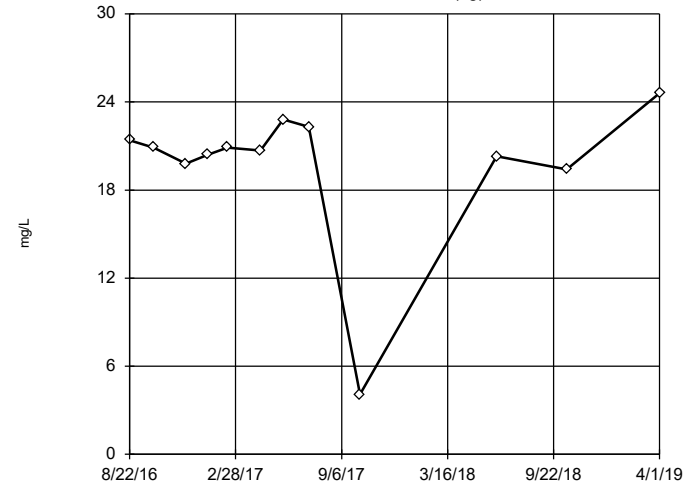
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 12  
Outlier is drawn as solid. Tukey's method selected by user.  
Data were natural log transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 43.72, low cutoff = 24.9, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

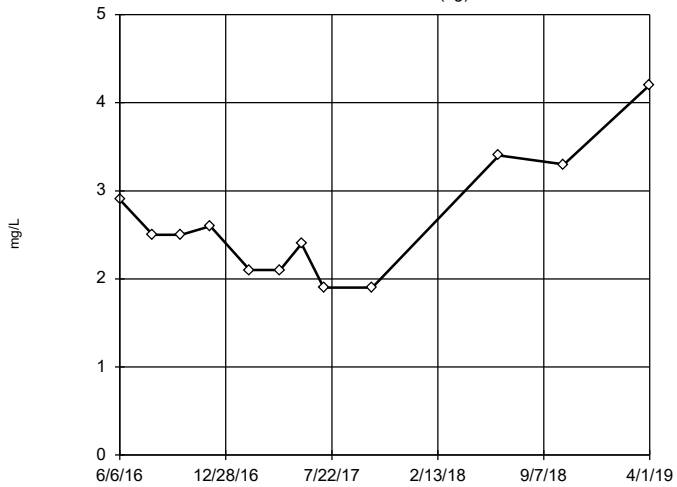
Tukey's Outlier Screening  
BGWA-29 (bg)



n = 12  
No outliers found. Tukey's method selected by user.  
Data were x^5 transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 25.25, low cutoff = -18.25, based on IQR multiplier of 3.

Constituent: Calcium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

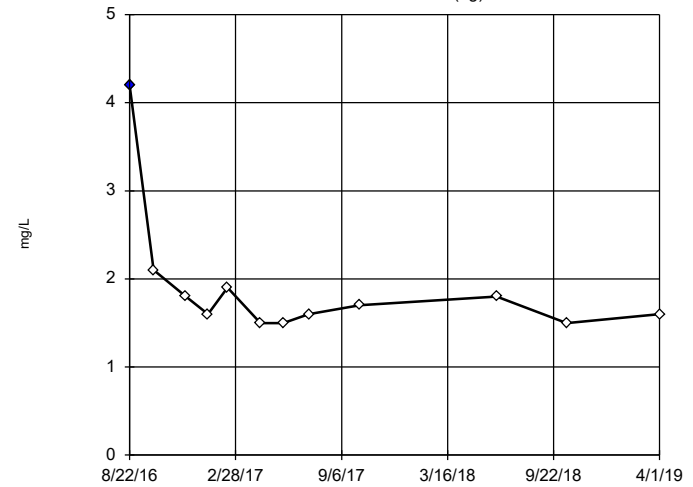
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 12  
No outliers found. Tukey's method selected by user.  
Data were natural log transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 9.889, low cutoff = 0.6569, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Tukey's Outlier Screening  
BGWA-29 (bg)

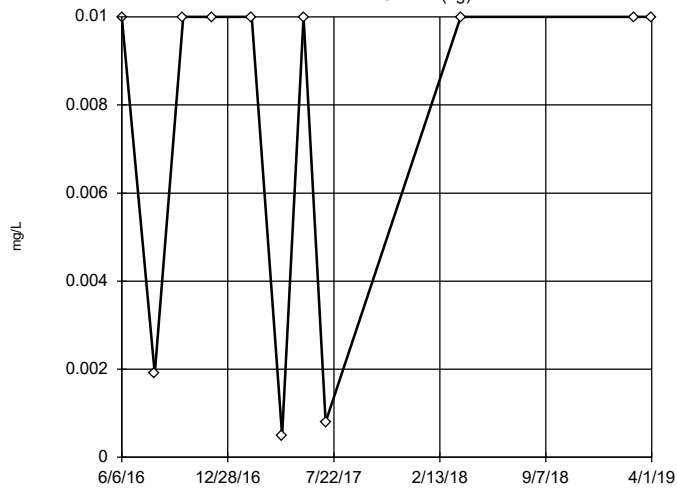


n = 12  
Outlier is drawn as solid. Tukey's method selected by user.  
Data were natural log transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 3.146, low cutoff = 0.9107, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Tukey's Outlier Screening

BGWA-2 (bg)

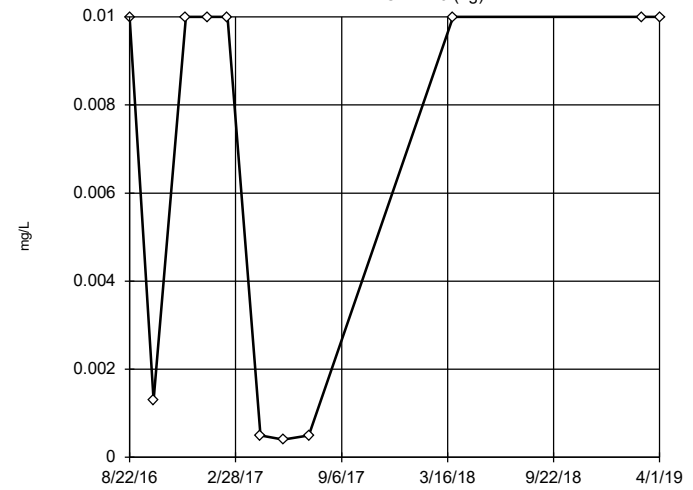


n = 11  
 No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
 Data were natural log transformed to achieve best W statistic (graph shown in original units).  
 High cutoff = 1.458, low cutoff = 0.00001303, based on IQR multiplier of 3.

Constituent: Chromium Analysis Run 7/18/2019 12:12 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Tukey's Outlier Screening

BGWA-29 (bg)

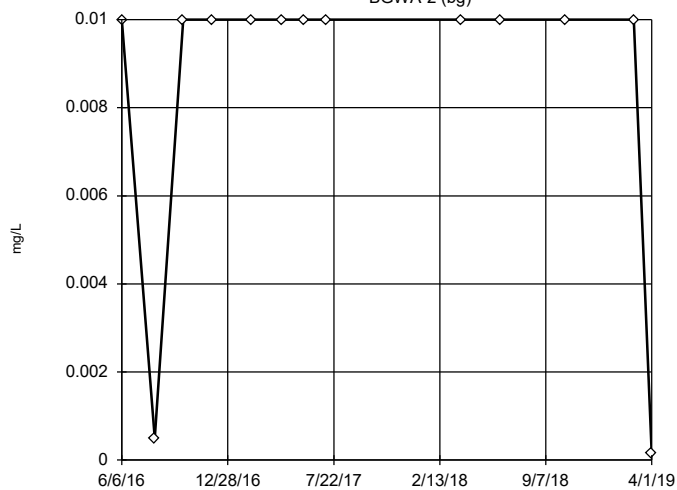


n = 11  
 No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
 Data were natural log transformed to achieve best W statistic (graph shown in original units).  
 High cutoff = 80, low cutoff = 6.3e-8, based on IQR multiplier of 3.

Constituent: Chromium Analysis Run 7/18/2019 12:12 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Tukey's Outlier Screening

BGWA-2 (bg)

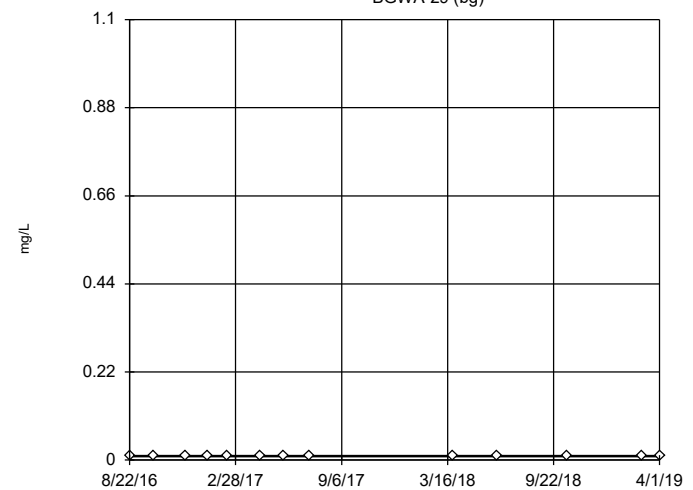


n = 13  
 No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
 Data were natural log transformed to achieve best W statistic (graph shown in original units).  
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cobalt Analysis Run 7/18/2019 12:12 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Tukey's Outlier Screening

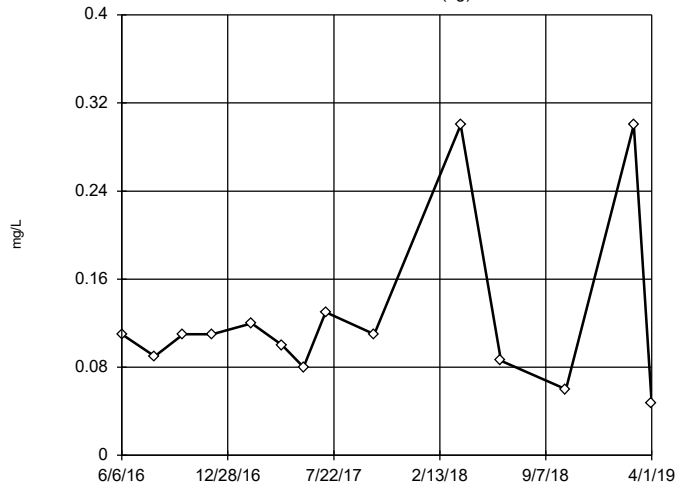
BGWA-29 (bg)



n = 13  
 No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
 Data were square root transformed to achieve best W statistic (graph shown in original units).  
 The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cobalt Analysis Run 7/18/2019 12:12 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

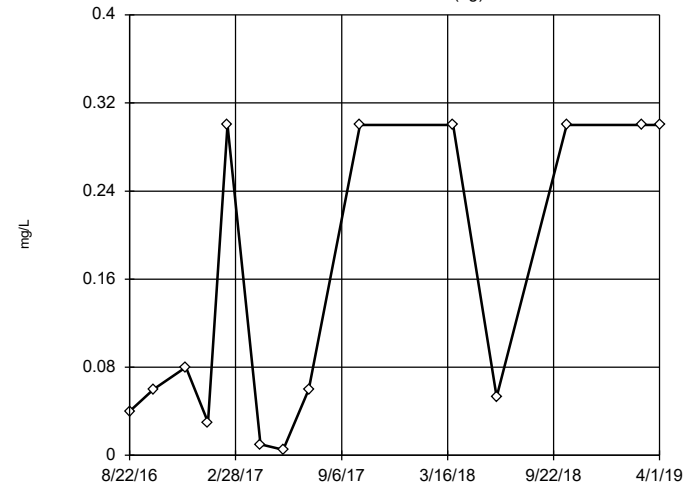
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 14  
No outliers found. Tukey's method selected by user.  
Data were natural log transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 0.4264, low cutoff = 0.02429, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

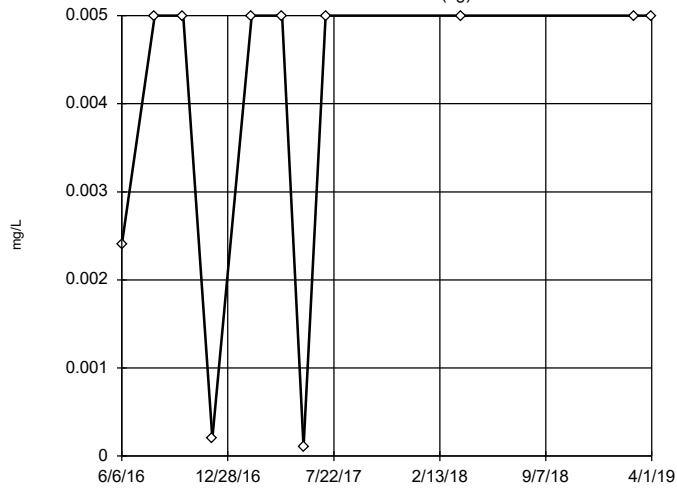
Tukey's Outlier Screening  
BGWA-29 (bg)



n = 14  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were natural log transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 194.9, low cutoff = 0.00005333, based on IQR multiplier of 3.

Constituent: Fluoride Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

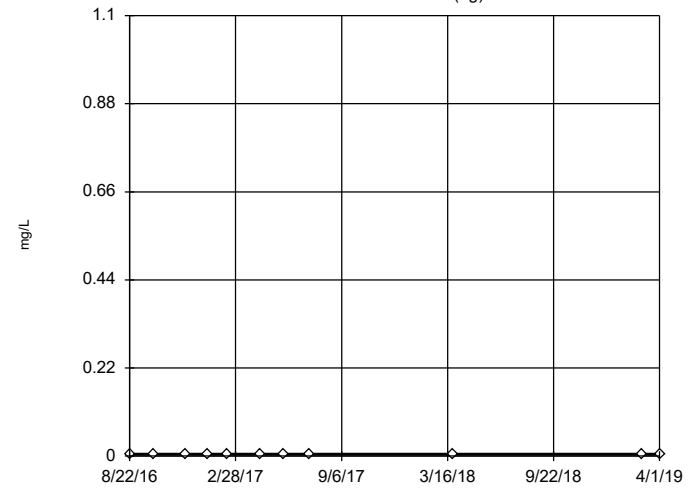
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 11  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Ladder of Powers transformations did not improve normality; analysis run on raw data.  
High cutoff = 0.0128, low cutoff = -0.0054, based on IQR multiplier of 3.

Constituent: Lead Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Tukey's Outlier Screening  
BGWA-29 (bg)

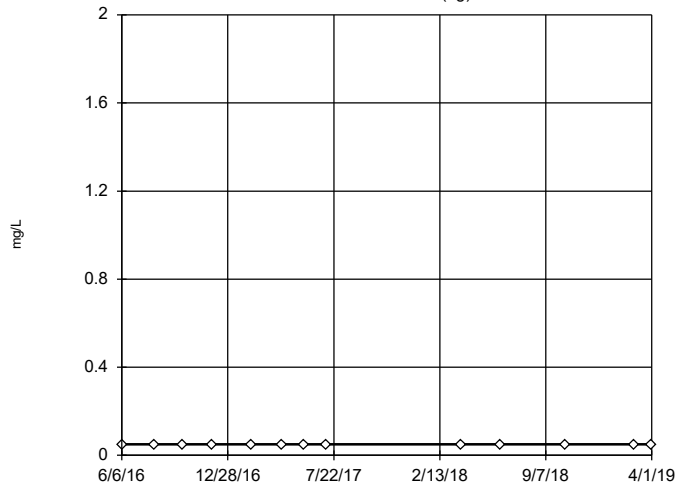


n = 11  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were square root transformed to achieve best W statistic (graph shown in original units).  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Lead Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1



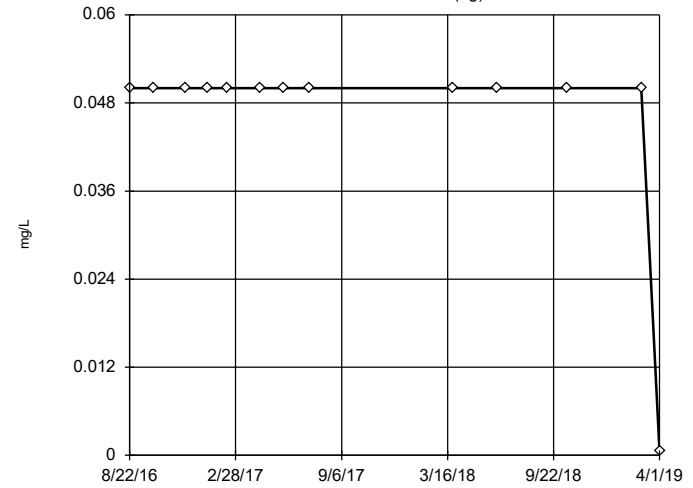
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 13  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were square root transformed to achieve best W statistic (graph shown in original units).  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Lithium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

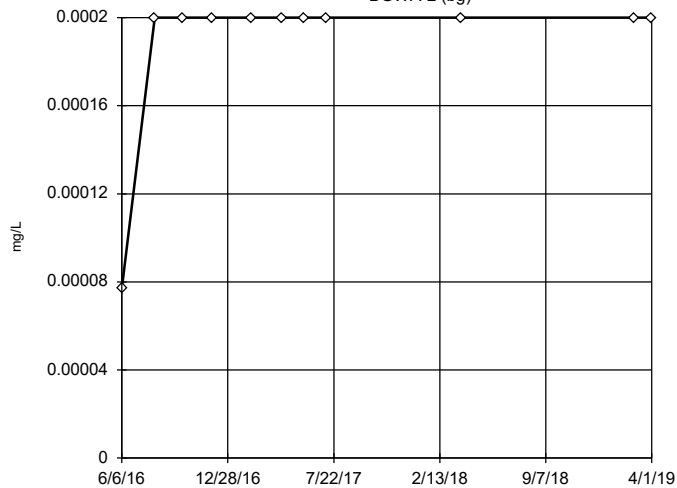
Tukey's Outlier Screening  
BGWA-29 (bg)



n = 13  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were x<sup>4</sup> transformed to achieve best W statistic (graph shown in original units).  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Lithium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

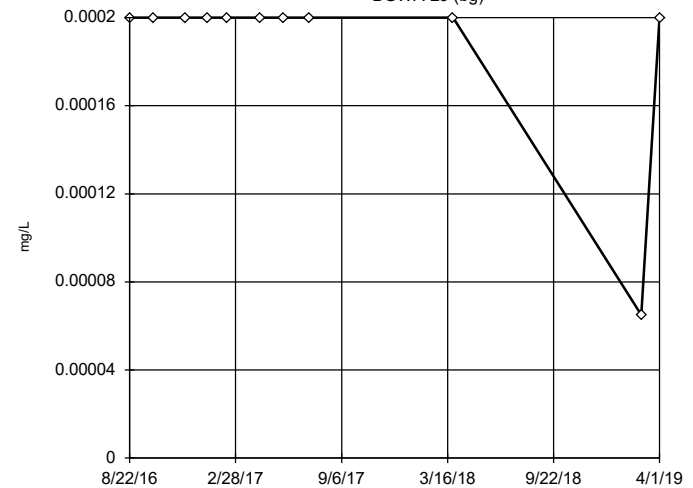
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 11  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Ladder of Powers transformations did not improve normality; analysis run on raw data.  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Mercury Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Tukey's Outlier Screening  
BGWA-29 (bg)

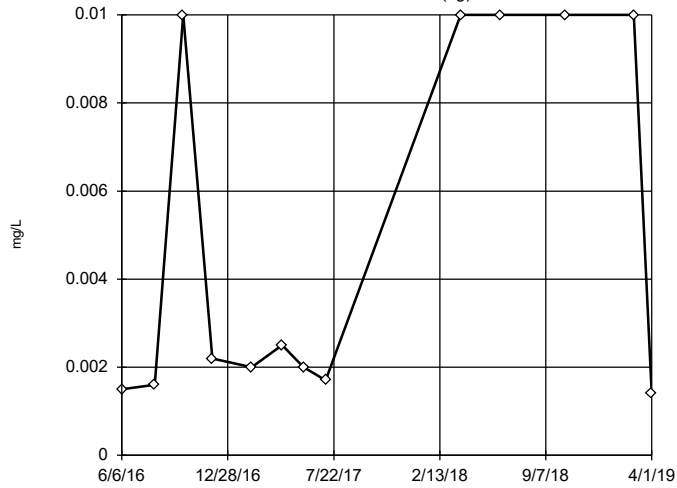


n = 11  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were cube root transformed to achieve best W statistic (graph shown in original units).  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Mercury Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Tukey's Outlier Screening

BGWA-2 (bg)



n = 13

No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.

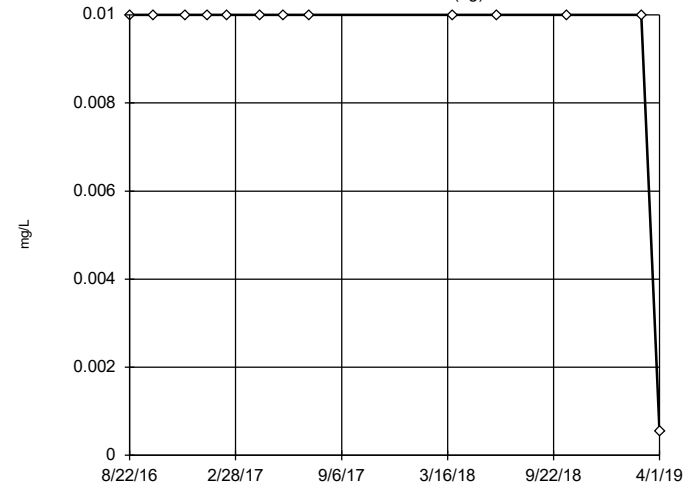
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2.229, low cutoff = 0.000007398, based on IQR multiplier of 3.

Constituent: Molybdenum Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Tukey's Outlier Screening

BGWA-29 (bg)



n = 13

No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.

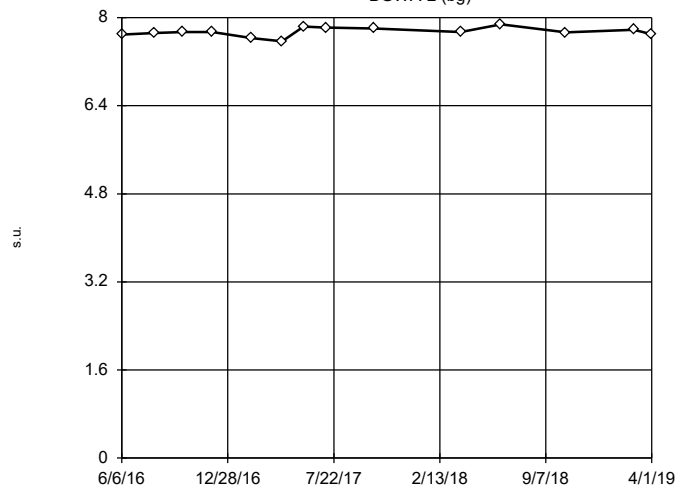
Data were square transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Molybdenum Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Tukey's Outlier Screening

BGWA-2 (bg)



n = 14

No outliers found. Tukey's method selected by user.

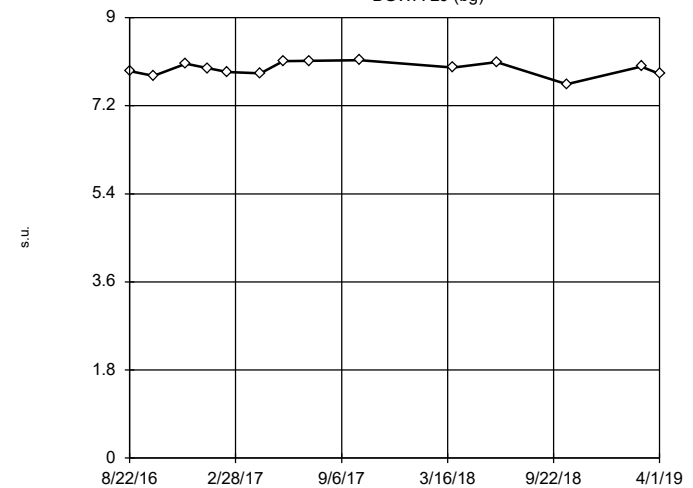
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.112, low cutoff = 7.286, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Tukey's Outlier Screening

BGWA-29 (bg)



n = 14

No outliers found. Tukey's method selected by user.

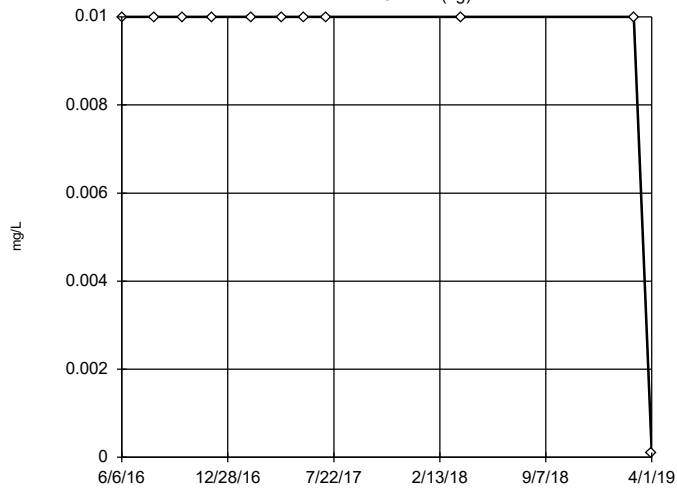
Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.671, low cutoff = 6.722, based on IQR multiplier of 3.

Constituent: pH Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Tukey's Outlier Screening

BGWA-2 (bg)



n = 11

No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.

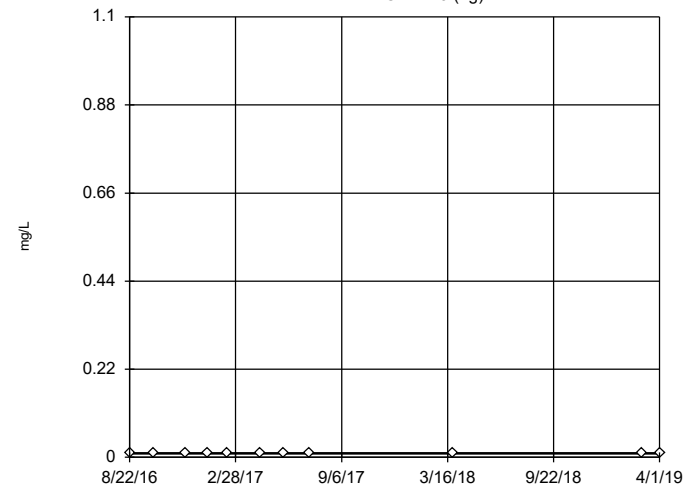
Data were square transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Selenium Analysis Run 7/18/2019 12:12 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Tukey's Outlier Screening

BGWA-29 (bg)



n = 11

No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.

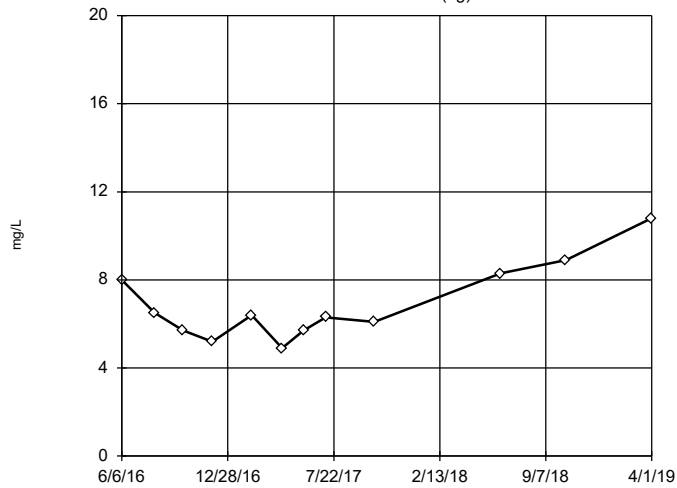
Data were square root transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Selenium Analysis Run 7/18/2019 12:12 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Tukey's Outlier Screening

BGWA-2 (bg)



n = 12

No outliers found. Tukey's method selected by user.

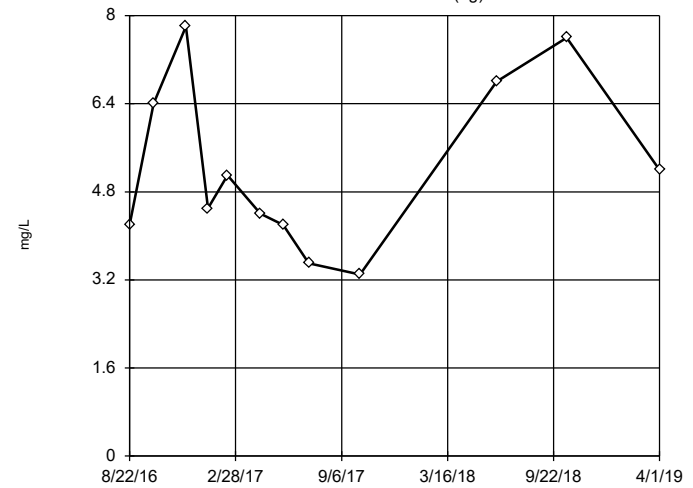
Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 23.81, low cutoff = 1.951, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/18/2019 12:12 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Tukey's Outlier Screening

BGWA-29 (bg)



n = 12

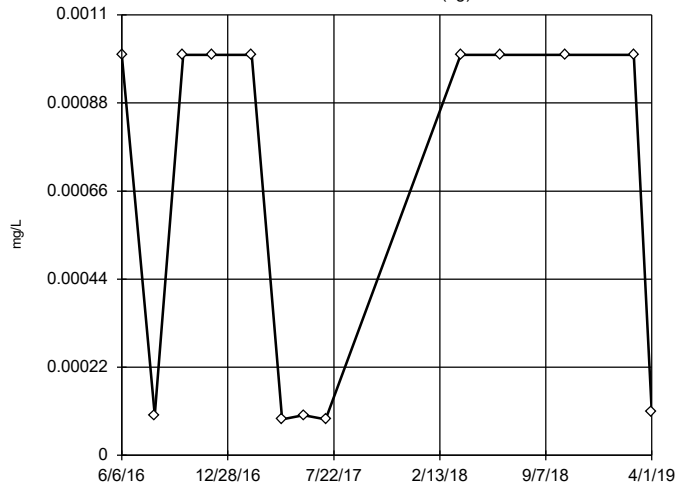
No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 25.56, low cutoff = 1.084, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 7/18/2019 12:12 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

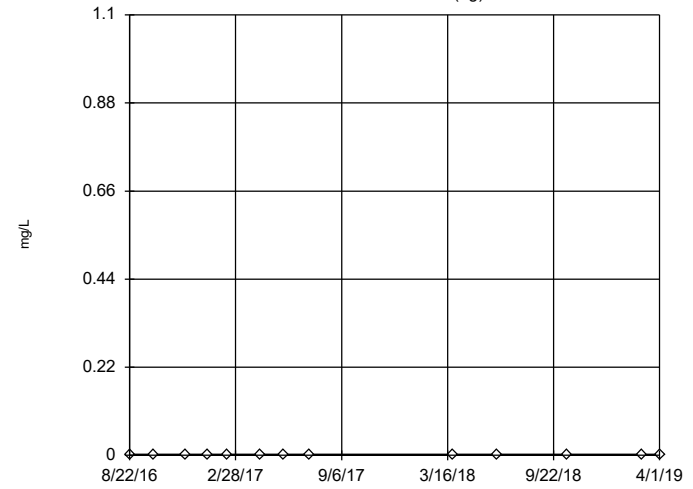
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 13  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were natural log transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 1, low cutoff = 1.0e-7, based on IQR multiplier of 3.

Constituent: Thallium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

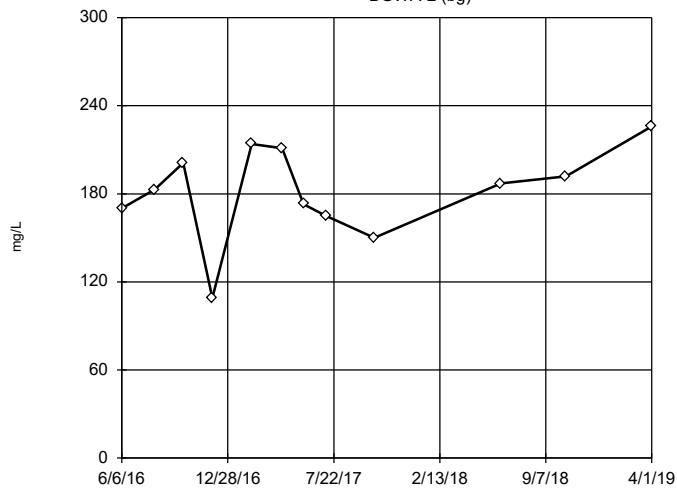
Tukey's Outlier Screening  
BGWA-29 (bg)



n = 13  
No outliers found. Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.05 alpha level.  
Data were cube root transformed to achieve best W statistic (graph shown in original units).  
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Thallium Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

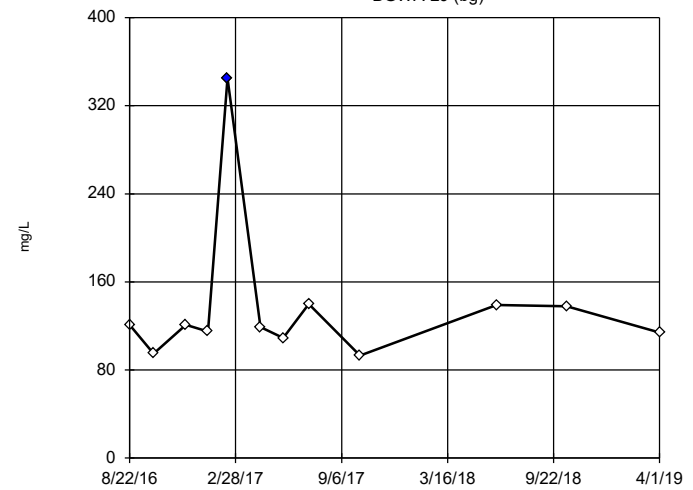
Tukey's Outlier Screening  
BGWA-2 (bg)



n = 12  
No outliers found. Tukey's method selected by user.  
Data were cube transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 275.5, low cutoff = -195.4, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

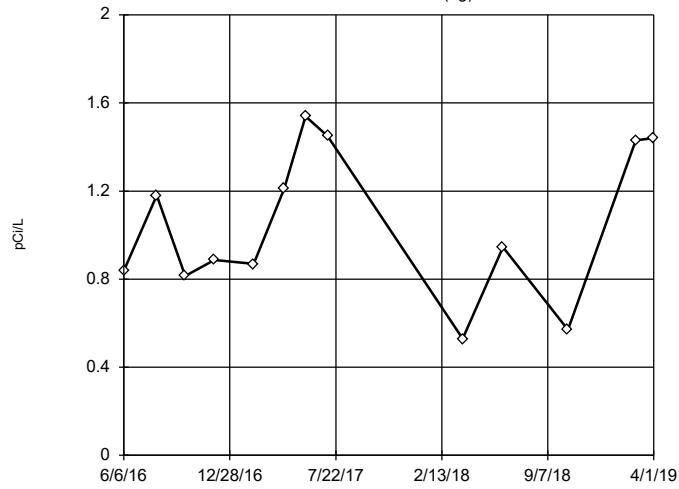
Tukey's Outlier Screening  
BGWA-29 (bg)



n = 12  
Outlier is drawn as solid. Tukey's method selected by user.  
Data were natural log transformed to achieve best W statistic (graph shown in original units).  
High cutoff = 265.6, low cutoff = 58.12, based on IQR multiplier of 3.

Constituent: Total Dissolved Solids Analysis Run 7/18/2019 12:12 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

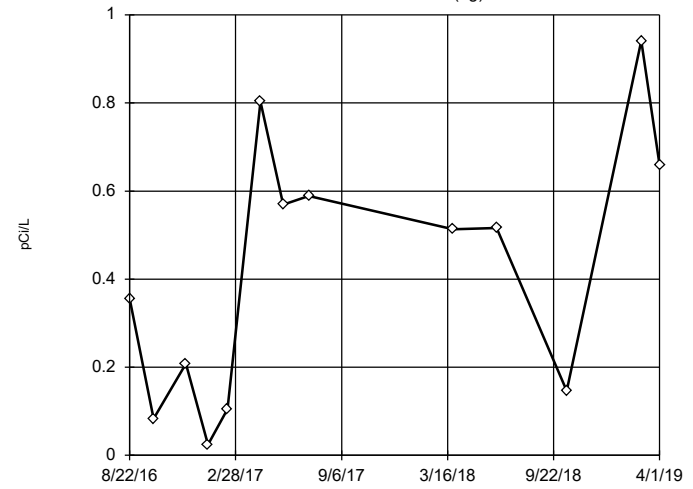
### Tukey's Outlier Screening BGWA-2 (bg)



n = 13  
 No outliers found.  
 Tukey's method selected by user.  
 Data were square root transformed to achieve best W statistic (graph shown in original units).  
 High cutoff = 4.262, low cutoff = 0.001819, based on IQR multiplier of 3.

Constituent: Total Radium Analysis Run 7/18/2019 12:12 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Tukey's Outlier Screening BGWA-29 (bg)



n = 13  
 No outliers found.  
 Tukey's method selected by user.  
 Data were square root transformed to achieve best W statistic (graph shown in original units).  
 High cutoff = 4.412, low cutoff = -0.9169, based on IQR multiplier of 3.

Constituent: Total Radium Analysis Run 7/18/2019 12:12 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

# Trend Test - Significant Results

Plant Bowen Client: Georgia Power Company Data: Bowen AP-1 Printed 7/18/2019, 12:46 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	BGWA-29 (bg)	-0.0004803	-36	-34	Yes	13	46.15	n/a	n/a	0.05	NP
Barium (mg/L)	BGWA-2 (bg)	-0.01347	-40	-34	Yes	13	0	n/a	n/a	0.05	NP
Barium (mg/L)	BGWA-29 (bg)	-0.005008	-35	-34	Yes	13	0	n/a	n/a	0.05	NP
Boron (mg/L)	BGWA-2 (bg)	-0.009846	-41	-30	Yes	12	16.67	n/a	n/a	0.05	NP

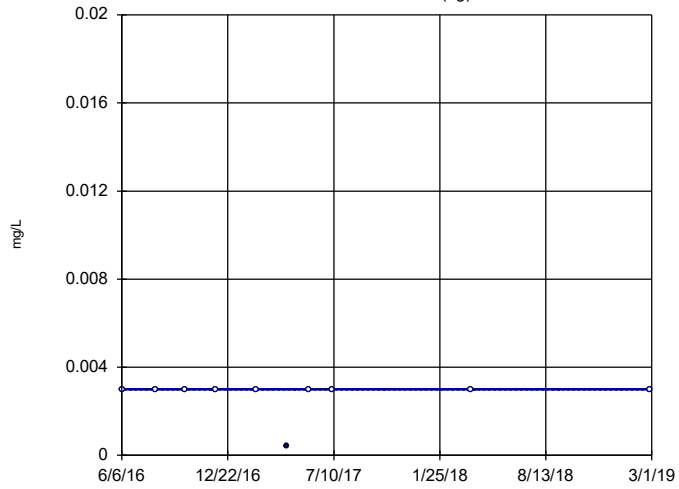
# Trend Test - All Results

Plant Bowen    Client: Georgia Power Company    Data: Bowen AP-1    Printed 7/18/2019, 12:46 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Antimony (mg/L)	BGWA-2 (bg)	0	-1	-23	No	10	90	n/a	n/a	0.05	NP
Antimony (mg/L)	BGWA-29 (bg)	0	0	23	No	10	100	n/a	n/a	0.05	NP
Arsenic (mg/L)	BGWA-2 (bg)	-0.0006222	-30	-34	No	13	30.77	n/a	n/a	0.05	NP
<b>Arsenic (mg/L)</b>	<b>BGWA-29 (bg)</b>	<b>-0.0004803</b>	<b>-36</b>	<b>-34</b>	<b>Yes</b>	<b>13</b>	<b>46.15</b>	<b>n/a</b>	<b>n/a</b>	<b>0.05</b>	<b>NP</b>
<b>Barium (mg/L)</b>	<b>BGWA-2 (bg)</b>	<b>-0.01347</b>	<b>-40</b>	<b>-34</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.05</b>	<b>NP</b>
<b>Barium (mg/L)</b>	<b>BGWA-29 (bg)</b>	<b>-0.005008</b>	<b>-35</b>	<b>-34</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.05</b>	<b>NP</b>
Beryllium (mg/L)	BGWA-2 (bg)	0	0	27	No	11	100	n/a	n/a	0.05	NP
Beryllium (mg/L)	BGWA-29 (bg)	0	0	27	No	11	100	n/a	n/a	0.05	NP
<b>Boron (mg/L)</b>	<b>BGWA-2 (bg)</b>	<b>-0.009846</b>	<b>-41</b>	<b>-30</b>	<b>Yes</b>	<b>12</b>	<b>16.67</b>	<b>n/a</b>	<b>n/a</b>	<b>0.05</b>	<b>NP</b>
Boron (mg/L)	BGWA-29 (bg)	0	-13	-30	No	12	58.33	n/a	n/a	0.05	NP
Cadmium (mg/L)	BGWA-2 (bg)	0	0	34	No	13	100	n/a	n/a	0.05	NP
Cadmium (mg/L)	BGWA-29 (bg)	0	6	34	No	13	92.31	n/a	n/a	0.05	NP
Calcium (mg/L)	BGWA-2 (bg)	1.136	14	30	No	12	0	n/a	n/a	0.05	NP
Calcium (mg/L)	BGWA-29 (bg)	-0.142	-3	-30	No	12	0	n/a	n/a	0.05	NP
Chloride (mg/L)	BGWA-2 (bg)	0.08469	3	30	No	12	0	n/a	n/a	0.05	NP
Chloride (mg/L)	BGWA-29 (bg)	-0.1988	-27	-30	No	12	0	n/a	n/a	0.05	NP
Chromium (mg/L)	BGWA-2 (bg)	0	3	27	No	11	72.73	n/a	n/a	0.05	NP
Chromium (mg/L)	BGWA-29 (bg)	0	-1	-27	No	11	63.64	n/a	n/a	0.05	NP
Cobalt (mg/L)	BGWA-2 (bg)	0	-3	-34	No	13	84.62	n/a	n/a	0.05	NP
Cobalt (mg/L)	BGWA-29 (bg)	0	0	34	No	13	100	n/a	n/a	0.05	NP
Fluoride (mg/L)	BGWA-2 (bg)	-0.002173	-8	-37	No	14	14.29	n/a	n/a	0.05	NP
Fluoride (mg/L)	BGWA-29 (bg)	0.09637	31	37	No	14	42.86	n/a	n/a	0.05	NP
Lead (mg/L)	BGWA-2 (bg)	0	9	27	No	11	72.73	n/a	n/a	0.05	NP
Lead (mg/L)	BGWA-29 (bg)	0	0	27	No	11	100	n/a	n/a	0.05	NP
Lithium (mg/L)	BGWA-2 (bg)	0	0	34	No	13	100	n/a	n/a	0.05	NP
Lithium (mg/L)	BGWA-29 (bg)	0	-12	-34	No	13	92.31	n/a	n/a	0.05	NP
Mercury (mg/L)	BGWA-2 (bg)	0	10	27	No	11	90.91	n/a	n/a	0.05	NP
Mercury (mg/L)	BGWA-29 (bg)	0	-8	-27	No	11	90.91	n/a	n/a	0.05	NP
Molybdenum (mg/L)	BGWA-2 (bg)	0.0005437	19	34	No	13	38.46	n/a	n/a	0.05	NP
Molybdenum (mg/L)	BGWA-29 (bg)	0	-12	-34	No	13	92.31	n/a	n/a	0.05	NP
pH (s.u.)	BGWA-2 (bg)	0.02355	16	37	No	14	0	n/a	n/a	0.05	NP
pH (s.u.)	BGWA-29 (bg)	0.01606	5	37	No	14	0	n/a	n/a	0.05	NP
Selenium (mg/L)	BGWA-2 (bg)	0	-10	-27	No	11	90.91	n/a	n/a	0.05	NP
Selenium (mg/L)	BGWA-29 (bg)	0	0	27	No	11	100	n/a	n/a	0.05	NP
Sulfate (mg/L)	BGWA-2 (bg)	1.082	19	30	No	12	0	n/a	n/a	0.05	NP
Sulfate (mg/L)	BGWA-29 (bg)	-0.2475	-3	-30	No	12	0	n/a	n/a	0.05	NP
Thallium (mg/L)	BGWA-2 (bg)	0	0	34	No	13	61.54	n/a	n/a	0.05	NP
Thallium (mg/L)	BGWA-29 (bg)	0	0	34	No	13	100	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	BGWA-2 (bg)	8.873	12	30	No	12	0	n/a	n/a	0.05	NP
Total Dissolved Solids (mg/L)	BGWA-29 (bg)	-0.225	-1	-30	No	12	0	n/a	n/a	0.05	NP
Total Radium (pCi/L)	BGWA-2 (bg)	0.09823	16	34	No	13	0	n/a	n/a	0.05	NP
Total Radium (pCi/L)	BGWA-29 (bg)	0.1977	30	34	No	13	0	n/a	n/a	0.05	NP

### Sen's Slope and 95% Confidence Band

BGWA-2 (bg)

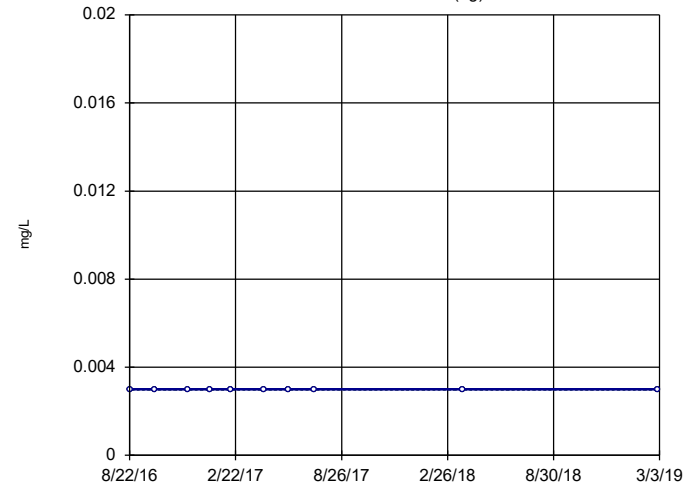


n = 10  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = -1  
critical = -23  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Antimony Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-29 (bg)

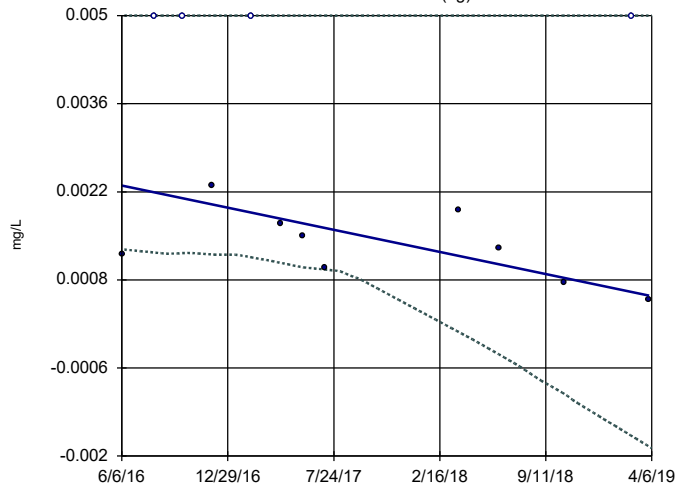


n = 10  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 0  
critical = 23  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Antimony Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-2 (bg)

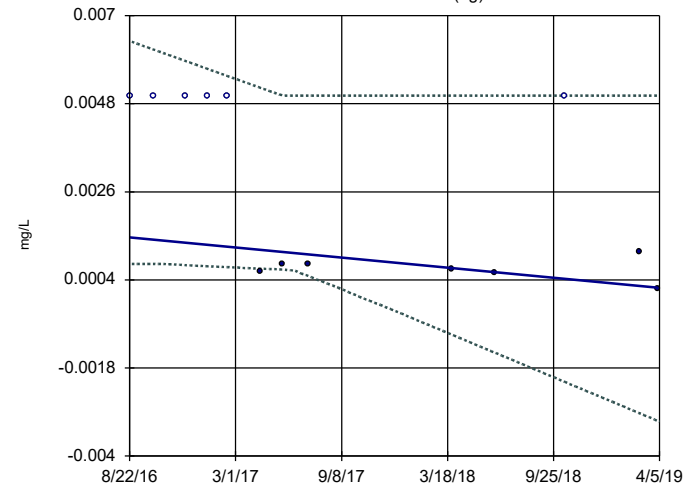


n = 13  
Slope = -0.0006222  
units per year.  
Mann-Kendall  
statistic = -30  
critical = -34  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Arsenic Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-29 (bg)

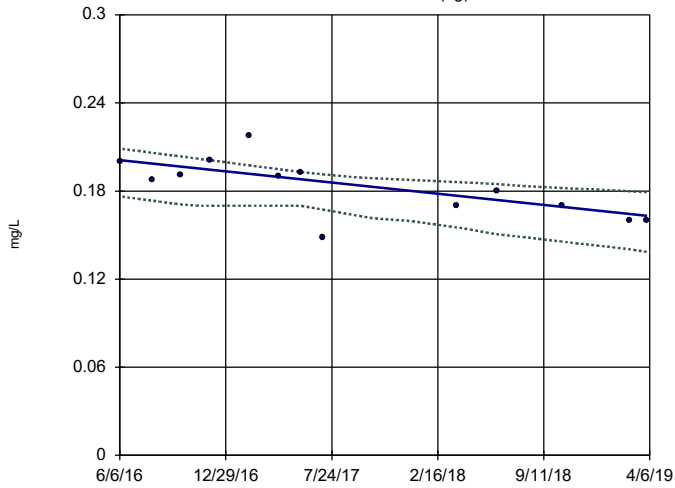


n = 13  
Slope = -0.0004803  
units per year.  
Mann-Kendall  
statistic = -36  
critical = -34  
Decreasing trend  
significant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Arsenic Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1



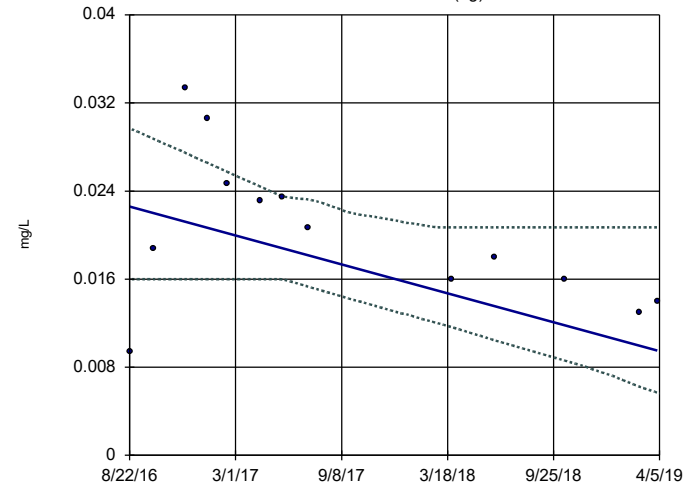
Sen's Slope and 95% Confidence Band  
BGWA-2 (bg)



n = 13  
Slope = -0.01347  
units per year.  
Mann-Kendall  
statistic = -40  
critical = -34  
Decreasing trend  
significant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Barium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

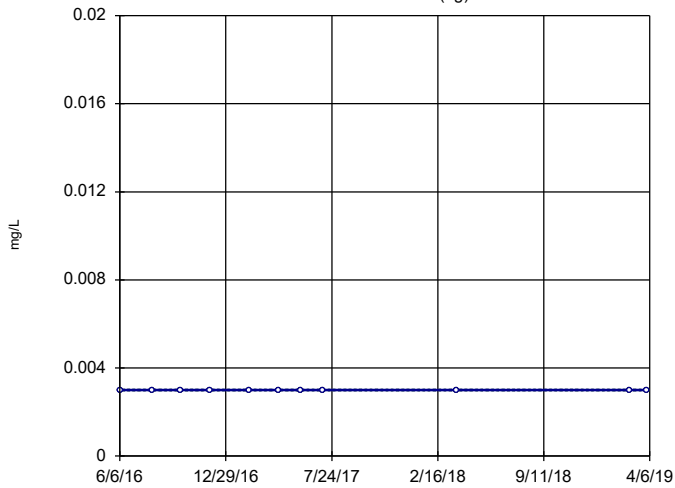
Sen's Slope and 95% Confidence Band  
BGWA-29 (bg)



n = 13  
Slope = -0.005008  
units per year.  
Mann-Kendall  
statistic = -35  
critical = -34  
Decreasing trend  
significant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Barium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

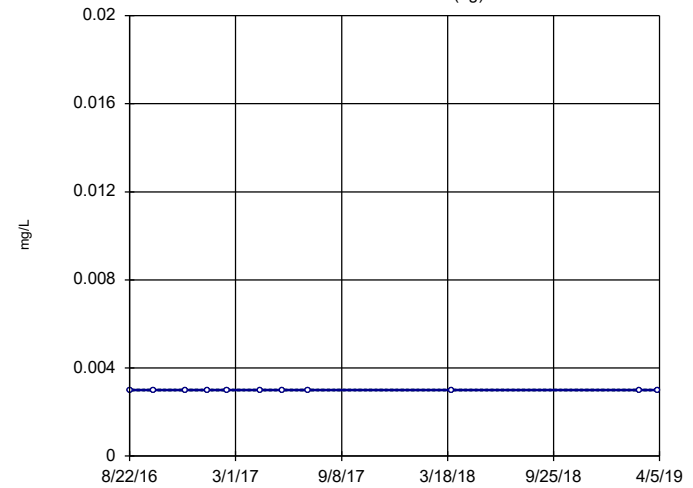
Sen's Slope and 95% Confidence Band  
BGWA-2 (bg)



n = 11  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 0  
critical = 27  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Beryllium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

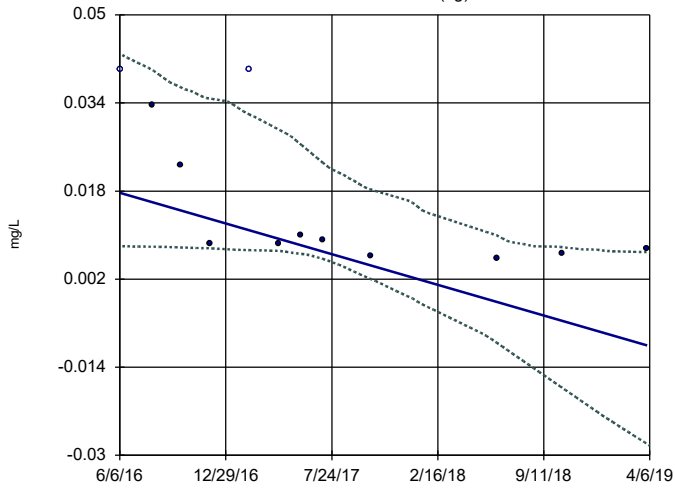
Sen's Slope and 95% Confidence Band  
BGWA-29 (bg)



n = 11  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 0  
critical = 27  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Beryllium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

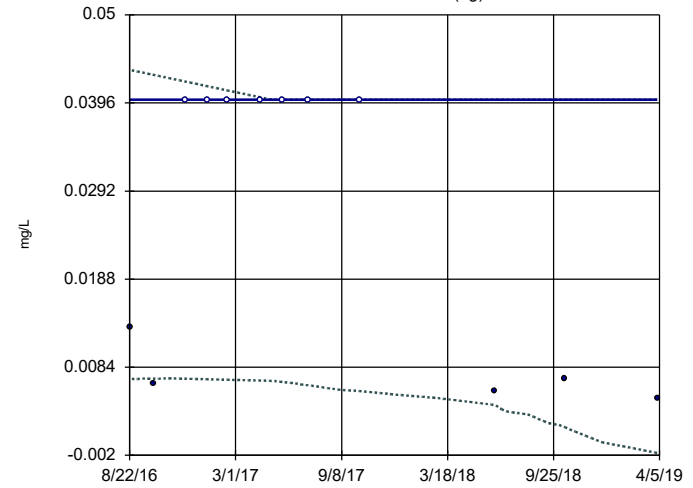
Sen's Slope and 95% Confidence Band  
BGWA-2 (bg)



n = 12  
Slope = -0.009846  
units per year.  
Mann-Kendall  
statistic = -41  
critical = -30  
Decreasing trend  
significant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Boron Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

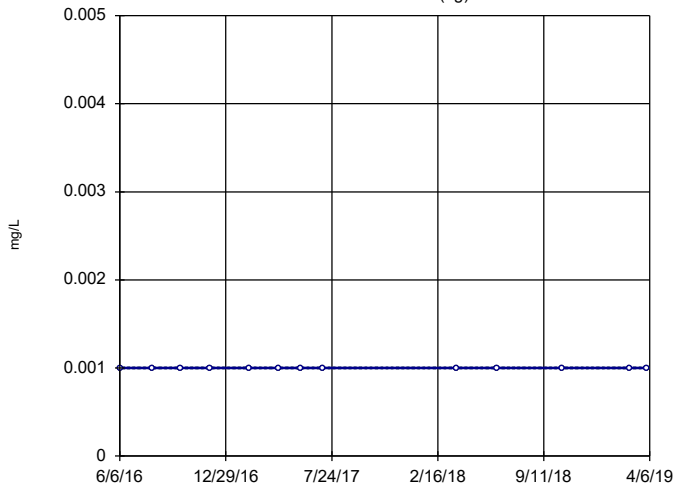
Sen's Slope and 95% Confidence Band  
BGWA-29 (bg)



n = 12  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = -13  
critical = -30  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Boron Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

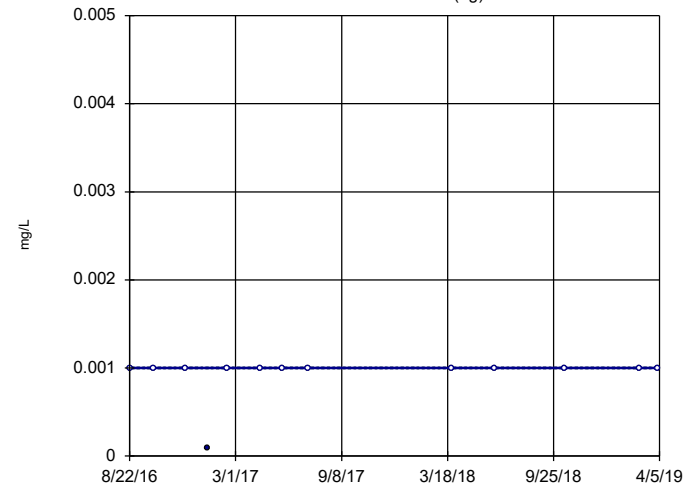
Sen's Slope and 95% Confidence Band  
BGWA-2 (bg)



n = 13  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 0  
critical = 34  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Cadmium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Sen's Slope and 95% Confidence Band  
BGWA-29 (bg)

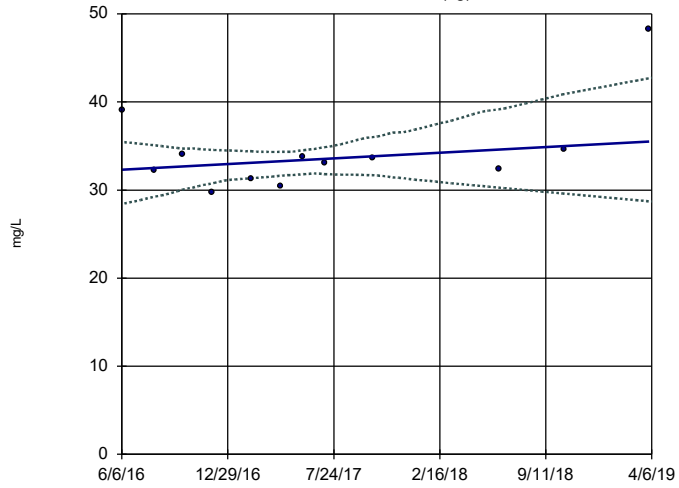


n = 13  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 6  
critical = 34  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Cadmium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

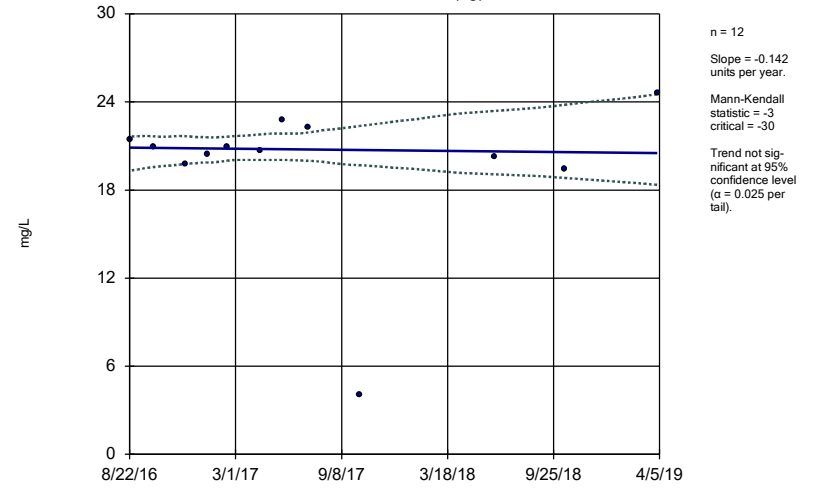
BGWA-2 (bg)



Constituent: Calcium Analysis Run 7/18/2019 12:45 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

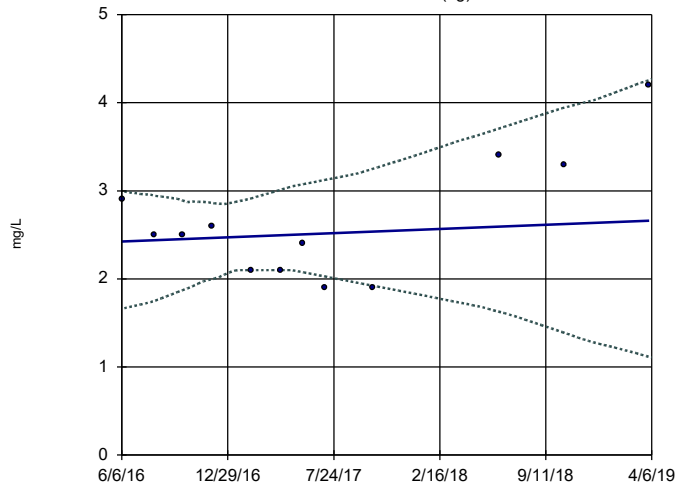
BGWA-29 (bg)



Constituent: Calcium Analysis Run 7/18/2019 12:45 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

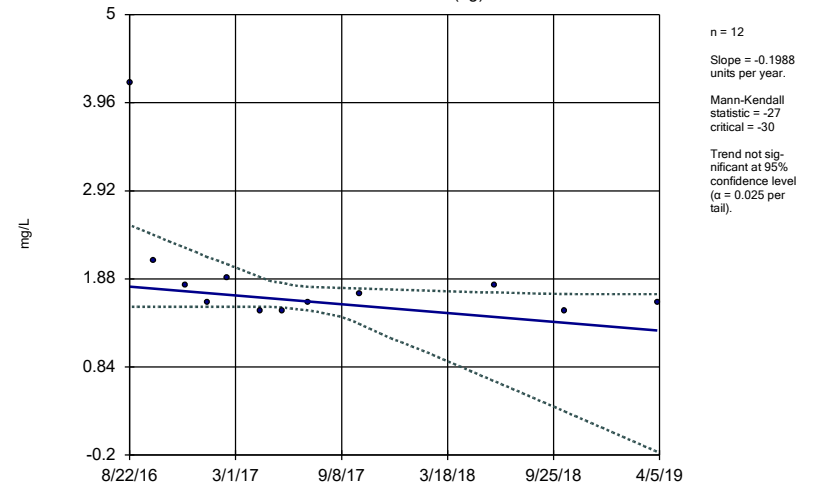
BGWA-2 (bg)



Constituent: Chloride Analysis Run 7/18/2019 12:45 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

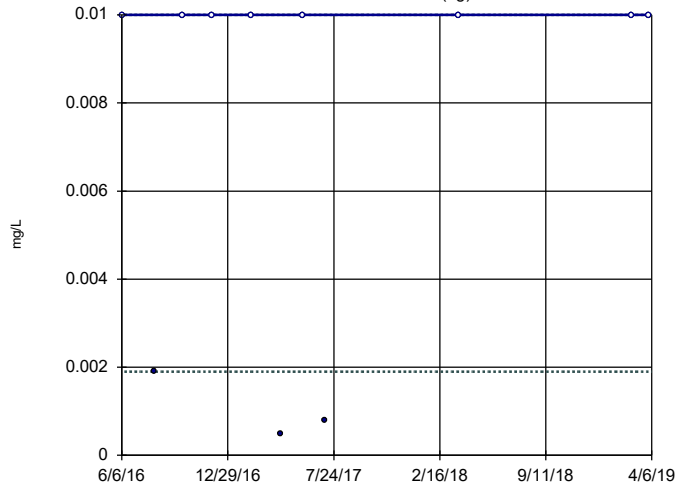
BGWA-29 (bg)



Constituent: Chloride Analysis Run 7/18/2019 12:45 AM  
 Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

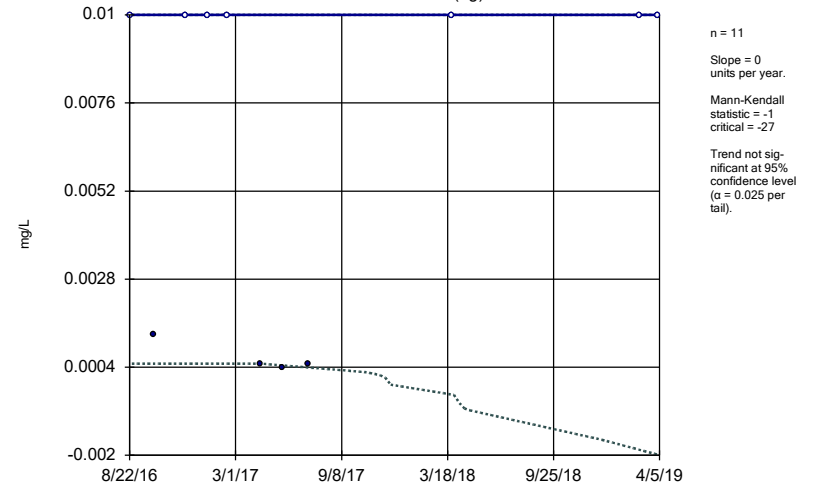
BGWA-2 (bg)



Constituent: Chromium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

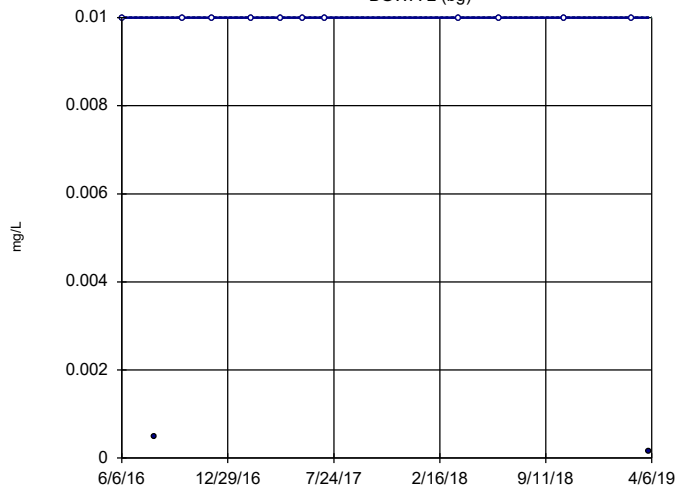
BGWA-29 (bg)



Constituent: Chromium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

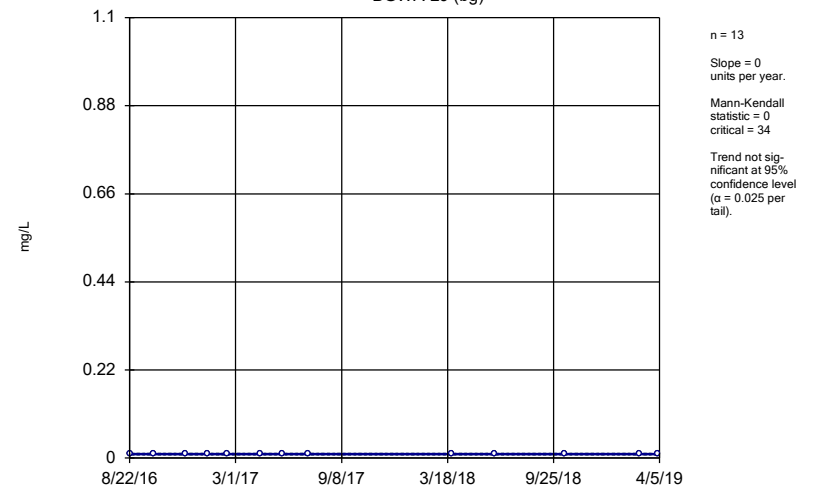
BGWA-2 (bg)



Constituent: Cobalt Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

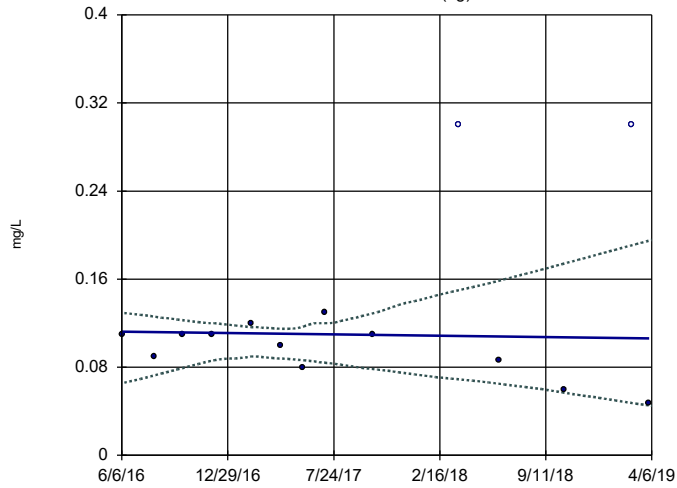
BGWA-29 (bg)



Constituent: Cobalt Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Sen's Slope and 95% Confidence Band

BGWA-2 (bg)

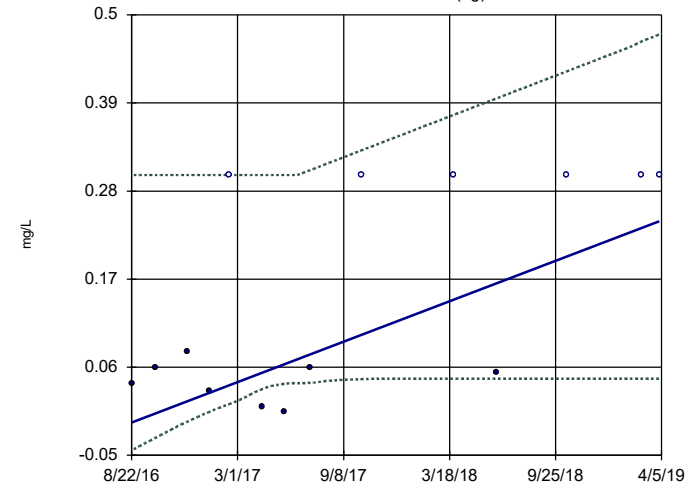


n = 14  
Slope = -0.002173  
units per year.  
Mann-Kendall  
statistic = -8  
critical = -37  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Fluoride Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Sen's Slope and 95% Confidence Band

BGWA-29 (bg)

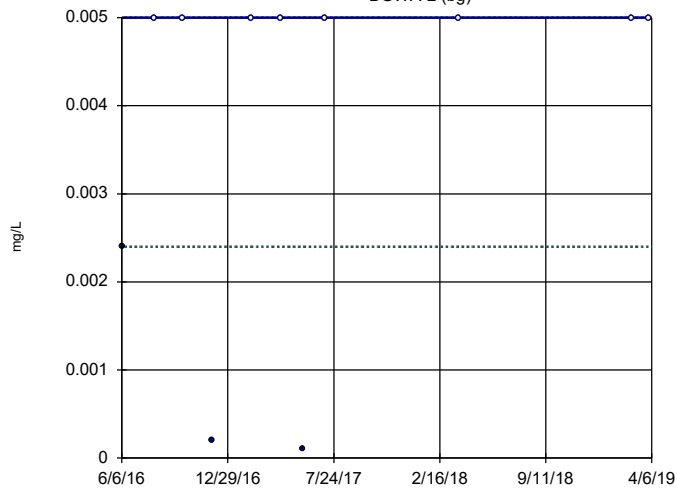


n = 14  
Slope = 0.09637  
units per year.  
Mann-Kendall  
statistic = 31  
critical = 37  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Fluoride Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Sen's Slope and 95% Confidence Band

BGWA-2 (bg)

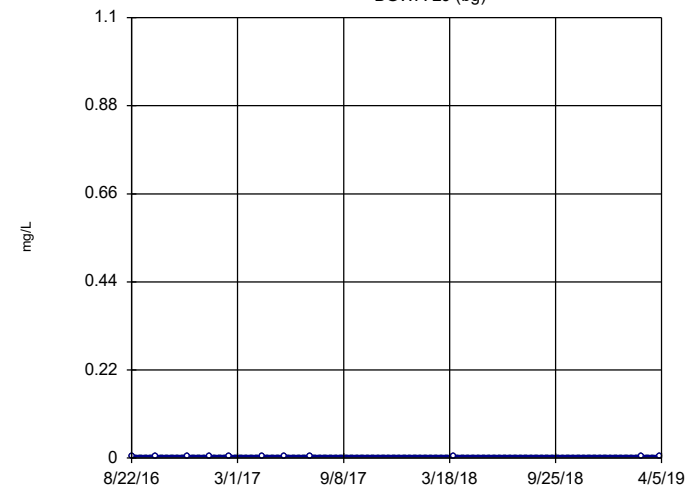


n = 11  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 9  
critical = 27  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Lead Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Sen's Slope and 95% Confidence Band

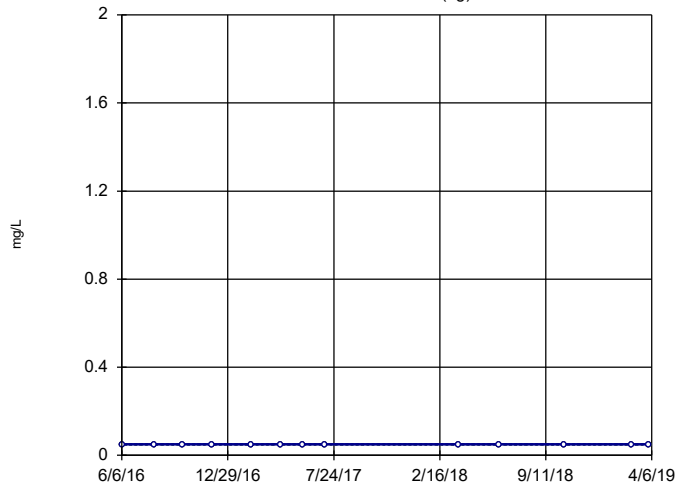
BGWA-29 (bg)



n = 11  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 0  
critical = 27  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Lead Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

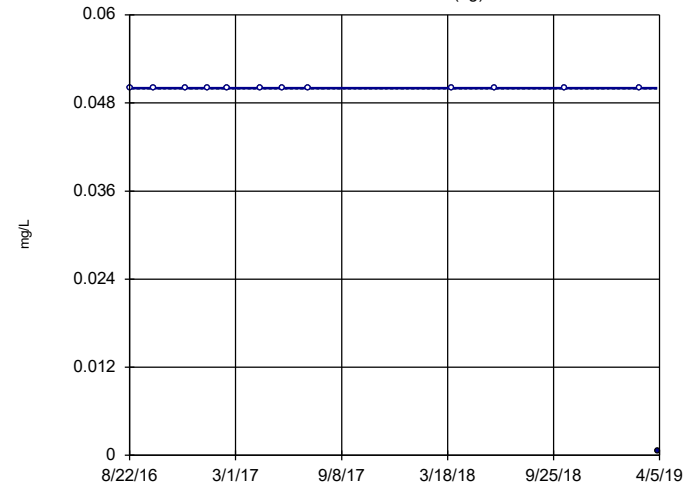
Sen's Slope and 95% Confidence Band  
BGWA-2 (bg)



n = 13  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 0  
critical = 34  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Lithium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

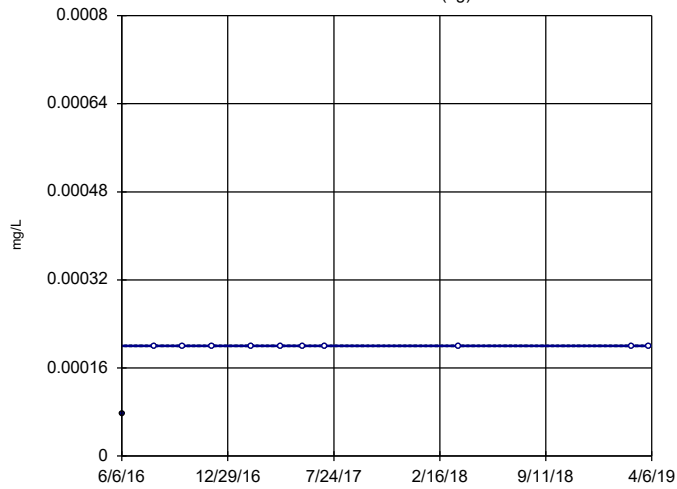
Sen's Slope and 95% Confidence Band  
BGWA-29 (bg)



n = 13  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = -12  
critical = -34  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Lithium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

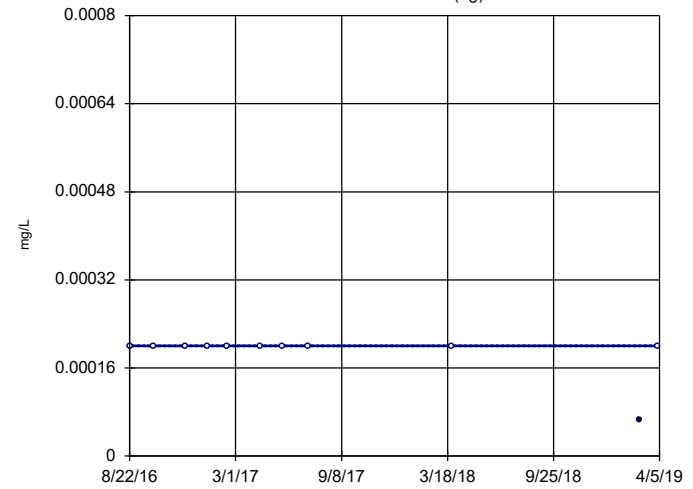
Sen's Slope and 95% Confidence Band  
BGWA-2 (bg)



n = 11  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 10  
critical = 27  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Mercury Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

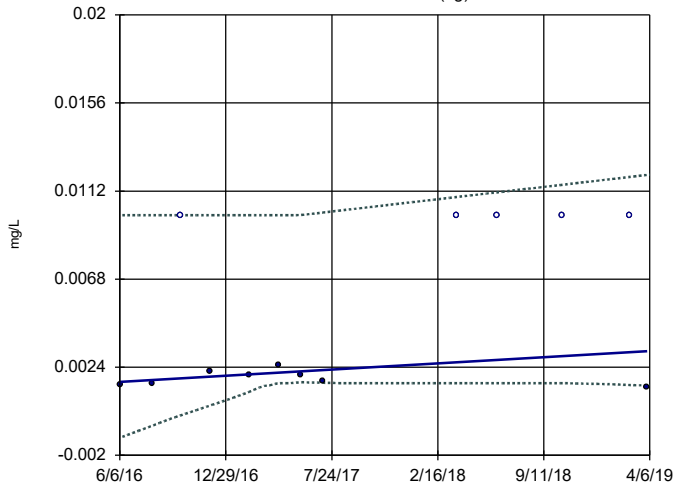
Sen's Slope and 95% Confidence Band  
BGWA-29 (bg)



n = 11  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = -8  
critical = -27  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Mercury Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

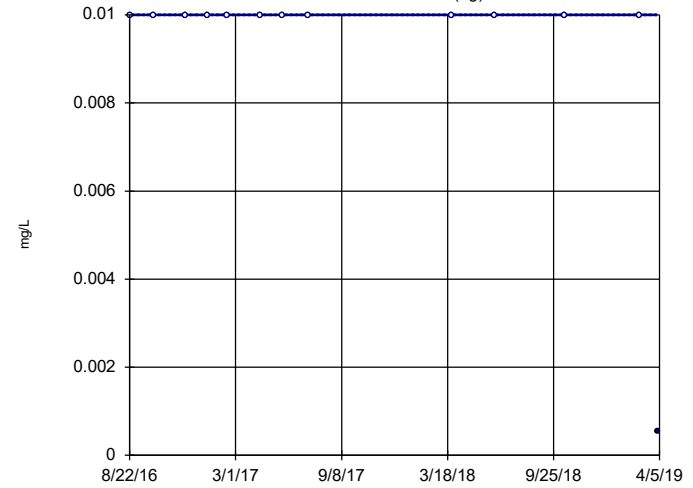
Sen's Slope and 95% Confidence Band  
BGWA-2 (bg)



n = 13  
Slope = 0.0005437  
units per year.  
Mann-Kendall  
statistic = 19  
critical = 34  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Molybdenum Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

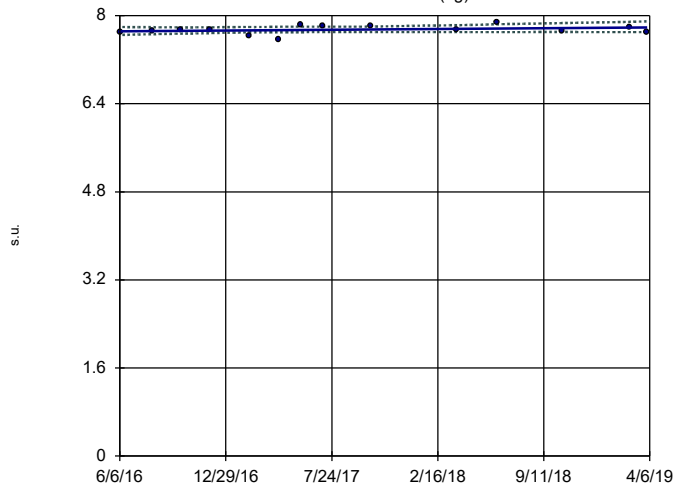
Sen's Slope and 95% Confidence Band  
BGWA-29 (bg)



n = 13  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = -12  
critical = -34  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Molybdenum Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

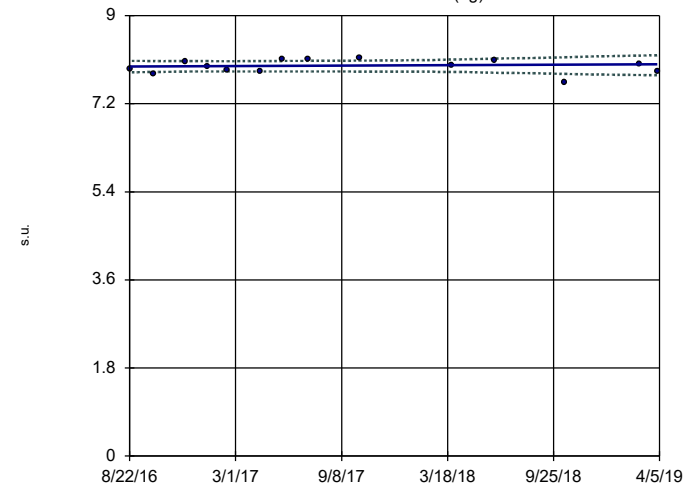
Sen's Slope and 95% Confidence Band  
BGWA-2 (bg)



n = 14  
Slope = 0.02355  
units per year.  
Mann-Kendall  
statistic = 16  
critical = 37  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: pH Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

Sen's Slope and 95% Confidence Band  
BGWA-29 (bg)

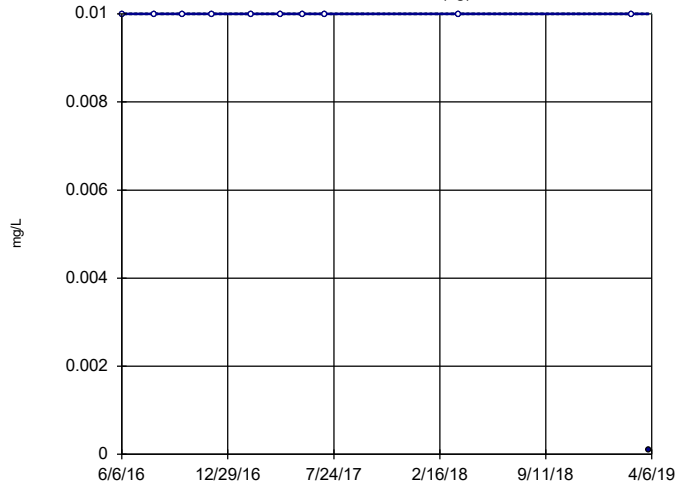


n = 14  
Slope = 0.01606  
units per year.  
Mann-Kendall  
statistic = 5  
critical = 37  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: pH Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-2 (bg)

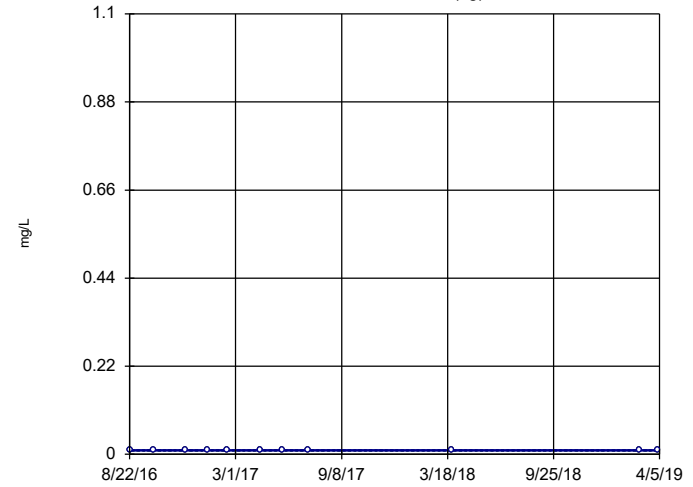


n = 11  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = -10  
critical = -27  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Selenium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-29 (bg)

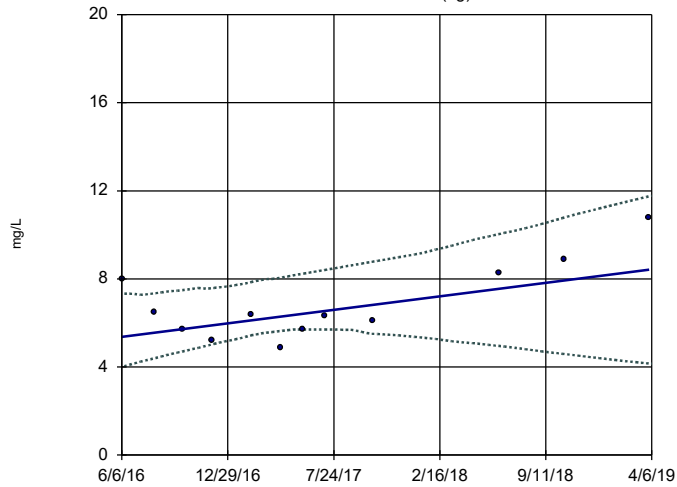


n = 11  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 0  
critical = 27  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Selenium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-2 (bg)

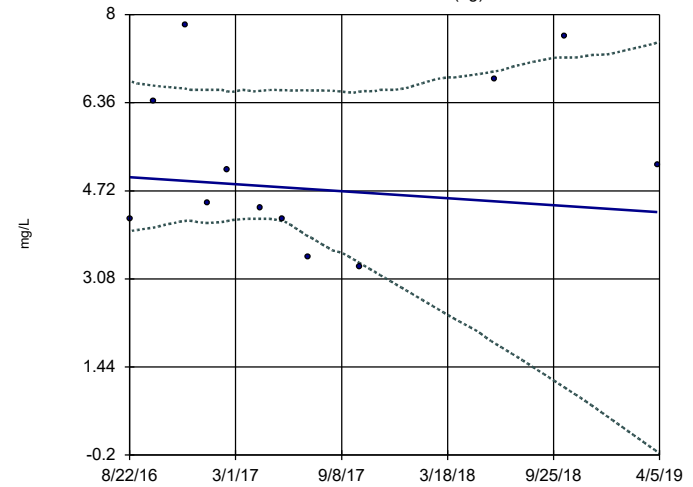


n = 12  
Slope = 1.082  
units per year.  
Mann-Kendall  
statistic = 19  
critical = 30  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Sulfate Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-29 (bg)



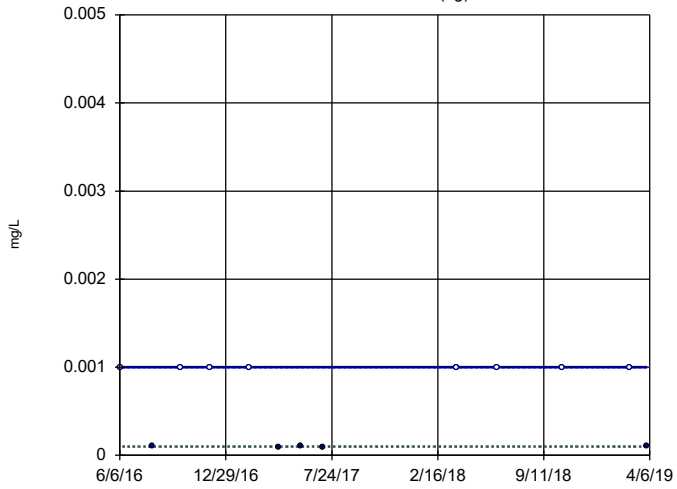
n = 12  
Slope = -0.2475  
units per year.  
Mann-Kendall  
statistic = -3  
critical = -30  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Sulfate Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1



### Sen's Slope and 95% Confidence Band

BGWA-2 (bg)

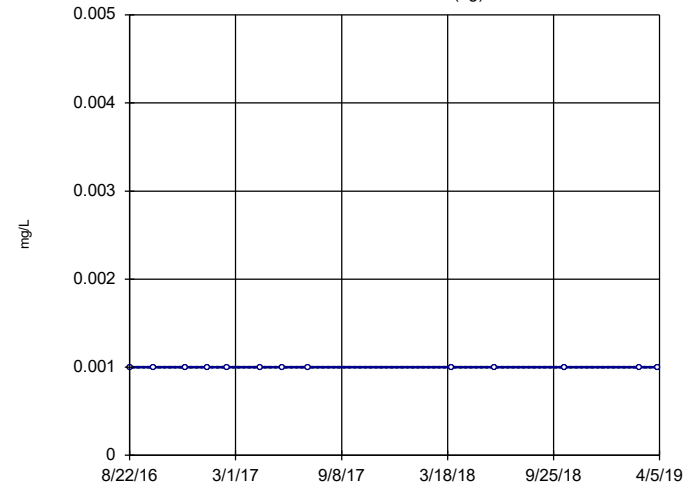


n = 13  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 0  
critical = 34  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Thallium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-29 (bg)

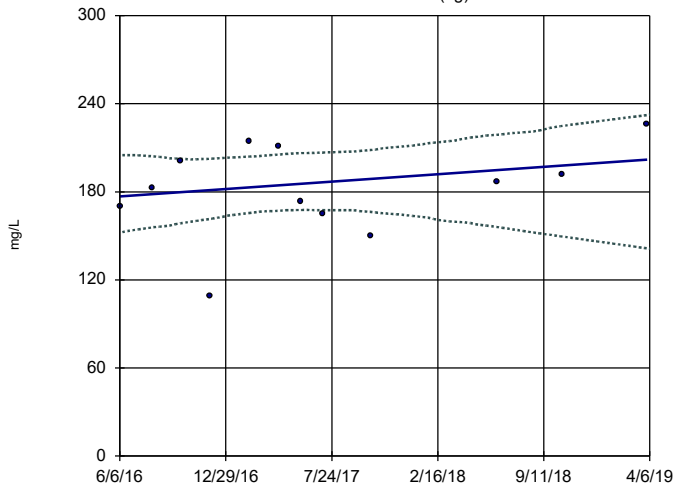


n = 13  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 0  
critical = 34  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Thallium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-2 (bg)

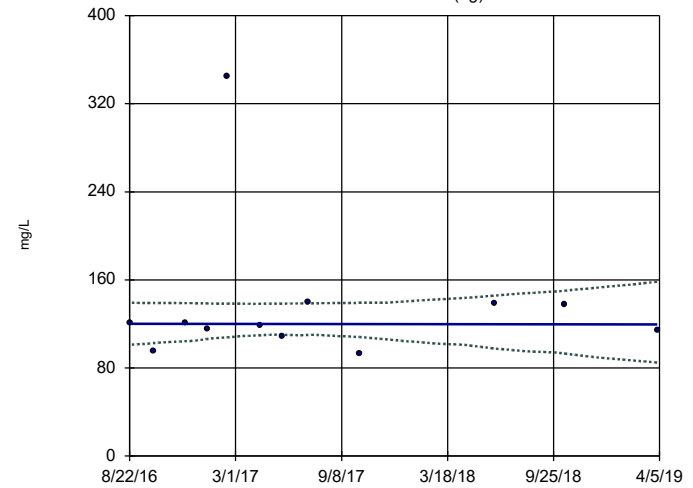


n = 12  
Slope = 8.873  
units per year.  
Mann-Kendall  
statistic = 12  
critical = 30  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Total Dissolved Solids Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-29 (bg)

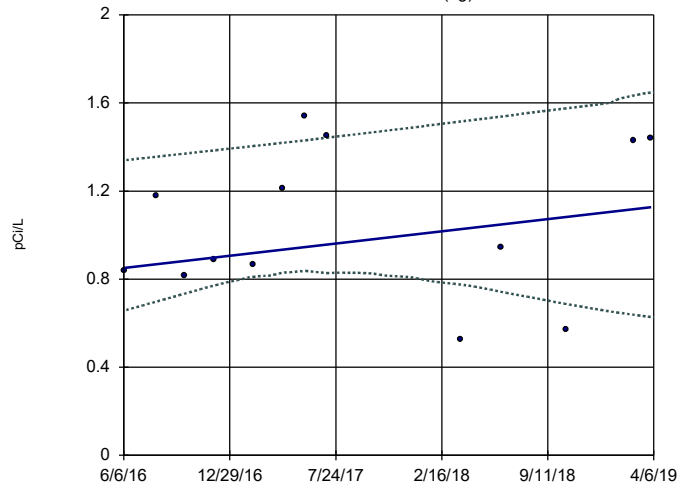


n = 12  
Slope = -0.225  
units per year.  
Mann-Kendall  
statistic = -1  
critical = -30  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Total Dissolved Solids Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-2 (bg)

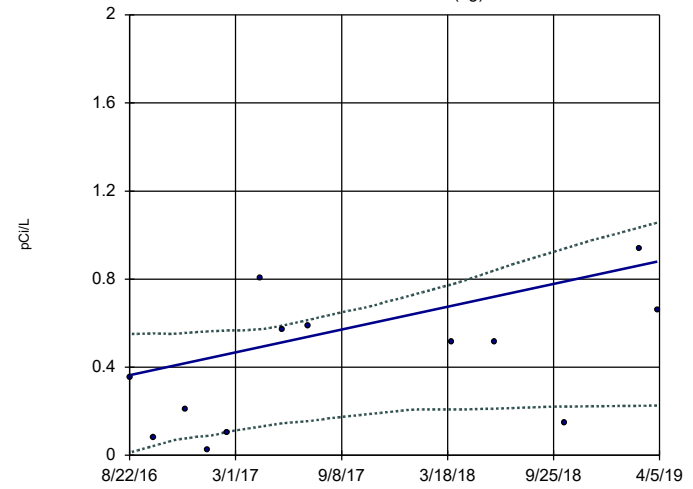


n = 13  
Slope = 0.09823  
units per year.  
Mann-Kendall  
statistic = 16  
critical = 34  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Total Radium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1

### Sen's Slope and 95% Confidence Band

BGWA-29 (bg)



n = 13  
Slope = 0.1977  
units per year.  
Mann-Kendall  
statistic = 30  
critical = 34  
Trend not sig-  
nificant at 95%  
confidence level  
( $\alpha = 0.025$  per  
tail).

Constituent: Total Radium Analysis Run 7/18/2019 12:45 AM  
Plant Bowen Client: Georgia Power Company Data: Bowen AP-1