REPORT

2020 Annual Groundwater Monitoring and Corrective Action Report

Georgia Power Company - Plant Branch
Ash Pond E

Submitted to:

Georgia Power Company
241 Ralph McGill Boulevard NE, Atlanta, Georgia 30308

Submitted by:

Golder Associates Inc.
5170 Peachtree Road Building 100 Suite 300, Atlanta, Georgia, USA 30341
+1 770 496-1893

166625418

July 31, 2020

Table of Contents

Table of Contents (continued)

Figures & Tables

Appendices

Certification Statement

This *2020 Annual Groundwater Monitoring & Corrective Action Report*, *Georgia Power Company Plant Branch Ash Pond E* (AP-E) has been prepared in compliance with the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10(6)(a-c) by a qualified groundwater scientist with Golder Associates Inc.

Golder Associates Inc.

Rachel P. Kirkman, PG
Principal and Senior Consultant

BRIAN STEELE
GEORGIA REGISTERED PROFESSIONAL GEOLOGIST
No. PG002171

7/30/2020

Brian Steele, PG
Georgia Registered Professional Geologist No. 2171

1.0 INTRODUCTION

In accordance with the Georgia Environmental Protection Division (GA EPD) Rules of Solid Waste Management 391-3-4-.10(6)(a)-(c), this *2020 Annual Groundwater Monitoring and Corrective Action Report* has been prepared to document groundwater monitoring activities conducted at Georgia Power Company's (GPC's) Plant Branch Ash Pond E, referred to as AP-E. To specify groundwater monitoring requirements, GA EPD rule 391-3-4-.10(6)(a) incorporates by reference the United States Environmental Protection Agency (US EPA) Coal Combustion Residuals (CCR) Rule 40 Code of Federal Regulations (CFR) § 257.90 through 257.91 and 257.93 through 257.94. This report documents the activities completed July 1 through December 31, 2019 following the requirements of the site's groundwater monitoring program and in accordance with § 257.90(e) and Georgia EPD rule 391-3-4-.10(6)(a). For ease of reference, the US EPA CCR rules are cited within this report.

Three monitoring events were conducted during this monitoring period: an initial assessment monitoring event was conducted in August 2019 as a result of statistical exceedances during the first detection monitoring event, two semi-annual assessment monitoring events conducted in October 2019 and March 2020. This report documents the activities completed between August 2019 and May 2020.

1.1 Site Description and Background

Plant Branch is located in Putnam County, GA, approximately 8 miles north of Milledgeville. The property occupies approximately 3,200 acres and is bounded on the south and east by Lake Sinclair, which is an approximate 15,330-acre hydroelectric reservoir that was created in 1953 by the impoundment of the Oconee River. A site location map and a detailed site map is included as Figure 1.

Plant Branch formerly operated as a coal-fired power plant since the 1960s until its retirement in 2015. Plant Branch is no longer active and is currently decommissioned. During its operation, five ash ponds were used for management of the CCR on the plant property. These CCR ponds are identified as Ponds A, B, C, D, and E. Ash Pond A, the first ash pond constructed at the Site, was taken out of service in the late 1960's and was closed in April 2016 by the removal and relocation of its stored CCR to Ash Pond E. Ponds B, C, D, and E are currently inactive, and will be closed by removal by relocation of the stored CCR material to a proposed fully lined landfill located on the plant property. This report documents the groundwater monitoring program at the unit AP-E.

Plant Branch ceased producing electricity prior to April 2015. Therefore, Ash Pond E is not subject to the Federal CCR Rule. A CCR Unit Solid Waste Handling Permit application for AP-E was submitted to GA EPD in November 2018 and is currently under review.

1.2 Site Geology and Hydrogeologic Setting

The following section and subsections include a general description of regional geologic and hydrogeologic characteristics of formations that occur beneath the site. Information presented in this section is based on published literature, discussion with local geologic experts, and experience working in this geologic terrain.

The site is located within the Piedmont Physiographic Province of central Georgia, which is characterized by gently rolling hills and narrow valleys, with locally pronounced linear ridges. Overall, the property slopes gently east and south toward Beaverdam Creek and Lake Sinclair. The metamorphic and igneous rocks that underlie the area have been subjected to physical and chemical weathering which has created a landscape dissected by creeks and streams forming a dendritic drainage pattern. These rocks are deeply weathered due to the humid climate and bedrock is typically overlain by a variably thick blanket of residual soils and saprolite. The overall

depth of weathering in the Piedmont/Blue Ridge is generally about 20 to 60 feet; however, the depth of weathering along discontinuities and/or very feldspathic rock units may extend to depths greater than 100 feet. Because of such variations in rock types and structure, the depth of weathering can vary significantly over short horizontal distances.

The near surface conditions were determined based upon available boring and monitoring well installation logs. Based on our review of this information, micaceous, locally saprolitic soils, consisting primarily of clay, silty clay, silt, and sandy clay occur as a variably thick blanket of residuum overlying bedrock across most of the site. The thickness of the residual soil encountered in the borings is variable, ranging from approximately 11 feet to as much as 74 feet. Saprolitic soils and/or saprolitic rock vary in thickness across the site but are generally encountered at or near ground surface. Saprolitic rock is also considered to be transitionally weathered rock (TWR) or partially weathered rock (PWR), as defined by standard penetration test data, where available. Material overlying the top of rock surface, including residual soils, saprolite, and transitionally weathered rock, is collectively referred to as overburden or regolith.

1.3 Groundwater Monitoring Well Network

Pursuant to § 257.91 of the CCR rule and 391-3-4-.10(6), a groundwater monitoring system was installed within the uppermost aquifer at AP-E. Wells placed in upgradient, and downgradient locations based on groundwater flow direction as determined by the potentiometric surface elevation contour maps.

A network of 12 monitoring wells were installed between 2014 to 2018 for groundwater monitoring in proximity to AP-E. Table 1, Monitoring Well Network Summary includes the pertinent construction details for the AP-E monitoring well network at Plant Branch.

Based on the site hydrogeology, the monitoring system is designed to monitor groundwater flow in the overburden, the transition-zone, and the upper bedrock as a single inter-connected aquifer system. Wells suffixed with an “S” are installed in overburden (saprolitic soil), an “I” indicates transitionally weathered rock (transition zone), and “D” indicates upper bedrock. Groundwater in the overburden, partially weathered rock, fractured bedrock, and the materials comprise a single uppermost aquifer based on site hydrogeologic conditions.

2.0 GROUNDWATER MONITORING ACTIVITIES

The following section describes monitoring-related activities performed during the previous annual monitoring period (August 2019 through July 2020). Groundwater sampling was performed in accordance with § 257.93 and EPD rule 391-3-4-.10(6)(a). Samples were collected from each well in the certified monitoring system for the CCR unit. The location of each of these monitoring wells is shown on Figure 2.

Pursuant to § 257.90(e)(3), Table 2, Groundwater Sampling Event Summary, presents a summary of groundwater sampling events completed for AP-E.

2.1 Monitoring Well Installation and Maintenance

For this reporting period, monitoring well-related activities included the following:

- Visual inspection of well conditions prior to sampling, recording the site conditions, and performing exterior maintenance to perform sampling under safe and clean conditions.
- Installation of additional site piezometers PZ-52D, PZ-53D, PZ-54, PZ-55, and PZ-56 as part of ongoing site investigations. Additional piezometers installed at Plant Branch are documented in a report, *Piezometer*

Installation Report, Georgia Power Company – Plant Branch, Milledgeville, Georgia, dated July 31, 2020. This installation report is included in Appendix A, Piezometer Installation Reports.

2.2 Initial Assessment Monitoring

Pursuant to §257.94(e)(3), an assessment monitoring program has been initiated for AP-E at Plant Branch based on statistically significant increases documented in the 2019 Annual Groundwater Monitoring and Corrective Action Report, (Golder 2019). A notice of assessment monitoring was placed in the operation record on November 13, 2019.

Groundwater sampling events were conducted for AP-E during August and October 2019, and March 2020. Resampling events were also completed during November and December 2019 due to laboratory error. During the initial assessment sampling event in August 2019, groundwater samples were collected and analyzed for Appendix IV to meet the requirement of §257.95(b). During the October 2019 and March 2020 semi-annual sampling events, groundwater samples from each detection monitoring well were collected for analysis of Appendix III, and the Appendix IV constituents detected during the August 2019 event. Results of sampling activities during this monitoring period are presented in Appendix B, Analytical Results, Field Data Forms, and Data Validation Summaries.

3.0 SAMPLE METHODOLOGY AND ANALYSIS

Sampling events completed during this reporting period for AP-E represent both the annual Appendix IV monitoring event as wells as two independent semi-annual assessment monitoring events for AP-E at Plant Branch. Groundwater analytical data and chain of custody records are presented in Appendix B. The following sections describe methods used to conduct groundwater monitoring at the site.

3.1 Groundwater Elevation Measurement

Prior to each sampling event, groundwater elevations were recorded from the monitoring well network. Groundwater elevations are summarized in Table 3, Summary of Groundwater Elevations. The recorded water level data were used to develop Figure 3, AP-E Potentiometric Surface Elevation Contour Map – August 26, 2019, Figure 4, AP-E Potentiometric Surface Elevation Contour Map – October 19, 2019, Figure 5, AP-E Potentiometric Surface Elevation Contour Map – March 2, 2020, and Figure 6, AP-E Potentiometric Surface Elevation Contour Map – June 3, 2020.. Review of Figures 3 through 6 shows that the general direction of groundwater flow across AP-E is to the east-northeast and east-southeast towards Beaverdam Creek and other natural streams onsite. This groundwater flow pattern is consistent with previous observations.

3.2 Groundwater Gradient and Flow Velocity

Groundwater flow rates at the site were calculated based on hydraulic gradients, hydraulic conductivity from previous slug test results, and an estimated effective porosity of the screened horizon. Based on slug test data at the site, hydraulic conductivity ranges from 2.7 to 5.5 feet per day, which is used in the flow calculations. The hydraulic gradient was calculated between well pairs shown on Table 4A, Groundwater Flow Velocity Calculations – October 2019 and Table 4B, Groundwater Flow Velocity Calculations – March 2020. An effective porosity of 0.20 was used based on the default values for effective porosity recommended by USEPA for a silty sand-type soil (USEPA, 1996).

Horizontal flow velocity was calculated using the commonly used derivative of Darcy's Law:

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

Where:

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

K = Average hydraulic conductivity of the aquifer $\left(\frac{feet}{day}\right)$

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

n_e = Effective porosity

Using this equation and groundwater elevation data from these sampling events, groundwater flow velocities are calculated for various areas of the site and are tabulated on Tables 4A and 4B.

As presented on Tables 4A and 4B groundwater flow velocity at the site ranges from approximately 0.07 to 0.29 feet per day (or approximately 26 to 107 feet per year) across AP-E. The observed groundwater flow velocities calculated for this monitoring event are also generally consistent with expected velocities in the regolith-upper bedrock aquifers of Georgia Piedmont and confirm the groundwater monitoring system as properly located to monitor the uppermost aquifer for AP-E at Plant Branch.

3.3 Groundwater Sampling

Groundwater samples were collected in accordance with §257.93(a) and 391-3-4-.10(6). Monitoring wells were purged and sampled using low-flow sampling procedures. Dedicated and/or non-dedicated low-flow pneumatic bladder pumps or peristaltic pumps were used to purge and sample the wells. During the purging of each well, field measurements of temperature, specific conductance, dissolved oxygen (DO), pH, and oxidation-reduction potential (ORP), were recorded using a SmarTroll (In-Situ field instrument) along with a separate turbidity meter to verify stabilization.

Groundwater samples were collected when the following general stabilization criteria were met:

- 0.1 standard units for pH
- 5% for specific conductance
- ±10% for DO where DO>0.5 mg/L; if DO<0.5 milligrams per liter (mg/L, no stabilization criteria apply)
- Turbidity measurements less than 5 nephelometric turbidity units (NTU)

Any deviation from stabilization criteria, if applicable, is identified on field sampling forms. Following well stabilization, unfiltered samples were collected directly into appropriately preserved laboratory supplied sample containers, placed in iced coolers, and submitted to the laboratory following standard chain-of-custody protocol. Field information forms generated directly from the SmarTroll® as well as chain-of-custody records are included in Appendix B.

Where sample turbidity was greater than 5 NTU and all other stabilization criteria were met, samplers continued purging for up to 3 additional hours in order to reduce the turbidity to 5 NTU or less. When turbidity remained above 5 NTU but was less than 10 NTU, and all other parameters are stabilized, the well was sampled. Where turbidity remained above 10 NTU, an additional unfiltered sample was collected followed by a filtered sample that has passed through an in-line 0.45-micron filter attached to the discharge (sample collection) tube. The unfiltered sample data are used for compliance monitoring and in the statistical analysis database. Filtered sample data are

used to assess the impacts of turbidity on groundwater quality. Additional details regarding filtered samples are recorded on the field information form and filtered samples are clearly identified as “filtered” on the laboratory reports.

Environmental monitoring field data sheets are included with the analytical reports in Appendix B. Field data and sampling notes for each monitoring well are recorded on the field information forms, which contain a description of the sampling equipment, sampling method, purge rate, field observations, and depth to water measurements at each monitoring location.

3.4 Laboratory Analyses

Groundwater samples were collected during August and October in 2019, and one event in March 2020. During the August 2019 sampling event, wells were sampled and analyzed for Appendix IV monitoring parameters pursuant to 40 CFR § 257.90(e)(3). The October 2019 and March 2020 events represent two semi-annual sampling events for AP-E at Plant Branch. Since AP-E is currently in assessment monitoring, groundwater samples from wells in the detection monitoring program were analyzed for Appendix III and the detected Appendix IV monitoring parameters per 40 CFR Parts 257 and 261. Tables 5A, 5B, and 5C, Analytical Data Summary, presents a tabulated summary of the 2019 and 2020 sampling results. Analytical methods used for groundwater monitoring parameters can be found on the attached analytical data reports in Appendix B.

Laboratory analyses for these assessment monitoring events were performed by Pace Analytical (Pace) in Atlanta, Georgia and Greensburg, Pennsylvania. Pace is accredited by National Environmental Laboratory Accreditation Program (NELAP) and maintain a NELAP certification for all parameters analyzed for this project. NELAP certification for Pace for 2019 and 2020 are provided in Appendix B. Groundwater data and chain of custody records for the monitoring events are presented in Appendix B.

3.5 Quality Assurance and Quality Control

During each sampling event, quality assurance/quality control samples (QA/QC) are collected at a rate of one sample per every 10 samples. Equipment blanks (where non-dedicated sampling equipment is used), field blanks, and duplicate samples were also collected during each sampling event. QA/QC sample data was evaluated during data validation and is included in Appendix B.

Groundwater quality data in this report was independently validated in accordance with USEPA guidance (USEPA, 2011) and the analytical methods. Data validation generally consisted of reviewing sample integrity, holding times, laboratory method blanks, laboratory control samples, matrix spikes/matrix spike duplicate recoveries and relative percent differences, post digestions spikes, laboratory and field duplicate relative percent difference (RPDs), field and equipment blanks, and reporting limits. Where appropriate, validation qualifiers and flags are applied to the data using USEPA procedures as guidance (USEPA, 2017). Data validation summary reports prepared by Environmental Standards and Golder are included in Appendix B. Flagged data are identified in the statistical analysis reports described in the following section.

A value followed by a "J" flag in tables and laboratory reports indicate that the value is an estimated analyte concentration detected between the method detection limit (MDL) and the laboratory reporting limit (RL). The estimated value is positively identified but is below the lowest level that can be reliably achieved within specified limits of precision and accuracy under routine laboratory operating conditions. “J” flagged data are used to establish background statistical limits but are not used when performing statistical analyses.

During validation, data were flagged as outliers or results were not in line with historical values. As such, resampling was conducted to verify the initial sample results.

4.0 STATISTICAL ANALYSES

Statistical analysis of Appendix III groundwater monitoring data was performed pursuant to § 257.93 following the established statistical method for AP-E.

4.1 Statistical Method

The selected statistical method for AP-E was developed in accordance with § 257.93(f) and 391-3-4-.10(6) using methodology presented in Statistical Analysis of Groundwater Data at RCRA Facilities, Unified Guidance (USEPA, 2009). The Sanitas Groundwater statistical software was used to perform the statistical analyses. Sanitas 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 (2009) document.

Table 4.1.1 Plant Branch AP-E Statistical Method Summary provides a summary of the statistical methodology used at AP-E for the first detection monitoring conducted in March 2019 and will be used for any routine detection monitoring in the future.

TABLE 4.1.1: PLANT BRANCH AP-E STATISTICAL METHOD SUMMARY

Monitoring Well Network	Upgradient Wells	BRGWA-2S, BRGWA-2I, BRGWA-5S, BRGWA-5I, BRGWA-6S
	Downgradient Wells	BRGWC-17S, BRGWC-33S, BRGWC- 34S, BRGWC-35S, BRGWC-36S, BRGWC-37S, and BRGWC-38S
CCR Monitoring Parameters	Appendix III (Detection Monitoring)	Boron, Calcium, Chloride, Fluoride, pH, Sulfate, Total Dissolved Solids (TDS)
	Appendix IV (Assessment Monitoring)	Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Mercury, Molybdenum, Selenium, Thallium, Radium (226+228)
	Data Screening on Proposed Background	Evaluate outliers, trends, and seasonality when sufficient data are available
	Statistical Limits	Interwell statistical limits will be applied on a constituent basis, depending on the appropriateness of the method as determined by the Analysis of Variance.
	Prediction Limits	Parametric when data follow a normal or transformed normal distribution and when less than 50% non-detects, utilizing Kaplan Meier non-detect adjustment when applicable; nonparametric when data sets contain greater than 50% non-detects or when data are not normally or transformed-normally distributed.
	Confidence Intervals	Used in Assessment and Corrective Action monitoring.

TABLE 4.1.1: PLANT BRANCH AP-E STATISTICAL METHOD SUMMARY		
	No Statistical Testing	Statistical testing is not required for parameters with 100% non-detects.
	Verification Resample Plan (Optional)	1-of-3 with minimum of 8 samples per well for interwell testing. ▪ Initial statistical exceedance warrants independent resampling within 90 days. ▪ If resample passes, well/parameter is not a confirmed statistically significant increase (SSI). ▪ If resample exceeds, well/parameter has a confirmed SSI. If no resample is collected, the original result is deem verified.

The following guidance is also applicable to the statistical analysis method:

- Statistical analyses are not performed on analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain less than or equal to 15% non-detects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the practical quantitation limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, a non-detect adjustment such as the Kaplan-Meier or Regression on Order Statistics (ROS) method for adjustment of the mean and standard deviation will be used prior to constructing a parametric prediction limit.
- Nonparametric prediction limits are used on data containing greater than 50% non-detects.

4.1.1 Appendix III Detection Monitoring Statistical Methods

Appendix III statistical analyses groundwater monitoring data was statistically evaluated through the use of interwell prediction limits. The Sen's Slope/Mann Kendall trend test was also performed to evaluate concentrations over time and determine whether concentrations are statistically increasing, decreasing or stabilizing.

4.1.2 Appendix IV Assessment Monitoring Statistical Methods

For the Assessment Monitoring Program (Appendix IV constituents), parametric tolerance limits were used to calculate site specific 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. The background limits were then used when determining the groundwater protection standard (GWPS) under Georgia EPD Rule 391-3-4-.10(6)(a).

USEPA revised the Federal CCR Rule on July 30, 2018, updating GWPS for cobalt, lead, lithium, and molybdenum as described above in 40 CFR §257.95(h)(2). Presently those updated GWPS have not yet been incorporated in the current Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a); therefore, under EPD rules, background concentrations are considered when determining the GWPS for constituents where an

MCL has not been established (or where background is higher than the MCL). Under the existing EPD rules, the GWPS is:

- The MCL or
- The background concentration when an MCL is not established or when the background concentration is higher than the MCL.

Following the above federal and state rule requirements, GWPSs were established for statistical comparison of Appendix IV constituents. Table 4.1.2, Summary of Background Levels and GWPSs, presented below, summarizes the background limit established at each monitoring well and the GWPS established under State rules.

To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV parameters in each downgradient well. Those confidence intervals were compared to the GWPS established for the State rules. Only when the entire confidence interval is above a GWPS is the well/constituent pair considered to exceed its respective standard. If there is an exceedance of the established standard, a statistically significant level (SSL) exceedance is identified.

Table 4.1.2: SUMMARY OF BACKGROUND LEVELS AND GWPSs

Analyte	Units	MCL	Site Specific Background October 2019[1]	Site Specific Background March 2020[1]	State-Derived GWPS[2]
Antimony	mg/L	0.006	0.0011	0.003	0.006
Arsenic	mg/L	0.01	0.001	0.005	0.01
Barium	mg/L	2	0.063	0.063	2
Beryllium	mg/L	0.004	0.000037	0.003	0.004
Cadmium	mg/L	0.005	0.000055	0.0025	0.005
Chromium	mg/L	0.1	0.016	0.01416	0.1
Cobalt	mg/L	NA	0.005	0.005	0.005
Fluoride	mg/L	4	0.19	0.3	4
Lead	mg/L	NA	0.00036	0.005	0.005
Lithium	mg/L	NA	0.089	0.089	0.089
Mercury	mg/L	0.002	0.00021	0.0005	0.002
Molybdenum	mg/L	NA	0.008	0.01	0.01
Radium (226 + 228)	pCi/L	5	3.164	1.467	5
Selenium	mg/L	0.05	0.00065	0.01	0.05
Thallium	mg/L	0.002	0.000026	0.001	0.002

Notes:

mg/L = milligrams per liter; pCi/L = picocuries per liter; NA = Not Available

MCL = Maximum Contaminant Level; RSL = Regional Screening Level

[1] The background limits are 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 existing EPD rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background levels for constituents where the background level is higher than the MCL.

A summary table of the statistical results accompanies the prediction limits for Appendix III and confidence intervals for Appendix IV in Appendix C, Statistical Analyses. The background period for statistical analyses included data through March 2020. Tolerance limits for confidence interval calculations are updated to include current data. Due to varying reporting limits in background, the most recent reporting limit is used when data is not reported above detection limits. This results in a more appropriate statistical test.

4.2 Statistical Analysis Results

Analytical data from the semi-annual assessment monitoring event in October 2019 and March 2020 at AP-E have been statistically analyzed in accordance with the site's Statistical Analysis Plan. Verification resampling to confirm initial SSIs was performed; therefore, initial SSIs are considered verified. The statistical results of the October 2019 monitoring event and resampling events are included in Appendix C, Statistical Analyses.

4.2.1 October 2019 Appendix III Statistical Results

Based on the statistical results presented in Appendix C, SSIs of boron, calcium, chloride, fluoride, pH, sulfate and total dissolved solids at various wells were identified following the October 2019 assessment monitoring event. A detailed list of the noted exceedances is provided in Appendix C.

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

4.2.2 October 2019 Appendix IV Statistical Results

Analytical data from the October 2019 monitoring event at AP-E have been statistically analyzed in accordance with the site's certified statistical analysis method. Review of the Sanitas results indicates that using the GWPS established according to EPD Rule 391-3-4-.10(6)(a), the following SSLs are identified below in Table 4.2.2, AP-E October 2019 Confidence Interval Statistically Significant Level Exceedances.

AP-E October 2019 Confidence Interval Statistically Significant Level Exceedances

AP-E Monitoring Well	Appendix IV Parameter
BRGWC-38S	Beryllium, Cobalt
BRGWC-33S	Cobalt

4.2.3 March 2020 Appendix III Statistical Results

Based on the statistical results presented in Appendix C, SSIs of boron, calcium, chloride, fluoride, pH, sulfate and total dissolved solids at various wells were identified following the March 2020 assessment monitoring event. A detailed list of the noted exceedances is provided in Appendix C.

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

4.2.4 March 2020 Appendix IV Statistical Results

Analytical data from the March 2020 monitoring event at AP-E have been statistically analyzed in accordance with the site's certified statistical analysis method. Review of the Sanitas results indicates that using the GWPS established according to EPD Rule 391-3-4-.10(6)(a), the following SSLs are identified below in Table 4.2.4, AP-E March 2020 Confidence Interval Statistically Significant Level Exceedances.

AP-E March 2020 Confidence Interval Statistically Significant Level Exceedances	
AP-E Monitoring Well	**Appendix IV Parameter**
BRGWC-38S	Beryllium, Cobalt
BRGWC-33S	Cobalt

4.3 Alternate Source Demonstration

Pursuant to the options of 40 CFR 257.95, an ASD has been prepared in response to SSLs identified for beryllium and cobalt in groundwater monitoring wells. A copy of the ASD is included as Appendix D.

The evaluation presented in this document demonstrates that statistically significant levels of beryllium and cobalt identified in groundwater are due to the presence of naturally-occurring beryllium and cobalt present in soils and bedrock, and not caused by a release from the CCR unit.

The occurrence of low-pH groundwater is due to natural groundwater recharge and flow conditions, which facilitates the release and mobilization of beryllium and cobalt from natural sources in the underlying rock formations to groundwater. The following lines of evidence demonstrate the natural occurrence of beryllium and cobalt in site groundwater.

- Beryllium and cobalt are not detected above naturally occurring background concentrations and have limited to no mobility in porewater from AP-E.
- The elemental ratios of lithium and boron in downgradient wells are reflective of upgradient groundwater conditions at the Site rather than porewater.
- Beryllium and cobalt are naturally occurring in the soils and bedrock at Plant Branch as identified by chemical analysis and sequential extraction of soil and rock samples.
- Soil/bedrock mineralogical results support the presence of naturally occurring beryllium and cobalt at Plant Branch.
- Beryllium and cobalt GWPS exceedances only occur where acidic groundwater is present, which is unrelated to the CCR porewater (circumneutral pH) and suggests aquifer materials are the source for elevated beryllium and cobalt concentrations.

Therefore, no further action (i.e., Assessment of Corrective Measures) is warranted at this time.

5.0 MONITORING PROGRAM STATUS

Statistical evaluations of the groundwater monitoring data for AP-E confirms SSIs of Appendix III groundwater monitoring parameters above background and SSLs of Appendix IV groundwater monitoring parameter above the established GWPS. Based on the results of the October 2019 and March 2020 sampling events, AP-E will remain in assessment monitoring.

6.0 CONCLUSIONS AND FUTURE ACTIONS

This *2020 Annual Groundwater Monitoring and Corrective Action Report, Georgia Power Plant Branch AP-E* has been prepared to fulfill the requirements of Georgia EPD Rules of Solid Waste Management 391-3-4-.10(6). The groundwater flow direction and rates interpreted during the August 2019, October 2019 and March 2020 monitoring events are generally consistent with historical evaluations.

Review of analytical results and statistical analyses developed for the site indicates confirmed SSIs of Appendix III above background and SSLs of Appendix IV above the established GWPS. Plant Branch is currently pursuing an Alternate Source Demonstration (ASD) for each of the identified SSLs following the rule and timelines specified in 40 CFR 257.95.

Based on the findings presented herein, Plant Branch will continue with assessment groundwater monitoring and reporting. The next scheduled sampling event is tentatively scheduled for August 2020.

7.0 REFERENCES

Golder Associates, 2018. Geologic and Hydrogeologic Summary Report, Georgia Power – Plant Branch, Putnam County, Georgia, October 2018.

Golder Associates, 2018. CCR Pond E Site Acceptability and Hydrogeologic Assessment Report, Georgia Power – Plant Branch, Putnam County, Georgia, Geosyntec, November 2018.

USEPA, 1996. Soil Guidance Manual,

USEPA, 2001, Data Validation Standard Operating Procedures and Quality Assurance Manual, November.

USEPA, 2009, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*. EPA 530-R-09-007.

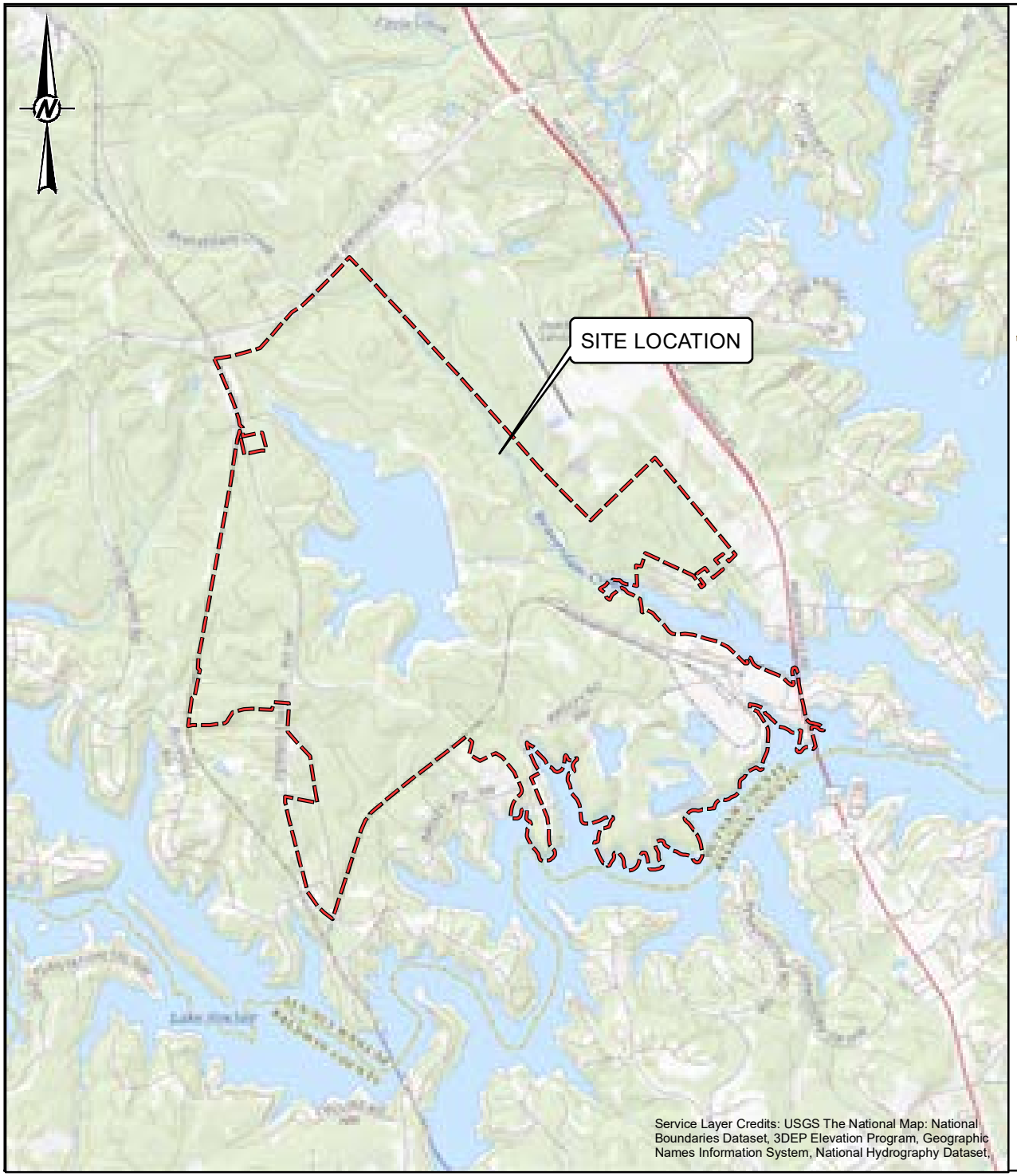
USEPA. 2015. Federal Register. Volume 80. No. 74 Friday April 17, 2015. Part II. Environmental Protection Agency. 40 CFR Parts 257and 261. Hazardous and Solid Waste Management System; Disposal of Coal

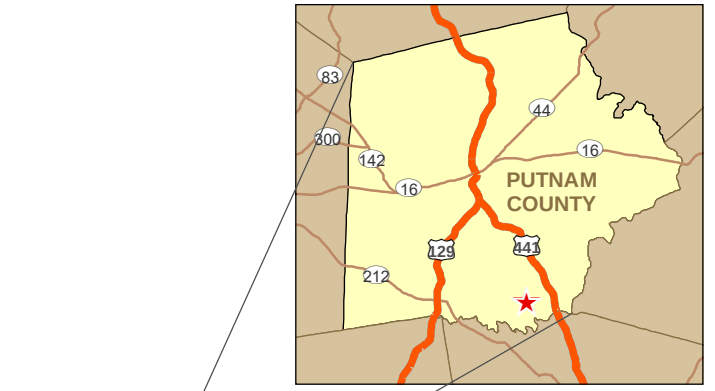
Combustion Residuals from Electric Utilities; Final Rule. [EPA-HQ-RCRA–2009–0640; FRL–9919–44– OSWER]. RIN–2050–AE81.

USEPA. 2017. National Functional Guidelines for Inorganic Superfund Methods Data Review. Office of Superfund Remediation and Technology Innovation. OLEM 9355.0-135 [EPA-540-R-2017-001]. Washington. DC. January.

FIGURES & TABLES

Path: H:\16x-Projects\1666254-SCS- Plant Branch\figures\A-\1666254A000-GIS.mxd





0 2000 4000
Feet

CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

PROJECT
GROUNDWATER MONITORING

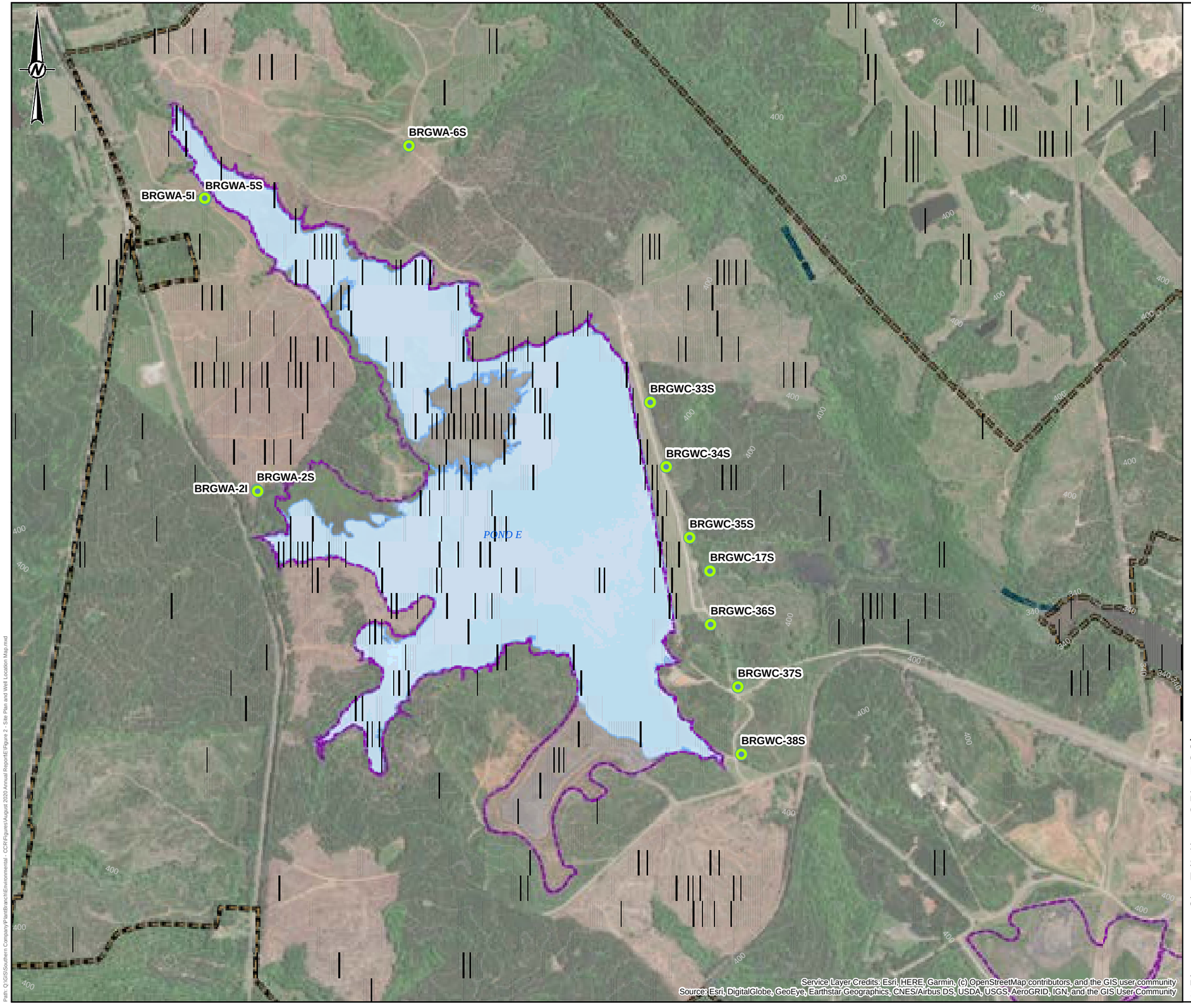
TITLE
SITE LOCATION MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-03-15
PREPARED	DJC
DESIGN	DLP
REVIEW	RK
APPROVED	DLP

PROJECT No.	CONTROL	Rev.	FIGURE
1666254	1666254A000-GIS.mxd	0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM: ANSI A



LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY BOUNDARY
- APPROXIMATE ASH POND BOUNDARY
- APPROXIMATE SURFACE WATER LIMITS

REFERENCE

1. SERVICE LAYER CREDITS: ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

2. COORDINATE SYSTEM: NAD 1983 STATE PLAN GEORGIA WEST (U.S. FEET).

3. BORING/PIEZOMETER LOCATIONS AND PROPERTY LINE PROVIDED BY SOUTHERN COMPANY SERVICES.

1500 750 0 1500
Feet

CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
SITE PLAN AND DETECTION MONITORING WELL LOCATION MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2020-05-21
PREPARED	BAS
DESIGN	BAS
REVIEW	RK
APPROVED	DLP

PROJECT No. 166625418 | CONTROL 1666254V001-GIS.mxd | Rev. 0 | FIGURE **2**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM: ANSI B

Path: Q:\GIS\Southern Company\PlantBranch\Environmental - CCR\Figures\August 2020 Annual Report\E\Figure 2 - Site Plan and Well Location Map.mxd

PZ-1I 432.3
PZ-1S 433.23
PZ-1D 430.91
BRGWA-6S 436.81
BRGWA-5I 435.93
BRGWA-5S 435.92
PZ-7S 429.67
PZ-14S 416.35
PZ-14I 418.23
PZ-13S 387.09
BRGWC-33S 409.02
PZ-8S 429.68
PZ-15S 405.99
PZ-15I 406.53
BRGWC-34S 389.51
BRGWA-2S 442.58
BRGWA-2I 442.16
PZ-16S 374.61
PZ-16I 374.68
BRGWC-35S 364.58
POND E
BRGWC-17S 364.44
PZ-17I 366.96
BRGWC-36S 383.57
PZ-3S DRY
PZ-3I 439.27
PZ-3D 440.09
BRGWC-37S 396.06
PB-1S NM
PB-2D NM
BRGWC-38S 410.92
PZ-10S 411.79
PB-4S NM
PB-4D NM
BRGWA-12I 385.78
PZ-12D* 359.96
BRGWA-12S DRY
PB-7S NM
PZ-39 385.79
PB-10D NM
PB-10S NM
PZ-4S DRY
PZ-4I 452.67
PZ-48 390.89
PB-8D NM
PB-8S NM
BRGWA-23S 392.17
PZ-23I 392.19
BRGWC-47 386.23
PZ-9S 434.78
PZ-11S 375.86
PB-13S NM
PB-13D NM

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LEGEND

- MONITORING WELL (ELEVATION feet NAVD88)
- PIEZOMETER (ELEVATION feet NAVD88)
- PROPERTY BOUNDARY
- GROUNDWATER SURFACE CONTOUR (feet NAVD88)
- APPROXIMATE ASH POND BOUNDARY
- APPROXIMATE SURFACE WATER LIMITS

NOTES

1. GROUNDWATER SURFACE CONTOUR INTERVAL = 10 FEET

2. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATA, AND TOPOGRAPHIC CONTOURS. THEREFORE, CONTOURS MAY NOT REFLECT ACTUAL CONDITIONS.

3. PZ-12D* DATA NOT USED FOR CONTOURING.

4. NAVD88=NORTH AMERICAN VERTICAL DATUM 88

5. GROUNDWATER ELEVATIONS RECORDED AUGUST 26, 2019.

6. NM = NOT MEASURED

REFERENCE

1. SERVICE LAYER CREDITS: ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

2. COORDINATE SYSTEM: NAD 1983 STATE PLAN GEORGIA WEST (U.S. FEET).

3. BORING/PIEZOMETER LOCATIONS AND PROPERTY LINE PROVIDED BY SOUTHERN COMPANY SERVICES.

KEY MAP

1500 750 0 1500
Feet

CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
GROUNDWATER SURFACE CONTOUR MAP
AUGUST 26, 2019

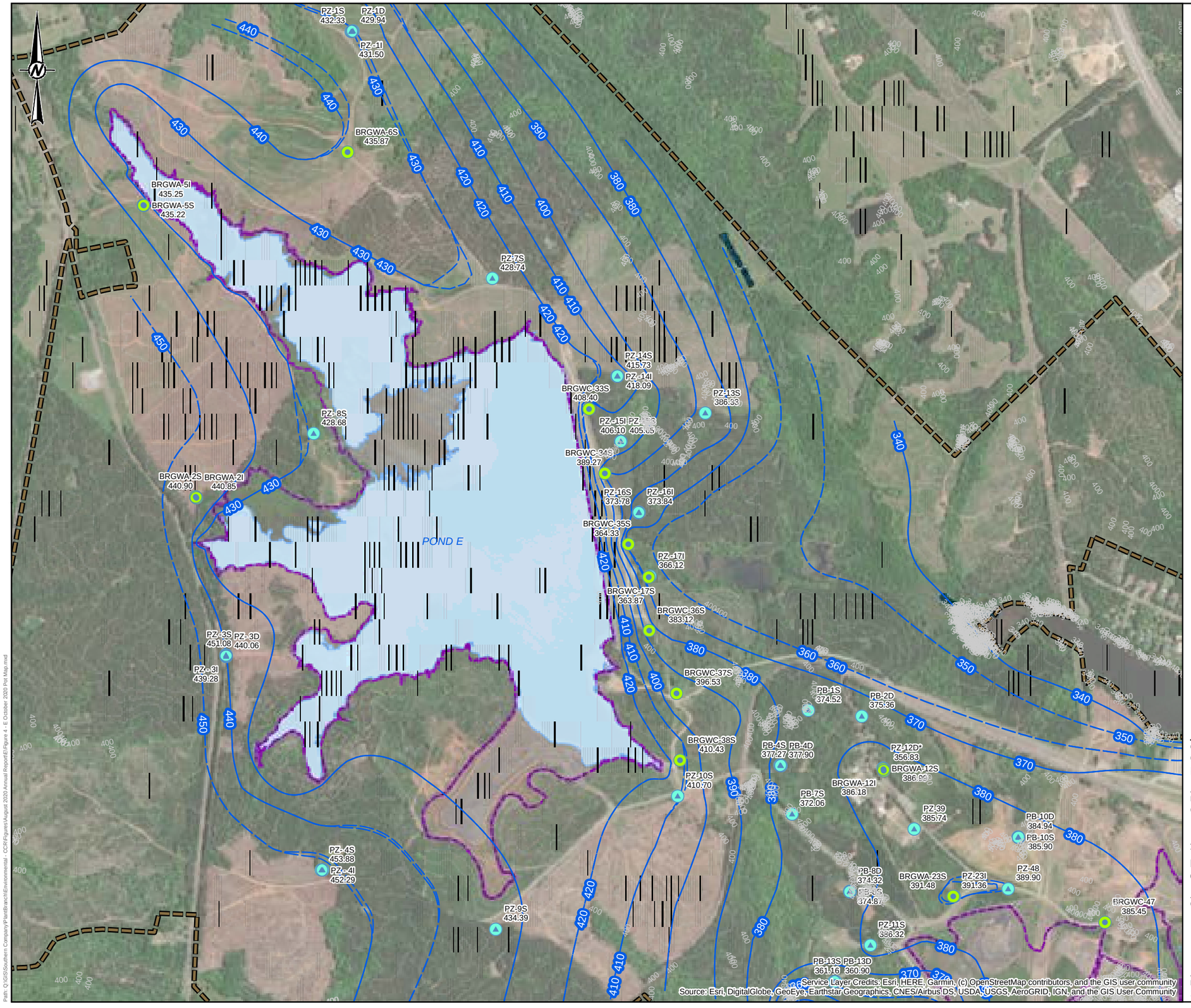
CONSULTANT
GOLDER

YYYY-MM-DD	2020-06-23
PREPARED	DJC
DESIGN	ED
REVIEW	RK
APPROVED	DJC

PROJECT No. 166625418
CONTROL 1666254V001-GIS.mxd
Rev. 0
FIGURE 3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM: ANSI B
1 in
0

Path: Q:\GIS\Southern Company\Plant Branch\Environmental - CCR\Figures\August 2020 Annual Report\EI\Figure 3 - E August 2019 Pot Map.mxd



LEGEND

- MONITORING WELL (ELEVATION feet NAVD88)
- PIEZOMETER (ELEVATION feet NAVD88)
- PROPERTY BOUNDARY
- GROUNDWATER SURFACE CONTOUR (feet NAVD88)
- APPROXIMATE ASH POND BOUNDARY
- APPROXIMATE SURFACE WATER LIMITS

NOTES

1. GROUNDWATER SURFACE CONTOUR INTERVAL = 10 FEET

2. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATA, AND TOPOGRAPHIC CONTOURS. THEREFORE, CONTOURS MAY NOT REFLECT ACTUAL CONDITIONS.

3. PZ-12D* DATA NOT USED FOR CONTOURING.

4. NAVD88=NORTH AMERICAN VERTICAL DATUM 88

5. GROUNDWATER ELEVATIONS RECORDED OCTOBER 14, 2019.

REFERENCE

1. SERVICE LAYER CREDITS: ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

2. COORDINATE SYSTEM: NAD 1983 STATE PLAN GEORGIA WEST (U.S. FEET).

3. BORING/PIEZOMETER LOCATIONS AND PROPERTY LINE PROVIDED BY SOUTHERN COMPANY SERVICES.

1000 500 0 1000
Feet

CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
POND E GROUNDWATER SURFACE CONTOUR MAP
OCTOBER 14, 2019

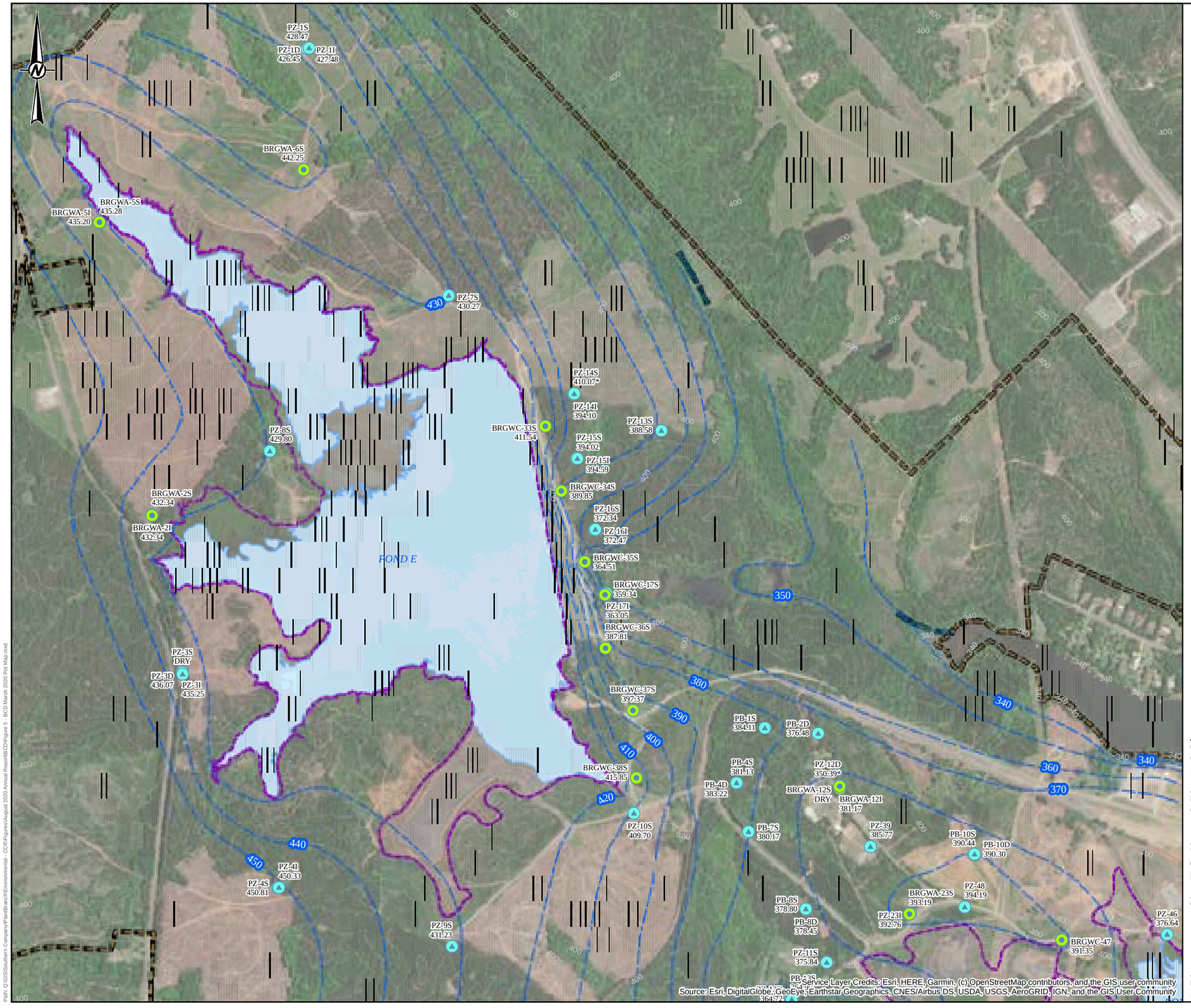
CONSULTANT
GOLDER

YYYY-MM-DD	2020-5-21
PREPARED	DJC
DESIGN	ED
REVIEW	RK
APPROVED	DLP

PROJECT No.	CONTROL	Rev.	FIGURE
166625418	1666254Q003-GIS.mxd	0	3

Path: Q:\GIS\Southern Company\PlantBranch\Environmental - CCR\Figures\August 2020 Annual Report\EI\Figure 4 - E October 2020 Pot Map.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY BOUNDARY
- GROUNDWATER ELEVATION CONTOUR (NAVD88)
- APPROXIMATE ASH POND BOUNDARY
- APPROXIMATE SURFACE WATER LIMITS

NOTES

1. GROUNDWATER SURFACE CONTOUR INTERVAL = 10 FEET

2. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATA, AND TOPOGRAPHIC CONTOURS. THEREFORE, CONTOURS MAY NOT REFLECT ACTUAL CONDITIONS.

3. PZ-14S* AND PZ-12D* DATA NOT USED FOR CONTOURING.

4. NAVD88=NORTH AMERICAN VERTICAL DATUM 88

5. GROUNDWATER ELEVATIONS RECORDED MARCH 2, 2020.

REFERENCE

1. SERVICE LAYER CREDITS: ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

2. COORDINATE SYSTEM: NAD 1983 STATE PLAN GEORGIA WEST (U.S. FEET).

3. BORING/PIEZOMETER LOCATIONS AND PROPERTY LINE PROVIDED BY METRO ENGINEERING & SURVEYING CO., INC.

1500 750 0 1500
Feet

CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
GROUNDWATER SURFACE CONTOUR MAP
MARCH 2, 2020

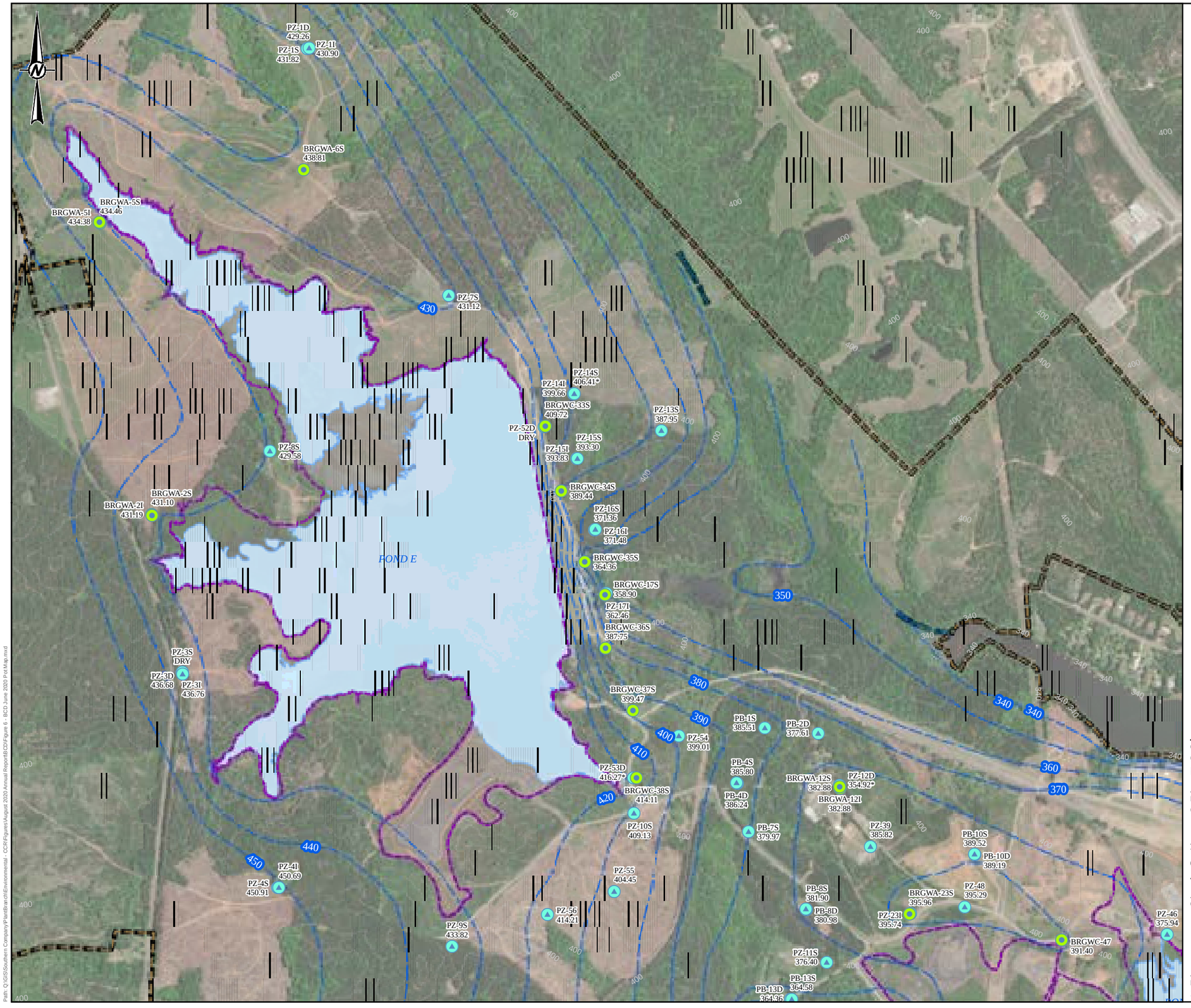
CONSULTANT
GOLDER

YYYY-MM-DD	2020-07-22
PREPARED	DJC
DESIGN	ED
REVIEW	RK
APPROVED	DLP

PROJECT No. 166625418 | CONTROL 1666254V001-GIS.mxd | Rev. 1 | FIGURE **5**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM: ANSI B

Path: Q:\GIS\Southern Company\PlantBranch\Environmental - CCR\Figures\August 2020 Annual Report\BCD\Figure 5 - BCD March 2020 Pot Map.mxd



LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY BOUNDARY
- GROUNDWATER ELEVATION CONTOUR (NAVD88)
- APPROXIMATE ASH POND BOUNDARY
- APPROXIMATE SURFACE WATER LIMITS

NOTES

1. GROUNDWATER SURFACE CONTOUR INTERVAL = 10 FEET

2. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATA, AND TOPOGRAPHIC CONTOURS. THEREFORE, CONTOURS MAY NOT REFLECT ACTUAL CONDITIONS.

3. PZ-53D*, PZ-14S*, AND PZ-12D* DATA NOT USED FOR CONTOURING.

4. NAVD88=NORTH AMERICAN VERTICAL DATUM 88

5. GROUNDWATER ELEVATIONS RECORDED JUNE 3, 2020.

REFERENCE

1. SERVICE LAYER CREDITS: ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

2. COORDINATE SYSTEM: NAD 1983 STATE PLAN GEORGIA WEST (U.S. FEET).

3. BORING/PIEZOMETER LOCATIONS AND PROPERTY LINE PROVIDED BY METRO ENGINEERING & SURVEYING CO., INC.

KEY MAP

1500 750 0 1500
Feet

CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
GROUNDWATER SURFACE CONTOUR MAP
JUNE 3, 2020

CONSULTANT
GOLDER

YYYY-MM-DD	2020-07-24
PREPARED	DJC
DESIGN	ED
REVIEW	RK
APPROVED	DLP

PROJECT No. 166625418 | CONTROL 1666254V001-GIS.mxd | Rev. 1 | FIGURE **6**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM: ANSI B

Path: Q:\GIS\Southern Company\PlantBranch\Environmental - CCR\Figures\August 2020 Annual Report\BCD\Figure 6 - BCD June 2020 Pot Map.mxd

APPENDIX A

PIEZOMETER INSTALLATION REPORT

July 28, 2020 Project No. 166625418

Mr. Joju Abraham, PG
Southern Company Services, Inc.
241 Ralph McGill Blvd NE
Atlanta GA 30308

JAbraham@southerco.com

PIEZOMETER INSTALLATION REPORT FOR SURFACE IMPOUNDMENT ASH POND E (AP-E) GEORGIA POWER PLANT BRANCH, MILLEDGEVILLE, GEORGIA

Dear Joju:

Golder Associates Inc. (Golder) is submitting this *Piezometer Installation Report to Southern Company Services, Inc. (SCS)* and *Georgia Power Company (GPC)*, which documents the construction of piezometers at surface impoundment Ash Pond E (AP-E) at Plant Branch in Milledgeville, Georgia. Piezometer construction activities were performed in general accordance with the standards described in the *RCRA Technical Enforcement Guidance Document* (1986) and the *Georgia Water Wells Standards Act of 1985*. The installation of the piezometers was conducted under the oversight and direction of Brian Steele and Rachel Kirkman, Georgia registered Professional Geologists (PGs).

The field activities for this investigation were performed in May through July 2020. The field work consisted of the installation and development of five (5) piezometers; Metro Engineering conducted a survey of the recently installed piezometers. A summary of the activities is presented below.

Piezometer Drilling and Construction Activities

Piezometers PZ-52D, PZ-53D, PZ-54, PZ-55, and PZ-56 were drilled and installed by Cascade Drilling, LP, who was contracted through SCS, at the facility in May 2020. Cascade has a current and valid bond with the Water Wells Standards Advisory Council for the state of Georgia (Appendix A). The driller's name is provided on the boring/construction diagrams presented in Appendix B.

A Golder geologist was present on site to oversee and record the drilling and piezometer construction under the supervision of professional geologists registered to practice in Georgia (Brian Steele and Rachel Kirkman). Drilling methods employed for borehole advancement were rotosonic drilling techniques with continuous core collected. The drilling equipment consisted of a full-sized Prosonic track mounted drilling rig, equipped with 4-inch sonic rods with an outer-casing sleeve. During the drilling, continuous core samples were logged in the field for lithologic and geotechnical properties.

Prior to use, and between boreholes, downhole equipment was steam cleaned. The boring (lithologic) logs and piezometer construction records for the newly installed piezometers are included in Appendix B. The construction data are summarized in Table 1, and the locations of the piezometers are provided on Figure 1.

Piezometers were constructed within the borehole using factory-cleaned and sealed Schedule 40 polyvinyl chloride (PVC) products with flush-threaded fittings. Specifically, piezometers were constructed with a 10-foot section of 4-inch outer diameter (OD) and 2-inch inner diameter (ID), flush-threaded, 0.010-inch factory-slotted PVC pre-packed screen. The drillers filled the annulus of each pre-pack screen section with No. 10 filter sand. In each case, the screen was placed near the bottom of the borehole, with the remainder of the piezometer constructed from 10-foot sections of 2-inch ID, flush-threaded, PVC casing riser. A flush-threaded PVC end cap placed on the bottom of each piezometer to provide a 0.4-foot sump/sediment trap, and the top of the piezometers extend approximately 3 feet above grade. Construction details for the piezometer are shown on the boring/construction logs in Appendix B. The PVC products used were American Society for Testing and Materials (ASTM) and National Sanitation Foundation (NSF) rated.

Following placement of the screen and casing, the annular space in each borehole adjacent to the screen was filled with U.S. Standard Sieve size No. 20-40 filter pack sand as appropriate for the formation. The filter pack sand was placed into the borehole and extends approximately 2 feet above the screen. Immediately following placement of the filter pack, each piezometer was pumped using a portable submersible pump until visibly clear water was discharged. If settling occurred during pumping, additional sand was placed so that the filter sand thickness was approximately 2 feet above the screen. A filter pack seal, composed of approximately 5 feet of hydrated time-release coated bentonite pellets, was then placed on top of the filter pack by slowly pouring the material down the borehole and tamping it into place with a tremie pipe. The bentonite was hydrated using potable water and allowed to cure for two hours prior to grouting the piezometer.

Following hydration of the bentonite, the remaining annular space was grouted with a Portland cement / Quick Gel mixture consisting of approximately 5% bentonite, and approximately 10 pounds per gallon, to 3 feet below ground surface using a tremie method. Each piezometer surface completion consists of a locked, anodized aluminum protective casing and a 4-foot by 4-foot by 4-inch concrete pad.

Piezometer Development Activities

The newly installed piezometers were developed in May and June 2020 in accordance with the Monitoring Well Development Procedures prepared by SCS (March 2016). The piezometer were surged using a Reclaimer pump system. During development, water quality measurements of pH, temperature, specific conductance, and turbidity were periodically collected using field-calibrated water quality equipment after the piezometer responded to improving conditions. Due to low water levels, PZ-53D and PZ-55 were surged by adding deionized (DI) water during development. The volume of DI water added to each well was removed in addition to recharged groundwater in the piezometers. Development activities were conducted utilizing an In-Situ SmarTroll and a Lamotte 2020 turbidimeter for monitoring water quality measurements. Development forms are included in Appendix B and summarized on Table 2.

As presented on the development forms, approximately 10 gallons (PZ-55) and approximately 190 gallons (PZ-54) of water were removed from each piezometer during development. During development, attempts were made for each piezometer to achieve a turbidity value below 10 nephelometric turbidity units (NTUs).

Aquifer Testing Activities

Aquifer tests (slug tests) were performed on June 15, 2020 on newly installed piezometers for PZ-53D and PZ-54 during the field investigation by experienced Golder representatives (Table 3). The purpose of the testing was to estimate the horizontal hydraulic conductivity of aquifer materials encountered at the site. In situ rising- and falling-head slug tests were chosen for the assessment due to the relatively low yields noted during installation and development.

Falling and rising-head tests were performed on two newly installed piezometers (PZ-53D and PZ-54). PZ-55 and PZ-56 were not slug tested as they were installed to monitor groundwater level measurements only. PZ-52D was not slug tested due to a very slow recharge rate of approximately 0.85 feet per day, and a small amount of water in the well (~2.5 feet). The recharge rate will be quantifiably measured after the next sampling event by installing a pressure transducer in the well to measure the recharge rate after all groundwater in the well has been removed during sampling. Prior to slug testing, the wells were opened, and groundwater levels were allowed to equilibrate. Groundwater levels were then measured using an electronic water level indicator referenced to a surveyed point on the top of the casing. A 100 pounds per square inch (psi) pressure transducer was lowered inside the well casing and placed approximately 2 feet above the bottom of the well. A PVC slug measuring 3 feet in length was then used to displace water inside the well.

The first portion of the test was a falling-head test that measured the rate water levels fell back to static levels after the insertion of the PVC slug. The pressure transducer was programmed to record changes in groundwater level at fast linear time intervals. Changes in groundwater levels were also measured with hand-held electronic water level indicators to field-verify the data collected by the transducer. Falling-head tests were terminated after water levels had recovered to within at least 90% of their pre-test level. A rising-head test was performed on each piezometer after the falling-head test was completed. The rising-head test was performed with the same methodology as the falling-head test, with the exception that the PVC slug was removed simultaneously with the start of the test.

In situ rising- and falling-head tests provide a quantitative estimate of horizontal hydraulic conductivity and a qualitative estimate of aquifer anisotropy in water-bearing units. The slug test data were analyzed using the Bouwer and Rice (1976 and 1989) equation which is applicable to fully or partially penetrating piezometers in unconfined or confined aquifers. Piezometer-specific aquifer thicknesses of approximately 10 (PZ-54) and 125 feet (PZ-53D) were assumed based on unconfined aquifer water column thickness.

The computer software program AQTESOLV, produced by HydroSOLVE, Inc., was used to assist in the analysis and plotting of data. The best fit lines were initially calculated by the computer software and were then adjusted manually, where necessary, to eliminate skin effects typically found at the start of aquifer tests and/or to ignore stabilized water levels at the end of the tests or fluctuations in the water level as they approached stabilization. Professional judgement was used to distinguish skin effects with the fact that during many tests, there is faster recovery near the beginning of an aquifer test than when water levels approach stabilization. The individual data points and computer plots of time versus groundwater displacement are presented in Appendix C. A summary of the aquifer testing and the calculated geometric mean for hydraulic conductivity for each of the hydrogeologic units are presented in Table 3.

Piezometer Survey

The newly installed piezometers were surveyed in June and July 2020 by Metro Engineering. The survey was completed using LEICA DNA10 digital level with a network of closed level loops with a positional tolerance of 0.5/0.01' H:V. The surveyed point on the top of the casing was used as reference, and the measurements were recorded to within 0.01 foot. Surveyed locations and elevations are presented on the boring/construction diagrams and a site map showing the locations of the newly installed piezometers is presented in Figure 1.

Closing

We appreciate the opportunity to assist SCS and GPC with this project. Should you have any questions or require additional information, please contact the undersigned at (770) 496-1893.

Sincerely,

Golder Associates Inc.

Brian Steele, PG
Senior Project Geologist

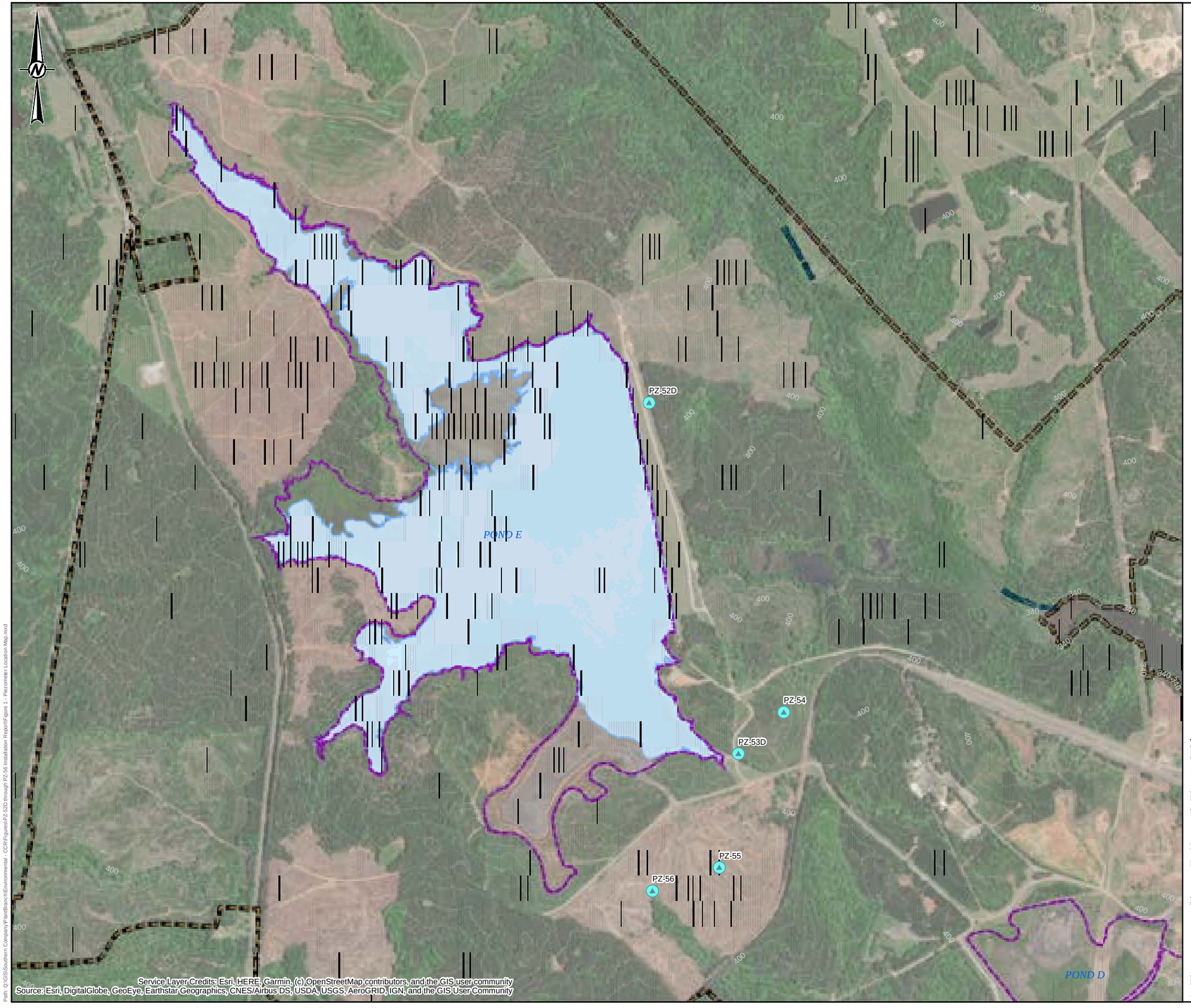
Rachel Kirkman, PG
Principal and Senior Consultant

BAS/RK/kld

Attachments: Figure 1: Piezometer Location Map
Table 1 Piezometer Installation Summary
Table 2 Summary of Piezometer Development Data
Table 3 Summary of Aquifer Test Data

Appendix A Cascade Drilling Bond
Appendix B Boring Logs/Construction Diagrams and Development Forms
Appendix C Aquifer (Slug) Test Results

https://golderassociates.sharepoint.com/sites/11952g/shared documents/200 reports/may 2020 asd investigation and well installation/pz-52d though pz-56 installation report/branch pond e piezometer installation report_final.docx



LEGEND

- PIEZOMETER
- PROPERTY BOUNDARY
- APPROXIMATE ASH POND BOUNDARY
- APPROXIMATE SURFACE WATER LIMITS

REFERENCE

1. SERVICE LAYER CREDITS: ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

2. COORDINATE SYSTEM: NAD 1983 STATE PLAN GEORGIA WEST (U.S. FEET).

3. PROPERTY LINE PROVIDED BY SOUTHERN COMPANY SERVICES.

4. PIEZOMETER LOCATIONS PROVIDED BY METRO ENGINEERING

1500 750 0 1500
Feet

CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
PIEZOMETER LOCATION MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2020-07-27
PREPARED	DJC
DESIGN	BS
REVIEW	RK
APPROVED	

PROJECT No. 166625418 | CONTROL 1666254V001-GIS.mxd | Rev. 0 | FIGURE 1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM: ANSI B

Path: Q:\GIS\Southern Company\PlantBranch\Environmental - CCR\Figures\PZ-52D through PZ-56 Installation Report\Figure 1 - Piezometer Location Map.mxd

METRO ENGINEERING & SURVEYING CO., INC.

SURVEYOR'S REPORT

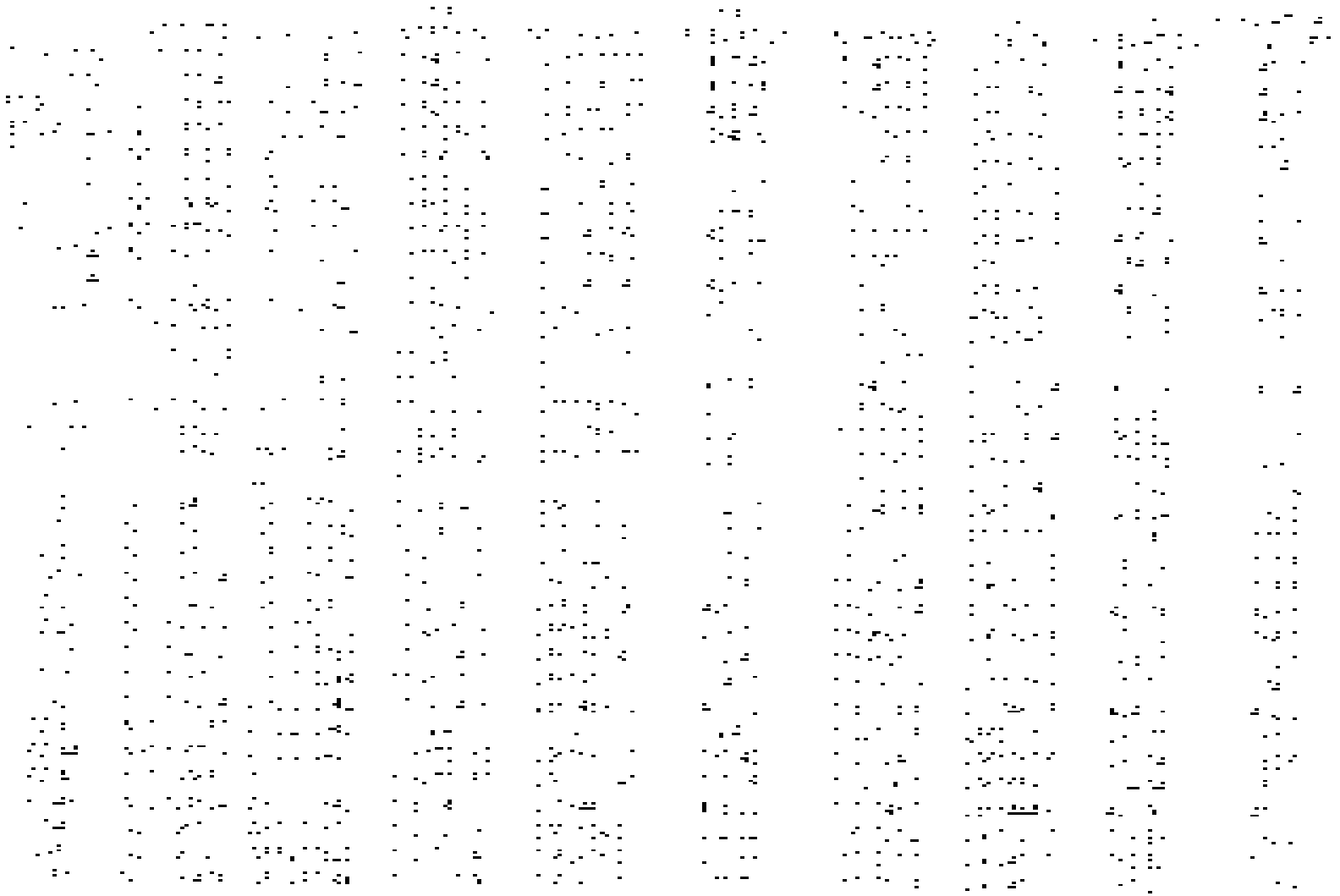
SCOPE OF WORK:

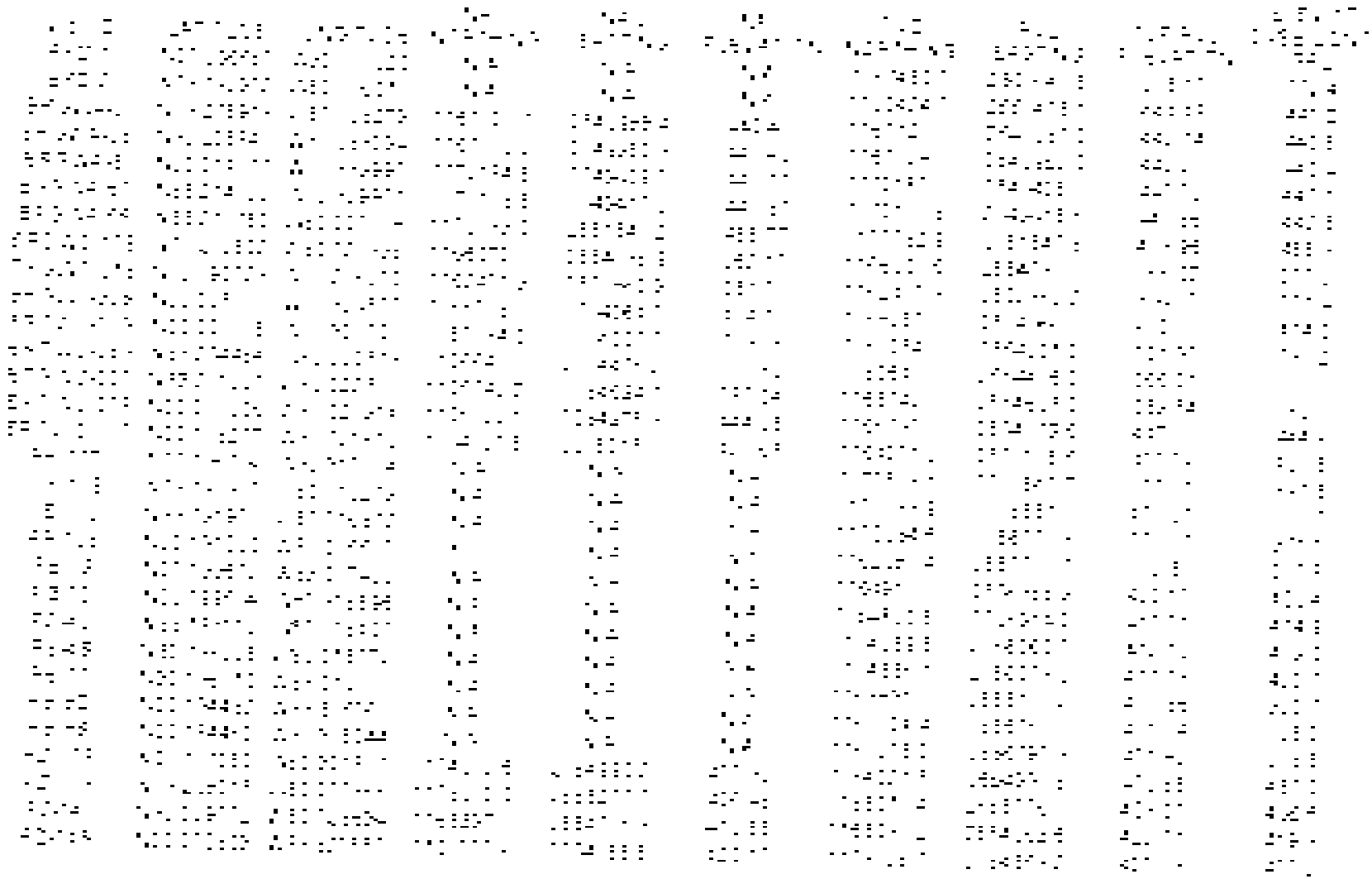
EQUIPMENT USED TO ESTABLISH THE MONITORING WELL LOCATIONS

CERTIFICATION:

GEORGIA REGISTERED PROFESSIONAL LAND SURVEYOR JAMES RANDOLPH GREEN

7/23/20





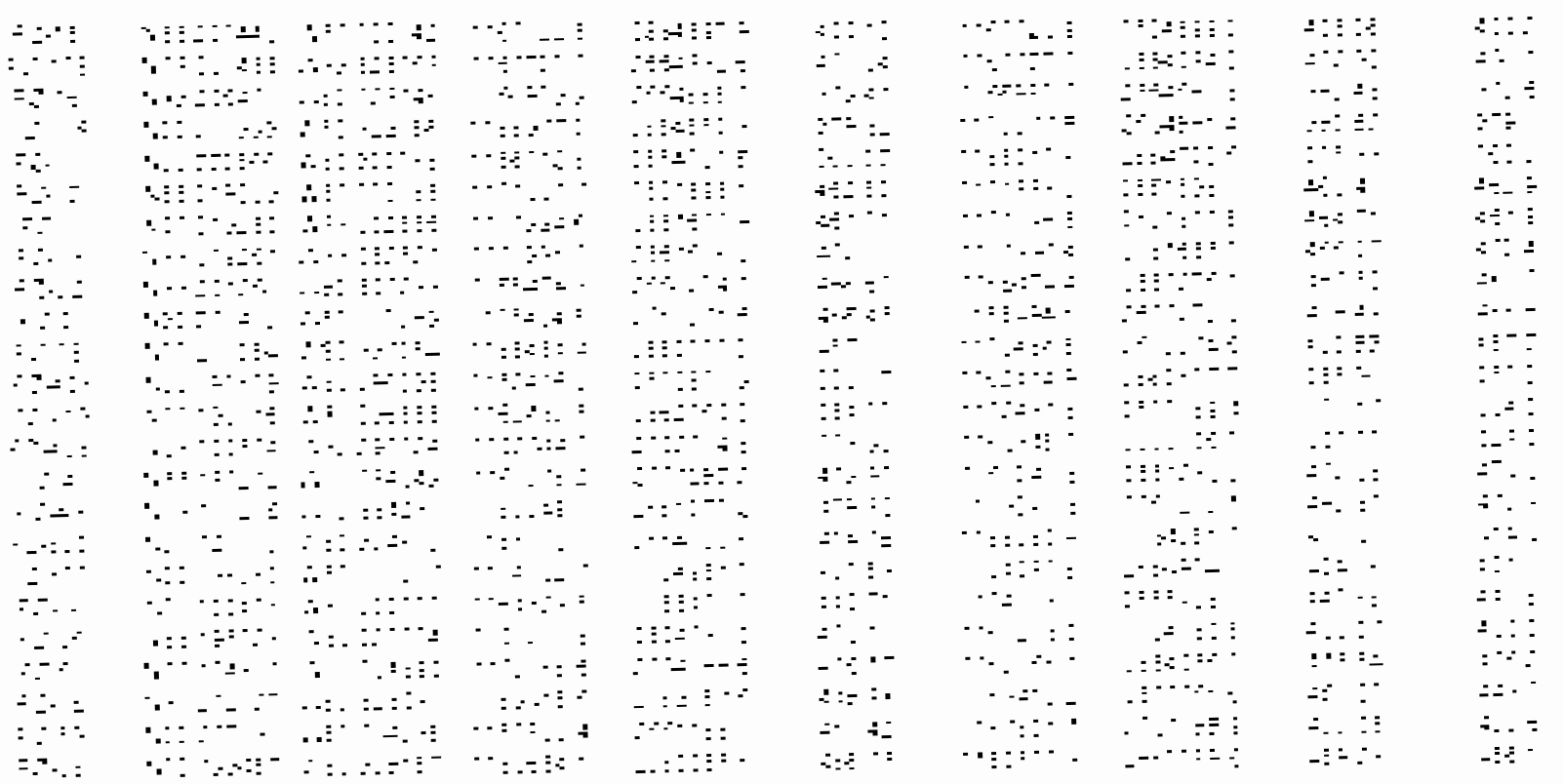


TABLE 1
SUMMARY OF PIEZOMETER CONSTRUCTION DETAILS
Georgia Power Company - Plant Branch
Milledgeville, Georgia

Borehole ID	Latitude	Longitude	NAD 83 Northing	NAD 83 Easting	Elevation On Top Of PVC (feet NAVD88)	Elevation Ground Surface (feet NAVD88)	Rock Type	Total Depth (feet bgs)	Depth to Bedrock (feet bgs)	Screened Interval (feet bgs)	Core Available	Water Level (feet bTOC)	Date Installed
PZ-52D	33.2083620	-83.3248700	1168053.90	2554051.70	417.03	414.3	Gneiss	59.50	28.5	49.5-59.5	Sonic Core	46.50	5/14/2020
PZ-53D	33.1982830	-83.3219170	1164393.80	2554984.30	434.68	431.6	Gneiss	144.00	139.0	129.4-139.4	Sonic Core	14.20	5/17/2020
PZ-54	33.1994680	-83.3203560	1164828.70	2555458.30	443.86	440.8	NA	52.00	NA	42-52	Sonic Core	41.40	5/15/2020
PZ-55	33.1950290	-83.3226040	1163208.00	2554783.60	453.07	450.2	Gneiss	49.30	49.0	39.3-49.3	Sonic Core	45.30	5/19/2020
PZ-56	33.1943770	-83.3248900	1162965.10	2554086.30	418.84	416.2	Gneiss	29.00	25.0	19.3-29.3	Sonic Core	5.35	5/20/2020

Notes:
NAD - North American Datum
NAVD88 - North American Vertical Datum 1988
NA - Not Applicable
bgs - Below ground surface
bTOC - Below Top o
Survey Data from Metro Engineering & Surveying Co., Inc.

Table 2
Summary of Piezometer Development
Georgia Power Company - Plant Branch
Milledgeville, Georgia

Piezometer ID	Date Started	Time Started (hr:min)	Elapsed Time (hr:min)	Development Method	Measured Total Depth of Well (ft bTOC)	Initial Water level (ft bTOC)	Final Water Level (ft bTOC)	Volume of Casing (gal)	Total Volume Removed (gal)	pH (SU)	Specific Conductance (mS/cm)	Temp (°C)	Turbidity (NTU)	ORP (mV)	DO (mg/L)
PZ-52D	6/1/2020	13:25	7:20	Bladder Pump	62.4	44.79	60.21	2.9(1)	23.55(2)	7.76	0.144	26.80	13.00	48.57	5.57
PZ-53D	6/1/2020	12:50	3:18	Reclaimer Pump	143.8	18.44	25.35	20.4	73.84	6.42	0.643	20.53	5.20	21.37	1.45
PZ-54	5/18/2020	13:20	5:50	Reclaimer Pump	54.9	44.72	47.50	1.7	190	6.17	0.193	19.17	9.10	99.90	11.37
PZ-55	6/2/2020	10:58	3:52	Reclaimer Pump	52.4	48.70	51(3)	0.6	10.3(2)	7.29	0.260	24.53	107.00	73.70	6.69
PZ-56	6/1/2020	15:40	3:40	Reclaimer Pump	32.3	4.70	5.35	4.5	92.5	5.86	0.089	18.83	20.30	107.68	5.24

Notes:
hr:min - hours:minutes
ft bTOC - feet below Top of Casing
gal - gallons
SU - Standard Units
mS/cm - millisiemens per centimeter
°C - degrees Celcius
NTU - nephelometric turbidity units
mV - millivolts
mg/L - milligrams per liter
ORP - oxygen reduction potential
DO - dissolved oxygen
-- = data unavailable; additional well development logs to be provide under separate cover for these wells
(1) PZ-52D, initial volume of casing consisted of approximately 2.6gal (15.9ft) of drilling fluid
(2) Total volume removed for PZ-52D and PZ-55 includes DI water additions. All DI water evacuated prior to completion
(3) Final DTW for PZ-55 inferred based on pump location. Well purged dry, WL below pump intake

Table 3
Summary of Slug Test Data
Georgia Power Company - Plant Branch
Milledgeville, Georgia

Piezometer ID	Saturated Aquifer Thickness Value (feet)	Screen Length (feet)	Piezometer Diameter (inches)	Aquifer Analysis Method	Aquifer Test Type	Hydraulic Conductivity (cm/sec)	Screened Lithology
PZ-53D	125	10	2	Bouwer-Rice	Falling	1.32E-04	Silty Sand/TWR
					Rising	1.19E-04	
PZ-54	10	10	2	Bouwer-Rice	Falling	6.76E-04	Silty Sand/TWR
					Rising	2.48E-04	

Notes:
(1) Geomean = geometric mean
(2) cm/sec = centimeter per second
TWR = Transitional Weathered Rock

COPY

CONTINUATION
CERTIFICATE

Atlantic Specialty Insurance Company

Bond No. 800021223

Date of Issue: June 30, 2015
(MONTH DAY YEAR)

On behalf of: Michael C. Rice and Savage Diving L.P. and any and all employees, officers, and partners
(PRINCIPAL)

And in favor of: State of Georgia
(OBLIGEE)

Does hereby continue said Bond in force for the further period

Beginning on: June 30, 2015
(MONTH DAY YEAR)

And ending on: June 30, 2021
(MONTH DAY YEAR)

In the sum of: Forty Thousand and Zero/100 ($40,000.00)

Description of Bond: Waste Pit Contractor Performance Bond

Premium: $1,200.00

PROVIDED: That this continuation certificate does not create any obligation and is executed upon the express condition and provision that the Surety's liability under said bond and the aforementioned Certificate issued in connection therewith shall not be cumulative and that the said Surety's aggregate liability under said bond and also under all such continuation certificates on account of all defaults committed during the period, regardless of the number of years said bond had been and shall be in force, shall not in any event exceed the amount of said bond as hereinbefore set forth.

Signed and Dated on: May 8, 2019
(MONTH DAY YEAR)
Atlantic Specialty Insurance Company

By: _____
Attorney-in-Fact - Elizabeth A. Harris

Ramey, Smith & Rees, Inc.
Agent

2101 112th Ave NE, Bellevue, WA 98004
Address of Agent

(425) 454-3400
Telephone Number of Agent

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Minneapolis, Minnesota, does hereby constitute and appoint Dominic M. Addario, Jessica M. Lawrence, Elizabeth A. Nolan, Tara M. Piper, Todd Pfefferman, Jennifer J. Rapaglia, Ronald J. Usinger, John R. Clapper, Kasper Rabenhorst, Lisa Armfield, Scott Hilden, Andrew P. Lawrence, Nicholas Arnold Hobbs, each individually if there be more than one named, as true and lawful Attorney-in-Fact to make, execute, seal and deliver for and on its behalf as surety and as its act and deed any and all bonds, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, in an amount not exceeding the sum of sixty million dollars ($60,000,000) and the execution of such bonds, recognizances, contracts of indemnity and other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company, as if they had been duly signed by an authorized officer of the Company and sealed with the Company's seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the

Resolved: That the President, any Senior Vice President or Vice President/Administrator or Assistant Vice President be and he is hereby authorized to appoint any and all bonds, recognizances, contracts of indemnity and other writings obligatory in the nature thereof on behalf of the Company, and to authorize and empower any officer of the Company the corporate seal of the Company to affix such seal to any such bond or undertaking; and that all such bonds, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, when duly executed by the President, any Senior Vice President or Vice President/Administrator or Assistant Vice President, together with a certified copy of this power of attorney, shall be binding upon the Company as if they have been duly signed by the President and sealed and delivered by the Secretary; and that the President, any Senior Vice President or Vice President/Administrator or Assistant Vice President may appoint and authorize an Attorney-in-Fact or agent to execute any such bond or undertaking and to affix the seal of the Company thereto; and that the President, any Senior Vice President or Vice President/Administrator or Assistant Vice President may at any time remove any such Attorney-in-Fact or agent and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority for and in the name of and on behalf of the Company, and it may be given full power and authority to execute or file any documents required by any law of any state or jurisdiction; and that the Attorney-in-Fact may delegate all or any part of the foregoing authority to one or more persons who are employees or agents of the Attorney-in-Fact, each of whom shall be considered an Attorney-in-Fact of the Company for purposes of these resolutions; and that any bond, recognizance, contract of indemnity or writing obligatory in the nature thereof executed pursuant to these resolutions on behalf of the Company by an Attorney-in-Fact shall be binding upon the Company as fully and to the same extent as if signed by the President and sealed and delivered by the Secretary.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-first day of September, 2011:

Resolved: That the signature of any Authorized Officer and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing an Attorney-in-Fact for the purposes only of executing and attesting any bond, undertaking, recognizance or other written obligation in the nature thereof, and any such signature and seal when so used being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed thereto this twenty-first day of October, 2011.

ATLANTIC SPECIALTY INSURANCE COMPANY
CORPORATE SEAL 1986 NEW YORK

By: _____
Paul J. Brehm, Senior Vice President

STATE OF MINNESOTA
HENNEPIN COUNTY

On this twenty-ninth day of October, 2011, before me personally came Paul J. Brehm, Senior Vice President of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, did depose and say that he is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and at the direction of said Company.

TARA JAVELLE STAFFORD
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2020

Notary Public

I, the undersigned, Secretary of ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation, do hereby certify that the foregoing power of attorney is in full force and has not been revoked, and the resolutions set forth above are now in force.

Signed and sealed. Dated 9 day of May 2019

ATLANTIC SPECIALTY INSURANCE COMPANY
CORPORATE SEAL 1986 NEW YORK

This Power of Attorney Expires
October 1, 2020

By: _____
Christopher P. Joy, Secretary

RECORD OF BOREHOLE PZ-52D

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 59.50 ft
LOCATION: 13' west of BRGWC-33S

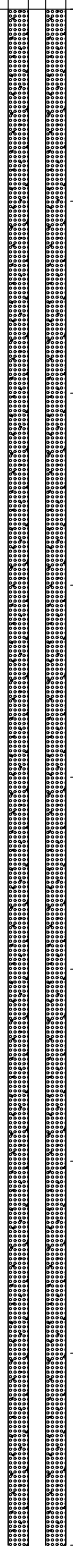
DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/14/20
DATE COMPLETED: 5/14/20

NORTHING: 1,168,053.90
EASTING: 2,554,051.70
GS ELEVATION: 414.3
TOC ELEVATION: 417.03 ft

DEPTH W.L.: 46.5
ELEVATION W.L.: 367.8'
DATE W.L.: 5/15/2020
TIME W.L.: 0735

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0		0.00 - 10.00 Air knife hole, water level ~ 5 feet bgs from SCS during hole clearing			404.3			
10	405	10.00 - 11.00 silty CLAY, red 2.5 YR 5/8, wet, slightly plastic, cohesive, soft. Residual soil	CL		10.00 403.3			
		11.00 - 17.00 silty SAND, very fine to medium sand, 7.5 YR 4/6 strong brown, weathered biotite gneiss, SAPROLITE, subhorizontal foliation, micaceous, medium grained gneiss, moist to wet, cohesive, non-PLASTIC, firm. Poorly sorted medium grained sand (quartz and plagioclase) 0.1 ft thick lenses from 13 - 15.5 feet	SM		11.00 397.3	1	ROTO SONIC	10.00 7.00
15	400	17.00 - 20.00 silty SAND, very fine to medium sand, variegated white, brown, orange, very dark brown to black, SAPROLITE, weathered biotite gneiss, cohesive, stiff, non-plastic, mosit to wet. Quartz-plagioclase-biotite ferrous oxide oxidation throughout	SM		17.00 394.3	2	ROTO SONIC	10.00 10.00
20	395	20.00 - 28.00 SILTY SAND, very fine to medium sand, variegated white, brown, orange, very dark brown to black, SAPROLITE, weakly foliated, weatehred biotite gneiss, cohesive, stiff, non-plastic, mosit to wet quatz-plagioclase-biotite oxidation staining throughout	SM		20.00 386.3			
25	390	28.00 - 28.50 Transitional weathered rock (TWR), biotite gneiss	TWR		385.8 28.50			
30	385	28.50 - 37.00 BIOTITE GNEISS, medium grained, phaneritic hornblende-quartz-plagioclase-biotite. Foliation orientation varies from subhorizontal to near vertical, weakly foliated from 31.5-32 feet, oxidation staining throughout, white and black foliations at 31 ft, 32.5 ft, and 33.5 ft	GNIESS		377.3	3	ROTO SONIC	9.00 10.00
35	380	37.00 - 47.00 INTERLAYERED BIOTITE GNEISS AND TWR, poor recovery due to subsurface materials and drilling methodology, rock recovered is oxidized throughout and appears less coherent section above, fractured	GNIESS		37.00	4	ROTO SONIC	2.50 10.00
40	375	Log continued on next page						

PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 49.5'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 49.5' - 59.5'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2
Slot Size: 0.10
End Cap: 4"

FILTER PACK
Interval: 47' - 59.5'
Type: #1 Sand

FILTER PACK SEAL
Interval: 43' - 47'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 43'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fref Kraus

GA INSPECTOR: Shannon George, PG
CHECKED BY: Brian Steele, PG DATE: 6/23/20

RECORD OF BOREHOLE PZ-52D

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 59.50 ft
LOCATION: 13' west of BRGWC-33S

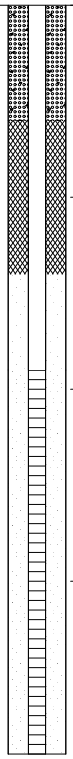
DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/14/20
DATE COMPLETED: 5/14/20

NORTHING: 1,168,053.90
EASTING: 2,554,051.70
GS ELEVATION: 414.3
TOC ELEVATION: 417.03 ft

DEPTH W.L.: 46.5
ELEVATION W.L.: 367.8'
DATE W.L.: 5/15/2020
TIME W.L.: 0735

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
40		37.00 - 47.00 INTERLAYERED BIOTITE GNEISS AND TWR, poor recovery due to subsurface materials and drilling methodology, rock recovered is oxidized throughout and appears less coherent section above, fractured *(Continued)*	GNIESS		367.3	4	ROTO SONIC	2.50 / 10.00
45	370							
50	365	47.00 - 59.50 BIOTITE GNEISS, medium grained, phaneritic hornblende-quartz-plagioclase-biotite, foliation orientation varies overall ~ 45 degrees from horizontal, weakly foliated, fractures/oxidation, minor oxidation at 50 ft, 51.5 ft, and 54.5 ft	GNIESS		47.00	5	ROTO SONIC	10.00
55	360							
	355				354.8	6	ROTO SONIC	2.50 / 2.50
60		Boring completed at 59.50 ft						
65	350							
70	345							
75	340							
80	335							

PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 49.5'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 49.5' - 59.5'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2
Slot Size: 0.10
End Cap: 4"

FILTER PACK
Interval: 47' - 59.5'
Type: #1 Sand

FILTER PACK SEAL
Interval: 43' - 47'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 43'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fref Kraus

GA INSPECTOR: Shannon George, PG
CHECKED BY: Brian Steele, PG DATE: 6/23/20

RECORD OF BOREHOLE PZ-53D

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 144.00 ft
LOCATION: 28' west of BRGWC-38S

DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/16/20
DATE COMPLETED: 5/17/20

NORTHING: 1,164,393.80
EASTING: 2,554,984.30
GS ELEVATION: 431.6
TOC ELEVATION: 434.68 ft

DEPTH W.L.: 14.2'
ELEVATION W.L.: 417.4'
DATE W.L.: 5/19/2020
TIME W.L.: 745

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	430	0.00 - 10.00 HYDROVAC HOLE, ML, SILT, red, plastic to slightly plastic, cohesive, firm to stiff, dry to moist			421.6			
10	420	10.00 - 15.00 ML, clayey sandy SILT, fine sand, micaceous throughout, red, very weak foliation, trace relict foliation, non-plastic to slightly plastic, soft, dry to moist, primarily very weathered biotite gneiss SAPROLITE	ML		10.00 416.6	1	ROTO SONIC	10.00 10.00
15	415	15.00 - 19.00 SM, silty SAND, very fine to fine sand, weakly foliated, cohesive, soft, non-plastic, moist, primarily very weathered metagranite	SM		15.00 412.6			
20	410	19.00 - 29.00 ML, clayey sandy SILT, ine sand, micaceous throughout, red, very weak foliation, trace relict foliation, non-plastic to slightly plastic, soft, dry to moist, primarily metagranite SAPROLITE 18'-20', biotite gneiss 20'-23.5', metagranite 23.5'-29'	ML		19.00 402.6	2	ROTO SONIC	10.00 10.00
25	405							
30	400	29.00 - 39.00 ML, clayey sandy SILT, fine sand, pale brown orange dark brown to black, subhorizontal foliation, moderately foliated, quartz-plagioclase-biotite, cohesive, soft to firm, wet, SM; 29'-30' and 34'-35'	ML		29.00 392.6	3	ROTO SONIC	12.50 10.00
35	395							
40		Log continued on next page	SP		39.00	4		

PIEZOMETER DIAGRAM and NOTES: AquaGuard Bentonite Grout; Riser

WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 129.4'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 129.4' - 139.4'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 126.6' - 140'
Type: #1 Sand

FILTER PACK SEAL
Interval: 121' - 126.6'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 121'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George, PG
CHECKED BY: Brian Steele, PG DATE: 6/23/20

BOREHOLE RECORD PLANT_BRANCH_20200603.GPJ PIEDMONT.GDT 7/27/20

RECORD OF BOREHOLE PZ-53D

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 144.00 ft
LOCATION: 28' west of BRGWC-38S

DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/16/20
DATE COMPLETED: 5/17/20

NORTHING: 1,164,393.80
EASTING: 2,554,984.30
GS ELEVATION: 431.6
TOC ELEVATION: 434.68 ft

DEPTH W.L.: 14.2'
ELEVATION W.L.: 367.8'
DATE W.L.: 5/19/2020
TIME W.L.: 745

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
40		39.00 - 42.00 SP, SAND, poorly graded, sme silt, medium to coarse sand, reddish brown, subangular to angular, non-cohesive, non-plastic, loose, moist to wet.	SP		389.6					
	390	39.8'-42' SAPROLITE, biotitte gneiss with granite interlayers, moderately foliated, white to pale brown to yellowish brown to very dark brown, medium to coarse grained, little to some oxidation, moist, cohesive, non-plastic, very stiff *(Continued)*			42.00					
45		42.00 - 49.00 CL/CH, sandy CLAY, dary grayish brown with interlayers of white, very stiff to hard, moist, plastic, weathered biotite gneiss	CL-CH			4	ROTO SONIC	14.00 10.00		
	385				382.6					
50		49.00 - 53.00 SM, silty SAND, fine to medium sand, with clay, brown, weathered gneiss, quartz-plagioclase-biotite, weakly foliated, very stiff to hard, non-plastic, moist	SM		49.00					
	380				378.6					
55		53.00 - 63.00 SM, silty clayey SAND, fine to coarse sand, subangular to angular, brown, weathered gneiss quartz-plagioclase-biotite, medium grained, subhorizontal foliation, cohesive, stiff to very stiff, moist, non-plastic to plastic, SAPROLITE			53.00	5	ROTO SONIC	10.50 10.00		
	375		SM							
60										
	370				368.6					
		63.00 - 65.00 CL, silty sandy CLAY, fine sand, brown to light olive brown, weathered gneiss, micaceous, moderately to weakly foliated, cohesive, plastic, moist to wet, w~PL, firm to very stiff	CL		63.00 366.6	6	ROTO SONIC	12.00 10.00		
65		65.00 - 69.00 SM, silty SAND, very fine to medium sand, pale brown, slightly weathered to weathered gneiss biotite-quartz-plagioclase/feldspar	SM		65.00					
	365				362.6					
		69.00 - 70.00 SP-SM, Sand with Silt, very fine to medium sand, poorly graded, weathered biotite gneiss, weakly foliated to no foliation, dark grayish brown, wet, loose, non-plastic	SP-SM		69.00 361.6					
70					70.00					
	360	70.00 - 73.50 ML, clayey sandy SILT, fine to medium sand, angular, brown to dark grayish brown, dry to moist, non-plastic	ML			7	ROTO SONIC	5.50 4.50		
		73.00 - 75.00 SP-SM, Sand with Silt, very fine to coarse sand, poorly graded, not foliated, weathered biotite gneiss	SP-SM		358.1					
					356.6					
75		75.00 - 79.00 SM, silty SAND, fine to coarse sand, TWR/SAPROLITE, interlayered SM and TWR, feldspathic biotite gneiss, coarse gravel throughout, firm to very hrd, dry	SM		75.00	8	ROTO SONIC	6.50 5.50		
	355				352.6					
			ML		79.00	9		9.50 10.00		
80		Log continued on next page								

WELL CASING
Interval: 0' - 129.4'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 129.4' - 139.4'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 126.6' - 140'
Type: #1 Sand

FILTER PACK SEAL
Interval: 121' - 126.6'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 121'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George, PG
CHECKED BY: Brian Steele, PG DATE: 6/23/20

RECORD OF BOREHOLE PZ-53D

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 144.00 ft
LOCATION: 28' west of BRGWC-38S

DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/16/20
DATE COMPLETED: 5/17/20

NORTHING: 1,164,393.80
EASTING: 2,554,984.30
GS ELEVATION: 431.6
TOC ELEVATION: 434.68 ft

DEPTH W.L.: 14.2'
ELEVATION W.L.: 367.8'
DATE W.L.: 5/19/2020
TIME W.L.: 745

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
80		79.00 - 85.00 ML, sandy SILT, fine to medium sand, angular, brown, subhorizontal foliation, wet from drilling *(Continued)*	ML		346.6	9	ROTO SONIC	9.50/10.00
85	350	85.00 - 89.00 SM, silty SAND, fine to coarse sand, some gravel, weathered felspathic biotite gneiss, SAPROLITE/TWR	SM		85.00 342.6			
90	345	89.00 - 93.00 ML, clayey sandy SILT, very fine to medium sand, subanglar to angular, dark grayish brown to grayish brown, fain foliation	ML		89.00 338.6	10	ROTO SONIC	8.00/10.00
95	340	93.00 - 99.00 SM, silty SAND, very fine to coarse sand, pale brown, weakly foliated, weathered geniss, SAPROLITE	SM		93.00 332.6			
100	335	99.00 - 102.50 ML, sandy SILT, and silty SAND, veryfine to medium sand, grayish brown to brown, not foliated, very weathered feldspathic geniss, non-plastic to slightly plastic, firm, wet, SAPROLITE	ML		99.00 329.1	11	ROTO SONIC	7.00/10.00
105	330	102.50 - 105.00 SM, silty SAND, very fine to coarse sand, some gravel, subangular to angular, pale brown, weathered gneiss, relict foliation, moderate foliation, hard, non-plastic, dry	SM		102.50 326.6			
110	325	105.00 - 109.00 No recovery			105.00 322.6			
115	320	109.00 - 113.00 ML/SM, sandy SILT and silty SAND, very fine to medium sand, grayish brown to brown, no foliation wet, non-plastic to plastic,	ML		109.00 318.6	12	ROTO SONIC	6.00/10.00
		113.00 - 115.00 SM, silty SAND, fine to coarse sand, weathered gneiss, weakly foliated, hard, SAPROLITE	SM		113.00 316.6			
120	315	115.00 - 119.00 No recovery			115.00 312.6			
		Log continued on next page	ML		119.00	13		9.50/10.00

PIEZOMETER DIAGRAM and NOTES

WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 129.4'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 129.4' - 139.4'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 126.6' - 140'
Type: #1 Sand

FILTER PACK SEAL
Interval: 121' - 126.6'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 121'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George, PG
CHECKED BY: Brian Steele, PG DATE: 6/23/20

RECORD OF BOREHOLE PZ-53D

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 144.00 ft
LOCATION: 28' west of BRGWC-38S

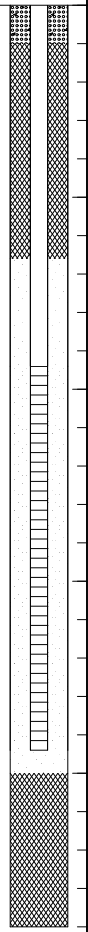
DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/16/20
DATE COMPLETED: 5/17/20

NORTHING: 1,164,393.80
EASTING: 2,554,984.30
GS ELEVATION: 431.6
TOC ELEVATION: 434.68 ft

DEPTH W.L.: 14.2'
ELEVATION W.L.: 367.8'
DATE W.L.: 5/19/2020
TIME W.L.: 745

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC
120		119.00 - 122.50 ML/SM, sandy SILT and silty SAND, very fine to medium sand, some coarse sand, some weathered gneiss cobbles up to 1.5", dark grayish brown, no foliation, biotite gneiss cobbles are weakly foliated, cohesive, non-plastic to slightly plastic, soft to hard, wet *(Continued)*	ML		309.1			
	310	122.50 - 127.00 SM, silty SAND, fine to coarse sand, weathered gneiss, weakly foliated, hard, SAPROLITE	SM		122.50 304.6	13	ROTO SONIC	9.50 / 10.00
125	305	127.00 - 129.00 ML/SM, sandy SILT and silty SAND, very fine to medium sand, some coarse sand, some weathered gneiss cobbles up to 1.5", dark grayish brown, no foliation, biotite gneiss cobbles are weakly foliated, cohesive, non-plastic to slightly plastic, soft to hard, wet	ML		127.00 302.6			
130		129.00 - 131.00 ML, clayey sandy SILT	ML		129.00 300.6			
	300	131.00 - 138.00 SM, silty SAND, fine and medium sand, gray to dark olive gray, interlayered weathered biotite gneiss and amphibolite, SAPROLITE	SM		131.00 293.6	14	ROTO SONIC	10.00 / 10.00
135	295	138.00 - 139.00 TWR, transitionally weathered rock, weathered biotite gneiss	TWR		138.00 292.6			
		139.00 - 144.00 BR, Biotite Gneiss, medium grained, quartz-hornblende-plagioclase, oxidation and fracture zone at 142'-143.5'	BR		139.00 287.6	15	ROTO SONIC	5.00 / 5.00
140	290	Boring completed at 144.00 ft						
145	285							
150	280							
155	275							
160								

PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 129.4'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 129.4' - 139.4'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 126.6' - 140'
Type: #1 Sand

FILTER PACK SEAL
Interval: 121' - 126.6'
Type: 3/8" Pel-Plug

ANNULUS SEAL
Interval: 0' - 121'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George, PG
CHECKED BY: Brian Steele, PG DATE: 6/23/20

RECORD OF BOREHOLE PZ-54

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 52.00 ft
LOCATION: SE of Pond E

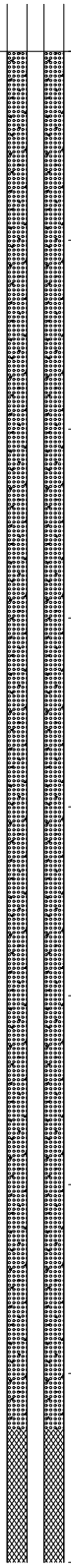
DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/15/20
DATE COMPLETED: 5/15/20

NORTHING: 1,164,828.70
EASTING: 2,555,458.30
GS ELEVATION: 440.8
TOC ELEVATION: 443.86 ft

DEPTH W.L.: 41.4'
ELEVATION W.L.: 399.4'
DATE W.L.: 5/16/2020
TIME W.L.: 735

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	440	0.00 - 7.00 CL, silty sandy CLAY, medium to coarse sand, angular quartz, red, mottled texture, trace fine gravel, subrounded to subangular, deeply weathered, plagioclase, firm to stiff, dry to moist, RESIDUUM	CL		433.8	1	ROTO SONIC	3.00 / 7.00
5	435	7.00 - 13.00 CL, silty CLAY some sand, fine to medium sand, angular to subangular, yellowish red, no structure, quartz and plagioclase, RESIDUUM	CL		7.00 427.8	2	ROTO SONIC	10.00 / 10.00
10	430	13.00 - 17.00 SM, silty SAND, fine to medium sand, anugular to subangular, light red to red, weak foliation, weathered to very weathered feldspathic biotite gneiss with sodium-plagioclase to potassium feldspar, quartz, little to trace mica, cohesive, non-plastic, firm to moist, dry, RESIDUUM	SM		13.00 423.8			
15	425	17.00 - 19.00 ML, clayey sandy SILT, red, mica rich, deeply weathered, feldspathic biotite gneiss, cohesive, slightly plastic, moist, RESIDUUM	ML		17.00 421.8	3	ROTO SONIC	10.00 / 10.00
20	420	19.00 - 28.00 SM, silty SAND, fine to medium sand, light red to red, weak foliation, weathered to very weathered feldspathic biotite gneiss, moist, cohesive, non-plastic to slightly plastic, firm, SAPROLITE	SM		19.00 412.8			
25	415	28.00 - 37.00 SM, silty SAND, fine to medium sand, light brown to ligh reddish brown, weathered to very weathered, feldspathic biotite gneiss, foliated to weakly foliated, non plastic, firm, oxidation at 28', SAPROLITE	SM		28.00 403.8	4	ROTO SONIC	9.50 / 10.00
30	410							
35	405	37.00 - 48.00 SM, clayey silty SAND, fine sand, pale brown, weathered feldspathic biotite gneiss, quartz-biotite-plagioclase, trace to little oxidation/mottling throughout, foliated to weakly foliated, moist, cohesive, non-plastic, stiff, SAPROLITE	SM		37.00	5	ROTO SONIC	10.00 / 10.00
40		Log continued on next page						

PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 42'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 42' - 52'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 40' - 52'
Type: #1 Sand

FILTER PACK SEAL
Interval: 36.5' - 40'
Type: Pel-Plug 3/8"

ANNULUS SEAL
Interval: 0' - 36.5'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: N/A

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George, PG
CHECKED BY: Brian Steele, PG DATE: 6/23/20

RECORD OF BOREHOLE PZ-54

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 52.00 ft
LOCATION: SE of Pond E

DRILL RIG: C 600 Track Mounted
DATE STARTED: 5/15/20
DATE COMPLETED: 5/15/20

NORTHING: 1,164,828.70
EASTING: 2,555,458.30
GS ELEVATION: 440.8
TOC ELEVATION: 443.86 ft

DEPTH W.L.: 41.4'
ELEVATION W.L.: 399.4'
DATE W.L.: 5/16/2020
TIME W.L.: 735

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
40	400	37.00 - 48.00 SM, clayey silty SAND, fine sand, pale brown, weathered feldspathic biotite gneiss, quartz-biotite-plagioclase, trace to little oxidation/mottling throughout, foliated to weakly foliated, moist, cohesive, non-plastic, stiff, SAPROLITE *(Continued)*	SM			5	ROTO SONIC	10.00 / 10.00	#1 Sand 0.010" Slotted Screen	**WELL CASING** Interval: 0' - 42' Material: Sch 40 PVC Diameter: 2" Joint Type: Threaded **WELL SCREEN** Interval: 42' - 52' Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen Diameter: 2" Slot Size: 0.010" End Cap: 3" **FILTER PACK** Interval: 40' - 52' Type: #1 Sand **FILTER PACK SEAL** Interval: 36.5' - 40' Type: Pel-Plug 3/8" **ANNULUS SEAL** Interval: 0' - 36.5' Type: AquaGuard Bentonite Grout **WELL COMPLETION** Pad: 4' x 4' x 2" Protective Casing: Aluminum **DRILLING METHODS** Soil Drill: Sonic Rock Drill: N/A
45	395				392.8					
		48.00 - 52.00 TWR, weathered feldspathic biotite gneiss interlayered with unweathered feldspathic biotite gneiss, coarse grained, foliated to weakly foliated, some oxidation staining	TWR		48.00	6	ROTO SONIC	5.00 / 5.00		
50	390				388.8					
		Boring completed at 52.00 ft								
55	385									
60	380									
65	375									
70	370									
75	365									
80										

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George, PG
CHECKED BY: Brian Steele, PG DATE: 6/23/20

RECORD OF BOREHOLE PZ-55

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 49.30 ft
LOCATION: SE of Pond E

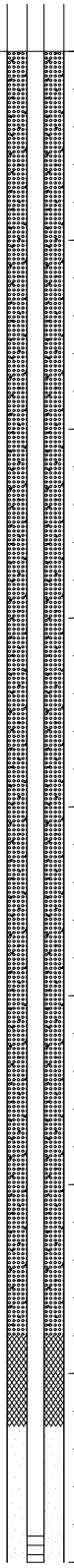
DRILL RIG: TSI Compact Crawler
DATE STARTED: 5/19/20
DATE COMPLETED: 5/19/20

NORTHING: 1,163,208.00
EASTING: 2,554,783.60
GS ELEVATION: 450.2
TOC ELEVATION: 453.07 ft

DEPTH W.L.: 45.3'
ELEVATION W.L.: 404.9'
DATE W.L.: 5/20/2020
TIME W.L.: 740

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	450	0.00 - 8.00 CL, silty CLAY, some sand, fine to medium sand, quartz angular, dark red, cohesive, slightly plastic to plastic, dry to moist, w<PL, firm to stiff, RESIDUUM	CL		442.2	1	ROTO SONIC	9.00 / 9.00
		8.00 - 9.50 ML, sandy SILT, very fine to fine sand, red to dark red, weathered gneiss, foliated, quartz-weathered plagioclase/feldspar and biotite, medium grained gneiss, moist, non-plastic, cohesive, firm, SAPROLITE	ML		8.00 440.7			
10	440	9.50 - 12.00 SM, silty SAND, fine to coarse sand, quartz angular, red, loose, non-plastic, moist to wet, SAPROLITE	SM		9.50 438.2	2	ROTO SONIC	8.00 / 10.00
		12.00 - 39.50 SM, silty SAND, fine to medium sand, weathered feldspathic biotite gneiss, weakly foliated, subhorizontal, non-cohesive, non-plastic, loose to compact, SAPROLITE			12.00			
15	435							
20	430	oxidation/mottling at 28.5' to 31'				3	ROTO SONIC	7.00 / 10.00
25	425		SM					
30	420					4	ROTO SONIC	10.00 / 10.00
35	415							
40		Log continued on next page	SP-SM		410.7 39.50	5		

PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 39.3'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 39.3' - 49.3'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 36.4' - 49.3'
Type: #1 Sand

FILTER PACK SEAL
Interval: 34' - 36.4'
Type: Pel-Plug 3/8"

ANNULUS SEAL
Interval: 0' - 34'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George, PG
CHECKED BY: Brian Steele, PG DATE: 6/24/20

RECORD OF BOREHOLE PZ-55

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 49.30 ft
LOCATION: SE of Pond E

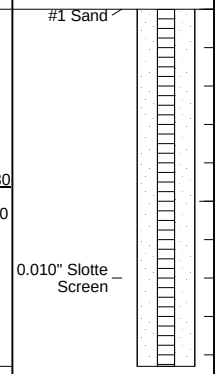
DRILL RIG: TSI Compact Crawler
DATE STARTED: 5/19/20
DATE COMPLETED: 5/19/20

NORTHING: 1,163,208.00
EASTING: 2,554,783.60
GS ELEVATION: 450.2
TOC ELEVATION: 453.07 ft

DEPTH W.L.: 45.3'
ELEVATION W.L.: 404.9'
DATE W.L.: 5/20/2020
TIME W.L.: 740

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
40	410	39.50 - 41.00 SP-SM, poorly graded Sand with Silt, very fine to fine sand, little fine gravel, moist to wet, grayish brown, loose to compact, non-plastic *(Continued)*	SP-SM		409.2			
			ML		41.00 408.2			
		41.00 - 42.00 ML, sandy SILT, very fne to fine sand, pale brown, moist, firm, non-plastic, moderate fliation, SAPROLITE			42.00			
		42.00 - 46.00 SP, SAND, fine sand, brown, poorly graded, moist to wet, loose to compact, non-plastic, SAPROLITE	SP			5	ROTO SONIC	10.30 10.30
45	405				404.2			
		46.00 - 48.50 ML, sandy SILT, fine sand, weathered gneiss, feldspathic biotite gneiss, moderate foliation, cohesive, firm to stiff, non-plastic, moist to wet, SAPROLITE	ML		46.00 401.7			
		48.50 - 49.00 TWR, transtionally weathered rock, weathered biotite gneiss, medium grained	TWR		401.2			
50	400	49.00 - 49.30 BR, Biotite Gneiss, medium grained, moderate foliation, hornblende-quartz-biotite-plagioclase	BR					
		Boring completed at 49.30 ft						
55	395							
60	390							
65	385							
70	380							
75	375							
80								

PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 39.3'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 39.3' - 49.3'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 36.4' - 49.3'
Type: #1 Sand

FILTER PACK SEAL
Interval: 34' - 36.4'
Type: Pel-Plug 3/8"

ANNULUS SEAL
Interval: 0' - 34'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George, PG
CHECKED BY: Brian Steele, PG DATE: 6/24/20

BOREHOLE RECORD PLANT_BRANCH_20200603.GPJ PIEDMONT.GDT 7/27/20

RECORD OF BOREHOLE PZ-56

SHEET 1 of 1

PROJECT: Plant Branch
PROJECT NUMBER: 1666254-01
DRILLED DEPTH: 29.00 ft
LOCATION: SE of Pond E

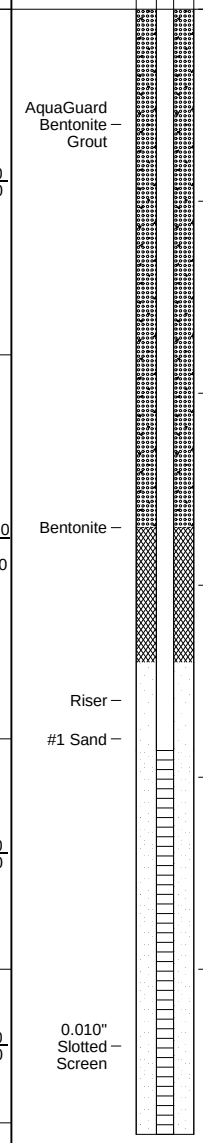
DRILL RIG: TSI Compact Crawler
DATE STARTED: 5/20/20
DATE COMPLETED: 5/20/20

NORTHING: 1,162,965.10
EASTING: 2,554,086.30
GS ELEVATION: 416.2
TOC ELEVATION: 418.84 ft

DEPTH W.L.: 5.35
ELEVATION W.L.: 410.85'
DATE W.L.: 6/2/2020
TIME W.L.: 1146

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC
0	415	0.00 - 6.00 Cl, silty CLAY, dark red, moist, no structure, mica flakes thoughout, cohesive, plastic, firm to stiff, w<PL, RESIDUUM	CL	410.2 / 6.00	1	ROTO SONIC	9.00 / 9.00
5	410	6.00 - 14.00 CL, silty CLAY, trace fine sand, yellowish orange, to pale brown, no structure, mottled, cohesive, moist, very stiff, plastic, w<PL, RESIDUUM	CL	402.2 / 14.00	2	ROTO SONIC	10.00 / 10.00
10	405	14.00 - 15.00 SM, silty clayey SAND, fine sand, yellowish red, moist to wet, mottled, compact to dense, non-plastic, RESIDUUM	SM	401.2 / 15.00			
15	400	15.00 - 18.00 CL, silty CLAY, little fine sand, red to pale brown to yellowish red, mottled, moist, plastic, stiff to very stiff, w>PL, RESIDUUM	CL	398.2 / 18.00			
20	395	18.00 - 24.50 SM, silty clayey SAND, fine sand, yellowish red, moist to wet, mottled, compact to dense, non-plastic, RESIDUUM	SM	391.7 / 25.00	3	ROTO SONIC	3.50 / 6.00
25	390	24.50 - 25.00 TWR, slightly weathered biotite gneiss, quartz-hornblende-plagioclase-biotite	TWR	391.2 / 25.00			
30	385	25.00 - 29.00 BR, Interlayered Biotite Gneiss and Amphibolite, primarily biotite gneiss, feldspathic, quartz-hornblende-potassium fledspar-plagioclase-biotite, medium to coarse grained, weak subhorizontal foliation 25.7'-26.5' Amphibolite, fine grained, very dark green to black, weakly foliated, quartz-plagioclase-biotite-hornblende	BR	387.2	4	ROTO SONIC	4.00 / 4.00
35	380	Boring completed at 29.00 ft					
40							

PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0' - 19.3'
Material: Sch 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 19.3' - 29.3'
Material: 0.010" Slotted Schedule 40 PVC Pre-Pack Screen
Diameter: 2"
Slot Size: 0.010"
End Cap: 3"

FILTER PACK
Interval: 17' - 29.3'
Type: #1 Sand

FILTER PACK SEAL
Interval: 13.5' - 17'
Type: Pel-Plug 3/8"

ANNULUS SEAL
Interval: 0' - 13.5'
Type: AquaGuard Bentonite Grout

WELL COMPLETION
Pad: 4' x 4' x 2"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: Sonic
Rock Drill: Sonic

LOG SCALE: 1 in = 5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Fred Kraus

GA INSPECTOR: Shannon George, PG
CHECKED BY: Brian Steele, PG DATE: 6/24/20

BOREHOLE RECORD PLANT_BRANCH_20200603.GPJ PIEDMONT.GDT 7/27/20

GOLDER

WELL DEVELOPMENT FIELD RECORD

Page 1 of 1

PROJECT NAME / NUMBER: 166625418 / Brush
WELL DIA (in): 2
DEVELOPED BY: KCM
STARTED DEVELOPMENT: 6-1-20 / 1325 (DATE / TIME)
W.L. BEFORE DEVELOPMENT: 49.79 (ft.) / 6-1-20 / 1302 (DATE / TIME)
WELL DEPTH BEFORE DEVEL: 62.90
STANDING WATER COLUMN (FT.): 13.11
SCREENED INTERVAL: 52.9 - 62.9 (Tot.) / 49.5 - 59.5 (Ø)

WELL ID: P2-520
DATE OF INSTALLATION:
COMPLETED DEVELOPMENT: 6-11-20 / 1259 (DATE / TIME)
W.L. AFTER DEVELOPMENT: 49.62 (ft.) / 6-12 (DATE) / 1124 (TIME)
WELL DEPTH AFTER DEVEL: 62.90
STANDING WELL VOLUME: 0.127 (gal)
DRILLING WATER LOSS: (gal)

TOP: top of pump

0.28' w.c.

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft)	FIELD PARAMETERS: pH (s.u.)	Sp. Cond. (mS/cm)	TEMP. (°C)	Turbidity (NTU)	Color	ROD (mg/L)	ORP (mV)	REMARKS
6-1-20 / 1325	~	0.25	49.79	7.33	0.57	25.12	Meas	Brown	7.51	113.9	Pump @ 62'
1335	2.5	0.25	56.04	7.71	0.66	22.21	17.1	Brown	9.65	114.9	"
1345	~	~	TOP								w.l. & turbs.
1426	~	~	TOP								"
1435	0.2		0.49	7.97	0.52	DISS	117	Grey	9.09	96.9	Purge pump water from tubing
6-2 / 1320	~	~	60.90								Add 3 gal DI
1355	~	~	59.11								Add 1 gal DI
1405		Meas					Meas	grey			Bkgd. turb.
1415	~1										Add 4 gal DI
1430	~2		58.21	7.79	0.01	24.58	59.2	Grey	9.06	88.7	
1440	~3.5		32.11	7.59	0.02	23.51	24.2	Grey	9.03	89.1	Add 3 gal DI
1450	~2.5		TOP	7.72	0.04	24.60	7.12	Cloudy	8.65	99.6	
1500	~	~	~								Pump, tubing retrieved
1600	8.5 Gal										END OF DAY
6/4 / 0952			60.20								
1145											Add 9 gal DI
1155			59.45								
1200		Meas		→ Ref. Section for data ←							Bkgd. turb.
1215		Meas									
1245	9 Gal										Pump / tubing removed END DEV
D/S 1305			60.05								
D/S / 1307			60.21								
6-11 / 1145			59.75								Hach Bottle @ 462 → 2.65 uC
		Meas		→ Ref. Section 6 for data ←							
	~2.5										
1258	~2.5										DRY, END OF DEV
	23.35	+ TOTAL VOLUME REMOVED (gal)									

2.7 gal removed

8.35 gal removed

9 gal removed

All 9 gal DI extracted, plus 0.15 gal water column

9 gal DI added and removed

DEVELOPMENT METHOD: Peristaltic + Bladder Pumps

NOTES: Purged dry x ~ / additions and removal of Type I DI water

GOLDER

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER: 1666259.18
WELL ID: PZ-53D
WELL SIZE (in): 2
DEVELOPED BY: J. MACDONALD
DATE OF INSTALLATION:
STARTED DEVELOPMENT (DATE / TIME): 08/01/20 - 12:50
COMPLETED DEVELOPMENT (DATE / TIME): 08/01 - 16:28
W.L. BEFORE DEVELOPMENT (m / DATE / TIME): 18.49 - 08/01 - 12:19
W.L. AFTER DEVELOPMENT (m / DATE / TIME): 26.35 - 08/01 - 16:08
WELL DEPTH BEFORE DEVEL: 147.82
WELL DEPTH AFTER DEVEL: 147.82
STANDING WATER COLUMN (FT.): 125.38
STANDING WELL VOLUME: 20.49 gal
SCREENED INTERVAL: 10' : 129 = 139' BGS
DRILLING WATER LOSS: gal

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (m)	FIELD PARAMETERS: pH (s.u.)	Sp. Cond. (mS/cm)	TEMP (°C)	Turbidity (NTU)	Color	DO (mg/L)	ORP (mV)	REMARKS
08/01/20 - 13:00	3		19.28	7.37	0.51	27.42	1001	BRN	6.51	192.9	6", SURGE-6
13:10	7		35.20	7.58	0.58	12.16	652	TAN	1.68	26.6	
13:20	10	0.38	37.48	7.07	0.69	15.92	128	TAN	0.76	16.0	SURGE-6
13:30	13.8		37.85	6.76	0.63	19.89	49.9	TAN	0.85	2.3	SURGE-6
13:40	17.6		38.10	6.70	0.76	13.33	79	TAN	0.98	1.9	
13:50	21.9		37.60	6.63	0.73	19.78	11.3	CLR	1.09	1.8	-> 4", SURGE-6
14:00	25.2		37.38	6.68	0.92	19.90	65	TAN	0.98	0.4	SURGE-6
14:10	29		38.05	6.60	0.66	15.81	39.0	murky	1.27	-8.0	SURGE-6
14:20	32.8		38.10	6.65	0.66	19.21	56.9	murky	1.33	-7.2	
14:30	36.6		37.72	6.95	0.71	19.51	11.29	CLR	1.38	-1.0	
14:40	40.4		37.49	6.69	0.71	15.50	8.6	CLR	1.98	-1.1	-> 8", SURGE-6
14:50	44.2		37.90	6.57	0.70	20.04	56.3	CLR	1.56	-4.1	SURGE-6
15:00	48.0		37.40	6.99	0.67	20.13	6.90	CLR	1.56	-1.7	-> 6", SURGE-6
15:10	51.8		37.32	6.98	0.59	19.99	27.9	murky	1.71	-0.9	
15:30	65.6		37.82	6.43	0.66	20.22	9.29	CLR	1.60	6.1	-> 5", BEGIN HOW FROM BTM
16:08	DEV	COMPLETE									

73.84 = TOTAL VOLUME REMOVED (gal)

DEVELOPMENT METHOD: RECLAIMER + SURGE-6

NOTES:

GOLDER

WELL DEVELOPMENT FIELD RECORD

Page _ of _

PROJECT NAME / NUMBER: 116254.18
WELL DIA (in): 2
DEVELOPED BY: J. Wagenpack
STARTED DEVELOPMENT: 06/02/00 : 10:58 (DATE / TIME)
W.L. BEFORE DEVELOPMENT: 4830.0642 : 10:27 (ft. / DATE / TIME)
WELL DEPTH BEFORE DEVEL: 52.36
STANDING WATER COLUMN (FT.): 5.66
SCREENED INTERVAL: 42.36 - 52.36

WELL ID: PZ-55
DATE OF INSTALLATION:
COMPLETED DEVELOPMENT: / (DATE / TIME)
W.L. AFTER DEVELOPMENT: / (ft. / DATE / TIME)
WELL DEPTH AFTER DEVEL:
STANDING WELL VOLUME: gal
DRILLING WATER LOSS: gal

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm) (L/min)	DTW (ft)	FIELD PARAMETERS: pH (s.u.)	Sp. Cond. (mS/cm)	TEMP (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)	REMARKS
06/02 - 11:05		0.16	TOP	8.11	0.01	20.46	>1000	BRN	8.97	185.7	6", SURGING
11:10	1.6		TOP	8.24	0.37	23.97	—	—	8.38	162.7	DRY, RECHARGING
11:40	WAITING FOR RECHARGE - ATTEMPTING BAILER										
	PUMP DEVELOPMENT										
12:01		—	51.96								
12:10		—	51.35								
12:20	—		51.29	- ADDING 5 GAL DI							
12:45	1.6	Bump	49.76	- BEGIN DEV, SURGING WITH SCREEN							
12:55			45.85	8.07	0.22	21.83	>1000	BRN	6.10	97.2	6", SURGING
13:00	2.2		46.16	7.93	0.19	23.87	1000	BRN	7.93	85.1	SURGING
13:05	2.2	Bump	46.85	7.80	0.20	21.94	1000	BRN	7.50	80.5	SURGING
13:10			47.76	7.77	0.24	21.67	1000	BRN	7.44	76.7	SURGING
13:15			48.58	7.71	0.21	21.19	1000	BRN	7.35	74.3	SURGING
13:20			49.58	7.69	0.20	21.02	1000	BRN	7.27	71.5	SURGING
13:25			50.45	7.52	0.26	20.79	1000	BRN	7.24	78.4	
13:30			TOP	7.55	0.36	20.70	1000	BRN	7.23	78.1	ADD 5 GAL DI
13:35	7.74		43.80	6.79	0.02	25.63	1000	BRN	6.50	78.0	SURGING
13:40	—		44.85	6.57	0.09	24.35	910	BRN	7.10	76.9	SURGING
13:50		30	47.90	6.91	0.13	23.30	1000	BRN	6.90	71.0	
14:00			49.40	7.05	0.15	22.81	1000	BRN	6.93	68.7	
14:10			50.40	7.26	0.18	22.13	66	TAN	6.90	63.7	
14:20	10.14		TOP	7.31	0.25	21.30	33	CLR	7.12	61.7	ADJUST RATE
14:35	BRING	—	TOP	7.29	0.26	19.54	107	TAN	6.61	77.7	
14:50	PURGED DRY, WELL EVACUATED, DEV COMPLETE PER BRIAN STEELE										
	10.30										

= TOTAL VOLUME REMOVED (gal)

DEVELOPMENT METHOD: BAILER PUMP + DI + SURGING

NOTES: OF 10 GAL DI - 8.7 EVACUATED. WELL DRY + V. SLOW RECHARGE (~0.1 ft. / 10 min)

GOLDER

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER: 16625418 / Plant Branch
WELL ID: PZ-56
WELL DIAM (in): 2
DEVELOPED BY: KEM
DATE OF INSTALLATION:
STARTED DEVELOPMENT: 6-1-24 1540
COMPLETED DEVELOPMENT: 6-2-24 1130
WL BEFORE DEVELOPMENT: 4.70 6-1 1508 (ft)
WL AFTER DEVELOPMENT: 5.75 6-2 1146 (ft)
WELL DEPTH BEFORE DEVEL: 32.35 (ft)
WELL DEPTH AFTER DEVEL: 32.34 (ft)
STANDING WATER COLUMN (FT): 27.65
STANDING WELL VOLUME: (gal)
SCREENED INTERVAL: 22.35-12.35
DRILLING WATER LOSS: (gal)

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft)	FIELD PARAMETERS: pH (s.u.)	Sp. Cond. (mS/cm)	TEMP (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)	REMARKS
6-1-24/1530			4.70								
6-1-24/1540	—	—	~~3.05~~	6.69	0.10	28.02	710.0	Brown	4.80	91.6	pump @ ~32'
1550	5	0.5	11.06	6.32	0.08	21.86	704.1	Brown	7.46	94.3	"
1600	5	0.5	10.95	6.35	0.09	22.21	"	"	7.59	97.8	"
1620	10	0.5	10.60	6.18	0.08	21.35	79.2	Brown	6.97	99.9	"
1640	10	0.5	10.25	5.98	0.09	20.29	55	Brown	6.05	106.4	"
1650	5	0.5	11.30	6.11	0.09	20.69	44	Brown	7.74	108.7	pump @ 27'
1700	5	0.5	10.25	6.15	0.09	21.15	70.6	Brown	7.58	108.7	pump @ 27'
1710	5	0.5	10.95	6.30	0.09	20.73	88	Brown	8.65	110.8	"
1720	5	0.5	9.95	6.26	0.09	20.58	60.3	Brown	7.01	112.7	"
1730	5	0.5	9.90	6.15	0.09	19.86	47.2	Brown	7.18	113.6	END OF DAY
6-2/955	—	—	4.60								
0940	—	—	4.60	6.53	0.10	20.64	108.7	Brown	7.52	103.1	Start Purge - pump @ 27'
1000	10	0.5	10.75	6.10	0.09	20.78	86.7	Brown	7.92	96.2	"
1020	10	0.5	9.90	6.12	0.09	20.21	41.1	Brown	8.90	97.2	"
1040	10	0.5	8.80	6.38	0.09	20.64	69.8	Brown	8.20	100.4	pump @ ~26'
1100	10	0.5	9.02	6.36	0.09	21.09	20.4	Brown	8.96	104.3	Dec pump to
		0.5									
1115	7.5	~~0.5~~	6.92								LF @ Sample
		Shut									
		Start									
1120		0.5	6.89	5.86	8.98	18.81	20.3	Clear	5.24	102.4	
	92.5	TOTAL VOLUME REMOVED (gal)									prior to low-flow

DEVELOPMENT METHOD:

NOTES:
6/1 -> End Note 2. Left pump hanging @ mid-screen.

Product Name: Low-Flow System

Date: 2020-06-04 12:49:54

Project Information:		Pump Information:	
Operator Name	K. Minkara	Pump Model/Type	Reclaimer
Company Name	Golder	Tubing Type	polyethylene
Project Name	166625418	Tubing Diameter	0.50 in
Site Name	Plant Branch	Tubing Length	62 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	LaMotte	Pump placement from TOC	62 ft

Well Information:		Pumping Information:	
Well ID	PZ-52D	Final Pumping Rate	700 mL/min
Well diameter	2 in	Total System Volume	2.483878 L
Well Total Depth	62.4 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	59.45 ft	Total Volume Pumped	34.07 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:25:02	1500.03	22.79	8.00	55.42	119.00	52.08	10.66	59.66
Last 5	12:30:02	1800.03	22.34	8.07	59.97	79.00	54.29	9.95	62.21
Last 5	12:35:02	2100.03	22.26	8.32	66.25	147.00	57.10	9.12	60.25
Last 5	12:40:02	2400.03	21.90	8.38	57.76	129.00	62.00	8.63	60.10
Last 5	12:45:02	2700.03	21.56	8.26	60.51	151.00	62.00	8.55	64.74
Variance 0			-0.07	0.25	6.28			-0.83	-1.96
Variance 1			-0.36	0.06	-8.49			-0.49	-0.16
Variance 2			-0.34	-0.12	2.75			-0.08	4.64

Notes

Purged dry twice prior with 12gal removed (~3gal formation water, ~9 DI water)

Added 9gal of Type I DI water prior to development. Historic poor yield, excessive drawdown. Air lift occurred at 1245, WL below top of pump. All DI water evacuated.

Grab Samples

Product Name: Low-Flow System

Date: 2020-06-11 13:02:19

Project Information:		Pump Information:	
Operator Name	K. Minkara	Pump Model/Type	SamplePro
Company Name	Golder	Tubing Type	polyethylene
Project Name	166625418	Tubing Diameter	0.170 in
Site Name	Default Site	Tubing Length	62 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	LaMotte	Pump placement from TOC	62 ft

Well Information:		Pumping Information:	
Well ID	PZ-52D	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.4917322 L
Well Total Depth	62.4 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	16.8 in
Depth to Water	59.75 ft	Total Volume Pumped	4.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	12:38:13	1500.01	22.99	7.83	153.34	11.24	60.90	6.78	51.67
Last 5	12:43:13	1800.01	22.80	7.86	144.81	11.40	61.13	6.84	49.42
Last 5	12:48:13	2100.00	22.94	7.84	144.42	11.04	61.15	6.24	48.86
Last 5	12:53:13	2400.00	24.74	7.81	142.59	12.10	61.15	5.65	47.38
Last 5	12:58:13	2700.00	26.80	7.76	143.67	13.00	61.15	5.57	48.57
Variance 0			0.13	-0.02	-0.39			-0.60	-0.56
Variance 1			1.81	-0.03	-1.83			-0.59	-1.48
Variance 2			2.06	-0.05	1.07			-0.09	1.18

Notes

Development continued
Previously purged dry 3 times

Grab Samples

Product Name: Low-Flow System

Date: 2020-06-01 16:08:54

Project Information:		Pump Information:	
Operator Name	Jude Waguespack	Pump Model/Type	SamplePro
Company Name	Golder	Tubing Type	polyethylene
Project Name	166625418	Tubing Diameter	.170 in
Site Name	Plant Branch	Tubing Length	136 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646777		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	136 ft

Well Information:		Pumping Information:	
Well ID	PZ-53D	Final Pumping Rate	400 mL/min
Well diameter	2 in	Total System Volume	0.8220256 L
Well Total Depth	143.82 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	37.00 ft	Total Volume Pumped	16 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	15:46:50	1200.01	20.64	6.25	523.11	3.88	25.90	1.80	13.42
Last 5	15:51:50	1500.01	21.60	6.24	537.11	7.40	25.45	1.78	16.58
Last 5	15:56:50	1800.01	20.97	6.33	585.90	4.10	25.30	1.62	20.92
Last 5	16:01:51	2101.01	20.48	6.39	631.23	5.20	25.35	1.51	23.01
Last 5	16:06:51	2401.00	20.53	6.42	642.94	--	--	1.45	21.37
Variance 0			-0.62	0.08	48.79			-0.16	4.34
Variance 1			-0.49	0.06	45.33			-0.11	2.09
Variance 2			0.04	0.03	11.71			-0.06	-1.64

Notes: Development complete

Grab Samples

GOLDER

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER: 1664259.12
WELL DIA (in): 2
DEVELOPED BY: J. WAGNER/SPARC
STARTED DEVEL: 05/18/24 (Date) 15:10 (Time)
W.L. BEFORE DEVEL: 99.72 (mbTOC) 05/18 (Date) 13:20 (Time)
WELL DEPTH BEFORE DEVEL: 59.56
STANDING WATER COLUMN (FT): 10.12
SCREEN LENGTH: 10'

WELL ID: PZ-57
WELL DIA (in): 2
DATE OF INSTALL: 5/30/24
COMPLETED DEVEL: 05/19 (Date) 17:10 (Time)
WL AFTER DEVEL: 47.50 (mbTOC) 05/19 (Date) 17:10 (Time)
WELL DEPTH AFTER DEVEL: 59.90
STANDING WELL VOLUME: 1.66 gal
DRILLING WATER LOSS: — gal

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft)	FIELD PARAMETERS pH (s.u.)	Sp. Cond (mS/cm)	TEMP (°C)	Turbidity (NTU)	Color	ROD (mg/L)	ORP (mV)	REMARKS Purge Method Bottom
5/18/24	—		46.30	6.82	458.7	29.22	2401	grey	7.91	123.4	6", S-PUMP
14:40	5	0.5	47.20	6.52	249.1	22.24	86	TAN	8.88	72.0	
14:50	10		48.1	6.47	115.3	19.48	71.7	CLR	9.60	50.7	
14:20	15		47.7	7.28	201.8	19.19	95.3	CLR	10.59	59.9	
14:30	20		47.4	6.39	214.5	19.05	733	murky	10.25	56.7	SURGING
14:40	25		47.5	6.33	191.6	19.11	64.3	murky	10.50	58.9	"
14:50	30		47.9	6.98	191.3	19.03	73.0	murky	10.61	59.0	"
15:10	40		47.9	6.39	183.2	19.16	31.1	CLR	10.24	69.5	
15:20	45		47.9	6.38	157.3	19.05	19.7	CLR	9.66	62.8	
15:30	50		47.9	6.36	172.4	19.10	23.9	CLR	9.71	69.2	S-PUMP
15:40	55		47.9	6.36	226.5	13.12	110	murky	9.88	48.7	
15:50	60		47.9	6.36	181.3	19.08	102.3	murky	9.83	71.1	"
16:10	70		47.9	6.36	169.3	19.11	56.3	murky	9.36	72.9	
16:20	75		47.9	6.25	191.9	19.09	37.7	CLR	9.63	71.1	END PUMP OUT
05/19/24	75		49.30	—	RECHARGE		REVERSE FLOW		—		6", S-PUMP SURGING
					(2)	13	20				
13:30	80		47.50	6.20	217.6	13.19	696	TAN	11.08	91.9	S-PUMP
13:40	85		47.30	6.21	221.5	13.13	79.0	murky	12.01	59.1	
13:50	90		47.50	6.20	167.2	19.23	91.9	murky	11.47	55.8	
14:00	95		47.55	6.21	152.5	19.23	179	murky	11.32	60.7	SURGING
14:10	100		47.55	6.16	215.3	19.22	69.6	murky	11.34	60.8	
14:20	105		48.10	6.19	215.7	19.21	59.7	cloudy	11.30	64.7	
14:30	110		47.85	6.22	219.9	19.21	23.4	CLR	11.29	65.7	
14:40	115		48.80	6.27	219.9	19.18	12.0	CLR	11.59	68.2	PUMP @ 5" + SURGING
14:50	120		47.45	6.55	176.7	19.46	100.1	murky	10.71	70.8	SURGING
15:00	125		47.10	6.93	227.1	19.98	80.7	murky	10.01	71.2	
15:10	130		47.10	6.91	224.1	19.39	58	murky	10.71	73.8	SURGING
15:20	135		47.10	6.82	196.9	19.98	69	murky	10.81	78.2	
15:30	140		47.10	6.50	223.6	19.19	59.7	murky	10.42	87.2	
15:40	145		47.10	6.49	171.5	19.35	60.2	murky	10.51	91.8	
15:50	150		49.17	6.98	176.3	19.39	85.2	murky	10.83	98.7	
16:00	155		47.10	6.92	209.9	19.17	65.3	murky	9.87	93.0	
16:10	160		47.10	6.98	171.3	19.21	39.3	CLR	10.70	92.0	
16:20	165			6.98	207.6	19.17	91.6	murky	10.63	91.0	SURGING
	190	* TOTAL VOLUME REMOVED (gal)									

DEVELOPMENT METHOD: RECHARGE + SURGING

NOTES: DRAWDOWN BEING DTW BELOW TOS ENTIRE SCREEN SURGED BEFORE PUMPING BEGINS

GOLDER

WELL DEVELOPMENT FIELD RECORD

PROJECT NAME / NUMBER: 166625418
WELL DIA (in): 2
DEVELOPED BY: J. WAGGERSTAFF
STARTED DEVEL: 05/09/24 (DATE) 17:20 (TIME)
WL BEFORE DEVEL: 44.72 (WL) 05/11 (DATE) 17:10 (TIME)
WELL DEPTH BEFORE DEVEL: 54.90
STANDING WATER COLUMN (FT): 10.18
SCREEN LENGTH: 10'

WELL ID: PZ-54
WELL DIA (in): 2
DATE OF INSTALL: 5/2024
COMPLETED DEVEL: 05/19 (DATE) 17:10 (TIME)
WL AFTER DEVEL: 47.50 (WL) 05/19 (DATE) 17:10 (TIME)
WELL DEPTH AFTER DEVEL: 54.90
STANDING WELL VOLUME: 1.66 gal
DRILLING WATER LOSS: — gal

DATE/TIME	VOLUME REMOVED (gal)	PUMPING RATE (gpm)	DTW (ft)	FIELD PARAMETERS: pH (s.u.)	Sp. Cond (mS/cm)	TEMP (°C)	Turbidity (NTU)	Color	RDO (mg/L)	ORP (mV)	REMARKS (Pump From Bottom)
05/9-16:30	170	0.5	47.10	6.97	205.1	19.39	62.7	murky	10.15	90.3	5'
16:40	175	1	47.10	6.97	187.5	19.42	9.9	clr	10.76	92.7	Pump -> 6''
16:50	180		47.50	6.16	201.6	19.17	76.3	murky	8.60	99.0	
17:00	185		47.50	6.19	190.4	19.27	21.1	clr	11.98	98.7	
17:10	190		47.60	6.17	192.9	19.17	9.1	clr	11.39	97.9	

17:10

190 = TOTAL VOLUME REMOVED (gal)

DEVELOPMENT METHOD: RECIRCULATE & SURGING

NOTES: SEE PAGE 2

Product Name: Low-Flow System

Date: 2020-06-02 11:34:06

Project Information:		Pump Information:	
Operator Name	K. Minkara	Pump Model/Type	Reclaimer
Company Name	Golder	Tubing Type	polyethylene
Project Name	166625418	Tubing Diameter	0.50 in
Site Name	Plant Branch	Tubing Length	27 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	LaMotte	Pump placement from TOC	27 ft

Well Information:		Pumping Information:	
Well ID	PZ-56	Final Pumping Rate	500 mL/min
Well diameter	2 in	Total System Volume	1.132495 L
Well Total Depth	32.35 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	6.92 ft	Total Volume Pumped	7.5 L

Low-Flow Sampling Stabilization Summary

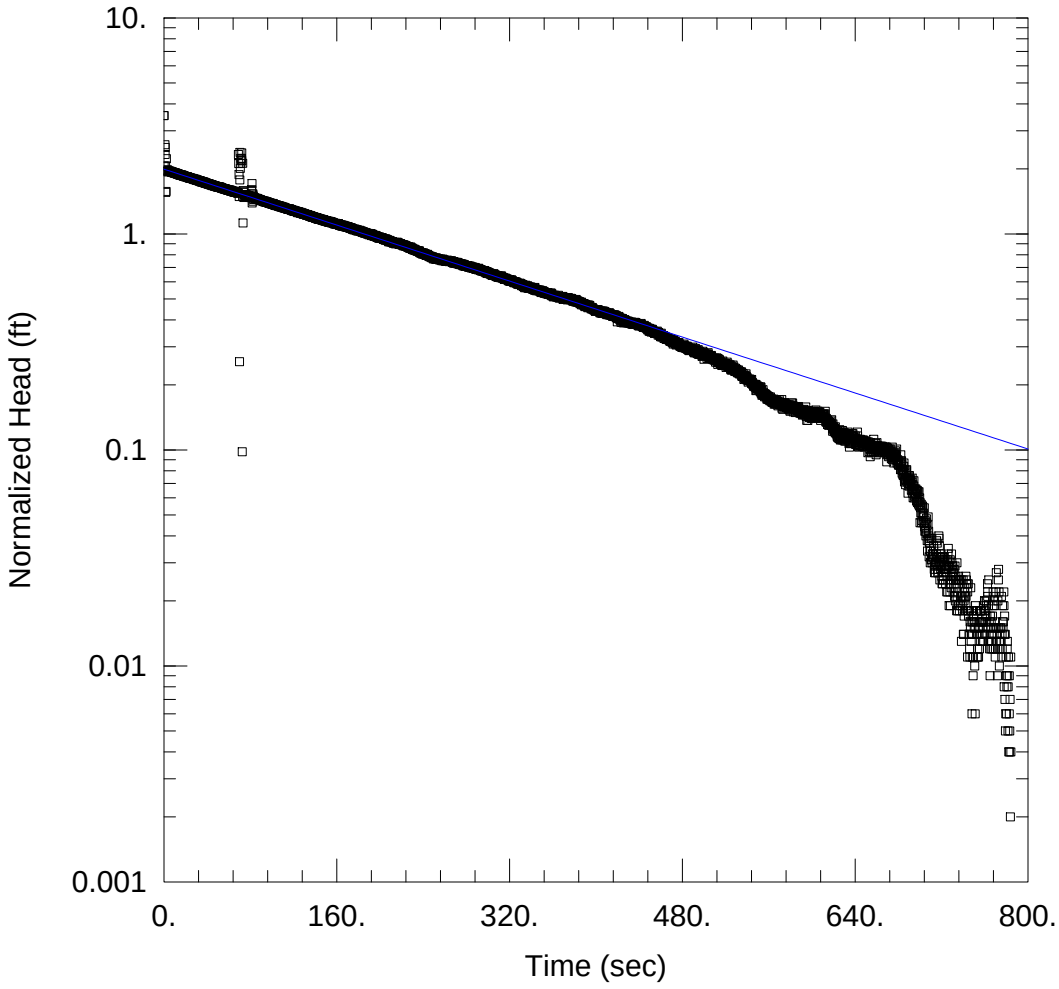
	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:20:49	300.05	18.79	5.96	90.69	30.50	6.69	5.22	109.94
Last 5	11:25:49	600.02	18.81	5.86	89.55	25.90	6.69	5.18	108.32
Last 5	11:30:49	900.03	18.83	5.86	89.10	20.30	6.69	5.24	107.68
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.02	-0.10	-1.14			-0.03	-1.62
Variance 2			0.02	-0.00	-0.46			0.06	-0.64

Notes

Development complete

PZ used for WL only. <50NTU criteria applied

Grab Samples



SLUG IN

Data Set: C:\...\PZ-53D (1) Slug In.aqt
Date: 06/24/20 Time: 09:32:49

AQUIFER DATA

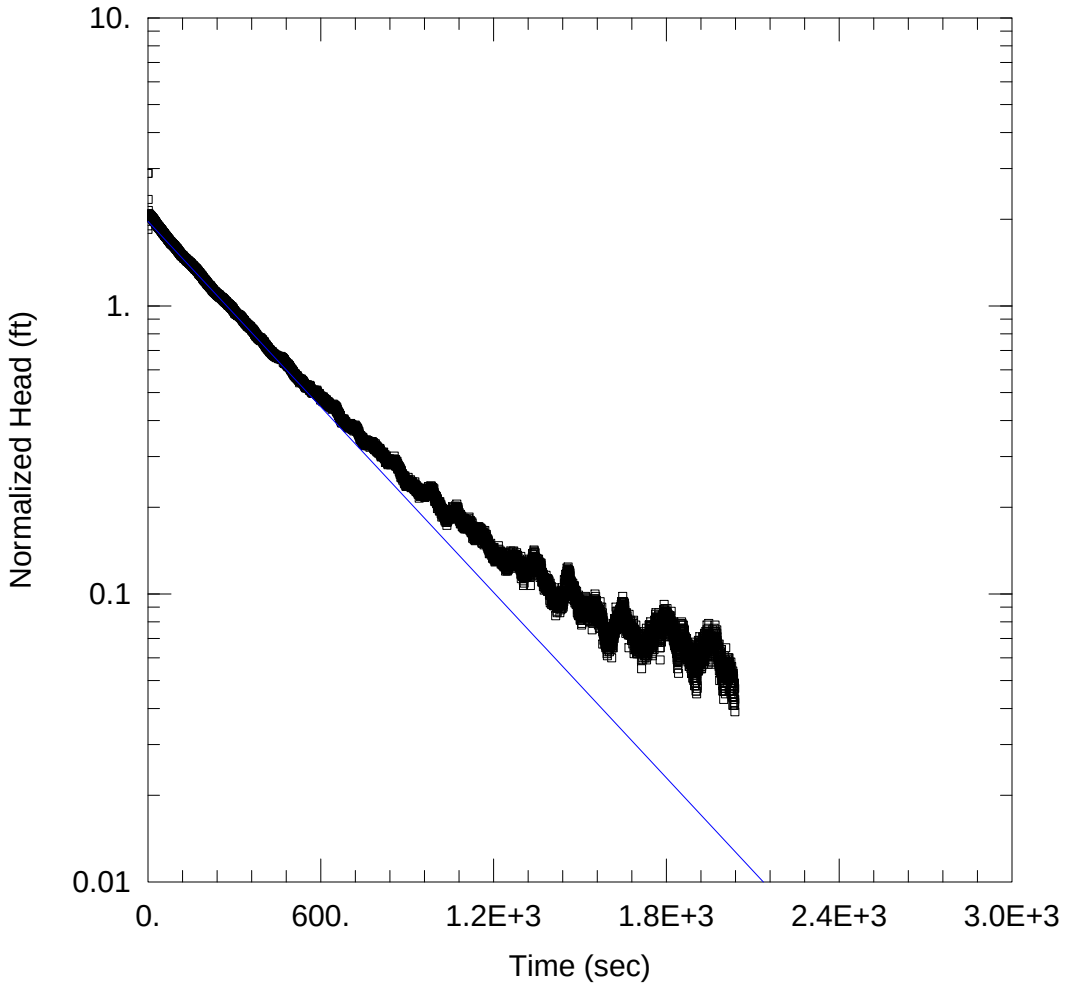
Saturated Thickness: 125.3 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-53D(1))

Initial Displacement: 3.532 ft Static Water Column Height: 125.3 ft
Total Well Penetration Depth: 125.3 ft Screen Length: 10. ft
Casing Radius: 0.081 ft Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0001591 cm/sec y0 = 1.995 ft



PZ-53D (2) SLUG IN

Data Set: C:\...\PZ-53D(2) Slug In.aqt
Date: 06/24/20 Time: 09:34:10

PROJECT INFORMATION

Client: Southern Company
Project: 166625418
Location: Branch

AQUIFER DATA

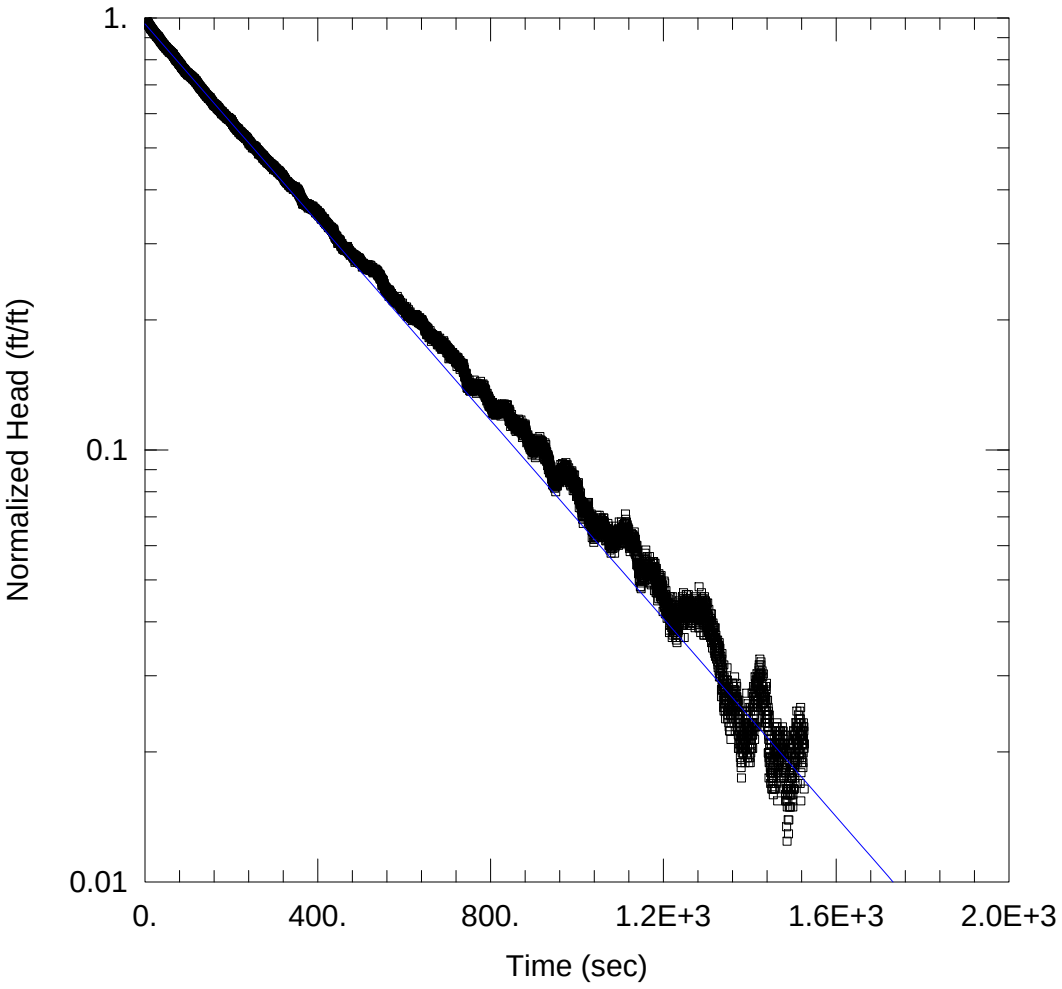
Saturated Thickness: 125. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-53D (2) Slug In)

Initial Displacement: 2.886 ft
Total Well Penetration Depth: 125. ft
Casing Radius: 0.081 ft
Static Water Column Height: 125. ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0001054 cm/sec
y0 = 1.966 ft



PZ-53D (2) SLUG OUT

Data Set: C:\...\PZ-53D(2) Slug Out.aqt
Date: 06/24/20 Time: 09:34:51

PROJECT INFORMATION

Client: Southern Company
Project: 166625418
Location: Branch

AQUIFER DATA

Saturated Thickness: 125. ft Anisotropy Ratio (Kz/Kr): 1.

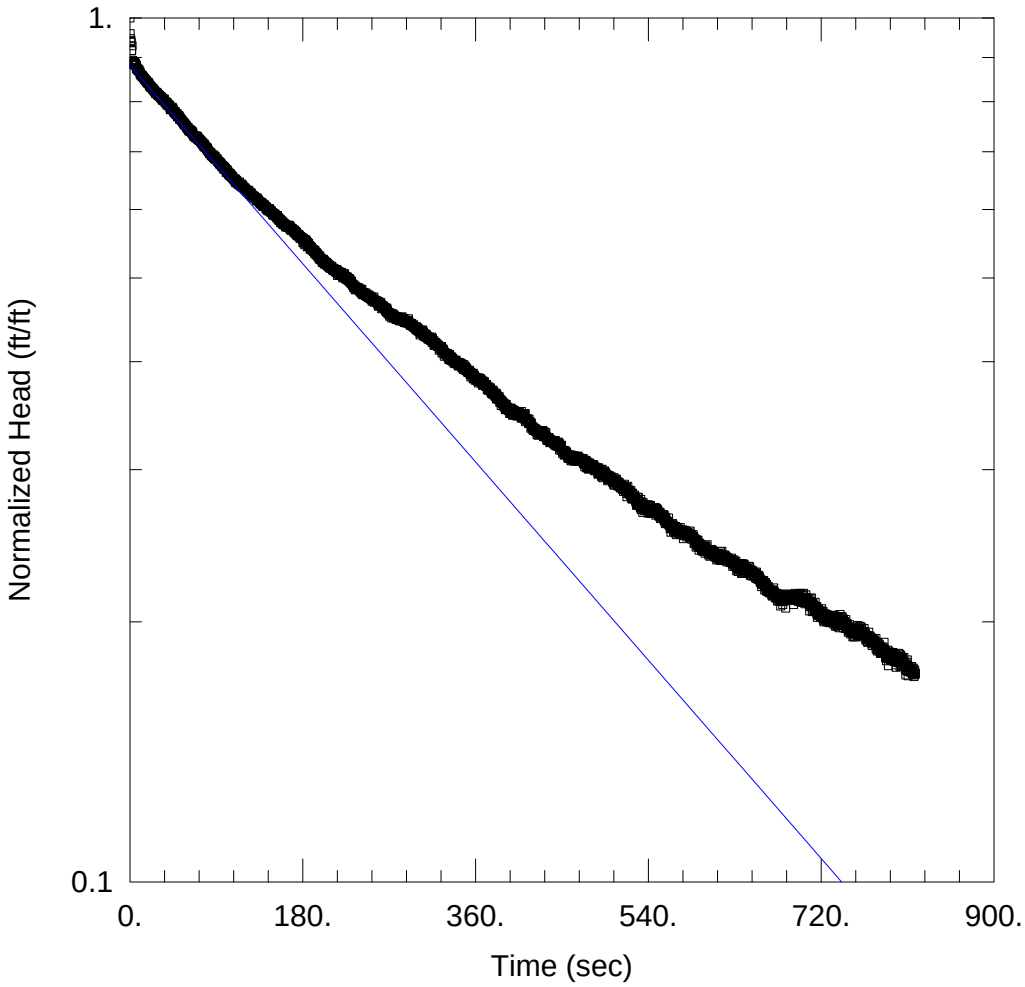
WELL DATA (PZ-53D (2) Slug Out)

Initial Displacement: -2.012 ft Static Water Column Height: 125. ft
Total Well Penetration Depth: 125. ft Screen Length: 10. ft
Casing Radius: 0.081 ft Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0001126 cm/sec y0 = -1.948 ft



SLUG OUT

Data Set: C:\...\PZ-53D (1) Slug Out.aqt
Date: 06/24/20 Time: 09:33:31

AQUIFER DATA

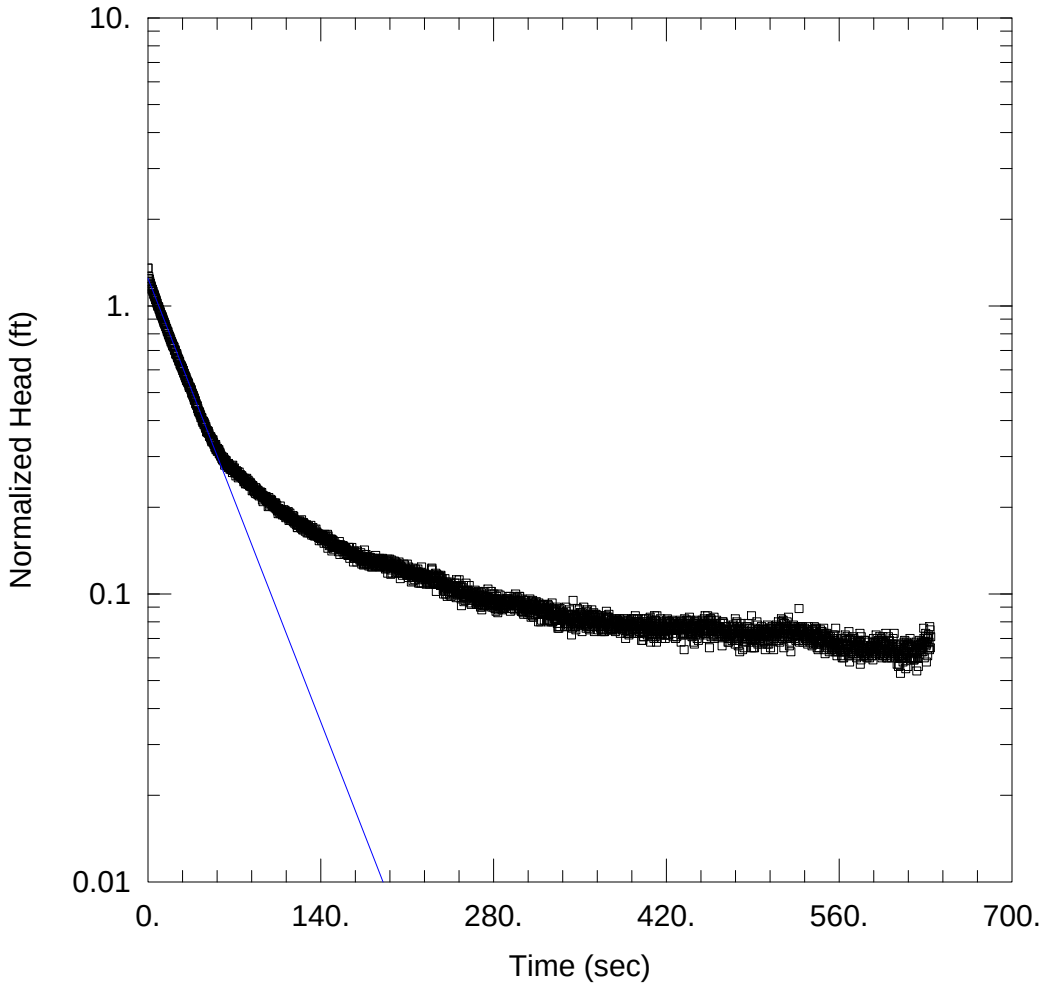
Saturated Thickness: 125.3 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-53D(1))

Initial Displacement: -2.54 ft Static Water Column Height: 125.3 ft
Total Well Penetration Depth: 125.3 ft Screen Length: 10. ft
Casing Radius: 0.081 ft Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0001252 cm/sec y0 = -2.238 ft



PZ-54(2) SLUG IN

Data Set: C:\...\PZ-54(2) Slug In.aqt
Date: 06/24/20 Time: 09:36:54

PROJECT INFORMATION

Client: Southern Company
Project: 166625418
Location: Branch

AQUIFER DATA

Saturated Thickness: 9.9 ft Anisotropy Ratio (Kz/Kr): 1.

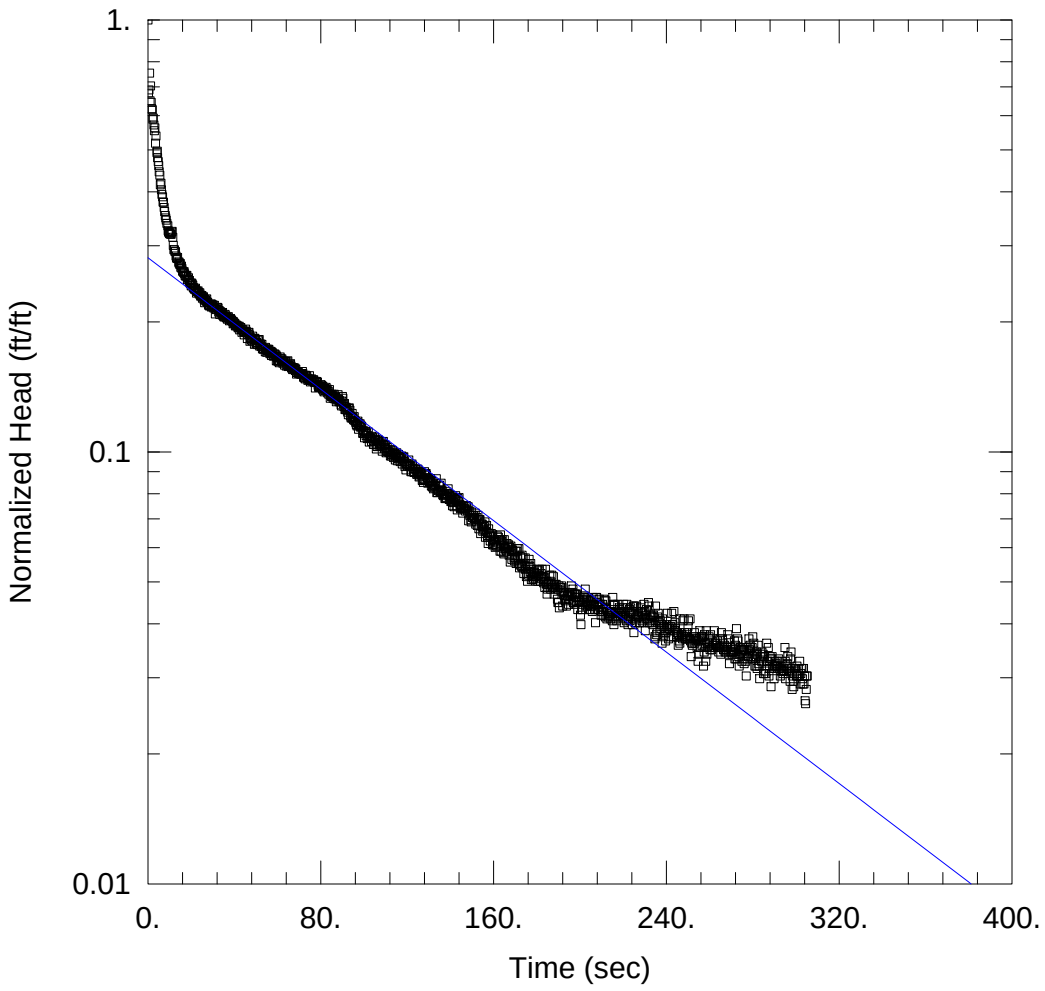
WELL DATA (PZ-54(2))

Initial Displacement: 1.354 ft
Total Well Penetration Depth: 9.9 ft
Casing Radius: 0.081 ft
Static Water Column Height: 9.9 ft
Screen Length: 9.9 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0007176 cm/sec y0 = 1.247 ft



PZ-54(2) SLUG OUT

Data Set: C:\...\PZ-54(2) Slug Out.aqt
Date: 06/24/20 Time: 09:37:36

PROJECT INFORMATION

Client: Southern Company
Project: 166625418
Location: Branch

AQUIFER DATA

Saturated Thickness: 9.9 ft Anisotropy Ratio (Kz/Kr): 1.

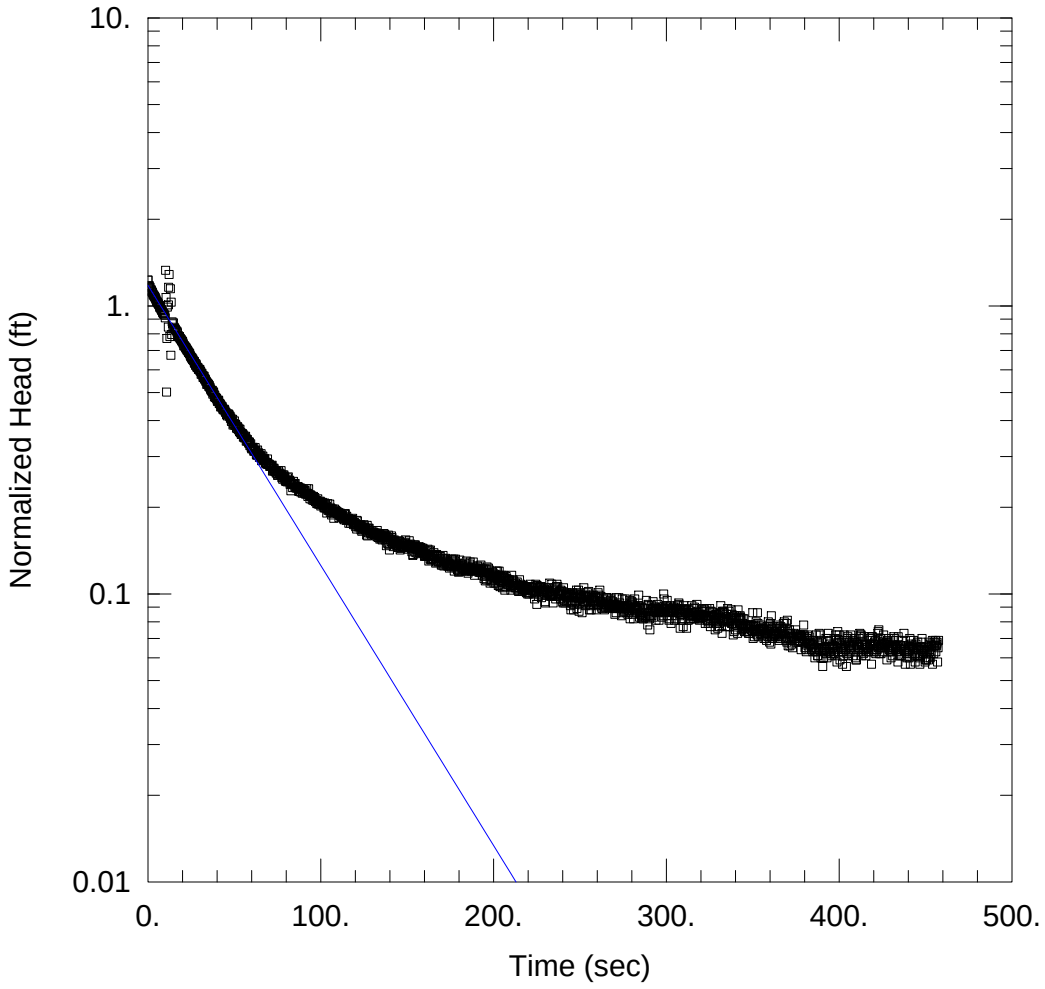
WELL DATA (PZ-54(2))

Initial Displacement: -2.411 ft
Total Well Penetration Depth: 9.9 ft
Casing Radius: 0.081 ft
Static Water Column Height: 9.9 ft
Screen Length: 9.9 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.000248 cm/sec y0 = -0.6786 ft



PZ-54(3) SLUG IN

Data Set: C:\...\PZ-54(3) Slug In.aqt
Date: 06/24/20 Time: 09:38:08

PROJECT INFORMATION

Client: Southern Company
Project: 166625418
Location: Branch

AQUIFER DATA

Saturated Thickness: 9.88 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-54 (3))

Initial Displacement: 1.23 ft
Total Well Penetration Depth: 9.88 ft
Casing Radius: 0.081 ft
Static Water Column Height: 9.88 ft
Screen Length: 9.88 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0006351 cm/sec
y0 = 1.179 ft

APPENDIX B

ANALYTICAL RESULTS, FIELD DATA FORMS, WELL INSPECTION FORMS & DATA VALIDATION SUMMARIES

APPENDIX B

ANALYTICAL RESULTS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2622483

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on August 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2622483

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2622483

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622483001	**BRGWA-6S**	Water	08/27/19 10:02	08/28/19 11:00
2622483002	**BRGWA-5S**	Water	08/27/19 10:57	08/28/19 11:00
2622483003	**BRGWA-5I**	Water	08/27/19 12:07	08/28/19 11:00
2622483004	**BRGWA-2S**	Water	08/27/19 11:53	08/28/19 11:00
2622483005	**BRGWA-2I**	Water	08/27/19 11:59	08/28/19 11:00
2622483006	**BRGWC-33S**	Water	08/27/19 16:10	08/28/19 11:00
2622483007	**DUP-1**	Water	08/27/19 00:00	08/28/19 11:00
2622483008	**FB-1**	Water	08/27/19 16:00	08/28/19 11:00
2622483009	**EB-1**	Water	08/27/19 16:29	08/28/19 11:00

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2622483

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2622483001	**BRGWA-6S**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622483002	**BRGWA-5S**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622483003	**BRGWA-5I**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622483004	**BRGWA-2S**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622483005	**BRGWA-2I**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622483006	**BRGWC-33S**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622483007	**DUP-1**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622483008	**FB-1**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622483009	**EB-1**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622483

Sample: BRGWA-6S **Lab ID: 2622483001** Collected: 08/27/19 10:02 Received: 08/28/19 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	09/03/19 20:51	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	09/03/19 20:51	7440-38-2	
Barium	**0.013**	mg/L	0.010	0.00049	1	08/29/19 18:05	09/03/19 20:51	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	09/03/19 20:51	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	09/03/19 20:51	7440-43-9	
Chromium	**0.015**	mg/L	0.010	0.00039	1	08/29/19 18:05	09/03/19 20:51	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	09/03/19 20:51	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	09/03/19 20:51	7439-92-1	
Lithium	**0.0028J**	mg/L	0.030	0.00078	1	08/29/19 18:05	09/03/19 20:51	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	09/03/19 20:51	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	09/03/19 20:51	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	09/03/19 20:51	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 09:13	08/29/19 12:33	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		09/01/19 04:45	16984-48-8	1A

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622483

Sample: BRGWA-5S **Lab ID: 2622483002** Collected: 08/27/19 10:57 Received: 08/28/19 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	09/03/19 20:57	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	09/03/19 20:57	7440-38-2	
Barium	**0.056**	mg/L	0.010	0.00049	1	08/29/19 18:05	09/03/19 20:57	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	09/03/19 20:57	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	09/03/19 20:57	7440-43-9	
Chromium	**0.0043J**	mg/L	0.010	0.00039	1	08/29/19 18:05	09/03/19 20:57	7440-47-3	
Cobalt	**0.00042J**	mg/L	0.0050	0.00030	1	08/29/19 18:05	09/03/19 20:57	7440-48-4	
Lead	**0.00036J**	mg/L	0.0050	0.000046	1	08/29/19 18:05	09/03/19 20:57	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/29/19 18:05	09/03/19 20:57	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	09/03/19 20:57	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	09/03/19 20:57	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	09/03/19 20:57	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 09:13	08/29/19 12:36	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		09/01/19 16:31	16984-48-8	1A

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622483

Sample: BRGWA-5I **Lab ID: 2622483003** Collected: 08/27/19 12:07 Received: 08/28/19 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	09/03/19 21:03	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	09/03/19 21:03	7440-38-2	
Barium	**0.028**	mg/L	0.010	0.00049	1	08/29/19 18:05	09/03/19 21:03	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	09/03/19 21:03	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	09/03/19 21:03	7440-43-9	
Chromium	**0.0055J**	mg/L	0.010	0.00039	1	08/29/19 18:05	09/03/19 21:03	7440-47-3	
Cobalt	**0.00068J**	mg/L	0.0050	0.00030	1	08/29/19 18:05	09/03/19 21:03	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	09/03/19 21:03	7439-92-1	
Lithium	**0.0019J**	mg/L	0.030	0.00078	1	08/29/19 18:05	09/03/19 21:03	7439-93-2	
Molybdenum	**0.0028J**	mg/L	0.010	0.00095	1	08/29/19 18:05	09/03/19 21:03	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	09/03/19 21:03	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	09/03/19 21:03	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 09:13	08/29/19 12:38	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		09/01/19 16:54	16984-48-8	1A

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622483

Sample: BRGWA-2S **Lab ID: 2622483004** Collected: 08/27/19 11:53 Received: 08/28/19 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	09/03/19 21:20	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	09/03/19 21:20	7440-38-2	
Barium	**0.0095J**	mg/L	0.010	0.00049	1	08/29/19 18:05	09/03/19 21:20	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	09/03/19 21:20	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	09/03/19 21:20	7440-43-9	
Chromium	**0.0083J**	mg/L	0.010	0.00039	1	08/29/19 18:05	09/03/19 21:20	7440-47-3	
Cobalt	**0.0012J**	mg/L	0.0050	0.00030	1	08/29/19 18:05	09/03/19 21:20	7440-48-4	
Lead	**0.000058J**	mg/L	0.0050	0.000046	1	08/29/19 18:05	09/03/19 21:20	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/29/19 18:05	09/03/19 21:20	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	09/03/19 21:20	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	09/03/19 21:20	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	09/03/19 21:20	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 10:01	08/29/19 15:23	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		09/01/19 17:17	16984-48-8	1A

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622483

Sample: BRGWA-2I **Lab ID: 2622483005** Collected: 08/27/19 11:59 Received: 08/28/19 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	09/03/19 21:25	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	09/03/19 21:25	7440-38-2	
Barium	**0.012**	mg/L	0.010	0.00049	1	08/29/19 18:05	09/03/19 21:25	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	09/03/19 21:25	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	09/03/19 21:25	7440-43-9	
Chromium	**0.00040J**	mg/L	0.010	0.00039	1	08/29/19 18:05	09/03/19 21:25	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	09/03/19 21:25	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	09/03/19 21:25	7439-92-1	
Lithium	**0.035**	mg/L	0.030	0.00078	1	08/29/19 18:05	09/03/19 21:25	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	09/03/19 21:25	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	09/03/19 21:25	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	09/03/19 21:25	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 10:01	08/29/19 15:32	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		09/03/19 23:36	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622483

Sample: BRGWC-33S **Lab ID: 2622483006** Collected: 08/27/19 16:10 Received: 08/28/19 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	09/03/19 21:31	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	09/03/19 21:31	7440-38-2	
Barium	**0.020**	mg/L	0.010	0.00049	1	08/29/19 18:05	09/03/19 21:31	7440-39-3	
Beryllium	**0.0019J**	mg/L	0.0030	0.000074	1	08/29/19 18:05	09/03/19 21:31	7440-41-7	
Cadmium	**0.00032J**	mg/L	0.0025	0.00011	1	08/29/19 18:05	09/03/19 21:31	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/29/19 18:05	09/03/19 21:31	7440-47-3	
Cobalt	**0.045**	mg/L	0.0050	0.00030	1	08/29/19 18:05	09/03/19 21:31	7440-48-4	
Lead	**0.00013J**	mg/L	0.0050	0.000046	1	08/29/19 18:05	09/03/19 21:31	7439-92-1	
Lithium	**0.010J**	mg/L	0.030	0.00078	1	08/29/19 18:05	09/03/19 21:31	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	09/03/19 21:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	09/03/19 21:31	7782-49-2	
Thallium	**0.00016J**	mg/L	0.0010	0.000052	1	08/29/19 18:05	09/03/19 21:31	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 10:01	08/29/19 15:34	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.11J**	mg/L	0.30	0.029	1		09/03/19 23:59	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622483

Sample: DUP-1 **Lab ID: 2622483007** Collected: 08/27/19 00:00 Received: 08/28/19 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	09/03/19 21:37	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	09/03/19 21:37	7440-38-2	
Barium	**0.021**	mg/L	0.010	0.00049	1	08/29/19 18:05	09/03/19 21:37	7440-39-3	
Beryllium	**0.0020J**	mg/L	0.0030	0.000074	1	08/29/19 18:05	09/03/19 21:37	7440-41-7	
Cadmium	**0.00033J**	mg/L	0.0025	0.00011	1	08/29/19 18:05	09/03/19 21:37	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/29/19 18:05	09/03/19 21:37	7440-47-3	
Cobalt	**0.047**	mg/L	0.0050	0.00030	1	08/29/19 18:05	09/03/19 21:37	7440-48-4	
Lead	**0.00010J**	mg/L	0.0050	0.000046	1	08/29/19 18:05	09/03/19 21:37	7439-92-1	
Lithium	**0.010J**	mg/L	0.030	0.00078	1	08/29/19 18:05	09/03/19 21:37	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/29/19 18:05	09/03/19 21:37	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	09/03/19 21:37	7782-49-2	
Thallium	**0.00017J**	mg/L	0.0010	0.000052	1	08/29/19 18:05	09/03/19 21:37	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 10:01	08/29/19 15:37	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	**0.22J**	mg/L	0.30	0.029	1		09/04/19 00:22	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622483

Sample: FB-1 **Lab ID: 2622483008** Collected: 08/27/19 16:00 Received: 08/28/19 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	09/03/19 21:43	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	09/03/19 21:43	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	08/29/19 18:05	09/03/19 21:43	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	09/03/19 21:43	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	09/03/19 21:43	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/29/19 18:05	09/03/19 21:43	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	09/03/19 21:43	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	09/03/19 21:43	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/29/19 18:05	09/03/19 21:43	7439-93-2	
Molybdenum	**0.0020J**	mg/L	0.010	0.00095	1	08/29/19 18:05	09/03/19 21:43	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	09/03/19 21:43	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	09/03/19 21:43	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 10:01	08/29/19 15:44	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		09/04/19 00:44	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622483

Sample: EB-1 **Lab ID: 2622483009** Collected: 08/27/19 16:29 Received: 08/28/19 11:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/29/19 18:05	09/03/19 21:48	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/29/19 18:05	09/03/19 21:48	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	08/29/19 18:05	09/03/19 21:48	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/29/19 18:05	09/03/19 21:48	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/29/19 18:05	09/03/19 21:48	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/29/19 18:05	09/03/19 21:48	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/29/19 18:05	09/03/19 21:48	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/29/19 18:05	09/03/19 21:48	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/29/19 18:05	09/03/19 21:48	7439-93-2	
Molybdenum	**0.0020J**	mg/L	0.010	0.00095	1	08/29/19 18:05	09/03/19 21:48	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/29/19 18:05	09/03/19 21:48	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/29/19 18:05	09/03/19 21:48	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/29/19 10:01	08/29/19 15:46	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		09/04/19 01:07	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622483

QC Batch: 34472 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2622483001, 2622483002, 2622483003

METHOD BLANK: 155027 Matrix: Water
Associated Lab Samples: 2622483001, 2622483002, 2622483003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	08/29/19 11:39	

LABORATORY CONTROL SAMPLE: 155028

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: 155029 155030

Parameter	Units	2622479001 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	0.0025	0.0026	97	99	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622483

QC Batch: 34475 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2622483004, 2622483005, 2622483006, 2622483007, 2622483008, 2622483009

METHOD BLANK: 155051 Matrix: Water
Associated Lab Samples: 2622483004, 2622483005, 2622483006, 2622483007, 2622483008, 2622483009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	08/29/19 15:18	

LABORATORY CONTROL SAMPLE: 155052

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155053 155054

Parameter	Units	2622483004 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	0.0025	0.0024	99	96	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622483

QC Batch: 34528 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622483001, 2622483002, 2622483003, 2622483004, 2622483005, 2622483006, 2622483007, 2622483008, 2622483009

METHOD BLANK: 155360 Matrix: Water
Associated Lab Samples: 2622483001, 2622483002, 2622483003, 2622483004, 2622483005, 2622483006, 2622483007, 2622483008, 2622483009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	09/03/19 20:11	
Arsenic	mg/L	ND	0.0050	0.00035	09/03/19 20:11	
Barium	mg/L	ND	0.010	0.00049	09/03/19 20:11	
Beryllium	mg/L	ND	0.0030	0.000074	09/03/19 20:11	
Cadmium	mg/L	ND	0.0025	0.00011	09/03/19 20:11	
Chromium	mg/L	ND	0.010	0.00039	09/03/19 20:11	
Cobalt	mg/L	ND	0.0050	0.00030	09/03/19 20:11	
Lead	mg/L	ND	0.0050	0.000046	09/03/19 20:11	
Lithium	mg/L	ND	0.030	0.00078	09/03/19 20:11	
Molybdenum	mg/L	ND	0.010	0.00095	09/03/19 20:11	
Selenium	mg/L	ND	0.010	0.0013	09/03/19 20:11	
Thallium	mg/L	ND	0.0010	0.000052	09/03/19 20:11	

LABORATORY CONTROL SAMPLE: 155361

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.12	118	80-120	
Arsenic	mg/L	0.1	0.10	105	80-120	
Barium	mg/L	0.1	0.11	105	80-120	
Beryllium	mg/L	0.1	0.11	109	80-120	
Cadmium	mg/L	0.1	0.11	108	80-120	
Chromium	mg/L	0.1	0.11	107	80-120	
Cobalt	mg/L	0.1	0.11	106	80-120	
Lead	mg/L	0.1	0.10	105	80-120	
Lithium	mg/L	0.1	0.11	107	80-120	
Molybdenum	mg/L	0.1	0.11	108	80-120	
Selenium	mg/L	0.1	0.11	107	80-120	
Thallium	mg/L	0.1	0.10	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155362 155363

Parameter	Units	2622481002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.12	114	117	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	100	103	75-125	3	20	
Barium	mg/L	0.027	0.1	0.1	0.13	0.13	101	107	75-125	4	20	
Beryllium	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622483

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155362 155363

Parameter	Units	2622481002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	mg/L	ND	0.1	0.1	0.10	0.11	103	106	75-125	2	20	
Chromium	mg/L	0.0018J	0.1	0.1	0.11	0.11	104	107	75-125	3	20	
Cobalt	mg/L	ND	0.1	0.1	0.10	0.11	103	107	75-125	4	20	
Lead	mg/L	ND	0.1	0.1	0.10	0.10	101	104	75-125	3	20	
Lithium	mg/L	0.0014J	0.1	0.1	0.10	0.10	100	103	75-125	3	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	106	110	75-125	4	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.11	103	106	75-125	4	20	
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	102	104	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622483

QC Batch: 34615 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2622483001, 2622483002, 2622483003, 2622483004

METHOD BLANK: 155878 Matrix: Water
Associated Lab Samples: 2622483001, 2622483002, 2622483003, 2622483004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	08/31/19 20:05	1A

LABORATORY CONTROL SAMPLE: 155879

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	10	9.4	94	90-110	1A

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622483

QC Batch: 34680 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2622483005, 2622483006, 2622483007, 2622483008, 2622483009

METHOD BLANK: 156099 Matrix: Water
Associated Lab Samples: 2622483005, 2622483006, 2622483007, 2622483008, 2622483009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	09/03/19 20:58	

LABORATORY CONTROL SAMPLE: 156100

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: 156101 156102

Parameter	Units	2622398001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.11J	10	10	9.4	9.2	92	91	90-110	1	15	

MATRIX SPIKE SAMPLE: 156103

Parameter	Units	2622402001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	ND	10	9.6	96	90-110	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2622483

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.

BATCH QUALIFIERS

Batch: 34615

[1] Batch accepted based on laboratory control sample (LCS) recovery.

ANALYTE QUALIFIERS

1A Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2622483

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622483001	**BRGWA-6S**	EPA 3005A	34528	EPA 6020B	34560
2622483002	**BRGWA-5S**	EPA 3005A	34528	EPA 6020B	34560
2622483003	**BRGWA-5I**	EPA 3005A	34528	EPA 6020B	34560
2622483004	**BRGWA-2S**	EPA 3005A	34528	EPA 6020B	34560
2622483005	**BRGWA-2I**	EPA 3005A	34528	EPA 6020B	34560
2622483006	**BRGWC-33S**	EPA 3005A	34528	EPA 6020B	34560
2622483007	**DUP-1**	EPA 3005A	34528	EPA 6020B	34560
2622483008	**FB-1**	EPA 3005A	34528	EPA 6020B	34560
2622483009	**EB-1**	EPA 3005A	34528	EPA 6020B	34560
2622483001	**BRGWA-6S**	EPA 7470A	34472	EPA 7470A	34485
2622483002	**BRGWA-5S**	EPA 7470A	34472	EPA 7470A	34485
2622483003	**BRGWA-5I**	EPA 7470A	34472	EPA 7470A	34485
2622483004	**BRGWA-2S**	EPA 7470A	34475	EPA 7470A	34513
2622483005	**BRGWA-2I**	EPA 7470A	34475	EPA 7470A	34513
2622483006	**BRGWC-33S**	EPA 7470A	34475	EPA 7470A	34513
2622483007	**DUP-1**	EPA 7470A	34475	EPA 7470A	34513
2622483008	**FB-1**	EPA 7470A	34475	EPA 7470A	34513
2622483009	**EB-1**	EPA 7470A	34475	EPA 7470A	34513
2622483001	**BRGWA-6S**	EPA 300.0	34615		
2622483002	**BRGWA-5S**	EPA 300.0	34615		
2622483003	**BRGWA-5I**	EPA 300.0	34615		
2622483004	**BRGWA-2S**	EPA 300.0	34615		
2622483005	**BRGWA-2I**	EPA 300.0	34680		
2622483006	**BRGWC-33S**	EPA 300.0	34680		
2622483007	**DUP-1**	EPA 300.0	34680		
2622483008	**FB-1**	EPA 300.0	34680		
2622483009	**EB-1**	EPA 300.0	34680		

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

CCR

SAMPLE ID

1	BRGWA-6I	WT	G	[illegible]	1002	4	1	3	1	1	2	1
2	BRGWA-5S	WT	G	[illegible]	1057	4	1	3	1	1	2	2
3	BRGWA-5I	WT	G	[illegible]	1107	4	1	3	1	1	2	3
4	BRGWA-2S	WT	G	[illegible]	1153	4	1	3	1	1	2	4
5	BRGWA-2I	WT	G	[illegible]	1159	4	1	3	1	1	2	5
6	BRGWC-33S	WT	G	[illegible]	1610	6	1	5	1	1	4	+2 [illegible] 6
7	DUP-1	WT	G	[illegible]	—	4	1	3	1	1	2	7
8	FB-1	WT	G	[illegible]	1600	4	1	3	1	1	2	8
9	EB-1	WT	G	[illegible]	1625	4	1	3	1	1	2	9
10												
11												
12												

[illegible]	[illegible]	0900	Charles [illegible]	8/24/19	1100	3.3	Y	Y	Y

T. [illegible]

Date Signed: 8-23-19

WO#: 2622403

Pace Analytical

Sample Condition Upon Receipt **WO#: 2622483**

Client Name: CH Power

PM: BM Due Date: 08/09/19

CLIENT: GAP-Raleigh-CCR

Courier: ☐ FedEx ☐ 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 214 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 1.3 C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C Comments:

Date and Initials of person examining contents: 8/5-8/6/19

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

Pace Analytical Services - Asheville

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

September 26, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2622484

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on August 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: Kristen Jurinko, Golder Associates Inc.
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta
Dominic Weatherhill, Georgia Power

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2622484

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2622484

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622484001	**BRGWA-6S**	Water	08/27/19 10:02	08/28/19 11:00
2622484002	**BRGWA-5S**	Water	08/27/19 10:57	08/28/19 11:00
2622484003	**BRGWA-5I**	Water	08/27/19 12:07	08/28/19 11:00
2622484004	**BRGWA-2S**	Water	08/27/19 11:53	08/28/19 11:00
2622484005	**BRGWA-2I**	Water	08/27/19 11:59	08/28/19 11:00
2622484006	**BRGWC-33S**	Water	08/27/19 16:10	08/28/19 11:00
2622484007	**DUP-1**	Water	08/27/19 00:00	08/28/19 11:00
2622484008	**FB-1**	Water	08/27/19 16:00	08/28/19 11:00
2622484009	**EB-1**	Water	08/27/19 16:29	08/28/19 11:00

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2622484

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622484001	**BRGWA-6S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622484002	**BRGWA-5S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622484003	**BRGWA-5I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622484004	**BRGWA-2S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622484005	**BRGWA-2I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622484006	**BRGWC-33S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622484007	**DUP-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622484008	**FB-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622484009	**EB-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622484

Sample: BRGWA-6S **Lab ID: 2622484001** Collected: 08/27/19 10:02 Received: 08/28/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.315 ± 0.258 (0.439) C:79% T:NA**	pCi/L	09/20/19 07:18	13982-63-3	
Radium-228	EPA 9320	**0.335 ± 0.394 (0.832) C:80% T:86%**	pCi/L	09/23/19 14:07	15262-20-1	
Total Radium	Total Radium Calculation	**0.650 ± 0.652 (1.27)**	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622484

Sample: BRGWA-5S **Lab ID: 2622484002** Collected: 08/27/19 10:57 Received: 08/28/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.520 ± 0.288 (0.370) C:87% T:NA**	pCi/L	09/20/19 07:19	13982-63-3	
Radium-228	EPA 9320	**0.922 ± 0.410 (0.676) C:80% T:91%**	pCi/L	09/23/19 14:07	15262-20-1	
Total Radium	Total Radium Calculation	**1.44 ± 0.698 (1.05)**	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622484

Sample: BRGWA-5I **Lab ID: 2622484003** Collected: 08/27/19 12:07 Received: 08/28/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.512 ± 0.297 (0.372) C:76% T:NA**	pCi/L	09/20/19 07:19	13982-63-3	
Radium-228	EPA 9320	**0.679 ± 0.377 (0.683) C:83% T:89%**	pCi/L	09/23/19 14:07	15262-20-1	
Total Radium	Total Radium Calculation	**1.19 ± 0.674 (1.06)**	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622484

Sample: BRGWA-2S **Lab ID: 2622484004** Collected: 08/27/19 11:53 Received: 08/28/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.950 ± 0.400 (0.410) C:78% T:NA**	pCi/L	09/20/19 07:19	13982-63-3	
Radium-228	EPA 9320	**0.515 ± 0.403 (0.800) C:81% T:81%**	pCi/L	09/23/19 14:07	15262-20-1	
Total Radium	Total Radium Calculation	**1.47 ± 0.803 (1.21)**	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622484

Sample: BRGWA-2I **Lab ID: 2622484005** Collected: 08/27/19 11:59 Received: 08/28/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.596 ± 0.302 (0.375) C:94% T:NA**	pCi/L	09/20/19 08:57	13982-63-3	
Radium-228	EPA 9320	**0.512 ± 0.371 (0.725) C:81% T:87%**	pCi/L	09/23/19 14:07	15262-20-1	
Total Radium	Total Radium Calculation	**1.11 ± 0.673 (1.10)**	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622484

Sample: BRGWC-33S **Lab ID: 2622484006** Collected: 08/27/19 16:10 Received: 08/28/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.433 ± 0.290 (0.446) C:78% T:NA**	pCi/L	09/20/19 07:19	13982-63-3	
Radium-228	EPA 9320	**0.947 ± 0.445 (0.756) C:81% T:76%**	pCi/L	09/23/19 10:55	15262-20-1	
Total Radium	Total Radium Calculation	**1.38 ± 0.735 (1.20)**	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622484

Sample: DUP-1 **Lab ID: 2622484007** Collected: 08/27/19 00:00 Received: 08/28/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.534 ± 0.285 (0.309) C:86% T:NA**	pCi/L	09/20/19 07:18	13982-63-3	
Radium-228	EPA 9320	**0.549 ± 0.437 (0.872) C:78% T:80%**	pCi/L	09/23/19 14:07	15262-20-1	
Total Radium	Total Radium Calculation	**1.08 ± 0.722 (1.18)**	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622484

Sample: FB-1 **Lab ID: 2622484008** Collected: 08/27/19 16:00 Received: 08/28/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.592 ± 0.325 (0.397) C:73% T:NA**	pCi/L	09/20/19 07:20	13982-63-3	
Radium-228	EPA 9320	**0.321 ± 0.282 (0.564) C:81% T:92%**	pCi/L	09/23/19 14:07	15262-20-1	
Total Radium	Total Radium Calculation	**0.913 ± 0.607 (0.961)**	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622484

Sample: EB-1 **Lab ID: 2622484009** Collected: 08/27/19 16:29 Received: 08/28/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.494 ± 0.273 (0.310) C:85% T:NA**	pCi/L	09/20/19 07:20	13982-63-3	
Radium-228	EPA 9320	**0.502 ± 0.390 (0.780) C:79% T:87%**	pCi/L	09/23/19 10:55	15262-20-1	
Total Radium	Total Radium Calculation	**0.996 ± 0.663 (1.09)**	pCi/L	09/24/19 10:31	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622484

QC Batch: 359967 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2622484001, 2622484002, 2622484003, 2622484004, 2622484005, 2622484006, 2622484007, 2622484008, 2622484009

METHOD BLANK: 1747391 Matrix: Water
Associated Lab Samples: 2622484001, 2622484002, 2622484003, 2622484004, 2622484005, 2622484006, 2622484007, 2622484008, 2622484009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.763 ± 0.364 (0.510) C:93% T:NA	pCi/L	09/20/19 07:14	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622484

QC Batch: 359968 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2622484001, 2622484002, 2622484003, 2622484004, 2622484005, 2622484006, 2622484007, 2622484008, 2622484009

METHOD BLANK: 1747392 Matrix: Water
Associated Lab Samples: 2622484001, 2622484002, 2622484003, 2622484004, 2622484005, 2622484006, 2622484007, 2622484008, 2622484009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.921 ± 0.439 (0.755) C:82% T:78%	pCi/L	09/23/19 10:55	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2622484

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2622484

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622484001	**BRGWA-6S**	EPA 9315	359967		
2622484002	**BRGWA-5S**	EPA 9315	359967		
2622484003	**BRGWA-5I**	EPA 9315	359967		
2622484004	**BRGWA-2S**	EPA 9315	359967		
2622484005	**BRGWA-2I**	EPA 9315	359967		
2622484006	**BRGWC-33S**	EPA 9315	359967		
2622484007	**DUP-1**	EPA 9315	359967		
2622484008	**FB-1**	EPA 9315	359967		
2622484009	**EB-1**	EPA 9315	359967		
2622484001	**BRGWA-6S**	EPA 9320	359968		
2622484002	**BRGWA-5S**	EPA 9320	359968		
2622484003	**BRGWA-5I**	EPA 9320	359968		
2622484004	**BRGWA-2S**	EPA 9320	359968		
2622484005	**BRGWA-2I**	EPA 9320	359968		
2622484006	**BRGWC-33S**	EPA 9320	359968		
2622484007	**DUP-1**	EPA 9320	359968		
2622484008	**FB-1**	EPA 9320	359968		
2622484009	**EB-1**	EPA 9320	359968		
2622484001	**BRGWA-6S**	Total Radium Calculation	362817		
2622484002	**BRGWA-5S**	Total Radium Calculation	362817		
2622484003	**BRGWA-5I**	Total Radium Calculation	362817		
2622484004	**BRGWA-2S**	Total Radium Calculation	362817		
2622484005	**BRGWA-2I**	Total Radium Calculation	362817		
2622484006	**BRGWC-33S**	Total Radium Calculation	362817		
2622484007	**DUP-1**	Total Radium Calculation	362817		
2622484008	**FB-1**	Total Radium Calculation	362817		
2622484009	**EB-1**	Total Radium Calculation	362817		

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

SAMPLE ID	Matrix	Collection Date	Collection Time	Preservative	Container Type	Container Size	Analysis Requested	Special Instructions
BRLwA-65	W	6	1402	4	1	3	1	
BRLwA-55	W	6	1057	4	1	3	1	
BRLwA-51	W	6	1207	4	1	3	1	
BRLwA-25	W	6	1153	4	1	2	1	
BRLwA-21	W	6	1159	4	1	3	1	
BRLwC-335	W	6	1610	6	1	5	1	+2 RA-4
DUP-1	W	6	—	4	1	3	1	
FB-1	W	6	1600	4	1	3	1	
EB-1	W	6	1629	4	1	3	1	

Relinquished by: [signature] 6-9-21 0900 Received by: [signature] 6/9/21 1102

WO# : 2622484

Pace Analytical

Client Name: CB Power

Sample Condition Upon Receipt

WO#: 2622484

PM: MH

Due Date: 08/28/19

CLIENT: GAPower-COR

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace

Tracking #:

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

PROJ. NAME:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Thermometer Used: 214 Type of Ice: ☐ Wet ☐ Blue ☐ None ☐ Samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)

Cooler Temperature: 1.3 °C Biological Tissue is Frozen: ☐ Yes ☐ No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents:

Chain of Custody Present	☐ Yes	☐ No	☐ N/A	1
Chain of Custody Filled Out	☐ Yes	☐ No	☐ N/A	2
Chain of Custody Relinquished	☐ Yes	☐ No	☐ N/A	3
Samples Intact & Signature on COC	☐ Yes	☐ No	☐ N/A	4
Samples Arrived within Hold Time	☐ Yes	☐ No	☐ N/A	5
Short Hold Time Analysis (<72hr).	☐ Yes	☐ No	☐ N/A	6
Rush Turn Around Time Requested	☐ Yes	☐ No	☐ N/A	7
Sufficient Volume	☐ Yes	☐ No	☐ N/A	8
Correct Containers Used	☐ Yes	☐ No	☐ N/A	9
-Pace Containers Used	☐ Yes	☐ No	☐ N/A	
Containers Intact	☐ Yes	☐ No	☐ N/A	10
Filtered volume received for Dissolved tests	☐ Yes	☐ No	☐ N/A	11
Sample Labels match COC	☐ Yes	☐ No	☐ N/A	12
-Includes date/time/ID/Analysis Matrix:	W			
All containers needing preservation have been checked.	☐ Yes	☐ No	☐ N/A	13
All containers needing preservation are found to be in compliance with EPA recommendation.	☐ Yes	☐ No	☐ N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐ Yes	☐ No		

Initial when completed	Lot # of added preservative

Samples checked for dechlorination	☐ Yes	☐ No	☐ N/A	14
Headspace in VOA Vials (>6mm)	☐ Yes	☐ No	☐ N/A	15
Trip Blank Present	☐ Yes	☐ No	☐ N/A	16
Trip Blank Custody Seals Present	☐ Yes	☐ No	☐ 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).

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

January 03, 2020

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

RE: Project: Plant Branch
Pace Project No.: 2622563

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on August 29, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2622563

Pace Analytical Services Atlanta
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

Pace Analytical Services Asheville
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2622563

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622563001	**BRGWC-17S**	Water	08/28/19 12:35	08/29/19 11:15
2622563002	**BRGWC-34S**	Water	08/28/19 13:21	08/29/19 11:15
2622563003	**BRGWC-35S**	Water	08/28/19 12:08	08/29/19 11:15
2622563004	**BRGWC-36S**	Water	08/28/19 11:36	08/29/19 11:15
2622563005	**BRGWC-37S**	Water	08/28/19 14:32	08/29/19 11:15
2622563006	**EB-2**	Water	08/28/19 12:59	08/29/19 11:15
2622563007	**FB-2**	Water	08/28/19 11:50	08/29/19 11:15

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2622563

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622563001	**BRGWC-17S**	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2622563002	**BRGWC-34S**	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2622563003	**BRGWC-35S**	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2622563004	**BRGWC-36S**	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2622563005	**BRGWC-37S**	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2622563006	**EB-2**	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A
2622563007	**FB-2**	EPA 6020B	CSW	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622563

Sample: BRGWC-17S **Lab ID: 2622563001** Collected: 08/28/19 12:35 Received: 08/29/19 11:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/30/19 16:08	09/04/19 20:57	7440-36-0	
Arsenic	**0.00073J**	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/04/19 20:57	7440-38-2	
Barium	**0.044**	mg/L	0.010	0.00049	1	08/30/19 16:08	09/04/19 20:57	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/04/19 20:57	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/04/19 20:57	7440-43-9	
Chromium	**0.013**	mg/L	0.010	0.00039	1	08/30/19 16:08	09/04/19 20:57	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/04/19 20:57	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/04/19 20:57	7439-92-1	
Lithium	**0.00097J**	mg/L	0.030	0.00078	1	08/30/19 16:08	09/04/19 20:57	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/30/19 16:08	09/04/19 20:57	7439-98-7	
Selenium	**0.0030J**	mg/L	0.010	0.0013	1	08/30/19 16:08	09/04/19 20:57	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/04/19 20:57	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/03/19 11:46	09/03/19 17:21	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**0.085J**	mg/L	0.30	0.050	1		09/05/19 10:21	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622563

Sample: BRGWC-34S **Lab ID: 2622563002** Collected: 08/28/19 13:21 Received: 08/29/19 11:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/30/19 16:08	09/04/19 21:03	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/04/19 21:03	7440-38-2	
Barium	**0.026**	mg/L	0.010	0.00049	1	08/30/19 16:08	09/04/19 21:03	7440-39-3	
Beryllium	**0.00014J**	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/04/19 21:03	7440-41-7	
Cadmium	**0.00025J**	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/04/19 21:03	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/30/19 16:08	09/04/19 21:03	7440-47-3	
Cobalt	**0.0037J**	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/04/19 21:03	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/04/19 21:03	7439-92-1	
Lithium	**0.00090J**	mg/L	0.030	0.00078	1	08/30/19 16:08	09/04/19 21:03	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/30/19 16:08	09/04/19 21:03	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/04/19 21:03	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/04/19 21:03	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/03/19 11:46	09/03/19 17:24	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**0.057J**	mg/L	0.30	0.050	1		09/05/19 10:50	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622563

Sample: BRGWC-35S **Lab ID: 2622563003** Collected: 08/28/19 12:08 Received: 08/29/19 11:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/30/19 16:08	09/04/19 21:37	7440-36-0	
Arsenic	**0.00044J**	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/04/19 21:37	7440-38-2	
Barium	**0.039**	mg/L	0.010	0.00049	1	08/30/19 16:08	09/04/19 21:37	7440-39-3	
Beryllium	**0.00016J**	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/04/19 21:37	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/04/19 21:37	7440-43-9	
Chromium	**0.0071J**	mg/L	0.010	0.00039	1	08/30/19 16:08	09/04/19 21:37	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/04/19 21:37	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/04/19 21:37	7439-92-1	
Lithium	**0.0021J**	mg/L	0.030	0.00078	1	08/30/19 16:08	09/04/19 21:37	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/30/19 16:08	09/04/19 21:37	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/04/19 21:37	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/04/19 21:37	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/03/19 11:46	09/03/19 17:26	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**0.056J**	mg/L	0.30	0.050	1		09/05/19 10:07	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622563

Sample: BRGWC-36S **Lab ID: 2622563004** Collected: 08/28/19 11:36 Received: 08/29/19 11:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	**0.00035J**	mg/L	0.0030	0.00027	1	08/30/19 16:08	09/04/19 22:00	7440-36-0	
Arsenic	**0.00045J**	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/04/19 22:00	7440-38-2	
Barium	**0.034**	mg/L	0.010	0.00049	1	08/30/19 16:08	09/04/19 22:00	7440-39-3	
Beryllium	**0.00011J**	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/04/19 22:00	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/04/19 22:00	7440-43-9	
Chromium	**0.0078J**	mg/L	0.010	0.00039	1	08/30/19 16:08	09/04/19 22:00	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/04/19 22:00	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/04/19 22:00	7439-92-1	
Lithium	**0.0025J**	mg/L	0.030	0.00078	1	08/30/19 16:08	09/04/19 22:00	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/30/19 16:08	09/04/19 22:00	7439-98-7	
Selenium	**0.0041J**	mg/L	0.010	0.0013	1	08/30/19 16:08	09/04/19 22:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/04/19 22:00	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/03/19 11:46	09/03/19 17:29	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		09/05/19 08:25	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622563

Sample: BRGWC-37S **Lab ID: 2622563005** Collected: 08/28/19 14:32 Received: 08/29/19 11:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/30/19 16:08	09/04/19 22:06	7440-36-0	
Arsenic	**0.00038J**	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/04/19 22:06	7440-38-2	
Barium	**0.027**	mg/L	0.010	0.00049	1	08/30/19 16:08	09/04/19 22:06	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/04/19 22:06	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/04/19 22:06	7440-43-9	
Chromium	**0.0017J**	mg/L	0.010	0.00039	1	08/30/19 16:08	09/04/19 22:06	7440-47-3	B
Cobalt	ND	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/04/19 22:06	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/04/19 22:06	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/30/19 16:08	09/04/19 22:06	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/30/19 16:08	09/04/19 22:06	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/04/19 22:06	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/04/19 22:06	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/03/19 11:46	09/03/19 17:31	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		09/05/19 11:05	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622563

Sample: EB-2 **Lab ID: 2622563006** Collected: 08/28/19 12:59 Received: 08/29/19 11:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/30/19 16:08	09/04/19 22:11	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/04/19 22:11	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	08/30/19 16:08	09/04/19 22:11	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/04/19 22:11	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/04/19 22:11	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/30/19 16:08	09/04/19 22:11	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/04/19 22:11	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/04/19 22:11	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/30/19 16:08	09/04/19 22:11	7439-93-2	
Molybdenum	**0.0021J**	mg/L	0.010	0.00095	1	08/30/19 16:08	09/04/19 22:11	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/04/19 22:11	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/04/19 22:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/03/19 11:46	09/03/19 17:33	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		09/05/19 10:36	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622563

Sample: FB-2 **Lab ID: 2622563007** Collected: 08/28/19 11:50 Received: 08/29/19 11:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	08/30/19 16:08	09/04/19 22:17	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/30/19 16:08	09/04/19 22:17	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	08/30/19 16:08	09/04/19 22:17	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/30/19 16:08	09/04/19 22:17	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/30/19 16:08	09/04/19 22:17	7440-43-9	
Chromium	**0.00045J**	mg/L	0.010	0.00039	1	08/30/19 16:08	09/04/19 22:17	7440-47-3	B
Cobalt	ND	mg/L	0.0050	0.00030	1	08/30/19 16:08	09/04/19 22:17	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/30/19 16:08	09/04/19 22:17	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/30/19 16:08	09/04/19 22:17	7439-93-2	
Molybdenum	**0.0021J**	mg/L	0.010	0.00095	1	08/30/19 16:08	09/04/19 22:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/30/19 16:08	09/04/19 22:17	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/30/19 16:08	09/04/19 22:17	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	09/03/19 11:46	09/03/19 17:40	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	ND	mg/L	0.30	0.050	1		09/05/19 09:52	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622563

QC Batch: 34630 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2622563001, 2622563002, 2622563003, 2622563004, 2622563005, 2622563006, 2622563007

METHOD BLANK: 155919 Matrix: Water
Associated Lab Samples: 2622563001, 2622563002, 2622563003, 2622563004, 2622563005, 2622563006, 2622563007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	09/03/19 16:46	

LABORATORY CONTROL SAMPLE: 155920

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0027	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155921 155922

Parameter	Units	2622561001 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	0.0025	0.0026	100	105	75-125	5	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622563

QC Batch: 34569 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622563001, 2622563002

METHOD BLANK: 155676 Matrix: Water
Associated Lab Samples: 2622563001, 2622563002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	09/04/19 18:22	
Arsenic	mg/L	ND	0.0050	0.00035	09/04/19 18:22	
Barium	mg/L	ND	0.010	0.00049	09/04/19 18:22	
Beryllium	mg/L	ND	0.0030	0.000074	09/04/19 18:22	
Cadmium	mg/L	ND	0.0025	0.00011	09/04/19 18:22	
Chromium	mg/L	ND	0.010	0.00039	09/04/19 18:22	
Cobalt	mg/L	ND	0.0050	0.00030	09/04/19 18:22	
Lead	mg/L	ND	0.0050	0.000046	09/04/19 18:22	
Lithium	mg/L	ND	0.030	0.00078	09/04/19 18:22	
Molybdenum	mg/L	ND	0.010	0.00095	09/04/19 18:22	
Selenium	mg/L	ND	0.010	0.0013	09/04/19 18:22	
Thallium	mg/L	ND	0.0010	0.000052	09/04/19 18:22	

LABORATORY CONTROL SAMPLE: 155677

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	112	80-120	
Arsenic	mg/L	0.1	0.10	101	80-120	
Barium	mg/L	0.1	0.10	105	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Cadmium	mg/L	0.1	0.10	104	80-120	
Chromium	mg/L	0.1	0.10	104	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Lead	mg/L	0.1	0.10	102	80-120	
Lithium	mg/L	0.1	0.099	99	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.10	104	80-120	
Thallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155678 155679

Parameter	Units	2622524009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	110	111	75-125	1	20	
Arsenic	mg/L	0.0011J	0.1	0.1	0.10	0.10	101	99	75-125	2	20	
Barium	mg/L	0.14	0.1	0.1	0.23	0.23	90	91	75-125	0	20	
Beryllium	mg/L	0.00090J	0.1	0.1	0.093	0.090	92	90	75-125	3	20	
Cadmium	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622563

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155678 155679

Parameter	Units	2622524009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/L	0.0056J	0.1	0.1	0.11	0.11	101	100	75-125	0	20	
Cobalt	mg/L	0.00070J	0.1	0.1	0.10	0.10	99	99	75-125	0	20	
Lead	mg/L	0.00022J	0.1	0.1	0.095	0.093	95	93	75-125	2	20	
Lithium	mg/L	0.012J	0.1	0.1	0.11	0.11	93	94	75-125	0	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	104	103	75-125	1	20	
Selenium	mg/L	0.0019J	0.1	0.1	0.10	0.099	100	97	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.096	0.094	96	94	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622563

QC Batch: 34570 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622563003, 2622563004, 2622563005, 2622563006, 2622563007

METHOD BLANK: 155680 Matrix: Water
Associated Lab Samples: 2622563003, 2622563004, 2622563005, 2622563006, 2622563007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	09/04/19 21:26	
Arsenic	mg/L	ND	0.0050	0.00035	09/04/19 21:26	
Barium	mg/L	ND	0.010	0.00049	09/04/19 21:26	
Beryllium	mg/L	ND	0.0030	0.000074	09/04/19 21:26	
Cadmium	mg/L	ND	0.0025	0.00011	09/04/19 21:26	
Chromium	mg/L	0.00055J	0.010	0.00039	09/04/19 21:26	
Cobalt	mg/L	ND	0.0050	0.00030	09/04/19 21:26	
Lead	mg/L	ND	0.0050	0.000046	09/04/19 21:26	
Lithium	mg/L	ND	0.030	0.00078	09/04/19 21:26	
Molybdenum	mg/L	ND	0.010	0.00095	09/04/19 21:26	
Selenium	mg/L	ND	0.010	0.0013	09/04/19 21:26	
Thallium	mg/L	ND	0.0010	0.000052	09/04/19 21:26	

LABORATORY CONTROL SAMPLE: 155681

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	113	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.10	103	80-120	
Cadmium	mg/L	0.1	0.10	103	80-120	
Chromium	mg/L	0.1	0.10	104	80-120	
Cobalt	mg/L	0.1	0.10	103	80-120	
Lead	mg/L	0.1	0.099	99	80-120	
Lithium	mg/L	0.1	0.11	105	80-120	
Molybdenum	mg/L	0.1	0.11	106	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155682 155683

Parameter	Units	2622563003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	114	114	75-125	0	20	
Arsenic	mg/L	0.00044J	0.1	0.1	0.10	0.10	101	101	75-125	0	20	
Barium	mg/L	0.039	0.1	0.1	0.14	0.14	103	104	75-125	0	20	
Beryllium	mg/L	0.00016J	0.1	0.1	0.10	0.099	101	99	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	104	102	75-125	2	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622563

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 155682 155683

Parameter	Units	2622563003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/L	0.0071J	0.1	0.1	0.11	0.11	105	106	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.11	0.10	106	104	75-125	2	20	
Lead	mg/L	ND	0.1	0.1	0.098	0.098	98	98	75-125	1	20	
Lithium	mg/L	0.0021J	0.1	0.1	0.10	0.098	98	96	75-125	2	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	108	107	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20	
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	100	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622563

QC Batch: 496024 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2622563001, 2622563002, 2622563003, 2622563004, 2622563005, 2622563006, 2622563007

METHOD BLANK: 2672026 Matrix: Water
Associated Lab Samples: 2622563001, 2622563002, 2622563003, 2622563004, 2622563005, 2622563006, 2622563007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	09/05/19 07:56	

LABORATORY CONTROL SAMPLE: 2672027

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.6	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2672028 2672029

Parameter	Units	2622563004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	2.5	2.7	100	105	90-110	4	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2672030 2672031

Parameter	Units	2622561002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.055J	2.5	2.5	3.2	3.2	125	127	90-110	1	10	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2622563

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2622563

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622563001	**BRGWC-17S**	EPA 3005A	34569	EPA 6020B	34600
2622563002	**BRGWC-34S**	EPA 3005A	34569	EPA 6020B	34600
2622563003	**BRGWC-35S**	EPA 3005A	34570	EPA 6020B	34601
2622563004	**BRGWC-36S**	EPA 3005A	34570	EPA 6020B	34601
2622563005	**BRGWC-37S**	EPA 3005A	34570	EPA 6020B	34601
2622563006	**EB-2**	EPA 3005A	34570	EPA 6020B	34601
2622563007	**FB-2**	EPA 3005A	34570	EPA 6020B	34601
2622563001	**BRGWC-17S**	EPA 7470A	34630	EPA 7470A	34665
2622563002	**BRGWC-34S**	EPA 7470A	34630	EPA 7470A	34665
2622563003	**BRGWC-35S**	EPA 7470A	34630	EPA 7470A	34665
2622563004	**BRGWC-36S**	EPA 7470A	34630	EPA 7470A	34665
2622563005	**BRGWC-37S**	EPA 7470A	34630	EPA 7470A	34665
2622563006	**EB-2**	EPA 7470A	34630	EPA 7470A	34665
2622563007	**FB-2**	EPA 7470A	34630	EPA 7470A	34665
2622563001	**BRGWC-17S**	EPA 300.0 Rev 2.1 1993	496024		
2622563002	**BRGWC-34S**	EPA 300.0 Rev 2.1 1993	496024		
2622563003	**BRGWC-35S**	EPA 300.0 Rev 2.1 1993	496024		
2622563004	**BRGWC-36S**	EPA 300.0 Rev 2.1 1993	496024		
2622563005	**BRGWC-37S**	EPA 300.0 Rev 2.1 1993	496024		
2622563006	**EB-2**	EPA 300.0 Rev 2.1 1993	496024		
2622563007	**FB-2**	EPA 300.0 Rev 2.1 1993	496024		

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

WO# : 2622563 WO# : 2622563

2622563

PM: BM Due Date: 08/05/19

CLIENT: GAPower-CCR

Company: Georgia Power - Coal Combustion Residuals	Billing Information:
Address: 241 Ralph McGill Blvd Atlanta, GA 30308	
Report To: Jason Hawkins	Email To: jahawkins@southernco.com
Copy To: Golder	Site/Facility ID: Bowen
Phone: (404) 506-7191	Collected By (print): Jason Hawkins Purchase Order #:
Email: jahawkins@southernco.com	Collected By (signature):

Project Description: CCR	Project Manager:
Phone: (678) 844-8279	Lab Project #: GAPOWER-BOWEN
Site/Facility ID (as named on permit): Bowen	Turnaround Date Required:
Same Day / Next Day / 2 Day / 3 Day / 4 Day / 5 Day (Rush charges apply)	Immediately Packed on Ice: Yes / No
	Field Filtered (if applicable): Yes / No
	Analysis:

Matrix: SW - Surface Water, GW - Groundwater, WW - Wastewater, DW - Drinking Water, OT - Other, TS - Trip Blank, SL - Sludge, OL - Oil, WP - Wipe, AR - Air, TB - Tissue, SO - Soil

Customer Sample ID	Matrix	Sample Type (G=Grab, C=Comp)	Collected (or Composite Start) Date	Time	Composite End Date	Time	Res Cl	# of Cont	Fluoride, Dissolved (SM 4500-F-C)	Magnesium, Dissolved (EPA 200.7)	Radium 226 + 228
BAGWC-175	GW	G			8/28/2019	12:35		6	1	1	4
BAGWC-185	GW	G			8/28/2019	13:15		4	1	1	2
BAGWC-355	GW	G			8/28/2019	12:08		4	1	1	2
BAGWC-365	GW	G			8/28/2019	13:36		4	1	1	2
BAGWC 375	GW	G			8/28/2019	14:32		4	1	1	2
FB-1	WT	G			8/28/2019	11:50		4	1	1	2
FB-2	WT	G			8/28/2019	13:50		4	1	1	2

Analysis Requested (Preservation/Method No./Comments): Fluoride, Magnesium, Radium 226 + 228

Special Handling / Comments / Preservation / Method No.:

Type of Ice Used: Wet / Blue / Dry / None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y / N / NA

Lab Sample Temperature Info: Temp Blank Received: Y / N / NA; Therm. ID#; Cooler 1 Temp Upon Receipt; Cooler 1 Thermometer Used; Cooler 1 Correction Factor; Temperature Blank

Lab Tracking #:

Samples Received via: FedEx / UPS / Courier / Pace Courier

Relinquished by/Affiliation: Signature	Date/Time	Received by/Company: Signature	Date/Time	Lab Use Only
	8-29-19 0825			
Relinquished by/Affiliation: Signature	Date/Time	Received by/Company: Signature	Date/Time	Lab Use Only
			8/29/19 1111	
Relinquished by/Affiliation: Signature	Date/Time	Received for Laboratory: Signature	Date/Time	Lab Use Only

Lab Use Only: Temp in °C; Received on Ice: Y / N; Custody Seals Intact: Y / N; Samples Intact: Y / N; pH Verified: Y / N; Trip Blank Received: Y / N / NA; Bottles Arrived: Sufficient / Insufficient; Correct Bottles: Y / N; Sufficient Volume: Y / N; Correct Preservatives: Y / N; VOA Zero Headspace: Y / N; Preservation Correct/Checked: Y / N; Filtered: Y / N; Headspace in VOA: Y / N; Project Sampling Procedure: Y / N; Extra Labels Provided: Y / N; Additional Comments:

Page 20 of 20

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

September 24, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2622564

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on August 29, 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: Kristen Jurinko, Golder Associates Inc.
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2622564

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2622564

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622564001	**BRGWC-17S**	Water	08/28/19 12:35	08/29/19 11:15
2622564002	**BRGWC-34S**	Water	08/28/19 13:21	08/29/19 11:15
2622564003	**BRGWC-35S**	Water	08/28/19 12:08	08/29/19 11:15
2622564004	**BRGWC-36S**	Water	08/28/19 11:36	08/29/19 11:15
2622564005	**BRGWC-37S**	Water	08/28/19 14:32	08/29/19 11:15
2622564006	**EB-2**	Water	08/28/19 12:59	08/29/19 11:15
2622564007	**FB-2**	Water	08/28/19 11:50	08/29/19 11:15

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2622564

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622564001	**BRGWC-17S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622564002	**BRGWC-34S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622564003	**BRGWC-35S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622564004	**BRGWC-36S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622564005	**BRGWC-37S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622564006	**EB-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622564007	**FB-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622564

Sample: BRGWC-17S **Lab ID: 2622564001** Collected: 08/28/19 12:35 Received: 08/29/19 11:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.240 ± 0.244 (0.495) C:89% T:NA**	pCi/L	09/12/19 08:18	13982-63-3	
Radium-228	EPA 9320	**-0.314 ± 0.544 (1.32) C:68% T:88%**	pCi/L	09/19/19 18:47	15262-20-1	
Total Radium	Total Radium Calculation	**0.240 ± 0.788 (1.82)**	pCi/L	09/23/19 11:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622564

Sample: BRGWC-34S **Lab ID: 2622564002** Collected: 08/28/19 13:21 Received: 08/29/19 11:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.364 ± 0.222 (0.320) C:92% T:NA**	pCi/L	09/12/19 08:25	13982-63-3	
Radium-228	EPA 9320	**0.447 ± 0.574 (1.22) C:67% T:84%**	pCi/L	09/19/19 18:48	15262-20-1	
Total Radium	Total Radium Calculation	**0.811 ± 0.796 (1.54)**	pCi/L	09/23/19 11:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622564

Sample: BRGWC-35S **Lab ID: 2622564003** Collected: 08/28/19 12:08 Received: 08/29/19 11:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.294 ± 0.231 (0.408) C:85% T:NA**	pCi/L	09/12/19 08:18	13982-63-3	
Radium-228	EPA 9320	**0.701 ± 0.658 (1.35) C:60% T:89%**	pCi/L	09/19/19 18:47	15262-20-1	
Total Radium	Total Radium Calculation	**0.995 ± 0.889 (1.76)**	pCi/L	09/23/19 11:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622564

Sample: BRGWC-36S **Lab ID: 2622564004** Collected: 08/28/19 11:36 Received: 08/29/19 11:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.541 ± 0.277 (0.359) C:79% T:NA**	pCi/L	09/12/19 08:17	13982-63-3	
Radium-228	EPA 9320	**0.325 ± 0.564 (1.23) C:68% T:87%**	pCi/L	09/19/19 18:46	15262-20-1	
Total Radium	Total Radium Calculation	**0.866 ± 0.841 (1.59)**	pCi/L	09/23/19 11:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622564

Sample: BRGWC-37S **Lab ID: 2622564005** Collected: 08/28/19 14:32 Received: 08/29/19 11:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.435 ± 0.295 (0.514) C:88% T:NA**	pCi/L	09/12/19 08:26	13982-63-3	
Radium-228	EPA 9320	**0.374 ± 0.517 (1.11) C:69% T:83%**	pCi/L	09/19/19 18:48	15262-20-1	
Total Radium	Total Radium Calculation	**0.809 ± 0.812 (1.62)**	pCi/L	09/23/19 11:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622564

Sample: EB-2 **Lab ID: 2622564006** Collected: 08/28/19 12:59 Received: 08/29/19 11:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.196 ± 0.202 (0.389) C:78% T:NA**	pCi/L	09/12/19 08:25	13982-63-3	
Radium-228	EPA 9320	**0.778 ± 0.588 (1.16) C:67% T:90%**	pCi/L	09/19/19 18:48	15262-20-1	
Total Radium	Total Radium Calculation	**0.974 ± 0.790 (1.55)**	pCi/L	09/23/19 11:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622564

Sample: FB-2 **Lab ID: 2622564007** Collected: 08/28/19 11:50 Received: 08/29/19 11:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.362 ± 0.235 (0.382) C:93% T:NA**	pCi/L	09/12/19 08:17	13982-63-3	
Radium-228	EPA 9320	**0.545 ± 0.582 (1.21) C:67% T:84%**	pCi/L	09/19/19 18:47	15262-20-1	
Total Radium	Total Radium Calculation	**0.907 ± 0.817 (1.59)**	pCi/L	09/23/19 11:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622564

QC Batch: 359954 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2622564001, 2622564002, 2622564003, 2622564004, 2622564005, 2622564006, 2622564007

METHOD BLANK: 1747365 Matrix: Water
Associated Lab Samples: 2622564001, 2622564002, 2622564003, 2622564004, 2622564005, 2622564006, 2622564007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0188 ± 0.324 (0.758) C:68% T:80%	pCi/L	09/19/19 15:18	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622564

QC Batch: 359953 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2622564001, 2622564002, 2622564003, 2622564004, 2622564005, 2622564006, 2622564007

METHOD BLANK: 1747363 Matrix: Water
Associated Lab Samples: 2622564001, 2622564002, 2622564003, 2622564004, 2622564005, 2622564006, 2622564007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.412 ± 0.223 (0.263) C:94% T:NA	pCi/L	09/12/19 08:42	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2622564

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2622564

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622564001	**BRGWC-17S**	EPA 9315	359953		
2622564002	**BRGWC-34S**	EPA 9315	359953		
2622564003	**BRGWC-35S**	EPA 9315	359953		
2622564004	**BRGWC-36S**	EPA 9315	359953		
2622564005	**BRGWC-37S**	EPA 9315	359953		
2622564006	**EB-2**	EPA 9315	359953		
2622564007	**FB-2**	EPA 9315	359953		
2622564001	**BRGWC-17S**	EPA 9320	359954		
2622564002	**BRGWC-34S**	EPA 9320	359954		
2622564003	**BRGWC-35S**	EPA 9320	359954		
2622564004	**BRGWC-36S**	EPA 9320	359954		
2622564005	**BRGWC-37S**	EPA 9320	359954		
2622564006	**EB-2**	EPA 9320	359954		
2622564007	**FB-2**	EPA 9320	359954		
2622564001	**BRGWC-17S**	Total Radium Calculation	362616		
2622564002	**BRGWC-34S**	Total Radium Calculation	362616		
2622564003	**BRGWC-35S**	Total Radium Calculation	362616		
2622564004	**BRGWC-36S**	Total Radium Calculation	362616		
2622564005	**BRGWC-37S**	Total Radium Calculation	362616		
2622564006	**EB-2**	Total Radium Calculation	362616		
2622564007	**FB-2**	Total Radium Calculation	362616		

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

WO# : 2622564

WO# : 2622564

PM : WH

CLIENT : GHD

Due Date : 08/27/19

Lab ID	Sample ID	Matrix	Date	Time	Analysis: Ethylene by 3810 G	Ethylene, mg/L RV	Methane 3810 RSK
	BRGWC-175	GW	8/28/2019	12:35	1	1	4
	BRGWC-345	GW	8/28/2019	11:11	1	1	3
	BRGWC-355	GW	8/28/2019	12:08	1	1	2
	BRGWC-365	GW	8/28/2019	11:16	1	1	4
	BRKWC-375	GW	8/28/2019	14:32	1	1	2
	CB-2	WT	8/28/2019	07:59	1	1	2
	FB-2	WT	8/28/2019	11:50	1	1	2

Relinquished by/Company: 8/29/19 11:15

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2622604

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on August 30, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2622604

Pace Analytical Services Atlanta
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

Pace Analytical Services Asheville
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2622604

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622604001	**BRGWC-38S**	Water	08/29/19 15:29	08/30/19 08:00

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2622604

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622604001	**BRGWC-38S**	EPA 6020B	KLH	12	PASI-GA
		EPA 7470A	DRB	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	1	PASI-A

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2622604

Sample: BRGWC-38S **Lab ID: 2622604001** Collected: 08/29/19 15:29 Received: 08/30/19 08:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	09/04/19 14:00	09/06/19 15:38	7440-36-0	
Arsenic	**0.0013J**	mg/L	0.0050	0.00035	1	09/04/19 14:00	09/06/19 15:38	7440-38-2	
Barium	**0.016**	mg/L	0.010	0.00049	1	09/04/19 14:00	09/06/19 15:38	7440-39-3	
Beryllium	**0.0088**	mg/L	0.0030	0.000074	1	09/04/19 14:00	09/06/19 15:38	7440-41-7	
Cadmium	**0.00053J**	mg/L	0.0025	0.00011	1	09/04/19 14:00	09/06/19 15:38	7440-43-9	
Chromium	**0.0044J**	mg/L	0.010	0.00039	1	09/04/19 14:00	09/06/19 15:38	7440-47-3	
Cobalt	**0.21**	mg/L	0.0050	0.00030	1	09/04/19 14:00	09/06/19 15:38	7440-48-4	
Lead	**0.00035J**	mg/L	0.0050	0.000046	1	09/04/19 14:00	09/06/19 15:38	7439-92-1	
Lithium	**0.021J**	mg/L	0.030	0.00078	1	09/04/19 14:00	09/06/19 15:38	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	09/04/19 14:00	09/06/19 15:38	7439-98-7	
Selenium	**0.036**	mg/L	0.010	0.0013	1	09/04/19 14:00	09/06/19 15:38	7782-49-2	
Thallium	**0.00021J**	mg/L	0.0010	0.000052	1	09/04/19 14:00	09/06/19 15:38	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	**0.00018J**	mg/L	0.00050	0.00014	1	09/05/19 09:07	09/05/19 13:44	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Fluoride	**0.90**	mg/L	0.10	0.050	1		09/06/19 20:21	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622604

QC Batch: 34720 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2622604001

METHOD BLANK: 156270 Matrix: Water
Associated Lab Samples: 2622604001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	09/05/19 12:57	

LABORATORY CONTROL SAMPLE: 156271

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 156272 156273

Parameter	Units	2622587001 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	91	92	75-125	2	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622604

QC Batch: 34718 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622604001

METHOD BLANK: 156264 Matrix: Water
Associated Lab Samples: 2622604001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	09/06/19 14:47	
Arsenic	mg/L	ND	0.0050	0.00035	09/06/19 14:47	
Barium	mg/L	ND	0.010	0.00049	09/06/19 14:47	
Beryllium	mg/L	ND	0.0030	0.000074	09/06/19 14:47	
Cadmium	mg/L	ND	0.0025	0.00011	09/06/19 14:47	
Chromium	mg/L	ND	0.010	0.00039	09/06/19 14:47	
Cobalt	mg/L	ND	0.0050	0.00030	09/06/19 14:47	
Lead	mg/L	ND	0.0050	0.000046	09/06/19 14:47	
Lithium	mg/L	ND	0.030	0.00078	09/06/19 14:47	
Molybdenum	mg/L	ND	0.010	0.00095	09/06/19 14:47	
Selenium	mg/L	ND	0.010	0.0013	09/06/19 14:47	
Thallium	mg/L	ND	0.0010	0.000052	09/06/19 14:47	

LABORATORY CONTROL SAMPLE: 156265

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	106	80-120	
Arsenic	mg/L	0.1	0.10	101	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	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.097	97	80-120	
Lithium	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.10	102	80-120	
Selenium	mg/L	0.1	0.098	98	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 156266 156267

Parameter	Units	2622596001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	107	106	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.098	101	98	75-125	4	20	
Barium	mg/L	0.076	0.1	0.1	0.18	0.17	102	98	75-125	2	20	
Beryllium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.099	101	98	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622604

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 156266 156267

Parameter	Units	2622596001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/L	0.0016J	0.1	0.1	0.10	0.10	101	101	75-125	0	20	
Cobalt	mg/L	0.0015J	0.1	0.1	0.10	0.10	100	100	75-125	1	20	
Lead	mg/L	0.000070J	0.1	0.1	0.10	0.10	101	100	75-125	0	20	
Lithium	mg/L	0.0070J	0.1	0.1	0.11	0.10	98	97	75-125	2	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	102	102	75-125	0	20	
Selenium	mg/L	0.0023J	0.1	0.1	0.098	0.099	96	97	75-125	1	20	
Thallium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2622604

QC Batch: 496440 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2622604001

METHOD BLANK: 2673683 Matrix: Water
Associated Lab Samples: 2622604001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.10	0.050	09/06/19 13:48	

LABORATORY CONTROL SAMPLE: 2673684

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2673685 2673686

Parameter	Units	2622572001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.78	2.5	2.5	4.9	4.8	164	160	90-110	2	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2673687 2673688

Parameter	Units	2622502009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2.5	2.5	3.1	2.7	124	106	90-110	16	10	M1,R1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2622604

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

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2622604

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622604001	**BRGWC-38S**	EPA 3005A	34718	EPA 6020B	34727
2622604001	**BRGWC-38S**	EPA 7470A	34720	EPA 7470A	34792
2622604001	**BRGWC-38S**	EPA 300.0 Rev 2.1 1993	496440		

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

WO# : 2622604

WO# : 2622604

Due Date: 08/09/19

CLIENT: GWP-CCR

Sample ID	Matrix	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	# of Cont.	Filtered (Y/N)
BMGWC 38S	GW	G			8/29/2019	1524		

Fluoride by 300.0 | Methane RSK-175 | Sulfate 300.0 28D

Relinquished by: [signature] Date/Time: 8/30/19 0800

Received by: [signature] Date/Time: 8/30/19 0800

Page 12 of 12

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

September 24, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2622605

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on August 30, 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: Kristen Jurinko, Golder Associates Inc.
Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2622605

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2622605

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622605001	**BRGWC-38S**	Water	08/29/19 15:29	08/30/19 08:00

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2622605

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622605001	**BRGWC-38S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622605

Sample: BRGWC-38S **Lab ID: 2622605001** Collected: 08/29/19 15:29 Received: 08/30/19 08:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**1.37 ± 0.424 (0.311) C:91% T:NA**	pCi/L	09/12/19 08:42	13982-63-3	
Radium-228	EPA 9320	**2.31 ± 0.668 (0.756) C:67% T:84%**	pCi/L	09/19/19 15:18	15262-20-1	
Total Radium	Total Radium Calculation	**3.68 ± 1.09 (1.07)**	pCi/L	09/23/19 11:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622605

QC Batch: 359954 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2622605001

METHOD BLANK: 1747365 Matrix: Water
Associated Lab Samples: 2622605001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0188 ± 0.324 (0.758) C:68% T:80%	pCi/L	09/19/19 15:18	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2622605

QC Batch: 359953 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2622605001

METHOD BLANK: 1747363 Matrix: Water
Associated Lab Samples: 2622605001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.412 ± 0.223 (0.263) C:94% T:NA	pCi/L	09/12/19 08:42	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2622605

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2622605

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622605001	**BRGWC-38S**	EPA 9315	359953		
2622605001	**BRGWC-38S**	EPA 9320	359954		
2622605001	**BRGWC-38S**	Total Radium Calculation	362615		

CHAIN-OF-CUSTODY Analytical Request Document

WO# : 2622605

WO# : 2622605

PH: 8H Due Date: 09/30/19

CLIENT: GSPusa-COP

Sample Identification	Matrix	Collection Date	Collection Time		Compositing End		Bottle Qty	Total Containers	Analysis: Pb Dissolved by 200.8	Analysis: Metals app list	Analysis: 220.220
			Start	End	Date	Time					
BRGWC 365	GW	G			8/29/2019	1554		6		1	1

Relinquished By (Signature) — Date/Time: 8/30/19 0830 — Received By (Signature): [illegible] — Date/Time: 9/4/19 0817

Relinquished By (Signature) — Date/Time: — — Received By (Signature) — Date/Time: —

Relinquished By (Signature) — Date/Time: — — Received By (Signature) — Date/Time: —

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: Plant Branch E
Pace Project No.: 2624389

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch E
Pace Project No.: 2624389

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch E
Pace Project No.: 2624389

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624389001	**BRGWA-6S**	Water	10/15/19 08:45	10/16/19 12:30
2624389002	**BRGWA-5S**	Water	10/15/19 09:00	10/16/19 12:30
2624389003	**BRGWA-5I**	Water	10/15/19 10:20	10/16/19 12:30
2624389004	**BRGWA-2S**	Water	10/15/19 09:55	10/16/19 12:30
2624389005	**BRGWA-2I**	Water	10/15/19 11:17	10/16/19 12:30

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch E
Pace Project No.: 2624389

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624389001	**BRGWA-6S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624389002	**BRGWA-5S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624389003	**BRGWA-5I**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624389004	**BRGWA-2S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624389005	**BRGWA-2I**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch E
Pace Project No.: 2624389

Sample: BRGWA-6S **Lab ID: 2624389001** Collected: 10/15/19 08:45 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 19:43	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 19:43	7440-38-2	
Barium	**0.013**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 19:43	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 19:43	7440-41-7	
Boron	**0.010J**	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 19:43	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 19:43	7440-43-9	
Calcium	**3.5**	mg/L	0.10	0.011	1	10/20/19 16:44	10/22/19 19:43	7440-70-2	
Chromium	**0.014**	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 19:43	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 19:43	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 19:43	7439-92-1	
Lithium	**0.0024J**	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 19:43	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 19:43	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 19:43	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 19:43	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**63.0**	mg/L	10.0	10.0	1		10/18/19 10:45		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.4**	mg/L	1.0	0.024	1		10/21/19 19:30	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/21/19 19:30	16984-48-8	
Sulfate	**0.48J**	mg/L	1.0	0.017	1		10/21/19 19:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch E
Pace Project No.: 2624389

Sample: BRGWA-5S **Lab ID: 2624389002** Collected: 10/15/19 09:00 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 19:55	7440-36-0	
Arsenic	**0.00039J**	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 19:55	7440-38-2	B
Barium	**0.049**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 19:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 19:55	7440-41-7	
Boron	**0.0060J**	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 19:55	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 19:55	7440-43-9	
Calcium	**20.0**	mg/L	5.0	0.55	50	10/20/19 16:44	10/22/19 20:00	7440-70-2	
Chromium	**0.0055J**	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 19:55	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 19:55	7440-48-4	
Lead	**0.000079J**	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 19:55	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 19:55	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 19:55	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 19:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 19:55	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**144**	mg/L	10.0	10.0	1		10/18/19 10:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**3.7**	mg/L	1.0	0.024	1		10/21/19 19:52	16887-00-6	
Fluoride	**0.045J**	mg/L	0.30	0.029	1		10/21/19 19:52	16984-48-8	
Sulfate	**0.68J**	mg/L	1.0	0.017	1		10/21/19 19:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch E
Pace Project No.: 2624389

Sample: BRGWA-5I **Lab ID: 2624389003** Collected: 10/15/19 10:20 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 20:06	7440-36-0	
Arsenic	**0.00058J**	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 20:06	7440-38-2	B
Barium	**0.032**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 20:06	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 20:06	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 20:06	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 20:06	7440-43-9	
Calcium	**14.4**	mg/L	5.0	0.55	50	10/20/19 16:44	10/22/19 20:12	7440-70-2	
Chromium	**0.0047J**	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 20:06	7440-47-3	
Cobalt	**0.00083J**	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 20:06	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 20:06	7439-92-1	
Lithium	**0.0020J**	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 20:06	7439-93-2	
Molybdenum	**0.0035J**	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 20:06	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 20:06	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 20:06	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**175**	mg/L	10.0	10.0	1		10/18/19 10:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.2**	mg/L	1.0	0.024	1		10/21/19 20:14	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/21/19 20:14	16984-48-8	
Sulfate	**3.8**	mg/L	1.0	0.017	1		10/21/19 20:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch E
Pace Project No.: 2624389

Sample: BRGWA-2S **Lab ID: 2624389004** Collected: 10/15/19 09:55 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 20:18	7440-36-0	
Arsenic	**0.00063J**	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 20:18	7440-38-2	B
Barium	**0.0091J**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 20:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 20:18	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 20:18	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 20:18	7440-43-9	
Calcium	**3.7**	mg/L	0.10	0.011	1	10/20/19 16:44	10/22/19 20:18	7440-70-2	
Chromium	**0.0083J**	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 20:18	7440-47-3	
Cobalt	**0.00097J**	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 20:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 20:18	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 20:18	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 20:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 20:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 20:18	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**66.0**	mg/L	10.0	10.0	1		10/18/19 10:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**1.9**	mg/L	1.0	0.024	1		10/21/19 21:42	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/21/19 21:42	16984-48-8	
Sulfate	**0.47J**	mg/L	1.0	0.017	1		10/21/19 21:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch E
Pace Project No.: 2624389

Sample: BRGWA-2I **Lab ID: 2624389005** Collected: 10/15/19 11:17 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	**0.00047J**	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 21:09	7440-36-0	
Arsenic	**0.00080J**	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 21:09	7440-38-2	B
Barium	**0.013**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 21:09	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 21:09	7440-41-7	
Boron	**0.0067J**	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 21:09	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 21:09	7440-43-9	
Calcium	**15.1**	mg/L	5.0	0.55	50	10/20/19 16:44	10/22/19 21:15	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 21:09	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 21:09	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 21:09	7439-92-1	
Lithium	**0.028J**	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 21:09	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 21:09	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 21:09	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 21:09	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**140**	mg/L	10.0	10.0	1		10/18/19 10:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.2**	mg/L	1.0	0.024	1		10/21/19 22:04	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/21/19 22:04	16984-48-8	
Sulfate	**5.2**	mg/L	1.0	0.017	1		10/21/19 22:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch E
Pace Project No.: 2624389

QC Batch: 37136 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624389001, 2624389002, 2624389003, 2624389004, 2624389005

METHOD BLANK: 167849 Matrix: Water
Associated Lab Samples: 2624389001, 2624389002, 2624389003, 2624389004, 2624389005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/22/19 18:23	
Arsenic	mg/L	0.00059J	0.0050	0.00035	10/22/19 18:23	
Barium	mg/L	ND	0.010	0.00049	10/22/19 18:23	
Beryllium	mg/L	ND	0.0030	0.000074	10/22/19 18:23	
Boron	mg/L	ND	0.040	0.0049	10/22/19 18:23	
Cadmium	mg/L	ND	0.0025	0.00011	10/22/19 18:23	
Calcium	mg/L	ND	0.10	0.011	10/22/19 18:23	
Chromium	mg/L	ND	0.010	0.00039	10/22/19 18:23	
Cobalt	mg/L	ND	0.0050	0.00030	10/22/19 18:23	
Lead	mg/L	ND	0.0050	0.000046	10/22/19 18:23	
Lithium	mg/L	ND	0.030	0.00078	10/22/19 18:23	
Molybdenum	mg/L	ND	0.010	0.00095	10/22/19 18:23	
Selenium	mg/L	ND	0.010	0.0013	10/22/19 18:23	
Thallium	mg/L	ND	0.0010	0.000052	10/22/19 18:23	

LABORATORY CONTROL SAMPLE: 167850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.098	98	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	0.099	99	80-120	
Boron	mg/L	1	0.96	96	80-120	
Cadmium	mg/L	0.1	0.097	97	80-120	
Calcium	mg/L	1	0.96	96	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.095	95	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	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168476 168477

Parameter	Units	2624389004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.098	0.097	97	97	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch E
Pace Project No.: 2624389

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168476 168477

Parameter	Units	2624389004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.00063J	0.1	0.1	0.095	0.098	95	97	75-125	3	20	
Barium	mg/L	0.0091J	0.1	0.1	0.11	0.11	100	103	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.092	0.094	92	94	75-125	2	20	
Boron	mg/L	ND	1	1	0.89	0.94	88	93	75-125	6	20	
Cadmium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	0	20	
Calcium	mg/L	3.7	1	1	4.5	4.5	88	82	75-125	1	20	
Chromium	mg/L	0.0083J	0.1	0.1	0.11	0.11	97	100	75-125	2	20	
Cobalt	mg/L	0.00097J	0.1	0.1	0.096	0.096	95	95	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.095	0.098	95	98	75-125	3	20	
Lithium	mg/L	ND	0.1	0.1	0.092	0.094	91	93	75-125	3	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.093	0.10	93	100	75-125	7	20	
Thallium	mg/L	ND	0.1	0.1	0.095	0.098	95	98	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch E
Pace Project No.: 2624389

QC Batch: 37181 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624389001, 2624389002, 2624389003, 2624389004, 2624389005

LABORATORY CONTROL SAMPLE: 168196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 168197

Parameter	Units	2624388001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1520	1570	3	10	

SAMPLE DUPLICATE: 168198

Parameter	Units	2624392001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	89.0	86.0	3	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch E
Pace Project No.: 2624389

QC Batch: 37138 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624389001, 2624389002, 2624389003, 2624389004, 2624389005

METHOD BLANK: 167857 Matrix: Water
Associated Lab Samples: 2624389001, 2624389002, 2624389003, 2624389004, 2624389005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.024	10/21/19 16:11	
Fluoride	mg/L	ND	0.30	0.029	10/21/19 16:11	
Sulfate	mg/L	ND	1.0	0.017	10/21/19 16:11	

LABORATORY CONTROL SAMPLE: 167858

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.9	99	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	9.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 167859 167860

Parameter	Units	2624388001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	20.9	10	10	28.1	28.1	72	72	90-110	0	15	M1
Fluoride	mg/L	ND	10	10	10.0	10.1	100	101	90-110	1	15	

MATRIX SPIKE SAMPLE: 167861

Parameter	Units	2624389005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.2	10	12.2	100	90-110	
Fluoride	mg/L	ND	10	10.3	103	90-110	
Sulfate	mg/L	5.2	10	14.8	96	90-110	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch E
Pace Project No.: 2624389

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch E
Pace Project No.: 2624389

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624389001	**BRGWA-6S**	EPA 3005A	37136	EPA 6020B	37255
2624389002	**BRGWA-5S**	EPA 3005A	37136	EPA 6020B	37255
2624389003	**BRGWA-5I**	EPA 3005A	37136	EPA 6020B	37255
2624389004	**BRGWA-2S**	EPA 3005A	37136	EPA 6020B	37255
2624389005	**BRGWA-2I**	EPA 3005A	37136	EPA 6020B	37255
2624389001	**BRGWA-6S**	SM 2540C	37181		
2624389002	**BRGWA-5S**	SM 2540C	37181		
2624389003	**BRGWA-5I**	SM 2540C	37181		
2624389004	**BRGWA-2S**	SM 2540C	37181		
2624389005	**BRGWA-2I**	SM 2540C	37181		
2624389001	**BRGWA-6S**	EPA 300.0	37138		
2624389002	**BRGWA-5S**	EPA 300.0	37138		
2624389003	**BRGWA-5I**	EPA 300.0	37138		
2624389004	**BRGWA-2S**	EPA 300.0	37138		
2624389005	**BRGWA-2I**	EPA 300.0	37138		

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

WO#: 2624389

2624389

ALL USE ONLY

Customer Sample ID	Matrix	Sample Type	Collected or Composite Start		Container Preservation		Pres Check	Analysis Test	Analysis Test	Analysis Test	Analysis Test	Analysis Test	Analysis Test	Analysis Test	Analysis Test
			Date	Time	Date	Time									
BMGWA-01	GW	G	10/13/2015	0845				4	L		L		2		
BMGWA-02	GW	G	10/13/2015	0900				4	L		L		2		
BMGWA-3	GW	G	10/13/2015	1020				4	L		L		2		
BMGWA-23	GW	G	10/13/2015	0915				4	L		L		2		
BMGWA-2	GW	G	10/13/2015	1127				4	L		L		2		

Relinquished by/Company: Date/Time 10-14-15 0815

Received by/Company: Date/Time 10/14/15

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

November 14, 2019

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

RE: Project: Plant Branch E
Pace Project No.: 2624391

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 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: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch E
Pace Project No.: 2624391

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch E
Pace Project No.: 2624391

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624391001	**BRGWA-6S**	Water	10/15/19 08:45	10/16/19 12:30
2624391002	**BRGWA-5S**	Water	10/15/19 09:00	10/16/19 12:30
2624391003	**BRGWA-5I**	Water	10/15/19 10:20	10/16/19 12:30
2624391004	**BRGWA-2S**	Water	10/15/19 09:55	10/16/19 12:30
2624391005	**BRGWA-2I**	Water	10/15/19 11:17	10/16/19 12:30

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch E
Pace Project No.: 2624391

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624391001	**BRGWA-6S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624391002	**BRGWA-5S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624391003	**BRGWA-5I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624391004	**BRGWA-2S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624391005	**BRGWA-2I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

Sample: BRGWA-6S **Lab ID: 2624391001** Collected: 10/15/19 08:45 Received: 10/16/19 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.402 ± 0.284 (0.490) C:95% T:NA**	pCi/L	11/07/19 07:47	13982-63-3	
Radium-228	EPA 9320	**-0.226 ± 0.787 (1.88) C:63% T:84%**	pCi/L	11/07/19 20:09	15262-20-1	
Total Radium	Total Radium Calculation	**0.402 ± 1.07 (2.37)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

Sample: BRGWA-5S **Lab ID: 2624391002** Collected: 10/15/19 09:00 Received: 10/16/19 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.467 ± 0.301 (0.486) C:92% T:NA**	pCi/L	11/07/19 07:47	13982-63-3	
Radium-228	EPA 9320	**-0.362 ± 0.637 (1.56) C:68% T:90%**	pCi/L	11/07/19 20:09	15262-20-1	
Total Radium	Total Radium Calculation	**0.467 ± 0.938 (2.05)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

Sample: BRGWA-5I **Lab ID: 2624391003** Collected: 10/15/19 10:20 Received: 10/16/19 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.651 ± 0.319 (0.390) C:93% T:NA**	pCi/L	11/07/19 07:47	13982-63-3	
Radium-228	EPA 9320	**0.0627 ± 1.06 (2.41) C:62% T:81%**	pCi/L	11/07/19 20:09	15262-20-1	
Total Radium	Total Radium Calculation	**0.714 ± 1.38 (2.80)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

Sample: BRGWA-2S **Lab ID: 2624391004** Collected: 10/15/19 09:55 Received: 10/16/19 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.212 ± 0.208 (0.385) C:90% T:NA**	pCi/L	11/07/19 07:47	13982-63-3	
Radium-228	EPA 9320	**0.595 ± 0.995 (2.17) C:64% T:69%**	pCi/L	11/07/19 20:09	15262-20-1	
Total Radium	Total Radium Calculation	**0.807 ± 1.20 (2.56)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

Sample: BRGWA-2I **Lab ID: 2624391005** Collected: 10/15/19 11:17 Received: 10/16/19 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.184 ± 0.199 (0.381) C:94% T:NA**	pCi/L	11/07/19 07:16	13982-63-3	
Radium-228	EPA 9320	**0.831 ± 0.868 (1.80) C:64% T:76%**	pCi/L	11/07/19 20:10	15262-20-1	
Total Radium	Total Radium Calculation	**1.02 ± 1.07 (2.18)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

QC Batch: 368367 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2624391001, 2624391002, 2624391003, 2624391004, 2624391005

METHOD BLANK: 1787254 Matrix: Water
Associated Lab Samples: 2624391001, 2624391002, 2624391003, 2624391004, 2624391005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.416 ± 0.262 (0.396) C:98% T:NA	pCi/L	11/07/19 07:47	

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

QC Batch: 368368 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2624391001, 2624391002, 2624391003, 2624391004, 2624391005

METHOD BLANK: 1787255 Matrix: Water
Associated Lab Samples: 2624391001, 2624391002, 2624391003, 2624391004, 2624391005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.536 ± 0.405 (0.790) C:74% T:76%	pCi/L	11/07/19 14:59	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch E
Pace Project No.: 2624391

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch E
Pace Project No.: 2624391

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624391001	**BRGWA-6S**	EPA 9315	368367		
2624391002	**BRGWA-5S**	EPA 9315	368367		
2624391003	**BRGWA-5I**	EPA 9315	368367		
2624391004	**BRGWA-2S**	EPA 9315	368367		
2624391005	**BRGWA-2I**	EPA 9315	368367		
2624391001	**BRGWA-6S**	EPA 9320	368368		
2624391002	**BRGWA-5S**	EPA 9320	368368		
2624391003	**BRGWA-5I**	EPA 9320	368368		
2624391004	**BRGWA-2S**	EPA 9320	368368		
2624391005	**BRGWA-2I**	EPA 9320	368368		
2624391001	**BRGWA-6S**	Total Radium Calculation	370511		
2624391002	**BRGWA-5S**	Total Radium Calculation	370511		
2624391003	**BRGWA-5I**	Total Radium Calculation	370511		
2624391004	**BRGWA-2S**	Total Radium Calculation	370512		
2624391005	**BRGWA-2I**	Total Radium Calculation	370512		

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

WO#: 2624391

Sample ID	Matrix	Sample Code	Collected (or Composite Start) Date	Time	Composite End Date	Time	Residual Chlorine (Y/N)	Cl-, NO3, SO4	Hardness (CaCO3)
BAGWA-01	GW	G	10/15/2025	1545			L	L	2
BAGWA-02	GW	G	10/15/2025	1500			L	L	2
BAGWA-03	GW	G	10/15/2025	1540			L	L	2
BAGWA-04	GW	G	10/15/2025	1555			L	L	2
BAGWA-05	GW	G	10/15/2025	1527			L	L	2

Relinquished by Company Signature: [signature] Date/Time: 10/16/2025 Received by Company Signature: [signature] Date/Time: 10/16/25 1245

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2624395

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2624395

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2624395

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624395001	**BRGWA-6S**	Water	10/15/19 08:45	10/16/19 12:30
2624395002	**BRGWA-5S**	Water	10/15/19 09:00	10/16/19 12:30
2624395003	**BRGWA-5I**	Water	10/15/19 10:20	10/16/19 12:30
2624395004	**BRGWA-2S**	Water	10/15/19 09:55	10/16/19 12:30
2624395005	**BRGWA-2I**	Water	10/15/19 11:17	10/16/19 12:30
2624395006	**BRGWA-12S**	Water	10/15/19 12:30	10/16/19 12:30
2624395007	**BRGWA-12I**	Water	10/15/19 15:45	10/16/19 12:30
2624395008	**BRGWA-23S**	Water	10/15/19 13:42	10/16/19 12:30
2624395009	**FB-1**	Water	10/15/19 14:10	10/16/19 12:30
2624395010	**BRGWC-25I**	Water	10/15/19 15:08	10/16/19 12:30

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624395

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624395001	**BRGWA-6S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395002	**BRGWA-5S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395003	**BRGWA-5I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395004	**BRGWA-2S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395005	**BRGWA-2I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395006	**BRGWA-12S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395007	**BRGWA-12I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395008	**BRGWA-23S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624395

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395009	**FB-1**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		EPA 300.0	MWB	1
2624395010	**BRGWC-25I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-6S **Lab ID: 2624395001** Collected: 10/15/19 08:45 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.052J**	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 01:25	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 01:25	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 01:25	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 01:25	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 01:25	7440-48-4	
Iron	**0.045**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 01:25	7439-89-6	
Magnesium	**3.6**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 01:25	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 01:25	7439-96-5	
Potassium	**0.67**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 01:25	7440-09-7	
Sodium	**2.2**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 01:25	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:06	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:06	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:06	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:06	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:06	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:06	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:06	7439-96-5	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.13**	mg/L	0.020	0.020	1		10/24/19 16:44		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.62**	mg/L	0.050	0.0050	1		10/18/19 21:52	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-5S **Lab ID: 2624395002** Collected: 10/15/19 09:00 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 01:44	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 01:44	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 01:44	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 01:44	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 01:44	7440-48-4	
Iron	**0.016J**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 01:44	7439-89-6	
Magnesium	**9.6**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 01:44	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 01:44	7439-96-5	
Potassium	**1.3**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 01:44	7440-09-7	
Sodium	**4.6**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 01:44	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:25	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:25	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:25	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:25	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:25	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:25	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:25	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**92.0**	mg/L	20.0	20.0	1		10/21/19 18:34		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:34		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.13**	mg/L	0.020	0.020	1		10/24/19 16:45		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.18**	mg/L	0.050	0.0050	1		10/18/19 22:55	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-5I **Lab ID: 2624395003** Collected: 10/15/19 10:20 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 01:49	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 01:49	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 01:49	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 01:49	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 01:49	7440-48-4	
Iron	**0.024J**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 01:49	7439-89-6	
Magnesium	**9.8**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 01:49	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 01:49	7439-96-5	
Potassium	**1.4**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 01:49	7440-09-7	
Sodium	**4.7**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 01:49	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:30	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:30	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:30	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:30	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:30	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:30	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:30	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**74.0**	mg/L	20.0	20.0	1		10/21/19 18:38		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:38		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.062**	mg/L	0.020	0.020	1		10/24/19 16:46		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.22**	mg/L	0.050	0.0050	1		10/18/19 23:15	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-2S **Lab ID: 2624395004** Collected: 10/15/19 09:55 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:03	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:03	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:03	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:03	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:03	7440-48-4	
Iron	**0.055**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:03	7439-89-6	
Magnesium	**3.9**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:03	7439-95-4	
Manganese	**0.086**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:03	7439-96-5	
Potassium	**0.41**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:03	7440-09-7	
Sodium	**2.9**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:03	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:35	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:35	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:35	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:35	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:35	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:35	7439-89-6	
Manganese, Dissolved	**0.074**	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:35	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**26.0**	mg/L	20.0	20.0	1		10/21/19 18:42		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:42		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/24/19 16:47		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.23**	mg/L	0.050	0.0050	1		10/18/19 23:36	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-2I **Lab ID: 2624395005** Collected: 10/15/19 11:17 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:08	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:08	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:08	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:08	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:08	7440-48-4	
Iron	**0.65**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:08	7439-89-6	
Magnesium	**6.4**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:08	7439-95-4	
Manganese	**0.090**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:08	7439-96-5	
Potassium	**7.0**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:08	7440-09-7	
Sodium	**7.6**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:08	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:40	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:40	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:40	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:40	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:40	7440-48-4	
Iron, Dissolved	**0.028J**	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:40	7439-89-6	
Manganese, Dissolved	**0.073**	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:40	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**88.0**	mg/L	20.0	20.0	1		10/21/19 18:46		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:46		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/24/19 16:47		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.12**	mg/L	0.050	0.0050	1		10/18/19 23:57	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-12S **Lab ID: 2624395006** Collected: 10/15/19 12:30 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:13	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:13	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:13	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:13	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:13	7440-48-4	
Iron	**0.019J**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:13	7439-89-6	
Magnesium	**3.5**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:13	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:13	7439-96-5	
Potassium	**2.7**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:13	7440-09-7	
Sodium	**5.6**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:13	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:45	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:45	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:45	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:45	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:45	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:45	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:45	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**35.0**	mg/L	20.0	20.0	1		10/21/19 18:50		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:50		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/24/19 16:48		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**1.4**	mg/L	0.050	0.0050	1		10/19/19 00:17	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-12I **Lab ID: 2624395007** Collected: 10/15/19 15:45 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:18	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:18	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:18	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:18	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:18	7440-48-4	
Iron	**0.029J**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:18	7439-89-6	
Magnesium	**4.1**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:18	7439-95-4	
Manganese	**0.017J**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:18	7439-96-5	
Potassium	**3.2**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:18	7440-09-7	
Sodium	**10.3**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:18	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 21:45	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 21:45	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 21:45	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 21:45	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 21:45	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 21:45	7439-89-6	
Manganese, Dissolved	**0.016J**	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 21:45	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**84.0**	mg/L	20.0	20.0	1		10/22/19 15:53		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/22/19 15:53		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.078**	mg/L	0.020	0.020	1		10/24/19 16:49		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.47**	mg/L	0.050	0.0050	1		10/19/19 00:38	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-23S **Lab ID: 2624395008** Collected: 10/15/19 13:42 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:23	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:23	7440-41-7	
Boron	**0.023J**	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:23	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:23	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:23	7440-48-4	
Iron	**0.079**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:23	7439-89-6	
Magnesium	**4.9**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:23	7439-95-4	
Manganese	**0.068**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:23	7439-96-5	
Potassium	**3.6**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:23	7440-09-7	
Sodium	**7.7**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:23	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 21:50	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 21:50	7440-41-7	
Boron, Dissolved	**0.032J**	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 21:50	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 21:50	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 21:50	7440-48-4	
Iron, Dissolved	**0.030J**	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 21:50	7439-89-6	
Manganese, Dissolved	**0.31**	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 21:50	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**29.0**	mg/L	20.0	20.0	1		10/21/19 18:54		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:54		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/24/19 16:50		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.12**	mg/L	0.050	0.0050	1		10/19/19 00:59	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: FB-1 **Lab ID: 2624395009** Collected: 10/15/19 14:10 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.057J**	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:27	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:27	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:27	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:27	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:27	7440-48-4	
Iron	**0.47**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:27	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:27	7439-95-4	
Manganese	**0.018J**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:27	7439-96-5	
Potassium	ND	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:27	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:27	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 22:04	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 22:04	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 22:04	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 22:04	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 22:04	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 22:04	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 22:04	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/22/19 16:00		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/22/19 16:00		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.011J**	mg/L	0.050	0.0050	1		10/19/19 02:22	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWC-25I **Lab ID: 2624395010** Collected: 10/15/19 15:08 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.033J**	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:32	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:32	7440-41-7	
Boron	**1.4**	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:32	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:32	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:32	7440-48-4	
Iron	**0.43**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:32	7439-89-6	
Magnesium	**21.9**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:32	7439-95-4	
Manganese	**1.9**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:32	7439-96-5	
Potassium	**5.2**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:32	7440-09-7	
Sodium	**20.7**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:32	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 22:09	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 22:09	7440-41-7	
Boron, Dissolved	**1.2**	mg/L	0.040	0.017	1	10/22/19 12:45	10/25/19 18:22	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 22:09	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 22:09	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 22:09	7439-89-6	
Manganese, Dissolved	**1.9**	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 22:09	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**52.0**	mg/L	20.0	20.0	1		10/21/19 19:02		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 19:02		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/24/19 16:51		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.016J**	mg/L	0.050	0.0050	1		10/30/19 02:12	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

QC Batch: 37228 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009, 2624395010

METHOD BLANK: 168486 Matrix: Water
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009, 2624395010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	mg/L	ND	0.10	0.032	10/24/19 01:15	
Beryllium	mg/L	ND	0.010	0.0026	10/24/19 01:15	
Boron	mg/L	ND	0.040	0.017	10/24/19 01:15	
Cadmium	mg/L	ND	0.010	0.00090	10/24/19 01:15	
Cobalt	mg/L	ND	0.040	0.0052	10/24/19 01:15	
Iron	mg/L	ND	0.040	0.015	10/24/19 01:15	
Magnesium	mg/L	ND	0.050	0.011	10/24/19 01:15	
Manganese	mg/L	ND	0.040	0.0061	10/24/19 01:15	
Potassium	mg/L	ND	0.20	0.026	10/24/19 01:15	
Sodium	mg/L	ND	1.0	0.19	10/24/19 01:15	

LABORATORY CONTROL SAMPLE: 168487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/L	1	1.0	104	80-120	
Beryllium	mg/L	1	1.0	104	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	1	1.0	104	80-120	
Cobalt	mg/L	1	1.0	103	80-120	
Iron	mg/L	1	1.1	105	80-120	
Magnesium	mg/L	1	1.0	104	80-120	
Manganese	mg/L	1	1.0	104	80-120	
Potassium	mg/L	1	1.0	104	80-120	
Sodium	mg/L	1	1.0	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168488 168489

Parameter	Units	2624395001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/L	ND	1	1	1.1	1.1	107	106	75-125	1	20	
Beryllium	mg/L	ND	1	1	1.1	1.1	106	106	75-125	0	20	
Boron	mg/L	ND	1	1	1.1	1.1	105	107	75-125	1	20	
Cadmium	mg/L	ND	1	1	1.0	1.1	105	105	75-125	1	20	
Cobalt	mg/L	ND	1	1	1.0	1.1	105	105	75-125	0	20	
Iron	mg/L	ND	1	1	1.1	1.1	106	106	75-125	0	20	
Magnesium	mg/L	3.6	1	1	4.6	4.7	101	108	75-125	1	20	
Manganese	mg/L	ND	1	1	1.1	1.1	106	105	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168488 168489

Parameter	Units	2624395001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Potassium	mg/L	0.67	1	1	1.7	1.7	101	102	75-125	1	20	
Sodium	mg/L	2.2	1	1	3.2	3.2	98	102	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

QC Batch: 37281 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009, 2624395010

METHOD BLANK: 168657 Matrix: Water
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009, 2624395010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	mg/L	ND	0.10	0.032	10/24/19 02:47	
Beryllium, Dissolved	mg/L	ND	0.010	0.0026	10/24/19 02:47	
Boron, Dissolved	mg/L	ND	0.040	0.017	10/24/19 02:47	
Cadmium, Dissolved	mg/L	ND	0.010	0.00090	10/24/19 02:47	
Cobalt, Dissolved	mg/L	ND	0.040	0.0052	10/24/19 02:47	
Iron, Dissolved	mg/L	ND	0.040	0.015	10/24/19 02:47	
Manganese, Dissolved	mg/L	ND	0.040	0.0061	10/24/19 02:47	

LABORATORY CONTROL SAMPLE: 168658

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	mg/L	1	0.98	98	80-120	
Beryllium, Dissolved	mg/L	1	0.99	99	80-120	
Boron, Dissolved	mg/L	1	0.98	98	80-120	
Cadmium, Dissolved	mg/L	1	0.98	98	80-120	
Cobalt, Dissolved	mg/L	1	0.98	98	80-120	
Iron, Dissolved	mg/L	1	0.99	99	80-120	
Manganese, Dissolved	mg/L	1	0.99	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168659 168660

Parameter	Units	2624395001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	mg/L	ND	1	1	1.0	0.97	101	97	75-125	4	20	
Beryllium, Dissolved	mg/L	ND	1	1	1.0	0.99	102	99	75-125	3	20	
Boron, Dissolved	mg/L	ND	1	1	1.0	1.0	102	99	75-125	3	20	
Cadmium, Dissolved	mg/L	ND	1	1	1.0	0.97	101	97	75-125	4	20	
Cobalt, Dissolved	mg/L	ND	1	1	1.0	0.97	101	97	75-125	3	20	
Iron, Dissolved	mg/L	ND	1	1	1.0	0.98	100	97	75-125	3	20	
Manganese, Dissolved	mg/L	ND	1	1	1.0	0.99	102	99	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

QC Batch: 37498 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395010

METHOD BLANK: 169830 Matrix: Water
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	10/24/19 16:43	

LABORATORY CONTROL SAMPLE: 169831

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.56	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169832 169833

Parameter	Units	2624576006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.57	0.56	113	112	80-120	1	10	H1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

QC Batch: 37219 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009

METHOD BLANK: 168456 Matrix: Water
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/18/19 21:11	

LABORATORY CONTROL SAMPLE: 168457

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168458 168459

Parameter	Units	2624395001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.62	10	10	10.9	11.0	103	104	90-110	1	15	H1

MATRIX SPIKE SAMPLE: 168460

Parameter	Units	2624395002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	0.18	10	10.7	105	90-110	H1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

QC Batch: 37579 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624395010

METHOD BLANK: 170492 Matrix: Water
Associated Lab Samples: 2624395010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/30/19 01:30	

LABORATORY CONTROL SAMPLE: 170493

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170494 170495

Parameter	Units	2624395010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.016J	10	10	9.9	9.7	98	97	90-110	2	15	H1

MATRIX SPIKE SAMPLE: 170496

Parameter	Units	2624492001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	ND	10	9.9	99	90-110	H1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2624395

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

H1 Analysis conducted outside the EPA method holding time.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624395

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624395001	**BRGWA-6S**	EPA 3010A	37228	EPA 6010D	37288
2624395002	**BRGWA-5S**	EPA 3010A	37228	EPA 6010D	37288
2624395003	**BRGWA-5I**	EPA 3010A	37228	EPA 6010D	37288
2624395004	**BRGWA-2S**	EPA 3010A	37228	EPA 6010D	37288
2624395005	**BRGWA-2I**	EPA 3010A	37228	EPA 6010D	37288
2624395006	**BRGWA-12S**	EPA 3010A	37228	EPA 6010D	37288
2624395007	**BRGWA-12I**	EPA 3010A	37228	EPA 6010D	37288
2624395008	**BRGWA-23S**	EPA 3010A	37228	EPA 6010D	37288
2624395009	**FB-1**	EPA 3010A	37228	EPA 6010D	37288
2624395010	**BRGWC-25I**	EPA 3010A	37228	EPA 6010D	37288
2624395001	**BRGWA-6S**	EPA 3010A	37281	EPA 6010D	37384
2624395002	**BRGWA-5S**	EPA 3010A	37281	EPA 6010D	37384
2624395003	**BRGWA-5I**	EPA 3010A	37281	EPA 6010D	37384
2624395004	**BRGWA-2S**	EPA 3010A	37281	EPA 6010D	37384
2624395005	**BRGWA-2I**	EPA 3010A	37281	EPA 6010D	37384
2624395006	**BRGWA-12S**	EPA 3010A	37281	EPA 6010D	37384
2624395007	**BRGWA-12I**	EPA 3010A	37281	EPA 6010D	37384
2624395008	**BRGWA-23S**	EPA 3010A	37281	EPA 6010D	37384
2624395009	**FB-1**	EPA 3010A	37281	EPA 6010D	37384
2624395010	**BRGWC-25I**	EPA 3010A	37281	EPA 6010D	37384
2624395002	**BRGWA-5S**	SM 2320B	37276		
2624395003	**BRGWA-5I**	SM 2320B	37276		
2624395004	**BRGWA-2S**	SM 2320B	37276		
2624395005	**BRGWA-2I**	SM 2320B	37276		
2624395006	**BRGWA-12S**	SM 2320B	37276		
2624395007	**BRGWA-12I**	SM 2320B	37343		
2624395008	**BRGWA-23S**	SM 2320B	37276		
2624395009	**FB-1**	SM 2320B	37343		
2624395010	**BRGWC-25I**	SM 2320B	37276		
2624395001	**BRGWA-6S**	SM 4500-P	37498		
2624395002	**BRGWA-5S**	SM 4500-P	37498		
2624395003	**BRGWA-5I**	SM 4500-P	37498		
2624395004	**BRGWA-2S**	SM 4500-P	37498		
2624395005	**BRGWA-2I**	SM 4500-P	37498		
2624395006	**BRGWA-12S**	SM 4500-P	37498		
2624395007	**BRGWA-12I**	SM 4500-P	37498		
2624395008	**BRGWA-23S**	SM 4500-P	37498		
2624395010	**BRGWC-25I**	SM 4500-P	37498		
2624395001	**BRGWA-6S**	EPA 300.0	37219		
2624395002	**BRGWA-5S**	EPA 300.0	37219		
2624395003	**BRGWA-5I**	EPA 300.0	37219		
2624395004	**BRGWA-2S**	EPA 300.0	37219		
2624395005	**BRGWA-2I**	EPA 300.0	37219		
2624395006	**BRGWA-12S**	EPA 300.0	37219		
2624395007	**BRGWA-12I**	EPA 300.0	37219		

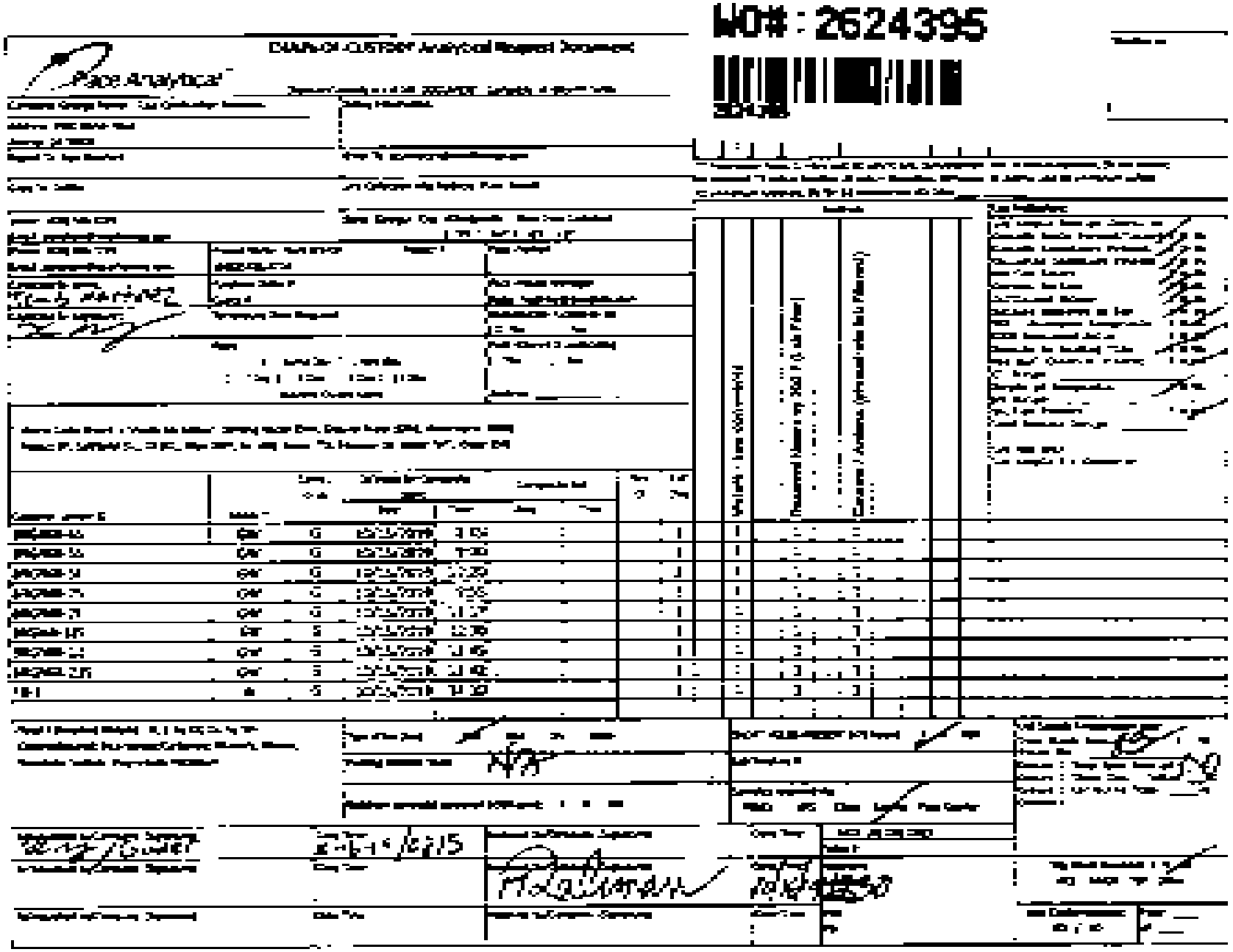
REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624395

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624395008	**BRGWA-23S**	EPA 300.0	37219		
2624395009	**FB-1**	EPA 300.0	37219		
2624395010	**BRGWC-25I**	EPA 300.0	37579		


WO#: 2624395
Pace Analytical

Sample Condition Upon Receipt

Pace Analytical

Client Name: Gra Power

Project #

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

Cooler Temperature: 1.0 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/16/19 DAR

Comments:

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

Client Notification/ Resolution:

Person Contacted: Date/Time:

Comments/ Resolution: 10860C-25T collected on 10/15/19 @ 1500 for Rad, Metals, Diss. Metals, IC-300 and TDS. Five containers labels had present but was not listed on the COC. Test was added to the requirements per Client's request.

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 container).

F-ALL-Q-020rev.07, 15August2008

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2624484

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 17, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2624484

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2624484

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624484001	**BRGWC-33S**	Water	10/16/19 09:48	10/17/19 11:35
2624484002	**BRGWC-34S**	Water	10/16/19 10:46	10/17/19 11:35
2624484003	**BRGWC-35S**	Water	10/16/19 12:02	10/17/19 11:35
2624484004	**BRGWC-37S**	Water	10/16/19 13:10	10/17/19 11:35
2624484005	**BRGWC-38S**	Water	10/16/19 14:45	10/17/19 11:35
2624484006	**Dup-1**	Water	10/16/19 00:00	10/17/19 11:35
2624484007	**EB-1**	Water	10/16/19 11:00	10/17/19 11:35
2624484008	**FB-2**	Water	10/16/19 13:05	10/17/19 11:35

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624484

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624484001	**BRGWC-33S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484002	**BRGWC-34S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484003	**BRGWC-35S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484004	**BRGWC-37S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484005	**BRGWC-38S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484006	**Dup-1**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484007	**EB-1**	EPA 6020B	CSW	14
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624484008	**FB-2**	EPA 6020B	CSW	14
		SM 2540C	MZP	1
		EPA 300.0	MWB	3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: BRGWC-33S **Lab ID: 2624484001** Collected: 10/16/19 09:48 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 23:04	7440-36-0	
Arsenic	**0.00056J**	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 23:04	7440-38-2	B
Barium	**0.019**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 23:04	7440-39-3	
Beryllium	**0.0018J**	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 23:04	7440-41-7	
Boron	**1.1**	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 23:04	7440-42-8	
Cadmium	**0.00039J**	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 23:04	7440-43-9	
Calcium	**46.5**	mg/L	5.0	0.55	50	10/20/19 16:44	10/22/19 23:09	7440-70-2	
Chromium	**0.00049J**	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 23:04	7440-47-3	
Cobalt	**0.042**	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 23:04	7440-48-4	
Lead	**0.000088J**	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 23:04	7439-92-1	
Lithium	**0.0098J**	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 23:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 23:04	7439-98-7	
Selenium	**0.0028J**	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 23:04	7782-49-2	
Thallium	**0.00019J**	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 23:04	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**281**	mg/L	10.0	10.0	1		10/22/19 13:14		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.4**	mg/L	1.0	0.024	1		10/24/19 17:04	16887-00-6	
Fluoride	**0.17J**	mg/L	0.30	0.029	1		10/24/19 17:04	16984-48-8	
Sulfate	**226**	mg/L	20.0	0.34	20		10/25/19 03:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: BRGWC-34S **Lab ID: 2624484002** Collected: 10/16/19 10:46 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 23:15	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 23:15	7440-38-2	
Barium	**0.022**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 23:15	7440-39-3	
Beryllium	**0.00014J**	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 23:15	7440-41-7	
Boron	**2.3**	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 23:15	7440-42-8	
Cadmium	**0.00040J**	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 23:15	7440-43-9	
Calcium	**78.2**	mg/L	5.0	0.55	50	10/20/19 16:44	10/22/19 23:21	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 23:15	7440-47-3	
Cobalt	**0.0043J**	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 23:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 23:15	7439-92-1	
Lithium	**0.00078J**	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 23:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 23:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 23:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 23:15	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**473**	mg/L	10.0	10.0	1		10/22/19 13:14		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**7.3**	mg/L	1.0	0.024	1		10/24/19 18:08	16887-00-6	
Fluoride	**0.13J**	mg/L	0.30	0.029	1		10/24/19 18:08	16984-48-8	
Sulfate	**325**	mg/L	20.0	0.34	20		10/25/19 03:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: BRGWC-35S **Lab ID: 2624484003** Collected: 10/16/19 12:02 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 18:43	7440-36-0	
Arsenic	**0.00040J**	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 18:43	7440-38-2	
Barium	**0.037**	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 18:43	7440-39-3	
Beryllium	**0.00015J**	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 18:43	7440-41-7	
Boron	**2.2**	mg/L	2.0	0.25	50	10/21/19 16:03	10/23/19 18:49	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 18:43	7440-43-9	
Calcium	**61.2**	mg/L	5.0	0.55	50	10/21/19 16:03	10/23/19 18:49	7440-70-2	M6
Chromium	**0.0064J**	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 18:43	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 18:43	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 18:43	7439-92-1	
Lithium	**0.0022J**	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 18:43	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 18:43	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 18:43	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 18:43	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**481**	mg/L	10.0	10.0	1		10/22/19 13:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.6**	mg/L	1.0	0.024	1		10/24/19 18:29	16887-00-6	
Fluoride	**0.080J**	mg/L	0.30	0.029	1		10/24/19 18:29	16984-48-8	
Sulfate	**277**	mg/L	20.0	0.34	20		10/25/19 04:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: BRGWC-37S **Lab ID: 2624484004** Collected: 10/16/19 13:10 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 19:34	7440-36-0	
Arsenic	**0.00078J**	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 19:34	7440-38-2	
Barium	**0.024**	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 19:34	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 19:34	7440-41-7	
Boron	**0.0055J**	mg/L	0.040	0.0049	1	10/21/19 16:03	10/23/19 19:34	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 19:34	7440-43-9	
Calcium	**3.4**	mg/L	0.10	0.011	1	10/21/19 16:03	10/23/19 19:34	7440-70-2	
Chromium	**0.0014J**	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 19:34	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 19:34	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 19:34	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 19:34	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 19:34	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 19:34	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 19:34	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**49.0**	mg/L	10.0	10.0	1		10/22/19 13:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.3**	mg/L	1.0	0.024	1		10/24/19 18:50	16887-00-6	
Fluoride	**0.059J**	mg/L	0.30	0.029	1		10/24/19 18:50	16984-48-8	
Sulfate	**0.29J**	mg/L	1.0	0.017	1		10/24/19 18:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: BRGWC-38S **Lab ID: 2624484005** Collected: 10/16/19 14:45 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 19:46	7440-36-0	
Arsenic	**0.0024J**	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 19:46	7440-38-2	
Barium	**0.015**	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 19:46	7440-39-3	
Beryllium	**0.0079**	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 19:46	7440-41-7	
Boron	**1.5**	mg/L	0.040	0.0049	1	10/21/19 16:03	10/23/19 19:46	7440-42-8	
Cadmium	**0.00057J**	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 19:46	7440-43-9	
Calcium	**38.4**	mg/L	5.0	0.55	50	10/21/19 16:03	10/23/19 19:52	7440-70-2	
Chromium	**0.0038J**	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 19:46	7440-47-3	
Cobalt	**0.21**	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 19:46	7440-48-4	
Lead	**0.00035J**	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 19:46	7439-92-1	
Lithium	**0.020J**	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 19:46	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 19:46	7439-98-7	
Selenium	**0.033**	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 19:46	7782-49-2	
Thallium	**0.00020J**	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 19:46	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**630**	mg/L	10.0	10.0	1		10/22/19 13:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.4**	mg/L	1.0	0.024	1		10/24/19 19:11	16887-00-6	
Fluoride	**0.61**	mg/L	0.30	0.029	1		10/24/19 19:11	16984-48-8	
Sulfate	**432**	mg/L	20.0	0.34	20		10/25/19 04:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: Dup-1 **Lab ID: 2624484006** Collected: 10/16/19 00:00 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 19:57	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 19:57	7440-38-2	
Barium	**0.023**	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 19:57	7440-39-3	
Beryllium	**0.00013J**	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 19:57	7440-41-7	
Boron	**2.4**	mg/L	2.0	0.25	50	10/21/19 16:03	10/23/19 20:03	7440-42-8	
Cadmium	**0.00040J**	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 19:57	7440-43-9	
Calcium	**81.4**	mg/L	5.0	0.55	50	10/21/19 16:03	10/23/19 20:03	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 19:57	7440-47-3	
Cobalt	**0.0043J**	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 19:57	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 19:57	7439-92-1	
Lithium	**0.00079J**	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 19:57	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 19:57	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 19:57	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 19:57	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/22/19 13:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**7.5**	mg/L	1.0	0.024	1		10/24/19 19:33	16887-00-6	
Fluoride	**0.13J**	mg/L	0.30	0.029	1		10/24/19 19:33	16984-48-8	
Sulfate	**317**	mg/L	20.0	0.34	20		10/25/19 04:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: EB-1 **Lab ID: 2624484007** Collected: 10/16/19 11:00 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 20:09	7440-36-0	
Arsenic	**0.00079J**	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 20:09	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 20:09	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 20:09	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/21/19 16:03	10/23/19 20:09	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 20:09	7440-43-9	
Calcium	**0.018J**	mg/L	0.10	0.011	1	10/21/19 16:03	10/23/19 20:09	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 20:09	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 20:09	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 20:09	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 20:09	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 20:09	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 20:09	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 20:09	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/23/19 15:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**0.059J**	mg/L	1.0	0.024	1		10/24/19 19:54	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		10/24/19 19:54	16984-48-8	
Sulfate	**0.042J**	mg/L	1.0	0.017	1		10/24/19 19:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: FB-2 **Lab ID: 2624484008** Collected: 10/16/19 13:05 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 20:15	7440-36-0	
Arsenic	**0.0011J**	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 20:15	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 20:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 20:15	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/21/19 16:03	10/23/19 20:15	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 20:15	7440-43-9	
Calcium	**0.019J**	mg/L	0.10	0.011	1	10/21/19 16:03	10/23/19 20:15	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 20:15	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 20:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 20:15	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 20:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 20:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 20:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 20:15	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**16.0**	mg/L	10.0	10.0	1		10/23/19 15:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**0.034J**	mg/L	1.0	0.024	1		10/24/19 21:21	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		10/24/19 21:21	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/24/19 21:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

QC Batch: 37136 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624484001, 2624484002

METHOD BLANK: 167849 Matrix: Water
Associated Lab Samples: 2624484001, 2624484002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/22/19 18:23	
Arsenic	mg/L	0.00059J	0.0050	0.00035	10/22/19 18:23	
Barium	mg/L	ND	0.010	0.00049	10/22/19 18:23	
Beryllium	mg/L	ND	0.0030	0.000074	10/22/19 18:23	
Boron	mg/L	ND	0.040	0.0049	10/22/19 18:23	
Cadmium	mg/L	ND	0.0025	0.00011	10/22/19 18:23	
Calcium	mg/L	ND	0.10	0.011	10/22/19 18:23	
Chromium	mg/L	ND	0.010	0.00039	10/22/19 18:23	
Cobalt	mg/L	ND	0.0050	0.00030	10/22/19 18:23	
Lead	mg/L	ND	0.0050	0.000046	10/22/19 18:23	
Lithium	mg/L	ND	0.030	0.00078	10/22/19 18:23	
Molybdenum	mg/L	ND	0.010	0.00095	10/22/19 18:23	
Selenium	mg/L	ND	0.010	0.0013	10/22/19 18:23	
Thallium	mg/L	ND	0.0010	0.000052	10/22/19 18:23	

LABORATORY CONTROL SAMPLE: 167850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.098	98	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	0.099	99	80-120	
Boron	mg/L	1	0.96	96	80-120	
Cadmium	mg/L	0.1	0.097	97	80-120	
Calcium	mg/L	1	0.96	96	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.095	95	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	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168476 168477

Parameter	Units	2624389004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.098	0.097	97	97	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168476 168477

Parameter	Units	2624389004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.00063J	0.1	0.1	0.095	0.098	95	97	75-125	3	20	
Barium	mg/L	0.0091J	0.1	0.1	0.11	0.11	100	103	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.092	0.094	92	94	75-125	2	20	
Boron	mg/L	ND	1	1	0.89	0.94	88	93	75-125	6	20	
Cadmium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	0	20	
Calcium	mg/L	3.7	1	1	4.5	4.5	88	82	75-125	1	20	
Chromium	mg/L	0.0083J	0.1	0.1	0.11	0.11	97	100	75-125	2	20	
Cobalt	mg/L	0.00097J	0.1	0.1	0.096	0.096	95	95	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.095	0.098	95	98	75-125	3	20	
Lithium	mg/L	ND	0.1	0.1	0.092	0.094	91	93	75-125	3	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.093	0.10	93	100	75-125	7	20	
Thallium	mg/L	ND	0.1	0.1	0.095	0.098	95	98	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

QC Batch: 37286 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624484003, 2624484004, 2624484005, 2624484006, 2624484007, 2624484008

METHOD BLANK: 168679 Matrix: Water
Associated Lab Samples: 2624484003, 2624484004, 2624484005, 2624484006, 2624484007, 2624484008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/23/19 18:31	
Arsenic	mg/L	ND	0.0050	0.00035	10/23/19 18:31	
Barium	mg/L	ND	0.010	0.00049	10/23/19 18:31	
Beryllium	mg/L	ND	0.0030	0.000074	10/23/19 18:31	
Boron	mg/L	ND	0.040	0.0049	10/23/19 18:31	
Cadmium	mg/L	ND	0.0025	0.00011	10/23/19 18:31	
Calcium	mg/L	ND	0.10	0.011	10/23/19 18:31	
Chromium	mg/L	ND	0.010	0.00039	10/23/19 18:31	
Cobalt	mg/L	ND	0.0050	0.00030	10/23/19 18:31	
Lead	mg/L	ND	0.0050	0.000046	10/23/19 18:31	
Lithium	mg/L	ND	0.030	0.00078	10/23/19 18:31	
Molybdenum	mg/L	ND	0.010	0.00095	10/23/19 18:31	
Selenium	mg/L	ND	0.010	0.0013	10/23/19 18:31	
Thallium	mg/L	ND	0.0010	0.000052	10/23/19 18:31	

LABORATORY CONTROL SAMPLE: 168680

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	0.10	101	80-120	
Beryllium	mg/L	0.1	0.10	103	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Selenium	mg/L	0.1	0.095	95	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168681 168682

Parameter	Units	2624484003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	100	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168681 168682

Parameter	Units	2624484003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.00040J	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Barium	mg/L	0.037	0.1	0.1	0.15	0.14	109	107	75-125	1	20	
Beryllium	mg/L	0.00015J	0.1	0.1	0.095	0.094	95	94	75-125	0	20	
Boron	mg/L	2.2	1	1	3.1	3.1	90	90	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	1	20	
Calcium	mg/L	61.2	1	1	62.7	66.1	145	485	75-125	5	20	M6
Chromium	mg/L	0.0064J	0.1	0.1	0.11	0.10	100	98	75-125	2	20	
Cobalt	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20	
Lithium	mg/L	0.0022J	0.1	0.1	0.096	0.095	94	93	75-125	1	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.096	0.096	96	95	75-125	0	20	
Thallium	mg/L	ND	0.1	0.1	0.098	0.098	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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

QC Batch: 37331 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624484001, 2624484002, 2624484003, 2624484004, 2624484005, 2624484006

LABORATORY CONTROL SAMPLE: 168856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	399	100	84-108	

SAMPLE DUPLICATE: 168857

Parameter	Units	2624541001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	237	249	5	10	

SAMPLE DUPLICATE: 168858

Parameter	Units	2624432004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	67.0	69.0	3	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

QC Batch: 37419 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624484007, 2624484008

LABORATORY CONTROL SAMPLE: 169291

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	391	98	84-108	

SAMPLE DUPLICATE: 169292

Parameter	Units	2624484007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 169293

Parameter	Units	2624491004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	500	501	0	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

QC Batch: 37461 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624484001, 2624484002, 2624484003, 2624484004, 2624484005, 2624484006, 2624484007, 2624484008

METHOD BLANK: 169631 Matrix: Water
Associated Lab Samples: 2624484001, 2624484002, 2624484003, 2624484004, 2624484005, 2624484006, 2624484007, 2624484008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.043J	1.0	0.024	10/24/19 16:21	
Fluoride	mg/L	ND	0.30	0.029	10/24/19 16:21	
Sulfate	mg/L	ND	1.0	0.017	10/24/19 16:21	

LABORATORY CONTROL SAMPLE: 169632

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.6	106	90-110	
Fluoride	mg/L	10	10.9	109	90-110	
Sulfate	mg/L	10	10.4	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169633 169634

Parameter	Units	2624484001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.4	10	10	15.3	15.3	99	100	90-110	0	15	
Fluoride	mg/L	0.17J	10	10	11.1	11.1	110	110	90-110	0	15	

MATRIX SPIKE SAMPLE: 169635

Parameter	Units	2624487002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.6	10	14.7	101	90-110	
Fluoride	mg/L	0.076J	10	10.6	106	90-110	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2624484

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.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624484

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624484001	**BRGWC-33S**	EPA 3005A	37136	EPA 6020B	37255
2624484002	**BRGWC-34S**	EPA 3005A	37136	EPA 6020B	37255
2624484003	**BRGWC-35S**	EPA 3005A	37286	EPA 6020B	37308
2624484004	**BRGWC-37S**	EPA 3005A	37286	EPA 6020B	37308
2624484005	**BRGWC-38S**	EPA 3005A	37286	EPA 6020B	37308
2624484006	**Dup-1**	EPA 3005A	37286	EPA 6020B	37308
2624484007	**EB-1**	EPA 3005A	37286	EPA 6020B	37308
2624484008	**FB-2**	EPA 3005A	37286	EPA 6020B	37308
2624484001	**BRGWC-33S**	SM 2540C	37331		
2624484002	**BRGWC-34S**	SM 2540C	37331		
2624484003	**BRGWC-35S**	SM 2540C	37331		
2624484004	**BRGWC-37S**	SM 2540C	37331		
2624484005	**BRGWC-38S**	SM 2540C	37331		
2624484006	**Dup-1**	SM 2540C	37331		
2624484007	**EB-1**	SM 2540C	37419		
2624484008	**FB-2**	SM 2540C	37419		
2624484001	**BRGWC-33S**	EPA 300.0	37461		
2624484002	**BRGWC-34S**	EPA 300.0	37461		
2624484003	**BRGWC-35S**	EPA 300.0	37461		
2624484004	**BRGWC-37S**	EPA 300.0	37461		
2624484005	**BRGWC-38S**	EPA 300.0	37461		
2624484006	**Dup-1**	EPA 300.0	37461		
2624484007	**EB-1**	EPA 300.0	37461		
2624484008	**FB-2**	EPA 300.0	37461		

WO#: 2624484

CHAIN-OF-CUSTODY Analytical Request Document

For Lab Use Only

Sample ID	Matrix	Sample Type	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	# of Containers	Methanol Preserved VOC Vials	Ethanol Preserved VOC Vials	Acidified VOC Vials	Unpreserved VOC Vials
SB6GWC-SB5	GW	G	10/15/2019	9:48			5	3	1	1	
SB6GWC-SB6	GW	G	10/15/2019	10:45			5	2	2	1	
SB6GWC-SB7	GW	G	10/16/2019	12:02			4	2	2	2	
SB6GWC-SB8	GW	G	10/16/2019	13:39			4	2	2	2	
SB6GWC-SB9	GW	G	10/16/2019	14:45			4	2	2	2	
DUP-1	GW	G	10/16/2019	–			4	2	2	2	
EB-1	W	G	10/16/2019	11:20			4	1	1	2	
FB-2	W	G	10/15/2019	15:05			4	1	1	2	

Page 22 of 23

Sample Condition Upon Receipt

Pace Analytical

Client Name: [illegible] Project #

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: [illegible] Type of Ice: ☑ Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature: [illegible] Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: 7/16/19

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

3000 Vials

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 DENR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect container).

F-ALL-C01 rev 3, 11Septembe 2006

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

November 14, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2624486

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 17, 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: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2624486

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2624486

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624486001	**BRGWC-33S**	Water	10/16/19 09:48	10/17/19 11:35
2624486002	**BRGWC-34S**	Water	10/16/19 10:46	10/17/19 11:35
2624486003	**BRGWC-35S**	Water	10/16/19 12:02	10/17/19 11:35
2624486004	**BRGWC-37S**	Water	10/16/19 13:10	10/17/19 11:35
2624486005	**BRGWC-38S**	Water	10/16/19 14:45	10/17/19 11:35
2624486006	**Dup-1**	Water	10/16/19 00:00	10/17/19 11:35
2624486007	**EB-1**	Water	10/16/19 11:00	10/17/19 11:35
2624486008	**FB-2**	Water	10/16/19 13:05	10/17/19 11:35

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624486

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624486001	**BRGWC-33S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486002	**BRGWC-34S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486003	**BRGWC-35S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486004	**BRGWC-37S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486005	**BRGWC-38S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486006	**Dup-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486007	**EB-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486008	**FB-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: BRGWC-33S **Lab ID: 2624486001** Collected: 10/16/19 09:48 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.474 ± 0.268 (0.357) C:95% T:NA**	pCi/L	11/06/19 07:22	13982-63-3	
Radium-228	EPA 9320	**0.682 ± 0.524 (1.03) C:76% T:74%**	pCi/L	11/06/19 17:28	15262-20-1	
Total Radium	Total Radium Calculation	**1.16 ± 0.792 (1.39)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: BRGWC-34S **Lab ID: 2624486002** Collected: 10/16/19 10:46 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.192 ± 0.231 (0.473) C:91% T:NA**	pCi/L	11/06/19 07:22	13982-63-3	
Radium-228	EPA 9320	**0.369 ± 0.405 (0.846) C:75% T:92%**	pCi/L	11/06/19 17:29	15262-20-1	
Total Radium	Total Radium Calculation	**0.561 ± 0.636 (1.32)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: BRGWC-35S **Lab ID: 2624486003** Collected: 10/16/19 12:02 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.523 ± 0.306 (0.453) C:94% T:NA**	pCi/L	11/06/19 07:22	13982-63-3	
Radium-228	EPA 9320	**1.17 ± 0.548 (0.942) C:76% T:87%**	pCi/L	11/06/19 17:31	15262-20-1	
Total Radium	Total Radium Calculation	**1.69 ± 0.854 (1.40)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: BRGWC-37S **Lab ID: 2624486004** Collected: 10/16/19 13:10 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.403 ± 0.313 (0.576) C:96% T:NA**	pCi/L	11/06/19 07:22	13982-63-3	
Radium-228	EPA 9320	**0.412 ± 0.399 (0.818) C:73% T:94%**	pCi/L	11/06/19 17:31	15262-20-1	
Total Radium	Total Radium Calculation	**0.815 ± 0.712 (1.39)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: BRGWC-38S **Lab ID: 2624486005** Collected: 10/16/19 14:45 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.539 ± 0.306 (0.446) C:92% T:NA**	pCi/L	11/06/19 08:52	13982-63-3	
Radium-228	EPA 9320	**2.12 ± 0.687 (0.928) C:77% T:86%**	pCi/L	11/06/19 17:31	15262-20-1	
Total Radium	Total Radium Calculation	**2.66 ± 0.993 (1.37)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: Dup-1 **Lab ID: 2624486006** Collected: 10/16/19 00:00 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.698 ± 0.332 (0.404) C:95% T:NA**	pCi/L	11/06/19 07:33	13982-63-3	
Radium-228	EPA 9320	**1.34 ± 0.495 (0.721) C:77% T:94%**	pCi/L	11/06/19 17:31	15262-20-1	
Total Radium	Total Radium Calculation	**2.04 ± 0.827 (1.13)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: EB-1 **Lab ID: 2624486007** Collected: 10/16/19 11:00 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.414 ± 0.255 (0.296) C:88% T:NA**	pCi/L	11/06/19 07:34	13982-63-3	
Radium-228	EPA 9320	**2.21 ± 0.691 (0.922) C:86% T:68%**	pCi/L	11/11/19 11:03	15262-20-1	
Total Radium	Total Radium Calculation	**2.62 ± 0.946 (1.22)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: FB-2 **Lab ID: 2624486008** Collected: 10/16/19 13:05 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.473 ± 0.298 (0.428) C:87% T:NA**	pCi/L	11/06/19 07:34	13982-63-3	
Radium-228	EPA 9320	**0.455 ± 0.495 (1.03) C:75% T:80%**	pCi/L	11/06/19 17:29	15262-20-1	
Total Radium	Total Radium Calculation	**0.928 ± 0.793 (1.46)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

QC Batch: 368259 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2624486001, 2624486002, 2624486003, 2624486004, 2624486005, 2624486006, 2624486007, 2624486008

METHOD BLANK: 1786863 Matrix: Water
Associated Lab Samples: 2624486001, 2624486002, 2624486003, 2624486004, 2624486005, 2624486006, 2624486007, 2624486008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.306 ± 0.244 (0.419) C:96% T:NA	pCi/L	11/06/19 08:02	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

QC Batch: 368258 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2624486001, 2624486002, 2624486003, 2624486004, 2624486005, 2624486006, 2624486007, 2624486008

METHOD BLANK: 1786861 Matrix: Water
Associated Lab Samples: 2624486001, 2624486002, 2624486003, 2624486004, 2624486005, 2624486006, 2624486007, 2624486008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0170 ± 0.384 (0.894) C:77% T:79%	pCi/L	11/06/19 17:17	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2624486

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624486

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624486001	**BRGWC-33S**	EPA 9315	368259		
2624486002	**BRGWC-34S**	EPA 9315	368259		
2624486003	**BRGWC-35S**	EPA 9315	368259		
2624486004	**BRGWC-37S**	EPA 9315	368259		
2624486005	**BRGWC-38S**	EPA 9315	368259		
2624486006	**Dup-1**	EPA 9315	368259		
2624486007	**EB-1**	EPA 9315	368259		
2624486008	**FB-2**	EPA 9315	368259		
2624486001	**BRGWC-33S**	EPA 9320	368258		
2624486002	**BRGWC-34S**	EPA 9320	368258		
2624486003	**BRGWC-35S**	EPA 9320	368258		
2624486004	**BRGWC-37S**	EPA 9320	368258		
2624486005	**BRGWC-38S**	EPA 9320	368258		
2624486006	**Dup-1**	EPA 9320	368258		
2624486007	**EB-1**	EPA 9320	368258		
2624486008	**FB-2**	EPA 9320	368258		
2624486001	**BRGWC-33S**	Total Radium Calculation	370511		
2624486002	**BRGWC-34S**	Total Radium Calculation	370511		
2624486003	**BRGWC-35S**	Total Radium Calculation	370511		
2624486004	**BRGWC-37S**	Total Radium Calculation	370511		
2624486005	**BRGWC-38S**	Total Radium Calculation	370511		
2624486006	**Dup-1**	Total Radium Calculation	370511		
2624486007	**EB-1**	Total Radium Calculation	370511		
2624486008	**FB-2**	Total Radium Calculation	370511		

WO# : 2624486

CHAIN-OF-CUSTODY Analytical Request Document

LAB USE ONLY

Sample ID	Matrix	Comp. / Grab	Collection Date	Collection Time	Containers Rec'd Date	Containers Rec'd Time	No. of Containers	Volume
[illegible]	GW	G	[illegible]	9:48			6	
[illegible]	GW	G	[illegible]	10:45			5	
[illegible]	GW	G	[illegible]	11:00			6	
[illegible]	GW	G	[illegible]	13:30			6	
[illegible]	GW	G	[illegible]	14:45			6	
DUP-1	GW	G	[illegible]	—			6	
FB-1	W	G	[illegible]	11:00			6	
FB-2	W	G	[illegible]	13:25			6	

Acetone
Methylene Chloride
Chloroform, Dichloromethane, Trichloroethene, TCE
Naphthalene, 1,2,4-TMB

[illegible]

Sample Condition Upon Receipt

Pace Analytical

Client Name: Groundwater Protection Project #

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°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/24/19 AB

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

3000 WTR

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 DENR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

F-ALL-C030rev.3, 11November2008

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2624678

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 18, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2624678

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2624678

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624678001	**BRGWC-17S**	Water	10/17/19 10:45	10/18/19 15:00
2624678002	**BRGWC-36S**	Water	10/17/19 12:38	10/18/19 15:00
2624678003	**BRGWC-27I**	Water	10/17/19 09:50	10/18/19 15:00
2624678004	**BRGWC-30I**	Water	10/17/19 12:00	10/18/19 15:00
2624678005	**BRGWC-32S**	Water	10/17/19 10:50	10/18/19 15:00
2624678006	**BRGWC-45**	Water	10/17/19 14:08	10/18/19 15:00
2624678007	**EB-2**	Water	10/17/19 13:00	10/18/19 15:00
2624678008	**EB-3**	Water	10/17/19 14:41	10/18/19 15:00
2624678009	**FB-3**	Water	10/17/19 14:13	10/18/19 15:00
2624678010	**DUP-3**	Water	10/17/19 00:00	10/18/19 15:00

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624678

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624678001	**BRGWC-17S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678002	**BRGWC-36S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678003	**BRGWC-27I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678004	**BRGWC-30I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678005	**BRGWC-32S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678006	**BRGWC-45**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678007	**EB-2**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678008	**EB-3**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624678

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678009	**FB-3**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678010	**DUP-3**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-17S **Lab ID: 2624678001** Collected: 10/17/19 10:45 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:06	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:06	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:06	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:06	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:06	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:06	7439-89-6	
Magnesium	**21.1**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:06	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:06	7439-96-5	
Potassium	**1.1**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:06	7440-09-7	
Sodium	**22.1**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:06	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 09:54	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 09:54	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 09:54	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 09:54	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 09:54	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 09:54	7439-89-6	
Magnesium, Dissolved	**21.5**	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 09:54	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 09:54	7439-96-5	
Potassium, Dissolved	**1.1**	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 09:54	7440-09-7	
Sodium, Dissolved	**22.0**	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 09:54	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**75.0**	mg/L	20.0	20.0	1		10/25/19 14:56		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/25/19 14:56		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.15**	mg/L	0.020	0.020	1		10/25/19 19:58		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.065**	mg/L	0.050	0.0050	1		10/24/19 02:59	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-36S **Lab ID: 2624678002** Collected: 10/17/19 12:38 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:11	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:11	7440-41-7	
Boron	**1.1**	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:11	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:11	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:11	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:11	7439-89-6	
Magnesium	**22.1**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:11	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:11	7439-96-5	
Potassium	**4.1**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:11	7440-09-7	
Sodium	**38.9**	mg/L	10.0	1.9	10	10/25/19 16:05	10/31/19 21:46	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 09:59	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 09:59	7440-41-7	
Boron, Dissolved	**1.1**	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 09:59	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 09:59	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 09:59	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 09:59	7439-89-6	
Magnesium, Dissolved	**23.0**	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 09:59	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 09:59	7439-96-5	
Potassium, Dissolved	**4.0**	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 09:59	7440-09-7	
Sodium, Dissolved	**36.6**	mg/L	10.0	1.9	10	11/01/19 17:23	11/05/19 17:18	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**16.0**	mg/L	1.0	1.0	1		10/28/19 11:44		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:44		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.19**	mg/L	0.020	0.020	1		10/25/19 19:59		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.035J**	mg/L	0.050	0.0050	1		10/30/19 07:30	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-27I **Lab ID: 2624678003** Collected: 10/17/19 09:50 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:16	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:16	7440-41-7	
Boron	**0.97**	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:16	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:16	7440-43-9	
Cobalt	**0.0090J**	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:16	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:16	7439-89-6	
Magnesium	**6.6**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:16	7439-95-4	
Manganese	**0.85**	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:16	7439-96-5	
Potassium	**5.9**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:16	7440-09-7	
Sodium	**17.4**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:16	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:04	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:04	7440-41-7	
Boron, Dissolved	**0.98**	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:04	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:04	7440-43-9	
Cobalt, Dissolved	**0.011J**	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:04	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:04	7439-89-6	
Magnesium, Dissolved	**7.1**	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:04	7439-95-4	
Manganese, Dissolved	**0.91**	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:04	7439-96-5	
Potassium, Dissolved	**6.2**	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:04	7440-09-7	
Sodium, Dissolved	**18.0**	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 10:04	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**16.5**	mg/L	1.0	1.0	1		10/28/19 11:49		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:49		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/25/19 20:00		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/24/19 02:37	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-30I **Lab ID: 2624678004** Collected: 10/17/19 12:00 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:24	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:24	7440-41-7	
Boron	**1.7**	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:24	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:24	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:24	7440-48-4	
Iron	**0.68**	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:24	7439-89-6	
Magnesium	**29.8**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:24	7439-95-4	
Manganese	**0.43**	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:24	7439-96-5	
Potassium	**4.4**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:24	7440-09-7	
Sodium	**26.7**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:24	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:08	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:08	7440-41-7	
Boron, Dissolved	**1.7**	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:08	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:08	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:08	7440-48-4	
Iron, Dissolved	**0.036J**	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:08	7439-89-6	
Magnesium, Dissolved	**32.5**	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:08	7439-95-4	
Manganese, Dissolved	**0.46**	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:08	7439-96-5	
Potassium, Dissolved	**4.5**	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:08	7440-09-7	
Sodium, Dissolved	**26.7**	mg/L	10.0	1.9	10	11/01/19 17:23	11/05/19 17:23	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**72.0**	mg/L	20.0	20.0	1		10/25/19 15:16		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/25/19 15:16		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.035**	mg/L	0.020	0.020	1		10/25/19 20:01		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.034J**	mg/L	0.050	0.0050	1		10/24/19 03:43	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-32S **Lab ID: 2624678005** Collected: 10/17/19 10:50 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:29	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:29	7440-41-7	
Boron	**1.5**	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:29	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:29	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:29	7440-48-4	
Iron	**0.067**	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:29	7439-89-6	
Magnesium	**37.9**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:29	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:29	7439-96-5	
Potassium	**1.8**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:29	7440-09-7	
Sodium	**28.9**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:29	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 18:00	11/03/19 11:07	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 18:00	11/03/19 11:07	7440-41-7	
Boron, Dissolved	**1.4**	mg/L	0.040	0.017	1	11/01/19 18:00	11/03/19 11:07	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 18:00	11/03/19 11:07	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 18:00	11/03/19 11:07	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 18:00	11/03/19 11:07	7439-89-6	
Magnesium, Dissolved	**38.6**	mg/L	0.050	0.011	1	11/01/19 18:00	11/03/19 11:07	7439-95-4	M1
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 18:00	11/03/19 11:07	7439-96-5	
Potassium, Dissolved	**1.7**	mg/L	0.20	0.026	1	11/01/19 18:00	11/03/19 11:07	7440-09-7	
Sodium, Dissolved	**28.1**	mg/L	1.0	0.19	1	11/01/19 18:00	11/03/19 11:07	7440-23-5	M1
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**21.0**	mg/L	20.0	20.0	1		10/25/19 15:20		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/25/19 15:20		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.063**	mg/L	0.020	0.020	1		10/25/19 20:03		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.13**	mg/L	0.050	0.0050	1		10/24/19 03:21	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-45 **Lab ID: 2624678006** Collected: 10/17/19 14:08 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:33	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:33	7440-41-7	
Boron	**0.064**	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:33	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:33	7440-43-9	
Cobalt	**0.0096J**	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:33	7440-48-4	
Iron	**0.34**	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:33	7439-89-6	
Magnesium	**19.0**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:33	7439-95-4	
Manganese	**0.37**	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:33	7439-96-5	
Potassium	**4.9**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:33	7440-09-7	
Sodium	**18.7**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:33	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:13	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:13	7440-41-7	
Boron, Dissolved	**0.065**	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:13	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:13	7440-43-9	
Cobalt, Dissolved	**0.0098J**	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:13	7440-48-4	
Iron, Dissolved	**0.25**	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:13	7439-89-6	
Magnesium, Dissolved	**19.6**	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:13	7439-95-4	
Manganese, Dissolved	**0.39**	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:13	7439-96-5	
Potassium, Dissolved	**4.9**	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:13	7440-09-7	
Sodium, Dissolved	**18.9**	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 10:13	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**42.0**	mg/L	20.0	20.0	1		10/25/19 15:24		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/25/19 15:24		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/25/19 20:03		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.056**	mg/L	0.050	0.0050	1		10/24/19 04:05	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: EB-2 **Lab ID: 2624678007** Collected: 10/17/19 13:00 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:38	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:38	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:38	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:38	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:38	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:38	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:38	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:38	7439-96-5	
Potassium	ND	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:38	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:38	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:33	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:33	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:33	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:33	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:33	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:33	7439-89-6	
Magnesium, Dissolved	ND	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:33	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:33	7439-96-5	
Potassium, Dissolved	ND	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:33	7440-09-7	
Sodium, Dissolved	ND	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 10:33	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:54		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:54		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/25/19 20:04		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.50	0.050	10		10/30/19 16:45	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: EB-3 **Lab ID: 2624678008** Collected: 10/17/19 14:41 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 20:32	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 20:32	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 20:32	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 20:32	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 20:32	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 20:32	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 20:32	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 20:32	7439-96-5	
Potassium	ND	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 20:32	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 20:32	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:38	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:38	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:38	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:38	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:38	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:38	7439-89-6	
Magnesium, Dissolved	ND	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:38	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:38	7439-96-5	
Potassium, Dissolved	ND	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:38	7440-09-7	
Sodium, Dissolved	ND	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 10:38	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:58		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:58		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/25/19 20:05		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/30/19 08:14	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: FB-3 **Lab ID: 2624678009** Collected: 10/17/19 14:13 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 20:37	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 20:37	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 20:37	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 20:37	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 20:37	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 20:37	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 20:37	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 20:37	7439-96-5	
Potassium	ND	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 20:37	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 20:37	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:52	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:52	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:52	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:52	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:52	7440-48-4	
Iron, Dissolved	**0.052**	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:52	7439-89-6	
Magnesium, Dissolved	ND	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:52	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:52	7439-96-5	
Potassium, Dissolved	ND	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:52	7440-09-7	
Sodium, Dissolved	ND	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 10:52	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 12:00		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 12:00		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/25/19 20:08		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/30/19 07:52	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: DUP-3 **Lab ID: 2624678010** Collected: 10/17/19 00:00 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 20:42	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 20:42	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 20:42	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 20:42	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 20:42	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 20:42	7439-89-6	
Magnesium	**20.2**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 20:42	7439-95-4	M1
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 20:42	7439-96-5	
Potassium	**1.1**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 20:42	7440-09-7	
Sodium	**21.2**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 20:42	7440-23-5	M1
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 18:00	11/03/19 11:36	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 18:00	11/03/19 11:36	7440-41-7	
Boron, Dissolved	**0.057**	mg/L	0.040	0.017	1	11/01/19 18:00	11/03/19 11:36	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 18:00	11/03/19 11:36	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 18:00	11/03/19 11:36	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 18:00	11/03/19 11:36	7439-89-6	
Magnesium, Dissolved	**21.1**	mg/L	0.050	0.011	1	11/01/19 18:00	11/03/19 11:36	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 18:00	11/03/19 11:36	7439-96-5	
Potassium, Dissolved	**1.1**	mg/L	0.20	0.026	1	11/01/19 18:00	11/03/19 11:36	7440-09-7	
Sodium, Dissolved	**21.7**	mg/L	1.0	0.19	1	11/01/19 18:00	11/03/19 11:36	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**73.0**	mg/L	20.0	20.0	1		10/25/19 15:27		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/25/19 15:27		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.15**	mg/L	0.020	0.020	1		10/25/19 20:09		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.064**	mg/L	0.050	0.0050	1		10/30/19 06:23	14797-55-8	H1,M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 37568 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678005, 2624678006, 2624678007, 2624678008, 2624678009, 2624678010

METHOD BLANK: 170388 Matrix: Water
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678005, 2624678006, 2624678007, 2624678008, 2624678009, 2624678010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	mg/L	ND	0.10	0.032	10/28/19 15:13	
Beryllium	mg/L	ND	0.010	0.0026	10/28/19 15:13	
Boron	mg/L	ND	0.040	0.017	10/28/19 15:13	
Cadmium	mg/L	ND	0.010	0.00090	10/28/19 15:13	
Cobalt	mg/L	ND	0.040	0.0052	10/28/19 15:13	
Iron	mg/L	ND	0.040	0.015	10/28/19 15:13	
Magnesium	mg/L	ND	0.050	0.011	10/28/19 15:13	
Manganese	mg/L	ND	0.040	0.0061	10/28/19 15:13	
Potassium	mg/L	ND	0.20	0.026	10/28/19 15:13	
Sodium	mg/L	ND	1.0	0.19	10/28/19 15:13	

LABORATORY CONTROL SAMPLE: 170389

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/L	1	0.96	96	80-120	
Beryllium	mg/L	1	0.97	97	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cadmium	mg/L	1	0.99	99	80-120	
Cobalt	mg/L	1	0.96	96	80-120	
Iron	mg/L	1	0.96	96	80-120	
Magnesium	mg/L	1	0.97	97	80-120	
Manganese	mg/L	1	0.98	98	80-120	
Potassium	mg/L	1	0.96	96	80-120	
Sodium	mg/L	1	0.97J	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170390 170391

Parameter	Units	2624678010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/L	ND	1	1	0.98	0.98	98	98	75-125	0	20	
Beryllium	mg/L	ND	1	1	1.0	1.0	101	100	75-125	1	20	
Boron	mg/L	0.057	1	1	1.0	1.0	99	100	75-125	1	20	
Cadmium	mg/L	ND	1	1	1.0	1.0	101	100	75-125	1	20	
Cobalt	mg/L	ND	1	1	0.99	0.98	99	98	75-125	1	20	
Iron	mg/L	ND	1	1	1.0	1.0	100	104	75-125	4	20	
Magnesium	mg/L	21.1	1	1	21.3	20.8	115	62	75-125	3	20	M1
Manganese	mg/L	ND	1	1	1.0	1.0	102	100	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170390 170391

Parameter	Units	2624678010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Potassium	mg/L	1.1	1	1	2.2	2.1	107	102	75-125	2	20	
Sodium	mg/L	21.7	1	1	22.2	21.8	99	59	75-125	2	20	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 38007 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678006, 2624678007, 2624678008, 2624678009

METHOD BLANK: 172830 Matrix: Water
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678006, 2624678007, 2624678008, 2624678009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	mg/L	ND	0.10	0.032	11/04/19 15:30	
Beryllium, Dissolved	mg/L	ND	0.010	0.0026	11/04/19 15:30	
Boron, Dissolved	mg/L	ND	0.040	0.017	11/04/19 15:30	
Cadmium, Dissolved	mg/L	ND	0.010	0.00090	11/04/19 15:30	
Cobalt, Dissolved	mg/L	ND	0.040	0.0052	11/04/19 15:30	
Iron, Dissolved	mg/L	ND	0.040	0.015	11/04/19 15:30	
Magnesium, Dissolved	mg/L	ND	0.050	0.011	11/04/19 15:30	
Manganese, Dissolved	mg/L	ND	0.040	0.0061	11/04/19 15:30	
Potassium, Dissolved	mg/L	ND	0.20	0.026	11/04/19 15:30	
Sodium, Dissolved	mg/L	ND	1.0	0.19	11/04/19 15:30	

LABORATORY CONTROL SAMPLE: 172831

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	mg/L	1	1.1	106	80-120	
Beryllium, Dissolved	mg/L	1	1.0	104	80-120	
Boron, Dissolved	mg/L	1	1.0	101	80-120	
Cadmium, Dissolved	mg/L	1	1.1	107	80-120	
Cobalt, Dissolved	mg/L	1	1.1	107	80-120	
Iron, Dissolved	mg/L	1	1.1	108	80-120	
Magnesium, Dissolved	mg/L	1	1.1	107	80-120	
Manganese, Dissolved	mg/L	1	1.1	106	80-120	
Potassium, Dissolved	mg/L	1	1.0	102	80-120	
Sodium, Dissolved	mg/L	1	1.0	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 172834 172835

Parameter	Units	2624490001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	mg/L	0.16	1	1	1.2	1.2	102	104	75-125	2	20	
Beryllium, Dissolved	mg/L	ND	1	1	1.0	1.0	103	103	75-125	0	20	
Boron, Dissolved	mg/L	1.2	1	1	2.1	2.2	99	100	75-125	1	20	
Cadmium, Dissolved	mg/L	ND	1	1	1.0	1.0	102	104	75-125	1	20	
Cobalt, Dissolved	mg/L	0.048	1	1	1.1	1.1	104	105	75-125	1	20	
Iron, Dissolved	mg/L	ND	1	1	1.1	1.1	106	106	75-125	0	20	
Magnesium, Dissolved	mg/L	5.7	1	1	6.4	6.4	68	70	75-125	0	20	M1
Manganese, Dissolved	mg/L	1.5	1	1	2.5	2.4	98	96	75-125	1	20	
Potassium, Dissolved	mg/L	12.5	1	1	12.9	12.9	42	48	75-125	0	20	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 172834 172835

Parameter	Units	2624490001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sodium, Dissolved	mg/L	16.4	1	1	16.5	16.6	9	26	75-125	1	20	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 38053 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Associated Lab Samples: 2624678005, 2624678010

METHOD BLANK: 172832 Matrix: Water
Associated Lab Samples: 2624678005, 2624678010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	mg/L	ND	0.10	0.032	11/03/19 10:57	
Beryllium, Dissolved	mg/L	ND	0.010	0.0026	11/03/19 10:57	
Boron, Dissolved	mg/L	ND	0.040	0.017	11/03/19 10:57	
Cadmium, Dissolved	mg/L	ND	0.010	0.00090	11/03/19 10:57	
Cobalt, Dissolved	mg/L	ND	0.040	0.0052	11/03/19 10:57	
Iron, Dissolved	mg/L	ND	0.040	0.015	11/03/19 10:57	
Magnesium, Dissolved	mg/L	ND	0.050	0.011	11/03/19 10:57	
Manganese, Dissolved	mg/L	ND	0.040	0.0061	11/03/19 10:57	
Potassium, Dissolved	mg/L	ND	0.20	0.026	11/03/19 10:57	
Sodium, Dissolved	mg/L	ND	1.0	0.19	11/03/19 10:57	

LABORATORY CONTROL SAMPLE: 172833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	mg/L	1	1.0	102	80-120	
Beryllium, Dissolved	mg/L	1	1.0	101	80-120	
Boron, Dissolved	mg/L	1	0.97	97	80-120	
Cadmium, Dissolved	mg/L	1	1.0	104	80-120	
Cobalt, Dissolved	mg/L	1	1.1	106	80-120	
Iron, Dissolved	mg/L	1	1.1	106	80-120	
Magnesium, Dissolved	mg/L	1	1.0	103	80-120	
Manganese, Dissolved	mg/L	1	1.1	105	80-120	
Potassium, Dissolved	mg/L	1	0.97	97	80-120	
Sodium, Dissolved	mg/L	1	0.96J	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 173035 173036

Parameter	Units	2624678005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	mg/L	ND	1	1	1.1	1.0	106	100	75-125	6	20	
Beryllium, Dissolved	mg/L	ND	1	1	1.1	1.0	106	100	75-125	5	20	
Boron, Dissolved	mg/L	1.4	1	1	2.6	2.5	117	103	75-125	5	20	
Cadmium, Dissolved	mg/L	ND	1	1	1.1	1.0	107	101	75-125	6	20	
Cobalt, Dissolved	mg/L	ND	1	1	1.1	1.0	108	102	75-125	6	20	
Iron, Dissolved	mg/L	ND	1	1	1.1	1.0	110	104	75-125	6	20	
Magnesium, Dissolved	mg/L	38.6	1	1	42.6	40.0	402	138	75-125	6	20	M1
Manganese, Dissolved	mg/L	ND	1	1	1.1	1.0	108	104	75-125	4	20	
Potassium, Dissolved	mg/L	1.7	1	1	3.0	2.7	125	100	75-125	9	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 173035 173036

Parameter	Units	2624678005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sodium, Dissolved	mg/L	28.1	1	1	30.8	28.7	270	57	75-125	7	20	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 37596 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678005, 2624678006, 2624678007, 2624678008, 2624678009, 2624678010

METHOD BLANK: 170601 Matrix: Water
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678005, 2624678006, 2624678007, 2624678008, 2624678009, 2624678010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	10/25/19 19:56	

LABORATORY CONTROL SAMPLE: 170602

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.56	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170603 170604

Parameter	Units	2624780001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.37	0.5	0.5	0.96	0.94	117	114	80-120	2	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 37451 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624678001, 2624678003, 2624678004, 2624678005, 2624678006

METHOD BLANK: 169595 Matrix: Water
Associated Lab Samples: 2624678001, 2624678003, 2624678004, 2624678005, 2624678006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/24/19 01:53	

LABORATORY CONTROL SAMPLE: 169596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	5	5.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169821 169822

Parameter	Units	2624678003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	ND	10	10	9.8	9.8	98	98	90-110	0	15	H1

MATRIX SPIKE SAMPLE: 169823

Parameter	Units	2624663002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	2.3	10	11.1	88	90-110	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 37499 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624678002, 2624678007, 2624678008, 2624678009, 2624678010

METHOD BLANK: 169844 Matrix: Water
Associated Lab Samples: 2624678002, 2624678007, 2624678008, 2624678009, 2624678010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/30/19 05:16	

LABORATORY CONTROL SAMPLE: 169845

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169846 169847

Parameter	Units	2624678010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.064	5	5	10.2	10.2	202	202	90-110	0	15	H1,M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2624678

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

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624678

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624678001	**BRGWC-17S**	EPA 3010A	37568	EPA 6010D	37588
2624678002	**BRGWC-36S**	EPA 3010A	37568	EPA 6010D	37588
2624678003	**BRGWC-27I**	EPA 3010A	37568	EPA 6010D	37588
2624678004	**BRGWC-30I**	EPA 3010A	37568	EPA 6010D	37588
2624678005	**BRGWC-32S**	EPA 3010A	37568	EPA 6010D	37588
2624678006	**BRGWC-45**	EPA 3010A	37568	EPA 6010D	37588
2624678007	**EB-2**	EPA 3010A	37568	EPA 6010D	37588
2624678008	**EB-3**	EPA 3010A	37568	EPA 6010D	37588
2624678009	**FB-3**	EPA 3010A	37568	EPA 6010D	37588
2624678010	**DUP-3**	EPA 3010A	37568	EPA 6010D	37588
2624678001	**BRGWC-17S**	EPA 3010A	38007	EPA 6010D	38048
2624678002	**BRGWC-36S**	EPA 3010A	38007	EPA 6010D	38048
2624678003	**BRGWC-27I**	EPA 3010A	38007	EPA 6010D	38048
2624678004	**BRGWC-30I**	EPA 3010A	38007	EPA 6010D	38048
2624678005	**BRGWC-32S**	EPA 3010A	38053	EPA 6010D	38066
2624678006	**BRGWC-45**	EPA 3010A	38007	EPA 6010D	38048
2624678007	**EB-2**	EPA 3010A	38007	EPA 6010D	38048
2624678008	**EB-3**	EPA 3010A	38007	EPA 6010D	38048
2624678009	**FB-3**	EPA 3010A	38007	EPA 6010D	38048
2624678010	**DUP-3**	EPA 3010A	38053	EPA 6010D	38066
2624678001	**BRGWC-17S**	SM 2320B	37559		
2624678004	**BRGWC-30I**	SM 2320B	37559		
2624678005	**BRGWC-32S**	SM 2320B	37559		
2624678006	**BRGWC-45**	SM 2320B	37559		
2624678010	**DUP-3**	SM 2320B	37559		
2624678002	**BRGWC-36S**	SM 2320B	37629		
2624678003	**BRGWC-27I**	SM 2320B	37629		
2624678007	**EB-2**	SM 2320B	37629		
2624678008	**EB-3**	SM 2320B	37629		
2624678009	**FB-3**	SM 2320B	37629		
2624678001	**BRGWC-17S**	SM 4500-P	37596		
2624678002	**BRGWC-36S**	SM 4500-P	37596		
2624678003	**BRGWC-27I**	SM 4500-P	37596		
2624678004	**BRGWC-30I**	SM 4500-P	37596		
2624678005	**BRGWC-32S**	SM 4500-P	37596		
2624678006	**BRGWC-45**	SM 4500-P	37596		
2624678007	**EB-2**	SM 4500-P	37596		
2624678008	**EB-3**	SM 4500-P	37596		
2624678009	**FB-3**	SM 4500-P	37596		
2624678010	**DUP-3**	SM 4500-P	37596		
2624678001	**BRGWC-17S**	EPA 300.0	37451		
2624678002	**BRGWC-36S**	EPA 300.0	37499		
2624678003	**BRGWC-27I**	EPA 300.0	37451		
2624678004	**BRGWC-30I**	EPA 300.0	37451		

REPORT OF LABORATORY ANALYSIS

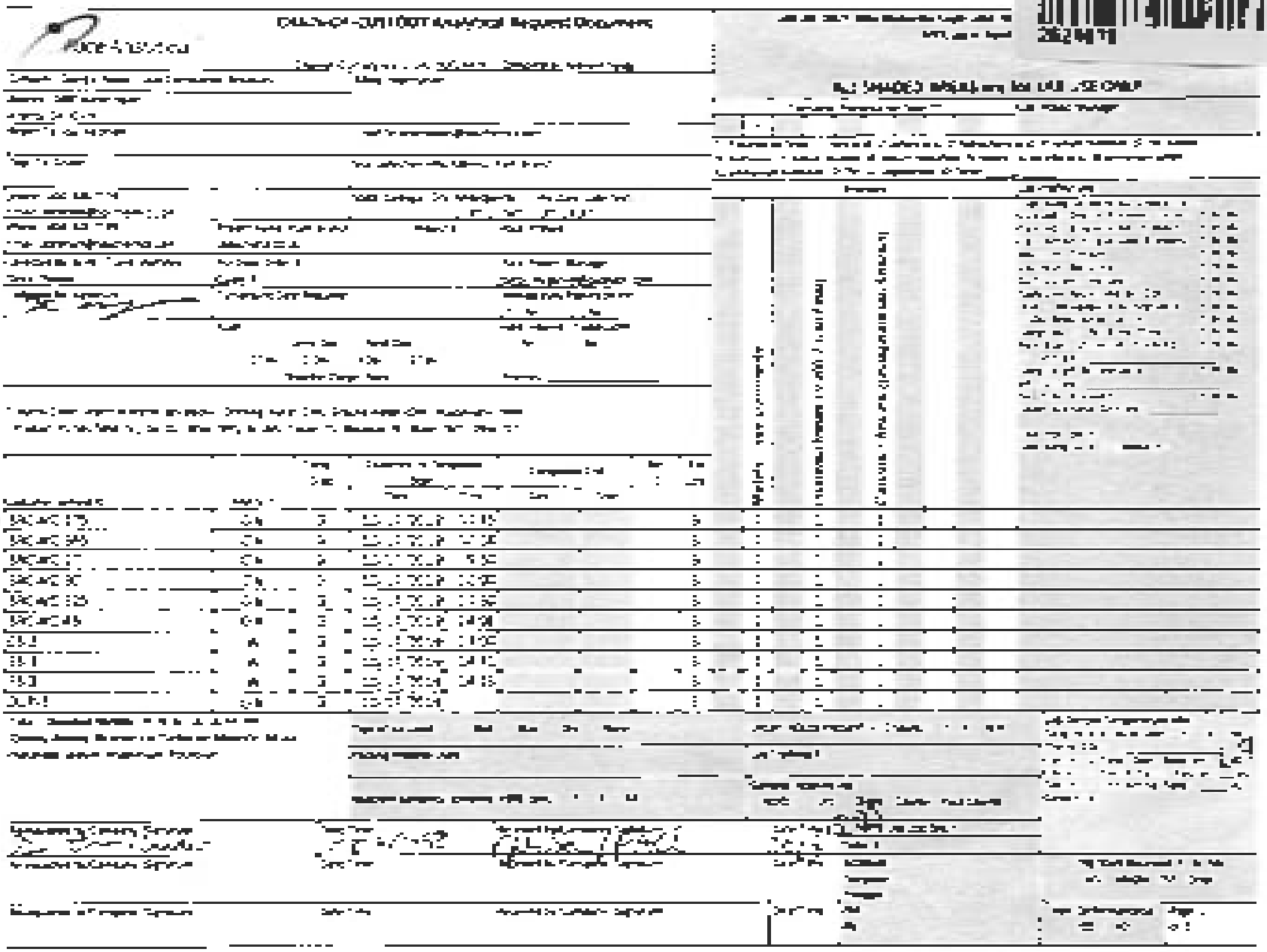
Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624678

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624678005	**BRGWC-32S**	EPA 300.0	37451		
2624678006	**BRGWC-45**	EPA 300.0	37451		
2624678007	**EB-2**	EPA 300.0	37499		
2624678008	**EB-3**	EPA 300.0	37499		
2624678009	**FB-3**	EPA 300.0	37499		
2624678010	**DUP-3**	EPA 300.0	37499		

WO#: 2624678



Client Name

Project #

Page 29 of 29

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

March 24, 2020

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

RE: Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory between March 04, 2020 and March 06, 2020. 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,

Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Lauren Petty, Southern Company Services, Inc.
Carolyn Powrozek, Golder
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Pace Analytical Services Atlanta
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

Pace Analytical Services Asheville
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629734001	**BRGWA-6S**	Water	03/03/20 13:56	03/04/20 10:45
2629734002	**BRGWA-2S**	Water	03/03/20 11:40	03/04/20 10:45
2629734003	**BRGWA-2I**	Water	03/03/20 12:25	03/04/20 10:45
2629734004	**BRGWA-5S**	Water	03/03/20 10:33	03/04/20 10:45
2629734005	**BRGWA-5I**	Water	03/03/20 09:39	03/04/20 10:45
2629734006	**BRGWC-17S**	Water	03/03/20 15:45	03/04/20 10:45
2629734007	**BRGWC-33S**	Water	03/05/20 09:05	03/06/20 09:45
2629734008	**BRGWC-34S**	Water	03/05/20 09:58	03/06/20 09:45
2629734009	**BRGWC-35S**	Water	03/05/20 11:47	03/06/20 09:45
2629734010	**BRGWC-38S**	Water	03/05/20 12:15	03/06/20 09:45
2629734011	**DUP-3**	Water	03/05/20 00:00	03/06/20 09:45
2629734012	**FB-2**	Water	03/05/20 11:15	03/06/20 09:45
2629734013	**BRGWC-37S**	Water	03/05/20 14:34	03/06/20 09:45
2629734014	**BRGWC-36S**	Water	03/05/20 15:58	03/06/20 09:45

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629734001	**BRGWA-6S**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734002	**BRGWA-2S**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734003	**BRGWA-2I**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734004	**BRGWA-5S**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734005	**BRGWA-5I**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734006	**BRGWC-17S**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734007	**BRGWC-33S**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734008	**BRGWC-34S**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734009	**BRGWC-35S**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734010	**BRGWC-38S**	EPA 6010D	KLH	1	PASI-GA

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734011	**DUP-3**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734012	**FB-2**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734013	**BRGWC-37S**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734014	**BRGWC-36S**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2629734001	**BRGWA-6S**					
EPA 6010D	Calcium	5.0	mg/L	0.50	03/11/20 18:37	
EPA 6020B	Arsenic	0.0018J	mg/L	0.0050	03/10/20 20:56	
EPA 6020B	Barium	0.019	mg/L	0.010	03/10/20 20:56	
EPA 6020B	Chromium	0.011	mg/L	0.010	03/10/20 20:56	
EPA 6020B	Cobalt	0.0011J	mg/L	0.0050	03/10/20 20:56	
EPA 6020B	Lead	0.000073J	mg/L	0.0050	03/10/20 20:56	
EPA 6020B	Lithium	0.0026J	mg/L	0.030	03/10/20 20:56	
SM 2540C	Total Dissolved Solids	54.0	mg/L	10.0	03/06/20 12:46	
EPA 300.0 Rev 2.1 1993	Chloride	2.9	mg/L	1.0	03/10/20 22:36	
EPA 300.0 Rev 2.1 1993	Fluoride	0.090J	mg/L	0.30	03/10/20 22:36	
EPA 300.0 Rev 2.1 1993	Sulfate	2.5	mg/L	1.0	03/10/20 22:36	
2629734002	**BRGWA-2S**					
EPA 6010D	Calcium	4.0	mg/L	0.50	03/11/20 18:41	
EPA 6020B	Arsenic	0.00098J	mg/L	0.0050	03/10/20 21:01	
EPA 6020B	Barium	0.011	mg/L	0.010	03/10/20 21:01	
EPA 6020B	Chromium	0.0098J	mg/L	0.010	03/10/20 21:01	
EPA 6020B	Cobalt	0.0015J	mg/L	0.0050	03/10/20 21:01	
SM 2540C	Total Dissolved Solids	41.0	mg/L	10.0	03/06/20 12:46	
EPA 300.0 Rev 2.1 1993	Chloride	1.9	mg/L	1.0	03/10/20 22:50	
EPA 300.0 Rev 2.1 1993	Fluoride	0.050J	mg/L	0.30	03/10/20 22:50	
EPA 300.0 Rev 2.1 1993	Sulfate	0.93J	mg/L	1.0	03/10/20 22:50	
2629734003	**BRGWA-2I**					
EPA 6010D	Calcium	20.0	mg/L	0.50	03/11/20 18:44	
EPA 6020B	Arsenic	0.0027J	mg/L	0.0050	03/10/20 21:07	
EPA 6020B	Barium	0.017	mg/L	0.010	03/10/20 21:07	
EPA 6020B	Boron	0.0082J	mg/L	0.10	03/10/20 21:07	
EPA 6020B	Chromium	0.00047J	mg/L	0.010	03/10/20 21:07	
EPA 6020B	Lithium	0.055	mg/L	0.030	03/10/20 21:07	
SM 2540C	Total Dissolved Solids	155	mg/L	10.0	03/06/20 12:46	
EPA 300.0 Rev 2.1 1993	Chloride	1.9	mg/L	1.0	03/10/20 23:05	
EPA 300.0 Rev 2.1 1993	Fluoride	0.066J	mg/L	0.30	03/10/20 23:05	
EPA 300.0 Rev 2.1 1993	Sulfate	7.1	mg/L	1.0	03/10/20 23:05	
2629734004	**BRGWA-5S**					
EPA 6010D	Calcium	23.2	mg/L	0.50	03/11/20 18:48	
EPA 6020B	Arsenic	0.0027J	mg/L	0.0050	03/10/20 21:24	
EPA 6020B	Barium	0.051	mg/L	0.010	03/10/20 21:24	
EPA 6020B	Chromium	0.0057J	mg/L	0.010	03/10/20 21:24	
EPA 6020B	Lead	0.000079J	mg/L	0.0050	03/10/20 21:24	
SM 2540C	Total Dissolved Solids	130	mg/L	10.0	03/06/20 12:47	
EPA 300.0 Rev 2.1 1993	Chloride	3.6	mg/L	1.0	03/10/20 23:19	
EPA 300.0 Rev 2.1 1993	Fluoride	0.057J	mg/L	0.30	03/10/20 23:19	
EPA 300.0 Rev 2.1 1993	Sulfate	0.71J	mg/L	1.0	03/10/20 23:19	
2629734005	**BRGWA-5I**					
EPA 6010D	Calcium	14.9	mg/L	0.50	03/11/20 18:51	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	03/10/20 21:30	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2629734005	**BRGWA-5I**					
EPA 6020B	Barium	0.028	mg/L	0.010	03/10/20 21:30	
EPA 6020B	Chromium	0.0069J	mg/L	0.010	03/10/20 21:30	
EPA 6020B	Cobalt	0.00043J	mg/L	0.0050	03/10/20 21:30	
EPA 6020B	Lithium	0.0013J	mg/L	0.030	03/10/20 21:30	
EPA 6020B	Molybdenum	0.0023J	mg/L	0.010	03/10/20 21:30	
EPA 300.0 Rev 2.1 1993	Chloride	3.9	mg/L	1.0	03/11/20 00:03	
EPA 300.0 Rev 2.1 1993	Sulfate	2.8	mg/L	1.0	03/11/20 00:03	
2629734006	**BRGWC-17S**					
EPA 6010D	Calcium	29.7	mg/L	0.50	03/11/20 18:55	
EPA 6020B	Arsenic	0.0033J	mg/L	0.0050	03/10/20 21:36	
EPA 6020B	Barium	0.036	mg/L	0.010	03/10/20 21:36	
EPA 6020B	Boron	0.0075J	mg/L	0.10	03/10/20 21:36	
EPA 6020B	Chromium	0.0081J	mg/L	0.010	03/10/20 21:36	
EPA 6020B	Selenium	0.0019J	mg/L	0.010	03/10/20 21:36	
SM 2540C	Total Dissolved Solids	263	mg/L	10.0	03/06/20 12:47	
EPA 300.0 Rev 2.1 1993	Chloride	3.8	mg/L	1.0	03/11/20 00:46	
EPA 300.0 Rev 2.1 1993	Fluoride	0.093J	mg/L	0.30	03/11/20 00:46	
EPA 300.0 Rev 2.1 1993	Sulfate	95.4	mg/L	2.0	03/11/20 05:13	
2629734007	**BRGWC-33S**					
EPA 6010D	Calcium	48.1	mg/L	0.50	03/18/20 19:08	
EPA 6020B	Barium	0.022	mg/L	0.010	03/16/20 15:35	
EPA 6020B	Beryllium	0.0018J	mg/L	0.0030	03/16/20 15:35	
EPA 6020B	Boron	1.5	mg/L	0.10	03/16/20 15:35	
EPA 6020B	Cadmium	0.00038J	mg/L	0.0025	03/16/20 15:35	
EPA 6020B	Cobalt	0.037	mg/L	0.0050	03/16/20 15:35	
EPA 6020B	Lead	0.000087J	mg/L	0.0050	03/16/20 15:35	
EPA 6020B	Lithium	0.011J	mg/L	0.030	03/16/20 15:35	
EPA 6020B	Thallium	0.00020J	mg/L	0.0010	03/16/20 15:35	
SM 2540C	Total Dissolved Solids	292	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	4.8	mg/L	1.0	03/12/20 05:37	
EPA 300.0 Rev 2.1 1993	Fluoride	0.088J	mg/L	0.30	03/12/20 05:37	
EPA 300.0 Rev 2.1 1993	Sulfate	173	mg/L	4.0	03/12/20 13:56	
2629734008	**BRGWC-34S**					
EPA 6010D	Calcium	89.6	mg/L	0.50	03/18/20 19:11	
EPA 6020B	Barium	0.025	mg/L	0.010	03/16/20 15:41	
EPA 6020B	Beryllium	0.00015J	mg/L	0.0030	03/16/20 15:41	
EPA 6020B	Boron	2.1	mg/L	0.10	03/16/20 15:41	
EPA 6020B	Cadmium	0.00018J	mg/L	0.0025	03/16/20 15:41	
EPA 6020B	Cobalt	0.0031J	mg/L	0.0050	03/16/20 15:41	
EPA 6020B	Lithium	0.00089J	mg/L	0.030	03/16/20 15:41	
SM 2540C	Total Dissolved Solids	489	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	6.4	mg/L	1.0	03/12/20 05:52	
EPA 300.0 Rev 2.1 1993	Fluoride	0.072J	mg/L	0.30	03/12/20 05:52	
EPA 300.0 Rev 2.1 1993	Sulfate	287	mg/L	6.0	03/12/20 14:11	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2629734009	**BRGWC-35S**					
EPA 6010D	Calcium	69.9	mg/L	0.50	03/18/20 19:15	
EPA 6020B	Barium	0.039	mg/L	0.010	03/16/20 15:47	
EPA 6020B	Beryllium	0.00015J	mg/L	0.0030	03/16/20 15:47	
EPA 6020B	Boron	1.9	mg/L	0.10	03/16/20 15:47	
EPA 6020B	Chromium	0.0076J	mg/L	0.010	03/16/20 15:47	
EPA 6020B	Lithium	0.0021J	mg/L	0.030	03/16/20 15:47	
SM 2540C	Total Dissolved Solids	535	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	5.8	mg/L	1.0	03/12/20 06:35	
EPA 300.0 Rev 2.1 1993	Fluoride	0.067J	mg/L	0.30	03/12/20 06:35	
EPA 300.0 Rev 2.1 1993	Sulfate	269	mg/L	6.0	03/12/20 14:25	
2629734010	**BRGWC-38S**					
EPA 6010D	Calcium	39.8	mg/L	0.50	03/18/20 19:18	
EPA 6020B	Arsenic	0.0011J	mg/L	0.0050	03/16/20 15:52	B
EPA 6020B	Barium	0.016	mg/L	0.010	03/16/20 15:52	
EPA 6020B	Beryllium	0.0082	mg/L	0.0030	03/16/20 15:52	
EPA 6020B	Boron	1.6	mg/L	0.10	03/16/20 15:52	
EPA 6020B	Cadmium	0.00059J	mg/L	0.0025	03/16/20 15:52	
EPA 6020B	Chromium	0.0038J	mg/L	0.010	03/16/20 15:52	
EPA 6020B	Cobalt	0.22	mg/L	0.0050	03/16/20 15:52	
EPA 6020B	Lead	0.00041J	mg/L	0.0050	03/16/20 15:52	
EPA 6020B	Lithium	0.021J	mg/L	0.030	03/16/20 15:52	
EPA 6020B	Selenium	0.032	mg/L	0.010	03/16/20 15:52	
EPA 6020B	Thallium	0.00020J	mg/L	0.0010	03/16/20 15:52	
SM 2540C	Total Dissolved Solids	608	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	5.8	mg/L	1.0	03/12/20 06:50	
EPA 300.0 Rev 2.1 1993	Fluoride	0.92	mg/L	0.30	03/12/20 06:50	
EPA 300.0 Rev 2.1 1993	Sulfate	370	mg/L	8.0	03/12/20 14:40	
2629734011	**DUP-3**					
EPA 6010D	Calcium	66.8	mg/L	0.50	03/18/20 19:22	
EPA 6020B	Barium	0.038	mg/L	0.010	03/16/20 15:58	
EPA 6020B	Beryllium	0.00015J	mg/L	0.0030	03/16/20 15:58	
EPA 6020B	Boron	2.0	mg/L	0.10	03/16/20 15:58	
EPA 6020B	Chromium	0.0064J	mg/L	0.010	03/16/20 15:58	
EPA 6020B	Lithium	0.0020J	mg/L	0.030	03/16/20 15:58	
SM 2540C	Total Dissolved Solids	501	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	5.9	mg/L	1.0	03/12/20 07:04	
EPA 300.0 Rev 2.1 1993	Fluoride	0.079J	mg/L	0.30	03/12/20 07:04	
EPA 300.0 Rev 2.1 1993	Sulfate	276	mg/L	6.0	03/12/20 16:43	
2629734012	**FB-2**					
EPA 6020B	Boron	0.014J	mg/L	0.10	03/16/20 16:04	
2629734013	**BRGWC-37S**					
EPA 6010D	Calcium	3.7	mg/L	0.50	03/18/20 19:29	
EPA 6020B	Arsenic	0.00044J	mg/L	0.0050	03/16/20 16:09	B
EPA 6020B	Barium	0.025	mg/L	0.010	03/16/20 16:09	
EPA 6020B	Boron	0.0076J	mg/L	0.10	03/16/20 16:09	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2629734013	**BRGWC-37S**					
EPA 6020B	Chromium	0.0016J	mg/L	0.010	03/16/20 16:09	
SM 2540C	Total Dissolved Solids	39.0	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	1.8	mg/L	1.0	03/12/20 08:02	
EPA 300.0 Rev 2.1 1993	Fluoride	0.050J	mg/L	0.30	03/12/20 08:02	
2629734014	**BRGWC-36S**					
EPA 6010D	Calcium	51.7	mg/L	0.50	03/18/20 19:32	
EPA 6020B	Barium	0.033	mg/L	0.010	03/16/20 16:15	
EPA 6020B	Beryllium	0.000092J	mg/L	0.0030	03/16/20 16:15	
EPA 6020B	Boron	1.1	mg/L	0.10	03/16/20 16:15	
EPA 6020B	Chromium	0.0087J	mg/L	0.010	03/16/20 16:15	
EPA 6020B	Lithium	0.0025J	mg/L	0.030	03/16/20 16:15	
EPA 6020B	Selenium	0.0034J	mg/L	0.010	03/16/20 16:15	
SM 2540C	Total Dissolved Solids	457	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	7.6	mg/L	1.0	03/12/20 08:17	
EPA 300.0 Rev 2.1 1993	Sulfate	262	mg/L	5.0	03/12/20 16:58	

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWA-6S **Lab ID: 2629734001** Collected: 03/03/20 13:56 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**5.0**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:37	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 20:56	7440-36-0	
Arsenic	**0.0018J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 20:56	7440-38-2	
Barium	**0.019**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 20:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 20:56	7440-41-7	
Boron	ND	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 20:56	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 20:56	7440-43-9	
Chromium	**0.011**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 20:56	7440-47-3	
Cobalt	**0.0011J**	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 20:56	7440-48-4	
Lead	**0.000073J**	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 20:56	7439-92-1	
Lithium	**0.0026J**	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 20:56	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 20:56	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 20:56	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 20:56	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**54.0**	mg/L	10.0	10.0	1		03/06/20 12:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**2.9**	mg/L	1.0	0.60	1		03/10/20 22:36	16887-00-6	
Fluoride	**0.090J**	mg/L	0.30	0.050	1		03/10/20 22:36	16984-48-8	
Sulfate	**2.5**	mg/L	1.0	0.50	1		03/10/20 22:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWA-2S **Lab ID: 2629734002** Collected: 03/03/20 11:40 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**4.0**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:41	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 21:01	7440-36-0	
Arsenic	**0.00098J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 21:01	7440-38-2	
Barium	**0.011**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 21:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 21:01	7440-41-7	
Boron	ND	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 21:01	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 21:01	7440-43-9	
Chromium	**0.0098J**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 21:01	7440-47-3	
Cobalt	**0.0015J**	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 21:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 21:01	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 21:01	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 21:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 21:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 21:01	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**41.0**	mg/L	10.0	10.0	1		03/06/20 12:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**1.9**	mg/L	1.0	0.60	1		03/10/20 22:50	16887-00-6	
Fluoride	**0.050J**	mg/L	0.30	0.050	1		03/10/20 22:50	16984-48-8	
Sulfate	**0.93J**	mg/L	1.0	0.50	1		03/10/20 22:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWA-2I **Lab ID: 2629734003** Collected: 03/03/20 12:25 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**20.0**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:44	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 21:07	7440-36-0	
Arsenic	**0.0027J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 21:07	7440-38-2	
Barium	**0.017**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 21:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 21:07	7440-41-7	
Boron	**0.0082J**	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 21:07	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 21:07	7440-43-9	
Chromium	**0.00047J**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 21:07	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 21:07	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 21:07	7439-92-1	
Lithium	**0.055**	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 21:07	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 21:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 21:07	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 21:07	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**155**	mg/L	10.0	10.0	1		03/06/20 12:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**1.9**	mg/L	1.0	0.60	1		03/10/20 23:05	16887-00-6	
Fluoride	**0.066J**	mg/L	0.30	0.050	1		03/10/20 23:05	16984-48-8	
Sulfate	**7.1**	mg/L	1.0	0.50	1		03/10/20 23:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWA-5S **Lab ID: 2629734004** Collected: 03/03/20 10:33 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**23.2**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:48	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 21:24	7440-36-0	
Arsenic	**0.0027J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 21:24	7440-38-2	
Barium	**0.051**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 21:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 21:24	7440-41-7	
Boron	ND	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 21:24	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 21:24	7440-43-9	
Chromium	**0.0057J**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 21:24	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 21:24	7440-48-4	
Lead	**0.000079J**	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 21:24	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 21:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 21:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 21:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 21:24	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**130**	mg/L	10.0	10.0	1		03/06/20 12:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**3.6**	mg/L	1.0	0.60	1		03/10/20 23:19	16887-00-6	
Fluoride	**0.057J**	mg/L	0.30	0.050	1		03/10/20 23:19	16984-48-8	
Sulfate	**0.71J**	mg/L	1.0	0.50	1		03/10/20 23:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWA-5I **Lab ID: 2629734005** Collected: 03/03/20 09:39 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**14.9**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:51	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 21:30	7440-36-0	
Arsenic	**0.0024J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 21:30	7440-38-2	
Barium	**0.028**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 21:30	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 21:30	7440-41-7	
Boron	ND	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 21:30	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 21:30	7440-43-9	
Chromium	**0.0069J**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 21:30	7440-47-3	
Cobalt	**0.00043J**	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 21:30	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 21:30	7439-92-1	
Lithium	**0.0013J**	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 21:30	7439-93-2	
Molybdenum	**0.0023J**	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 21:30	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 21:30	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 21:30	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		03/06/20 12:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**3.9**	mg/L	1.0	0.60	1		03/11/20 00:03	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 00:03	16984-48-8	
Sulfate	**2.8**	mg/L	1.0	0.50	1		03/11/20 00:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-17S **Lab ID: 2629734006** Collected: 03/03/20 15:45 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**29.7**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:55	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 21:36	7440-36-0	
Arsenic	**0.0033J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 21:36	7440-38-2	
Barium	**0.036**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 21:36	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 21:36	7440-41-7	
Boron	**0.0075J**	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 21:36	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 21:36	7440-43-9	
Chromium	**0.0081J**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 21:36	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 21:36	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 21:36	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 21:36	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 21:36	7439-98-7	
Selenium	**0.0019J**	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 21:36	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 21:36	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**263**	mg/L	10.0	10.0	1		03/06/20 12:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**3.8**	mg/L	1.0	0.60	1		03/11/20 00:46	16887-00-6	
Fluoride	**0.093J**	mg/L	0.30	0.050	1		03/11/20 00:46	16984-48-8	
Sulfate	**95.4**	mg/L	2.0	1.0	2		03/11/20 05:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-33S **Lab ID: 2629734007** Collected: 03/05/20 09:05 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**48.1**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:08	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 15:35	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 15:35	7440-38-2	
Barium	**0.022**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 15:35	7440-39-3	
Beryllium	**0.0018J**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 15:35	7440-41-7	
Boron	**1.5**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 15:35	7440-42-8	
Cadmium	**0.00038J**	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 15:35	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 15:35	7440-47-3	
Cobalt	**0.037**	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 15:35	7440-48-4	
Lead	**0.000087J**	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 15:35	7439-92-1	
Lithium	**0.011J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 15:35	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 15:35	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 15:35	7782-49-2	
Thallium	**0.00020J**	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 15:35	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**292**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**4.8**	mg/L	1.0	0.60	1		03/12/20 05:37	16887-00-6	
Fluoride	**0.088J**	mg/L	0.30	0.050	1		03/12/20 05:37	16984-48-8	
Sulfate	**173**	mg/L	4.0	2.0	4		03/12/20 13:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-34S **Lab ID: 2629734008** Collected: 03/05/20 09:58 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**89.6**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:11	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 15:41	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 15:41	7440-38-2	
Barium	**0.025**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 15:41	7440-39-3	
Beryllium	**0.00015J**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 15:41	7440-41-7	
Boron	**2.1**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 15:41	7440-42-8	
Cadmium	**0.00018J**	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 15:41	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 15:41	7440-47-3	
Cobalt	**0.0031J**	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 15:41	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 15:41	7439-92-1	
Lithium	**0.00089J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 15:41	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 15:41	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 15:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 15:41	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**489**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**6.4**	mg/L	1.0	0.60	1		03/12/20 05:52	16887-00-6	
Fluoride	**0.072J**	mg/L	0.30	0.050	1		03/12/20 05:52	16984-48-8	
Sulfate	**287**	mg/L	6.0	3.0	6		03/12/20 14:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-35S **Lab ID: 2629734009** Collected: 03/05/20 11:47 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**69.9**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:15	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 15:47	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 15:47	7440-38-2	
Barium	**0.039**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 15:47	7440-39-3	
Beryllium	**0.00015J**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 15:47	7440-41-7	
Boron	**1.9**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 15:47	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 15:47	7440-43-9	
Chromium	**0.0076J**	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 15:47	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 15:47	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 15:47	7439-92-1	
Lithium	**0.0021J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 15:47	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 15:47	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 15:47	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 15:47	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**535**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**5.8**	mg/L	1.0	0.60	1		03/12/20 06:35	16887-00-6	
Fluoride	**0.067J**	mg/L	0.30	0.050	1		03/12/20 06:35	16984-48-8	
Sulfate	**269**	mg/L	6.0	3.0	6		03/12/20 14:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-38S **Lab ID: 2629734010** Collected: 03/05/20 12:15 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**39.8**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:18	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 15:52	7440-36-0	
Arsenic	**0.0011J**	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 15:52	7440-38-2	B
Barium	**0.016**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 15:52	7440-39-3	
Beryllium	**0.0082**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 15:52	7440-41-7	
Boron	**1.6**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 15:52	7440-42-8	
Cadmium	**0.00059J**	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 15:52	7440-43-9	
Chromium	**0.0038J**	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 15:52	7440-47-3	
Cobalt	**0.22**	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 15:52	7440-48-4	
Lead	**0.00041J**	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 15:52	7439-92-1	
Lithium	**0.021J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 15:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 15:52	7439-98-7	
Selenium	**0.032**	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 15:52	7782-49-2	
Thallium	**0.00020J**	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 15:52	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**608**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**5.8**	mg/L	1.0	0.60	1		03/12/20 06:50	16887-00-6	
Fluoride	**0.92**	mg/L	0.30	0.050	1		03/12/20 06:50	16984-48-8	
Sulfate	**370**	mg/L	8.0	4.0	8		03/12/20 14:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: DUP-3 **Lab ID: 2629734011** Collected: 03/05/20 00:00 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**66.8**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:22	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 15:58	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 15:58	7440-38-2	
Barium	**0.038**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 15:58	7440-39-3	
Beryllium	**0.00015J**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 15:58	7440-41-7	
Boron	**2.0**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 15:58	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 15:58	7440-43-9	
Chromium	**0.0064J**	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 15:58	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 15:58	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 15:58	7439-92-1	
Lithium	**0.0020J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 15:58	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 15:58	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 15:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 15:58	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**501**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**5.9**	mg/L	1.0	0.60	1		03/12/20 07:04	16887-00-6	
Fluoride	**0.079J**	mg/L	0.30	0.050	1		03/12/20 07:04	16984-48-8	
Sulfate	**276**	mg/L	6.0	3.0	6		03/12/20 16:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: FB-2 **Lab ID: 2629734012** Collected: 03/05/20 11:15 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	ND	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:25	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 16:04	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 16:04	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 16:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 16:04	7440-41-7	
Boron	**0.014J**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 16:04	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 16:04	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 16:04	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 16:04	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 16:04	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 16:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 16:04	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 16:04	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 16:04	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	ND	mg/L	1.0	0.60	1		03/12/20 07:19	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		03/12/20 07:19	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		03/12/20 07:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-37S **Lab ID: 2629734013** Collected: 03/05/20 14:34 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**3.7**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:29	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 16:09	7440-36-0	
Arsenic	**0.00044J**	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 16:09	7440-38-2	B
Barium	**0.025**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 16:09	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 16:09	7440-41-7	
Boron	**0.0076J**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 16:09	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 16:09	7440-43-9	
Chromium	**0.0016J**	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 16:09	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 16:09	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 16:09	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 16:09	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 16:09	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 16:09	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 16:09	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**39.0**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**1.8**	mg/L	1.0	0.60	1		03/12/20 08:02	16887-00-6	
Fluoride	**0.050J**	mg/L	0.30	0.050	1		03/12/20 08:02	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		03/12/20 08:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-36S **Lab ID: 2629734014** Collected: 03/05/20 15:58 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**51.7**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:32	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 16:15	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 16:15	7440-38-2	
Barium	**0.033**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 16:15	7440-39-3	
Beryllium	**0.000092J**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 16:15	7440-41-7	
Boron	**1.1**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 16:15	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 16:15	7440-43-9	
Chromium	**0.0087J**	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 16:15	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 16:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 16:15	7439-92-1	
Lithium	**0.0025J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 16:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 16:15	7439-98-7	
Selenium	**0.0034J**	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 16:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 16:15	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**457**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**7.6**	mg/L	1.0	0.60	1		03/12/20 08:17	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		03/12/20 08:17	16984-48-8	
Sulfate	**262**	mg/L	5.0	2.5	5		03/12/20 16:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44425 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

METHOD BLANK: 203825 Matrix: Water
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	0.14	03/11/20 17:22	

LABORATORY CONTROL SAMPLE: 203826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203827 203828

Parameter	Units	2629679001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	5.3	1	1	6.6	6.3	129	101	75-125	4	20	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44482 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

METHOD BLANK: 204090 Matrix: Water
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	0.14	03/18/20 18:33	

LABORATORY CONTROL SAMPLE: 204091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.99	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204092 204093

Parameter	Units	2629733017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	37.9	1	1	38.6	39.1	76	118	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44282 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

METHOD BLANK: 202999 Matrix: Water
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	03/10/20 20:16	
Arsenic	mg/L	ND	0.0050	0.00035	03/10/20 20:16	
Barium	mg/L	ND	0.010	0.00049	03/10/20 20:16	
Beryllium	mg/L	ND	0.0030	0.000074	03/10/20 20:16	
Boron	mg/L	ND	0.10	0.0049	03/10/20 20:16	
Cadmium	mg/L	ND	0.0025	0.00011	03/10/20 20:16	
Chromium	mg/L	ND	0.010	0.00039	03/10/20 20:16	
Cobalt	mg/L	ND	0.0050	0.00030	03/10/20 20:16	
Lead	mg/L	ND	0.0050	0.000046	03/10/20 20:16	
Lithium	mg/L	ND	0.030	0.00078	03/10/20 20:16	
Molybdenum	mg/L	ND	0.010	0.00095	03/10/20 20:16	
Selenium	mg/L	ND	0.010	0.0013	03/10/20 20:16	
Thallium	mg/L	ND	0.0010	0.000052	03/10/20 20:16	

LABORATORY CONTROL SAMPLE: 203000

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	100	80-120	
Barium	mg/L	0.1	0.10	102	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	0.1	0.10	101	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	103	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.10	105	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203001 203002

Parameter	Units	2629733001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	111	110	75-125	1	20	
Arsenic	mg/L	0.0015J	0.1	0.1	0.11	0.11	106	105	75-125	1	20	
Barium	mg/L	0.060	0.1	0.1	0.17	0.18	115	116	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203001 203002

Parameter	Units	2629733001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	0	20	
Boron	mg/L	0.0065J	1	1	1.0	1.0	102	103	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.11	0.11	106	105	75-125	0	20	
Chromium	mg/L	0.0028J	0.1	0.1	0.11	0.11	112	107	75-125	4	20	
Cobalt	mg/L	ND	0.1	0.1	0.11	0.11	107	108	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.11	0.10	108	105	75-125	2	20	
Lithium	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	108	105	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.11	0.10	106	104	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.11	0.10	107	105	75-125	2	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44487 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

METHOD BLANK: 204143 Matrix: Water
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	03/16/20 14:26	
Arsenic	mg/L	0.00036J	0.0050	0.00035	03/16/20 14:26	
Barium	mg/L	ND	0.010	0.00049	03/16/20 14:26	
Beryllium	mg/L	ND	0.0030	0.000074	03/16/20 14:26	
Boron	mg/L	ND	0.10	0.0049	03/16/20 14:26	
Cadmium	mg/L	ND	0.0025	0.00011	03/16/20 14:26	
Chromium	mg/L	ND	0.010	0.00039	03/16/20 14:26	
Cobalt	mg/L	ND	0.0050	0.00030	03/16/20 14:26	
Lead	mg/L	ND	0.0050	0.000046	03/16/20 14:26	
Lithium	mg/L	ND	0.030	0.00078	03/16/20 14:26	
Molybdenum	mg/L	ND	0.010	0.00095	03/16/20 14:26	
Selenium	mg/L	ND	0.010	0.0013	03/16/20 14:26	
Thallium	mg/L	ND	0.0010	0.000052	03/16/20 14:26	

LABORATORY CONTROL SAMPLE: 204144

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	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	101	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.096	96	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.095	95	80-120	
Thallium	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204145 204146

Parameter	Units	2629733015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	106	102	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	105	101	75-125	4	20	
Barium	mg/L	0.025	0.1	0.1	0.13	0.12	102	98	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204145 204146

Parameter	Units	2629733015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.1	0.1	0.095	0.092	95	92	75-125	4	20	
Boron	mg/L	1.5	1	1	2.6	2.4	112	94	75-125	7	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	104	102	75-125	2	20	
Chromium	mg/L	ND	0.1	0.1	0.098	0.096	97	95	75-125	2	20	
Cobalt	mg/L	0.0011J	0.1	0.1	0.098	0.098	97	97	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.096	0.095	96	95	75-125	1	20	
Lithium	mg/L	0.016J	0.1	0.1	0.12	0.11	99	93	75-125	5	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	106	100	75-125	6	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	101	99	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.098	0.095	98	95	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44309 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

LABORATORY CONTROL SAMPLE: 203157

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	396	99	84-108	

SAMPLE DUPLICATE: 203158

Parameter	Units	2629679001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	52.0	49.0	6	10	

SAMPLE DUPLICATE: 203159

Parameter	Units	2629766004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	63.0	67.0	6	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44505 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

LABORATORY CONTROL SAMPLE: 204334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	390	98	84-108	

SAMPLE DUPLICATE: 204335

Parameter	Units	2629733017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	297	314	6	10	

SAMPLE DUPLICATE: 204336

Parameter	Units	2629734014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	457	455	0	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 529177 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

METHOD BLANK: 2826406 Matrix: Water
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/10/20 19:28	
Fluoride	mg/L	ND	0.10	0.050	03/10/20 19:28	
Sulfate	mg/L	ND	1.0	0.50	03/10/20 19:28	

LABORATORY CONTROL SAMPLE: 2826407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.6	97	90-110	
Fluoride	mg/L	2.5	2.6	102	90-110	
Sulfate	mg/L	50	51.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826408 2826409

Parameter	Units	92468412012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	0.93J	50	50	52.4	51.9	103	102	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	3.0	2.9	119	114	90-110	4	10	M1
Sulfate	mg/L	7.7	50	50	60.6	59.7	106	104	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826410 2826411

Parameter	Units	2629734005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.9	50	50	54.3	55.1	101	102	90-110	2	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	103	105	90-110	2	10	
Sulfate	mg/L	2.8	50	50	55.2	56.0	105	106	90-110	1	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 529688 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

METHOD BLANK: 2829146 Matrix: Water
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/12/20 02:58	
Fluoride	mg/L	ND	0.10	0.050	03/12/20 02:58	
Sulfate	mg/L	ND	1.0	0.50	03/12/20 02:58	

LABORATORY CONTROL SAMPLE: 2829147

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.6	101	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	50	52.4	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2829148 2829149

Parameter	Units	92468620006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	14.1	50	50	64.3	64.6	100	101	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	103	105	90-110	1	10	
Sulfate	mg/L	13.1	50	50	64.2	64.4	102	103	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2829150 2829151

Parameter	Units	2629734012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	50	50	50.4	50.8	101	102	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.7	2.8	110	110	90-110	0	10	
Sulfate	mg/L	ND	50	50	52.4	52.6	104	105	90-110	0	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629734001	**BRGWA-6S**	EPA 3010A	44425	EPA 6010D	44437
2629734002	**BRGWA-2S**	EPA 3010A	44425	EPA 6010D	44437
2629734003	**BRGWA-2I**	EPA 3010A	44425	EPA 6010D	44437
2629734004	**BRGWA-5S**	EPA 3010A	44425	EPA 6010D	44437
2629734005	**BRGWA-5I**	EPA 3010A	44425	EPA 6010D	44437
2629734006	**BRGWC-17S**	EPA 3010A	44425	EPA 6010D	44437
2629734007	**BRGWC-33S**	EPA 3010A	44482	EPA 6010D	44490
2629734008	**BRGWC-34S**	EPA 3010A	44482	EPA 6010D	44490
2629734009	**BRGWC-35S**	EPA 3010A	44482	EPA 6010D	44490
2629734010	**BRGWC-38S**	EPA 3010A	44482	EPA 6010D	44490
2629734011	**DUP-3**	EPA 3010A	44482	EPA 6010D	44490
2629734012	**FB-2**	EPA 3010A	44482	EPA 6010D	44490
2629734013	**BRGWC-37S**	EPA 3010A	44482	EPA 6010D	44490
2629734014	**BRGWC-36S**	EPA 3010A	44482	EPA 6010D	44490
2629734001	**BRGWA-6S**	EPA 3005A	44282	EPA 6020B	44315
2629734002	**BRGWA-2S**	EPA 3005A	44282	EPA 6020B	44315
2629734003	**BRGWA-2I**	EPA 3005A	44282	EPA 6020B	44315
2629734004	**BRGWA-5S**	EPA 3005A	44282	EPA 6020B	44315
2629734005	**BRGWA-5I**	EPA 3005A	44282	EPA 6020B	44315
2629734006	**BRGWC-17S**	EPA 3005A	44282	EPA 6020B	44315
2629734007	**BRGWC-33S**	EPA 3005A	44487	EPA 6020B	44511
2629734008	**BRGWC-34S**	EPA 3005A	44487	EPA 6020B	44511
2629734009	**BRGWC-35S**	EPA 3005A	44487	EPA 6020B	44511
2629734010	**BRGWC-38S**	EPA 3005A	44487	EPA 6020B	44511
2629734011	**DUP-3**	EPA 3005A	44487	EPA 6020B	44511
2629734012	**FB-2**	EPA 3005A	44487	EPA 6020B	44511
2629734013	**BRGWC-37S**	EPA 3005A	44487	EPA 6020B	44511
2629734014	**BRGWC-36S**	EPA 3005A	44487	EPA 6020B	44511
2629734001	**BRGWA-6S**	SM 2540C	44309		
2629734002	**BRGWA-2S**	SM 2540C	44309		
2629734003	**BRGWA-2I**	SM 2540C	44309		
2629734004	**BRGWA-5S**	SM 2540C	44309		
2629734005	**BRGWA-5I**	SM 2540C	44309		
2629734006	**BRGWC-17S**	SM 2540C	44309		
2629734007	**BRGWC-33S**	SM 2540C	44505		
2629734008	**BRGWC-34S**	SM 2540C	44505		
2629734009	**BRGWC-35S**	SM 2540C	44505		
2629734010	**BRGWC-38S**	SM 2540C	44505		
2629734011	**DUP-3**	SM 2540C	44505		
2629734012	**FB-2**	SM 2540C	44505		
2629734013	**BRGWC-37S**	SM 2540C	44505		
2629734014	**BRGWC-36S**	SM 2540C	44505		
2629734001	**BRGWA-6S**	EPA 300.0 Rev 2.1 1993	529177		
2629734002	**BRGWA-2S**	EPA 300.0 Rev 2.1 1993	529177		
2629734003	**BRGWA-2I**	EPA 300.0 Rev 2.1 1993	529177		
2629734004	**BRGWA-5S**	EPA 300.0 Rev 2.1 1993	529177		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629734005	**BRGWA-5I**	EPA 300.0 Rev 2.1 1993	529177		
2629734006	**BRGWC-17S**	EPA 300.0 Rev 2.1 1993	529177		
2629734007	**BRGWC-33S**	EPA 300.0 Rev 2.1 1993	529688		
2629734008	**BRGWC-34S**	EPA 300.0 Rev 2.1 1993	529688		
2629734009	**BRGWC-35S**	EPA 300.0 Rev 2.1 1993	529688		
2629734010	**BRGWC-38S**	EPA 300.0 Rev 2.1 1993	529688		
2629734011	**DUP-3**	EPA 300.0 Rev 2.1 1993	529688		
2629734012	**FB-2**	EPA 300.0 Rev 2.1 1993	529688		
2629734013	**BRGWC-37S**	EPA 300.0 Rev 2.1 1993	529688		
2629734014	**BRGWC-36S**	EPA 300.0 Rev 2.1 1993	529688		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

WO#: 2629734

SAMPLE ID	Matrix	# of Containers	Collected Date	Collected Time	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
BRGWC-33S	WT	6			5	3		
BRGWC-34S	WT	6			5	2		
BRGWC-35S	WT	6			7	2		extra radiums
BRGWC-38S	WT	6			5	2		
D-F-3	WT	6			5	2		
FB-2	WT	6			5	2		
BRGWC-37S	WT	6			5	2		
BRGWC-36S	WT	6			5	2		

Relinquished by / Affiliation	Date	Time	Accepted by / Affiliation	Date	Time	Sample Conditions			
Darren Cox / Geosyntec	3/6/20	0945	Charles Hanks	3/6/20	0945	0.2	Y	N	Y

DATE Signed (MM/DD/YY): 03-06-2020

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days

Sample Condition Upon Re

WO#: 2629734

PM: KH Due Date: 03/18/26

CLIENT: 28-GA Pace

Pace Analytical

Client Name:

Cooler | | FedEx | | UPS | | USPS | | Client | | Commercial | | Pace

Tracking #:

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

Packing Material: | | Bubble Wrap | | Bubble Bags | | None | | Other

Thermometer Used

Type of Ice: Blue None | | Samples received using multiple coolers

Cooler Temperature

Biological Tissue is Frozen: yes no

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents:

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

April 06, 2020

Mr. Joju Abraham
Georgia Power
2480 Maner Road
Atlanta, GA 30339

RE: Project: 2629734
Pace Project No.: 30353315

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 05, 2020 and March 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

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

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
(724)850-5612
Project Manager

Enclosures

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 2629734
Pace Project No.: 30353315

Pace Analytical Services Pennsylvania
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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: 2629734
Pace Project No.: 30353315

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629734001	**BRGWA-6S**	Water	03/03/20 13:56	03/05/20 09:15
2629734002	**BRGWA-2S**	Water	03/03/20 11:40	03/05/20 09:15
2629734003	**BRGWA-2I**	Water	03/03/20 12:25	03/05/20 09:15
2629734004	**BRGWA-5S**	Water	03/03/20 10:33	03/05/20 09:15
2629734005	**BRGWA-5I**	Water	03/03/20 09:39	03/05/20 09:15
2629734006	**BRGWC-17S**	Water	03/03/20 15:45	03/05/20 09:15
2629734007	**BRGWC-33S**	Water	03/05/20 09:05	03/10/20 09:20
2629734008	**BRGWC-34S**	Water	03/05/20 09:58	03/10/20 09:20
2629734009	**BRGWC-35S**	Water	03/05/20 11:47	03/10/20 09:20
2629734010	**BRGWC-38S**	Water	03/05/20 12:15	03/10/20 09:20
2629734011	**DUP-3**	Water	03/05/20 00:01	03/10/20 09:20
2629734012	**FB-2**	Water	03/05/20 11:15	03/10/20 09:20
2629734013	**BRGWC-37S**	Water	03/05/20 14:34	03/10/20 09:20
2629734014	**BRGWC-36S**	Water	03/05/20 15:58	03/10/20 09:20

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 2629734
Pace Project No.: 30353315

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629734001	**BRGWA-6S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734002	**BRGWA-2S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734003	**BRGWA-2I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734004	**BRGWA-5S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734005	**BRGWA-5I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734006	**BRGWC-17S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734007	**BRGWC-33S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734008	**BRGWC-34S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734009	**BRGWC-35S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734010	**BRGWC-38S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734011	**DUP-3**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734012	**FB-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734013	**BRGWC-37S**	EPA 9315	LAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 2629734
Pace Project No.: 30353315

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734014	**BRGWC-36S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

Sample: BRGWA-6S **Lab ID: 2629734001** Collected: 03/03/20 13:56 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.397 ± 0.306 (0.514) C:77% T:NA**	pCi/L	03/12/20 08:21	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**-0.106 ± 0.323 (0.784) C:71% T:87%**	pCi/L	03/24/20 19:45	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.397 ± 0.629 (1.30)**	pCi/L	04/03/20 13:26	7440-14-4	

Sample: BRGWA-2S **Lab ID: 2629734002** Collected: 03/03/20 11:40 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.342 ± 0.357 (0.719) C:70% T:NA**	pCi/L	03/12/20 08:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.476 ± 0.405 (0.816) C:71% T:89%**	pCi/L	03/24/20 19:47	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.818 ± 0.762 (1.54)**	pCi/L	04/03/20 13:26	7440-14-4	

Sample: BRGWA-2I **Lab ID: 2629734003** Collected: 03/03/20 12:25 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.535 ± 0.350 (0.567) C:79% T:NA**	pCi/L	03/12/20 08:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.644 ± 0.436 (0.838) C:72% T:85%**	pCi/L	03/24/20 19:48	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.18 ± 0.786 (1.41)**	pCi/L	04/03/20 13:26	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

Sample: BRGWA-5S **Lab ID: 2629734004** Collected: 03/03/20 10:33 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.936 ± 0.427 (0.475) C:76% T:NA**	pCi/L	03/12/20 08:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.565 ± 0.411 (0.803) C:71% T:92%**	pCi/L	03/24/20 19:48	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.50 ± 0.838 (1.28)**	pCi/L	04/03/20 14:54	7440-14-4	

Sample: BRGWA-5I **Lab ID: 2629734005** Collected: 03/03/20 09:39 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.559 ± 0.436 (0.767) C:59% T:NA**	pCi/L	03/12/20 08:23	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.437 ± 0.376 (0.759) C:72% T:95%**	pCi/L	03/24/20 19:48	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.996 ± 0.812 (1.53)**	pCi/L	04/03/20 14:54	7440-14-4	

Sample: BRGWC-17S **Lab ID: 2629734006** Collected: 03/03/20 15:45 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.369 ± 0.266 (0.413) C:88% T:NA**	pCi/L	03/12/20 08:23	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.387 ± 0.437 (0.916) C:69% T:79%**	pCi/L	03/24/20 19:48	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.756 ± 0.703 (1.33)**	pCi/L	04/03/20 14:54	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

Sample: BRGWC-33S **Lab ID: 2629734007** Collected: 03/05/20 09:05 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.462 ± 0.210 (0.193) C:93% T:NA**	pCi/L	03/23/20 10:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.221 ± 0.336 (0.727) C:81% T:83%**	pCi/L	04/02/20 11:49	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.683 ± 0.546 (0.920)**	pCi/L	04/06/20 07:58	7440-14-4	

Sample: BRGWC-34S **Lab ID: 2629734008** Collected: 03/05/20 09:58 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.463 ± 0.217 (0.232) C:93% T:NA**	pCi/L	03/23/20 10:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.329 ± 0.339 (0.701) C:84% T:87%**	pCi/L	04/02/20 11:49	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.792 ± 0.556 (0.933)**	pCi/L	04/06/20 07:58	7440-14-4	

Sample: BRGWC-35S **Lab ID: 2629734009** Collected: 03/05/20 11:47 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.657 ± 0.256 (0.228) C:95% T:NA**	pCi/L	03/23/20 10:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.201 ± 0.318 (0.689) C:84% T:88%**	pCi/L	04/02/20 11:49	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.858 ± 0.574 (0.917)**	pCi/L	04/06/20 07:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

Sample: BRGWC-38S **Lab ID: 2629734010** Collected: 03/05/20 12:15 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.710 ± 0.272 (0.221) C:90% T:NA**	pCi/L	03/23/20 10:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**1.50 ± 0.498 (0.693) C:84% T:92%**	pCi/L	04/02/20 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**2.21 ± 0.770 (0.914)**	pCi/L	04/06/20 07:59	7440-14-4	

Sample: DUP-3 **Lab ID: 2629734011** Collected: 03/05/20 00:01 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.667 ± 0.260 (0.231) C:88% T:NA**	pCi/L	03/23/20 10:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.0551 ± 0.315 (0.720) C:83% T:88%**	pCi/L	04/02/20 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.722 ± 0.575 (0.951)**	pCi/L	04/06/20 07:59	7440-14-4	

Sample: FB-2 **Lab ID: 2629734012** Collected: 03/05/20 11:15 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.467 ± 0.225 (0.273) C:91% T:NA**	pCi/L	03/23/20 10:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.332 ± 0.346 (0.719) C:83% T:88%**	pCi/L	04/02/20 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.799 ± 0.571 (0.992)**	pCi/L	04/06/20 07:59	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

Sample: BRGWC-37S **Lab ID: 2629734013** Collected: 03/05/20 14:34 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.503 ± 0.220 (0.193) C:94% T:NA**	pCi/L	03/23/20 10:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.288 ± 0.368 (0.784) C:83% T:90%**	pCi/L	04/02/20 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.791 ± 0.588 (0.977)**	pCi/L	04/06/20 07:59	7440-14-4	

Sample: BRGWC-36S **Lab ID: 2629734014** Collected: 03/05/20 15:58 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.920 ± 0.318 (0.208) C:79% T:NA**	pCi/L	03/23/20 10:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.383 ± 0.343 (0.698) C:83% T:90%**	pCi/L	04/02/20 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.30 ± 0.661 (0.906)**	pCi/L	04/06/20 07:59	7440-14-4	

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 387070 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

METHOD BLANK: 1875172 Matrix: Water
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.386 ± 0.179 (0.259) C:94% T:NA	pCi/L	03/11/20 19:21	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 387086 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

METHOD BLANK: 1875203 Matrix: Water
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.371 ± 0.288 (0.559) C:81% T:88%	pCi/L	03/24/20 19:46	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 388323 | Analysis Method: EPA 9320
QC Batch Method: EPA 9320 | Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

METHOD BLANK: 1881006 Matrix: Water
Associated Lab Samples: 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0681 ± 0.261 (0.594) C:84% T:89%	pCi/L	04/02/20 14:56	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 388319
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734007, 2629734008, 2629734009

METHOD BLANK: 1881002 Matrix: Water
Associated Lab Samples: 2629734007, 2629734008, 2629734009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.174 ± 0.140 (0.217) C:89% T:NA	pCi/L	03/23/20 10:13	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 388322
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734007, 2629734008, 2629734009

METHOD BLANK: 1881005 Matrix: Water
Associated Lab Samples: 2629734007, 2629734008, 2629734009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.510 ± 0.340 (0.651) C:86% T:94%	pCi/L	04/02/20 11:49	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 388320 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

METHOD BLANK: 1881003 Matrix: Water
Associated Lab Samples: 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.387 ± 0.205 (0.273) C:94% T:NA	pCi/L	03/23/20 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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 2629734
Pace Project No.: 30353315

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.

TNTC - Too Numerous To Count

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: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. Is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(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.

Chain of Custody

Pace Analytical®

☐ Samples were sent directly to the Subcontracting Laboratory

State Of Origin: GA
Cert. Needed: ☐ Yes ☐ No
Owner Received Date: 3/4/2020
Results Requested By: [illegible]

Workorder: [illegible]
Workorder Name: [illegible]

Karen Harting
Pace Analytical Charlotte
9800 Kincey Ave
Suite 100
Huntersville, NC 28078
Phone (704) 875-9092

Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2,3, & 4
Greensburg, PA 15601
Phone (724)850-5600

WO# : 30353315

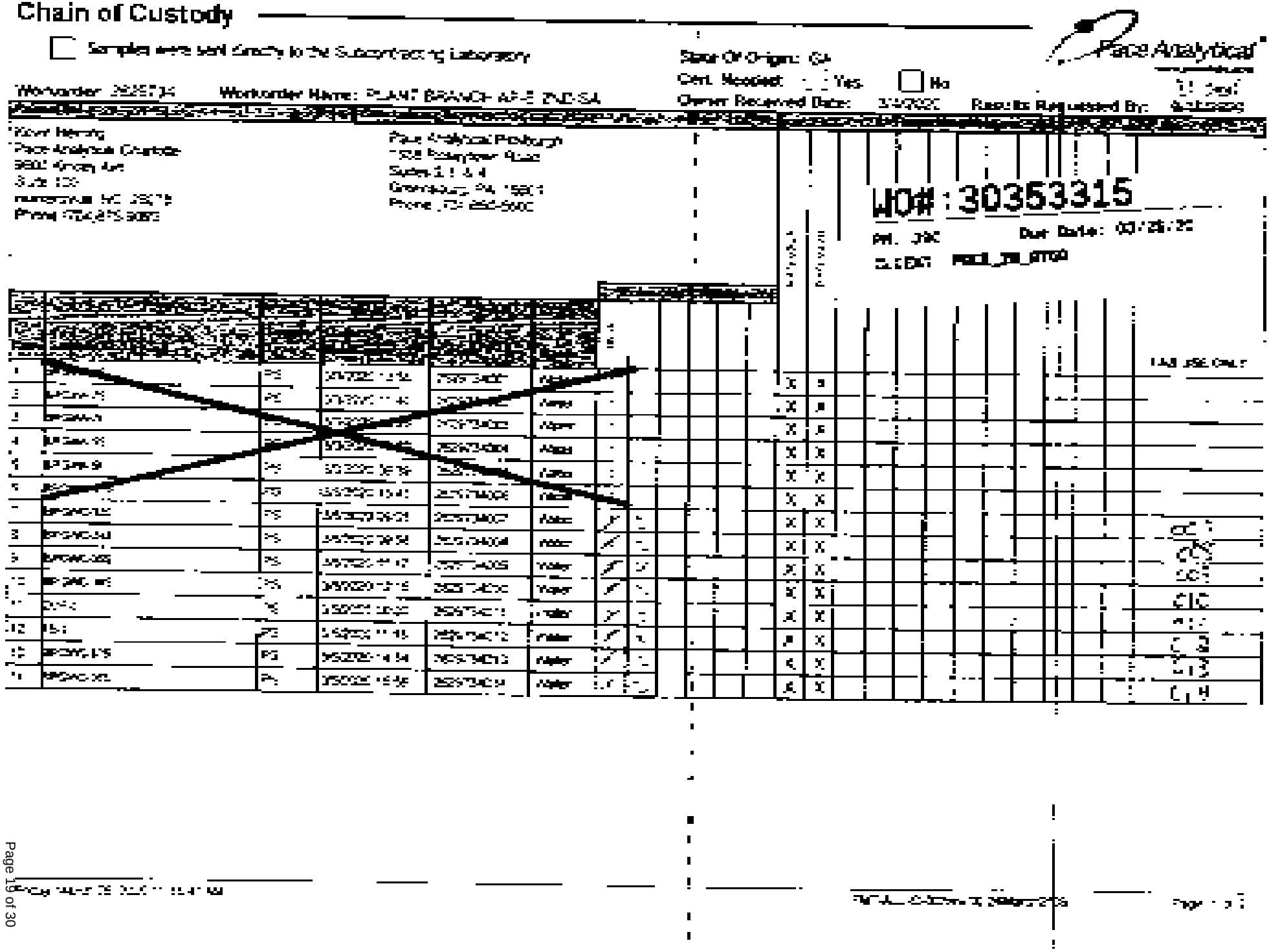
Item	Sample ID		Collect Date/Time	Lab ID	Matrix					LAB USE ONLY
1	[illegible]	PS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	X	X	[illegible]
2	[illegible]	PS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	X	X	[illegible]
3	[illegible]	PS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	X	X	[illegible]
4	[illegible]	PS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	X	X	[illegible]
5	[illegible]	PS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	X	X	[illegible]
6	[illegible]	PS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	X	X	[illegible]

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	[illegible]	[illegible]	[illegible]
2				[illegible]
3				

Cooler Temperature on Receipt [illegible] °C | Custody Seal Y or [✓ N] | Received on Ice Y or [✓ N] | Samples Intact [✓ Y] or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

[illegible]



Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory

Workorder: [illegible] Workorder Name: PLANT BRANCH AP-3 IND-SA

State Of Origin: GA
Cert. Needed: ☐ Yes ☐ No
Owner Received Date: [illegible] Results Requested By: [illegible]

Pace Analytical

Kevin Herring
Pace Analytical Charlotte
9800 Kincey Ave
Suite 100
Huntersville, NC 28078
Phone (704)875-9092

Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2, 3 & 4
Greensburg, PA 15601
Phone (724)850-5600

WO#: 30353315

PM: JMC Due Date: [illegible]
CLIENT: [illegible]

1	[illegible]	PS	[illegible]	[illegible]	Water			X	X	
2	[illegible]	PS	[illegible]	[illegible]	Water			X	X	
3	[illegible]	PS	[illegible]	[illegible]	Water			X	X	
4	[illegible]	PS	[illegible]	[illegible]	Water			X	X	
5	[illegible]	PS	[illegible]	[illegible]	Water			X	X	
6	[illegible]	PS	[illegible]	[illegible]	Water			X	X	
7	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
8	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
9	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
10	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
11	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
12	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
13	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
14	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]

Timeline	Relinquished By	Date/Time	Received By	Date/Time	
1					
2					
3					

Cooler Temperature on Receipt ___°C/N°C | Custody Seal Y or (N) | Received on Ice Y or (N) | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on the COC document.
The chain of custody is considered complete as is since this information is available in Pace environmental laboratory

3035315

Pittsburgh Lab Sample Condition Upon Receipt

Client Name

Project #

Label

Custody Seal on Cooler/Box Present:

Thermometer Used

Type of Ice

Cooler Temperature

Observed Temp

Correction Factor

Temp Blank Temperature

Comments

pH Upon Receipt

Date and Initials of Person Examining Contents

Client Approved to Hold Past Hold Time

Client Approved Dilution

Residual Chlorine Present

Adjusted pH

Lot # of pH Paper

Additional Sample Volume Received

Sample Condition Upon Receipt

Client Notified/Resolution

Person Contacted

Date/Time

Contacted By

Comments/Resolution

A check in this box indicates that additional information has been stored in eLogin.

Pittsburgh Lab Sample Condition Upon Receipt

Client Name Pace Analytical Project # 30353335

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 1163 9506 8797

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used: Type of Ice: Wet Blue Dry None

Cooler Temperature Observed Temp 4.4 °C Corr. Factor °C Final Temp °C

Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Comments:

Chain of Custody Present: Yes No N/A 1.

Chain of Custody Filled Out: Yes No N/A 2.

Chain of Custody Relinquished: Yes No N/A 3.

Sampler Name & Signature on COC: Yes No N/A 4.

Samples Arrived within Hold Time: Yes No N/A 5.

Short Hold Time Analysis (<72 hr remaining): Yes No N/A 6.

Rush Turn Around Time Requested: Yes No N/A 7.

Sufficient Volume: Yes No N/A 8.

Correct Containers Used: Yes No N/A 9.

-Pace Containers Used: Yes No N/A

Containers Intact: Yes No N/A 10.

Filtered volume received for Dissolved tests: Yes No N/A 11.

Sample Labels match COC: Yes No N/A 12.

-Includes date/time/ID/Analysis Matrix:

All containers needing preservation have been checked and noted below: Yes No N/A 13.

Exceptions noted in comments below:

All containers needing preservation are found to be in compliance with EPA recommendation: Yes No N/A

Initial when completed: Lot # of added preservative:

Samples checked for dechlorination: Yes No N/A 14.

Headspace in VOA Vials (>6mm): Yes No N/A 15.

Trip Blank Present: Yes No N/A 16.

Trip Blank Custody Seals Present: Yes No N/A

Pace Trip Blank Lot # (if purchased):

Client Notification/Resolution:

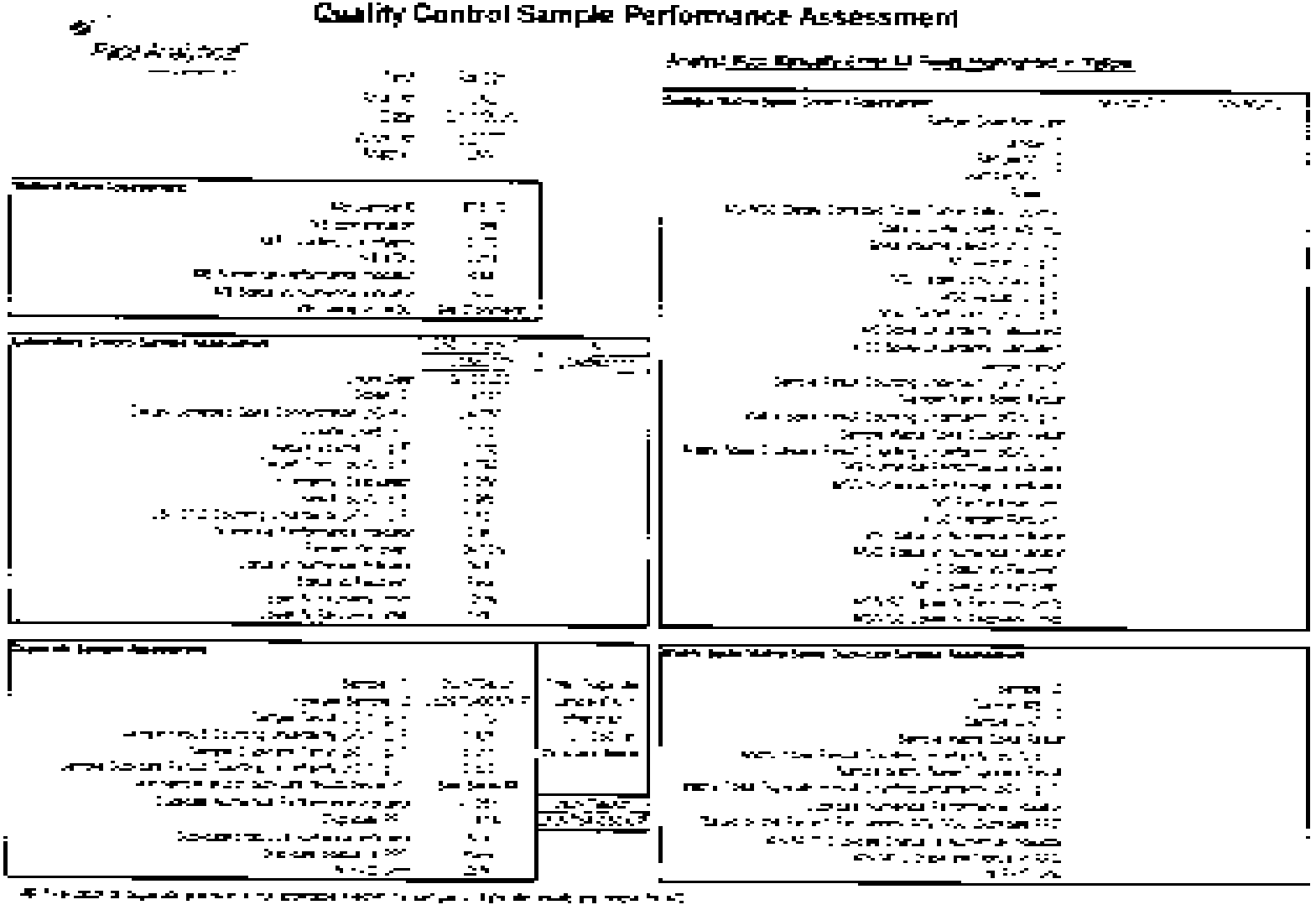
Person Contacted: Date/Time: By:

Comments/Resolution:

- A check in this box indicates that additional information has been noted in comments.

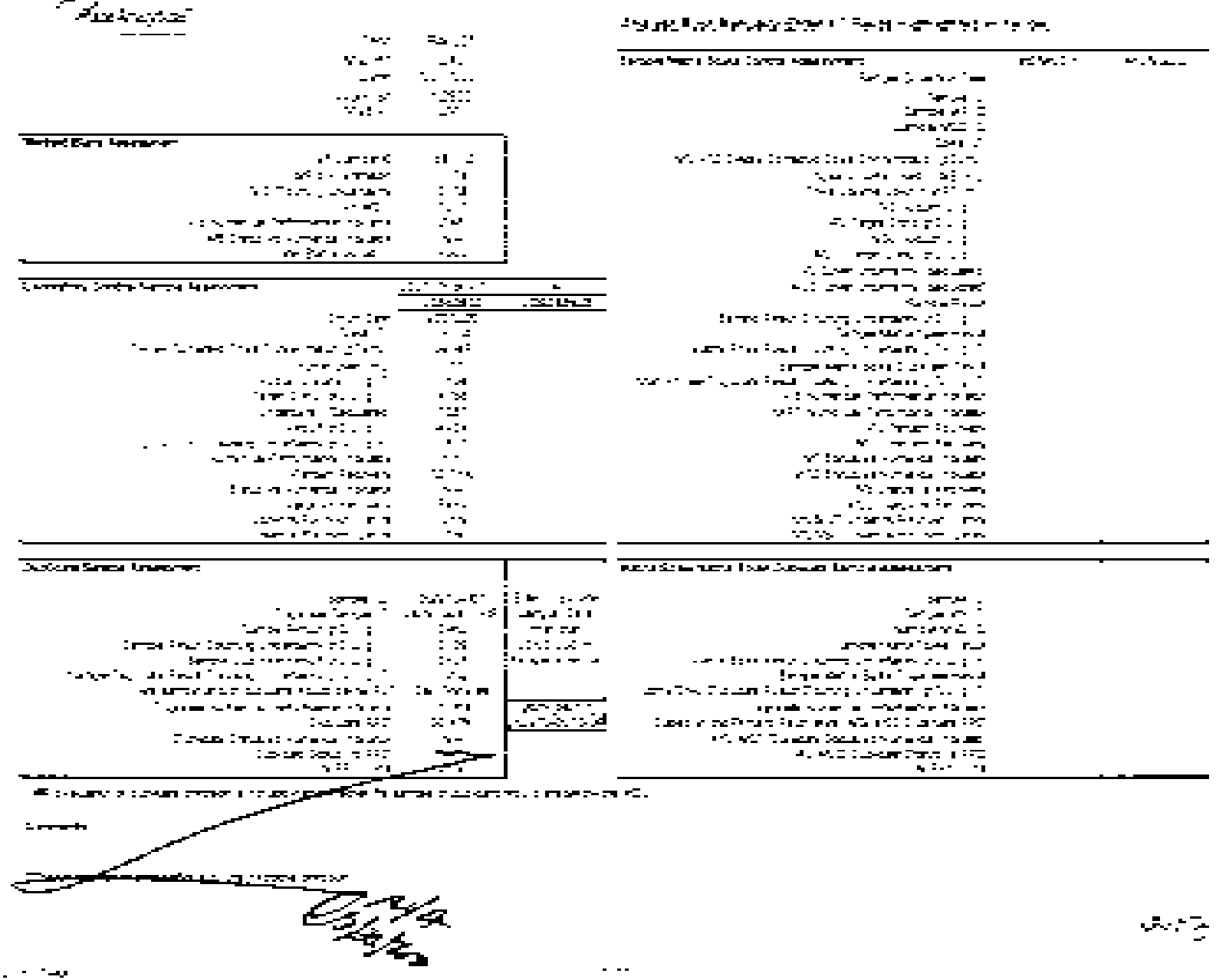
Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Quality Control Sample Performance Assessment

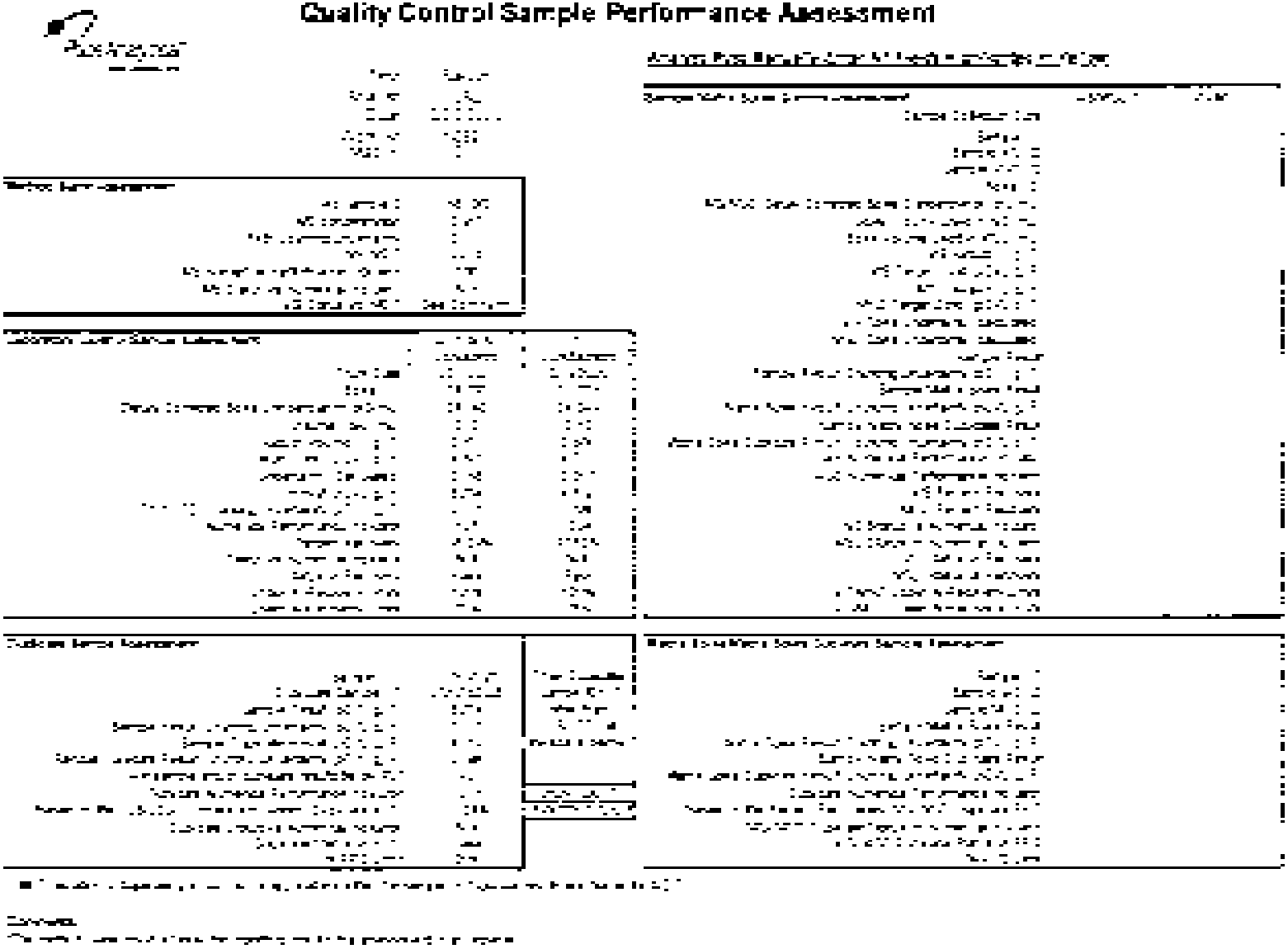


Quality Control Sample Performance Assessment

Quality Control Sample Performance Assessment

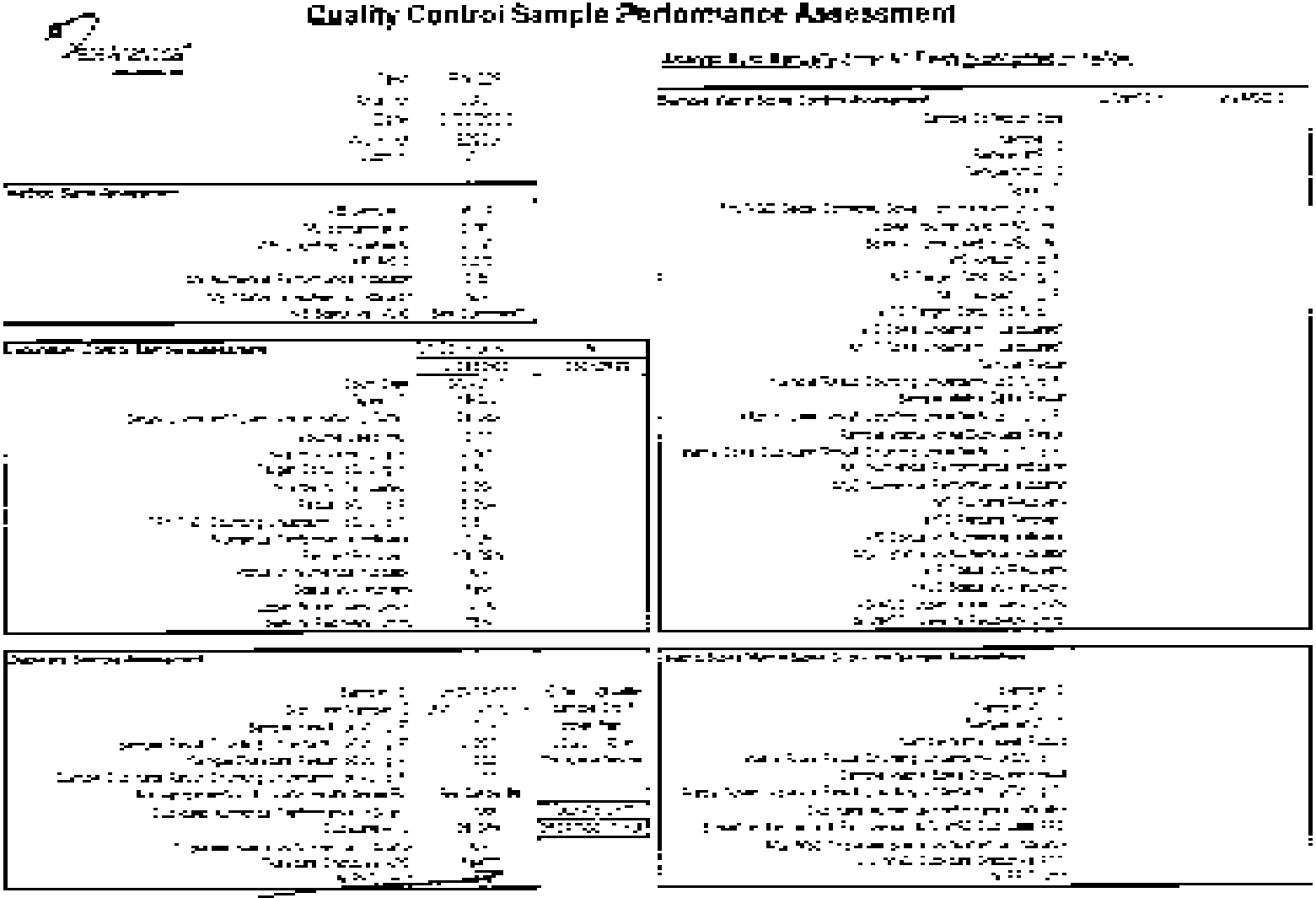


Quality Control Sample Performance Assessment

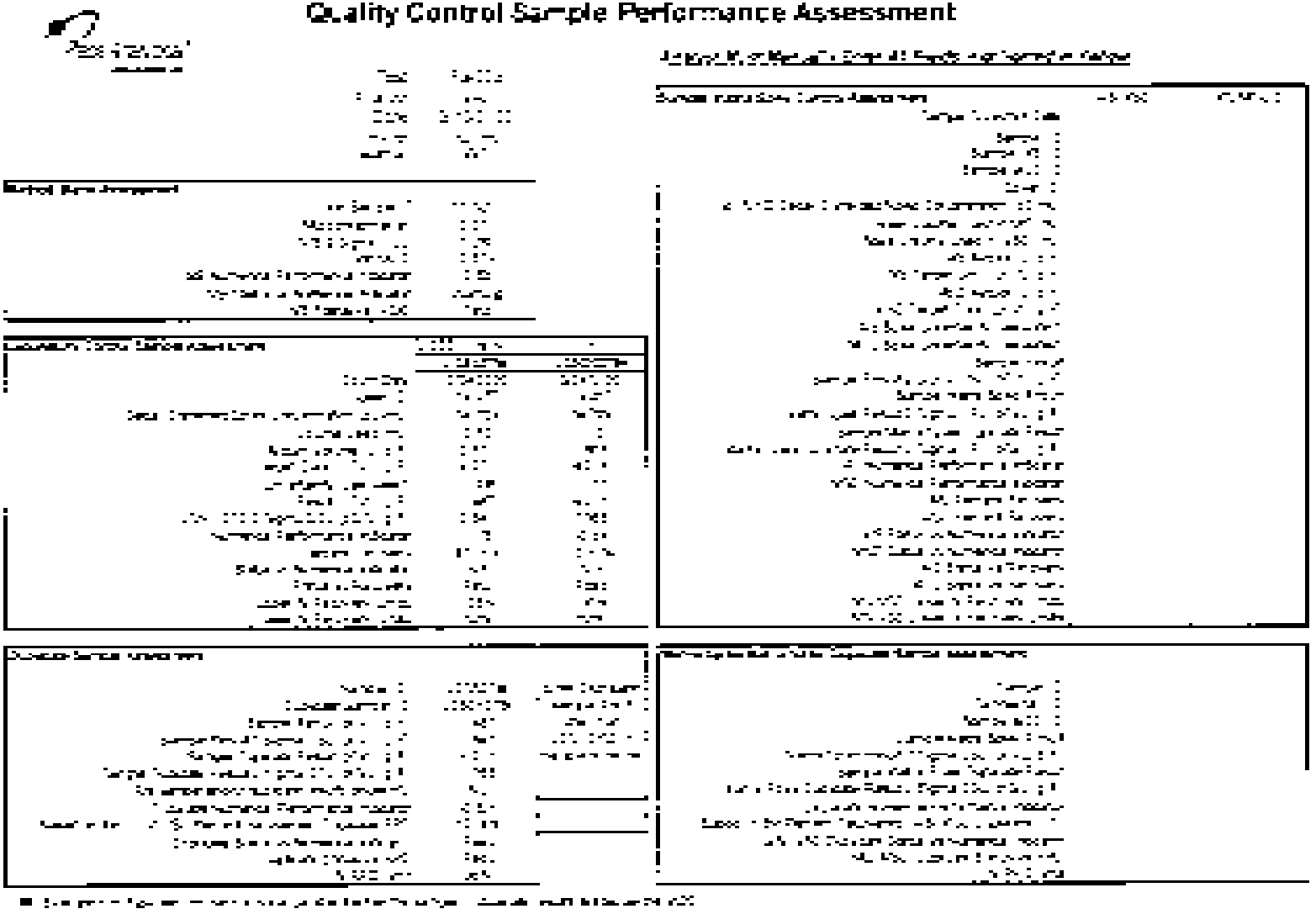


Page 26 of 30

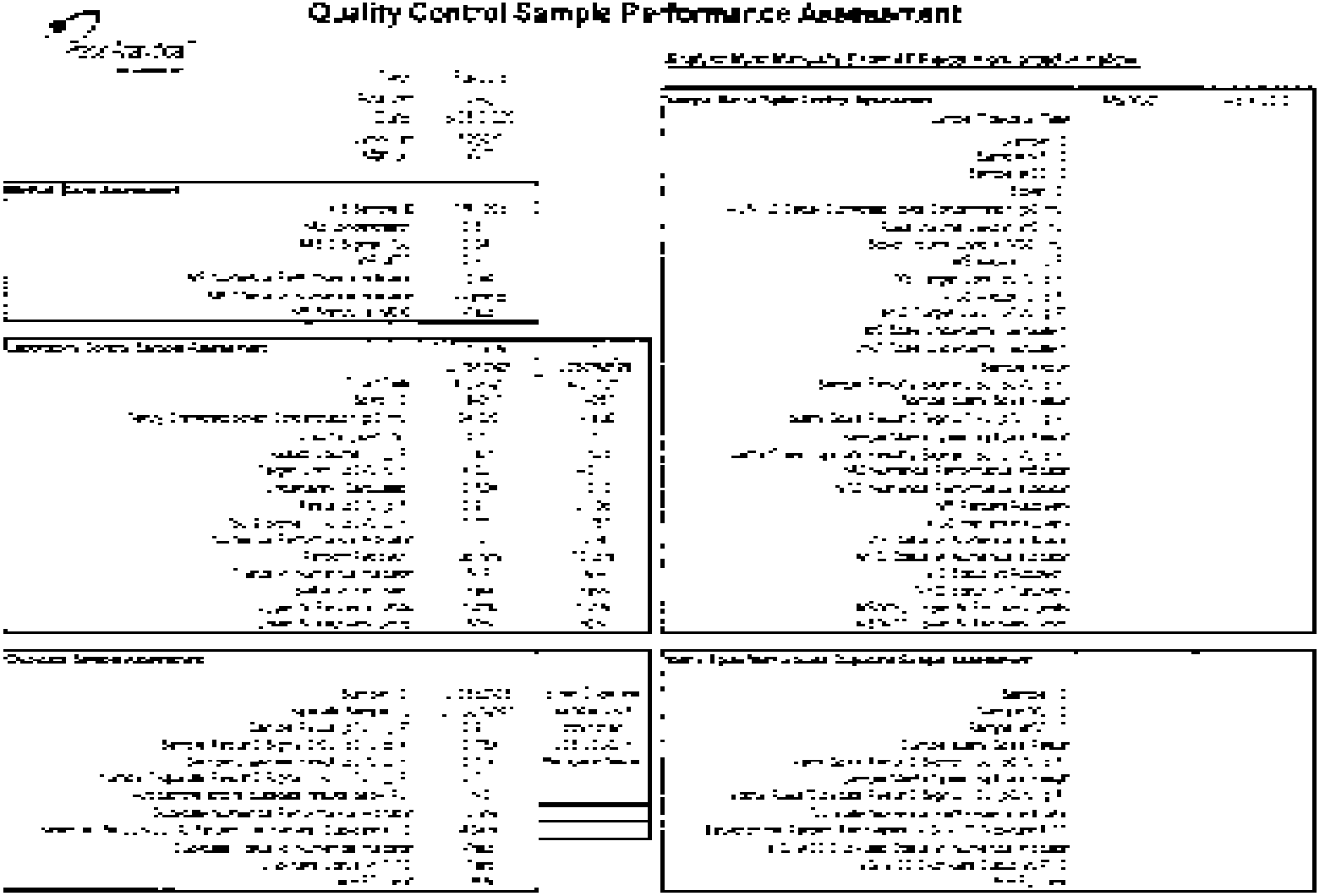
Quality Control Sample Performance Assessment



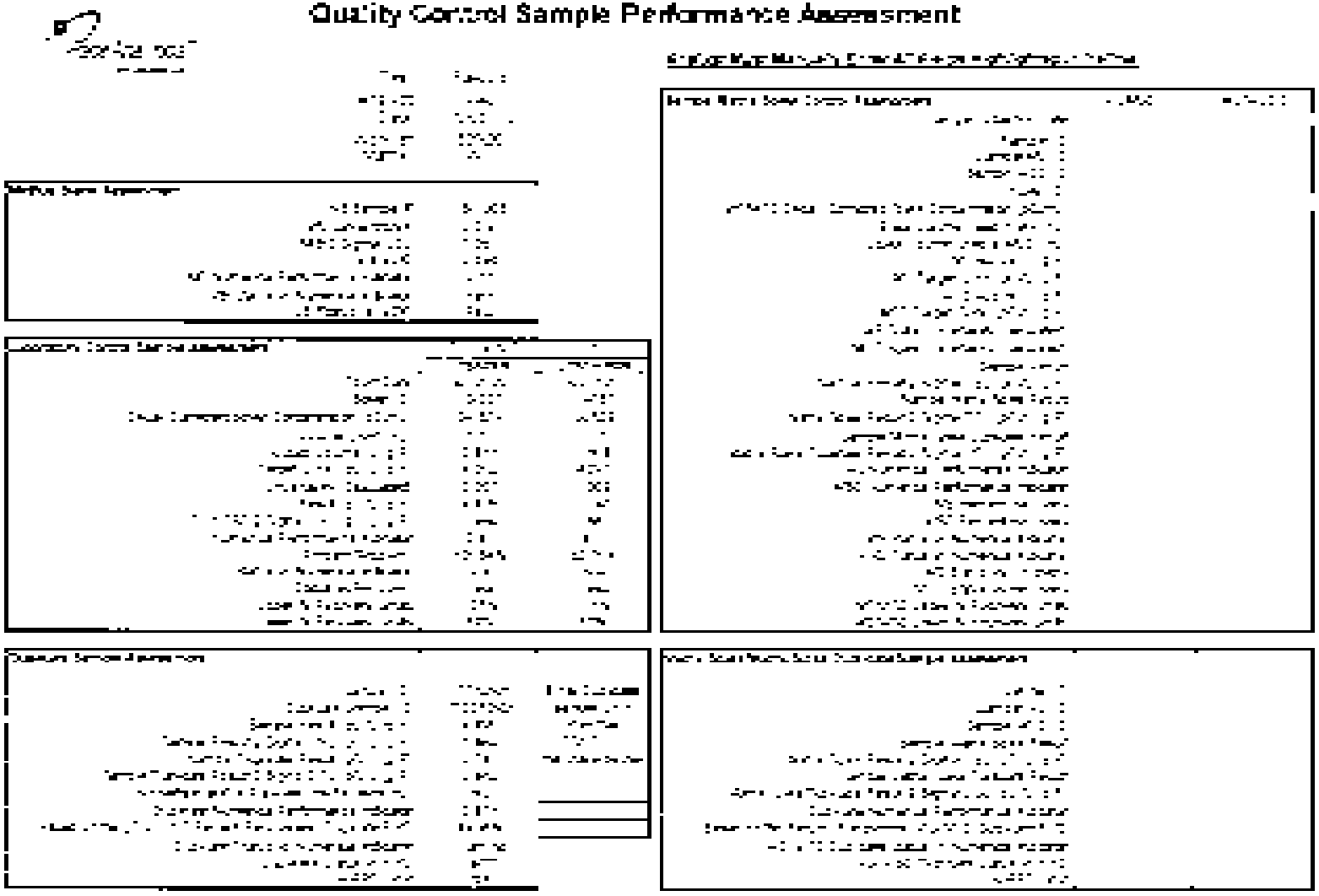
Quality Control Sample Performance Assessment



Quality Control Sample Performance Assessment



Quality Control Sample Performance Assessment



COMMONWEALTH OF VIRGINIA
DEPARTMENT OF GENERAL SERVICES
DIVISION OF CONSOLIDATED LABORATORY SERVICES

Certifies that

VA Laboratory ID#: 460222
Pace Analytical Services, LLC - Asheville NC

2225 Riverside Drive
Asheville, NC 28804

Owner: PAS PARENT, LLC
Operator: PACE ANALYTICAL SERVICES, LLC
Responsible Official: FELICIA GROGAN

Having met the requirements of 1 VAC 30-46 and
having been found compliant with the 2009 TNI Standard approved by The NELAC Institute
is hereby approved as an

Accredited Environmental Laboratory

As more fully described in the attached Scope of Accreditation

Effective Date: **December 10, 2019**
Expiration Date: **June 14, 2020**
Certificate # 10657

Denise M. Toney, Ph.D., HCLD
DGS Deputy Director for Laboratories

Continued accreditation status depends on successful ongoing participation in the program.
Certificate to be conspicuously displayed at the laboratory.
Not valid unless accompanied by a valid Virginia Environmental Laboratory Accreditation Program (VELAP) Scope of Accreditation.
Customers are urged to verify the laboratory's current accreditation status.

Certificate Not Transferable

Surrender Upon Revocation

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services

Scope of Accreditation

VELAP Certificate No.: 10657

Pace Analytical Services, LLC - Asheville NC
2225 Riverside Drive
Asheville, NC 28804

Virginia Laboratory ID: 460222
Effective Date: December 10, 2019
Expiration Date: June 14, 2020

DRINKING WATER

METHOD	ANALYTE	PRIMARY
EPA 200.8 REV 5.4	COPPER	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1 A + C)	NITRATE AS N	VA
SM 2320 B-2011	ALKALINITY AS CACO3	VA
SM 9223 COLISURE®	TOTAL COLIFORMS	VA
EPA 200.8 REV 5.4	LEAD	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1-A)	NITRITE AS N	VA
SM 9223 COLISURE®	ESCHERICHIA COL.	VA

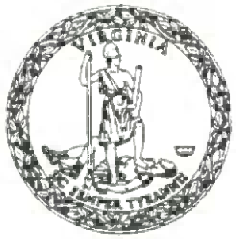
NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 1010	FLASHPOINT	VA
EPA 160.4	RESIDUE-VOLATILE	VA
EPA 180.1 REV 2	TURBIDITY	VA
EPA 200.7 REV 4.4	ANTIMONY	VA
EPA 200.7 REV 4.4	BARIUM	VA
EPA 200.7 REV 4.4	BORON	VA
EPA 200.7 REV 4.4	CALCIUM	VA
EPA 200.7 REV 4.4	COBALT	VA
EPA 200.7 REV 4.4	IRON	VA
EPA 200.7 REV 4.4	MAGNESIUM	VA
EPA 200.7 REV 4.4	MOLYBDENUM	VA
EPA 200.7 REV 4.4	POTASSIUM	VA
EPA 200.7 REV 4.4	SILICA AS SIO2	VA
EPA 200.7 REV 4.4	SODIUM	VA
EPA 200.7 REV 4.4	TIN	VA
EPA 200.7 REV 4.4	VANADIUM	VA
EPA 200.8 REV 5.4	ALUMINUM	VA
EPA 200.8 REV 5.4	ARSENIC	VA
EPA 200.8 REV 5.4	BERYLLIUM	VA
EPA 200.8 REV 5.4	CHROMIUM	VA
EPA 200.8 REV 5.4	COPPER	VA
EPA 200.8 REV 5.4	MANGANESE	VA
EPA 200.8 REV 5.4	NICKEL	VA
EPA 200.8 REV 5.4	SILVER	VA
EPA 200.8 REV 5.4	VANADIUM	VA
EPA 200.8 REV 5.4 - EXTENDED	BORON	VA
EPA 200.8 REV 5.4 - EXTENDED	IRON	VA
EPA 200.8 REV 5.4 - EXTENDED	POTASSIUM	VA
EPA 120.1	CONDUCTIVITY	VA
EPA 1631 E	MERCURY	VA
EPA 200.7 REV 4.4	ALUMINUM	VA
EPA 200.7 REV 4.4	ARSENIC	VA
EPA 200.7 REV 4.4	BERYLLIUM	VA
EPA 200.7 REV 4.4	CADMIUM	VA
EPA 200.7 REV 4.4	CHROMIUM	VA
EPA 200.7 REV 4.4	COPPER	VA
EPA 200.7 REV 4.4	LEAD	VA
EPA 200.7 REV 4.4	MANGANESE	VA
EPA 200.7 REV 4.4	NICKEL	VA
EPA 200.7 REV 4.4	SELENIUM	VA
EPA 200.7 REV 4.4	SILVER	VA
EPA 200.7 REV 4.4	THALLIUM	VA
EPA 200.7 REV 4.4	TITANIUM	VA
EPA 200.7 REV 4.4	ZINC	VA
EPA 200.8 REV 5.4	ANTIMONY	VA
EPA 200.8 REV 5.4	BARIUM	VA
EPA 200.8 REV 5.4	CADMIUM	VA
EPA 200.8 REV 5.4	COBALT	VA
EPA 200.8 REV 5.4	LEAD	VA
EPA 200.8 REV 5.4	MOLYBDENUM	VA
EPA 200.8 REV 5.4	SELENIUM	VA
EPA 200.8 REV 5.4	THALLIUM	VA
EPA 200.8 REV 5.4	ZINC	VA
EPA 200.8 REV 5.4 - EXTENDED	CALCIUM	VA
EPA 200.8 REV 5.4 - EXTENDED	MAGNESIUM	VA
EPA 200.8 REV 5.4 - EXTENDED	SODIUM	VA

This Scope of Accreditation must accompany the Certificate issued by Virginia DCLS with the same Certificate Number indicated above.

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services



Scope of Accreditation

VELAP Certificate No.: 10657

Pace Analytical Services, LLC - Asheville NC
2225 Riverside Drive
Asheville, NC 28804

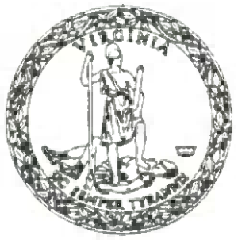
Virginia Laboratory ID: 460222
Effective Date: December 10, 2019
Expiration Date: June 14, 2020

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 200.8 REV 5.4 - EXTENDED	TIN	VA
EPA 218.6 REV 3.3	CHROMIUM VI	VA
EPA 300.0 REV 2.1	BROMIDE	VA
EPA 300.0 REV 2.1	FLUORIDE	VA
EPA 300.0 REV 2.1	NITRATE/NITRITE	VA
EPA 300.0 REV 2.1	ORTHOPHOSPHATE AS P	VA
EPA 3005 A	PREP: ACID DIGESTION OF WATERS FOR TOTAL RECOVERABLE OR DISSOLVED METALS	VA
EPA 350.1 REV 2	AMMONIA AS N	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1-A + C)	NITRATE AS N	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1-A)	NITRITE AS N	VA
EPA 420.4 REV 1 (AS LACHAT 10-210-00-1-X)	TOTAL PHENOLICS	VA
EPA 6010 D	ANTIMONY	VA
EPA 6010 D	BARIUM	VA
EPA 6010 D	BORON	VA
EPA 6010 D	CALCIUM	VA
EPA 6010 D	COBALT	VA
EPA 6010 D	IRON	VA
EPA 6010 D	LITHIUM	VA
EPA 6010 D	MANGANESE	VA
EPA 6010 D	NICKEL	VA
EPA 6010 D	SELENIUM	VA
EPA 6010 D	SILVER	VA
EPA 6010 D	STRONTIUM	VA
EPA 6010 D	TIN	VA
EPA 6010 D	VANADIUM	VA
EPA 6010 D - EXTENDED	SILICON	VA
EPA 6020 B	ANTIMONY	VA
EPA 6020 B	BARIUM	VA
EPA 6020 B	CADMIUM	VA
EPA 6020 B	CHROMIUM	VA
EPA 6020 B	COPPER	VA
EPA 6020 B	LEAD	VA
EPA 6020 B	MANGANESE	VA
EPA 200.8 REV 5.4 - EXTENDED	TITANIUM	VA
EPA 245.1 REV 3	MERCURY	VA
EPA 300.0 REV 2.1	CHLORIDE	VA
EPA 300.0 REV 2.1	NITRATE AS N	VA
EPA 300.0 REV 2.1	NITRITE AS N	VA
EPA 300.0 REV 2.1	SULFATE	VA
EPA 3010 A	PREP: ACID DIGESTION OF AQUEOUS SAMPLES AND EXTRACTS FOR TOTAL METALS	VA
EPA 351.2 REV 2 (AS LACHAT 10-107-06-2-D)	KJELDAHL NITROGEN - TOTAL (TKN)	VA
EPA 353.2 REV 2 (AS LACHAT 10-107-04-1-A)	NITRATE/NITRITE	VA
EPA 365.1 REV 2 (AS LACHAT 10-115-01-1-E)	PHOSPHORUS, TOTAL	VA
EPA 6010 D	ALUMINUM	VA
EPA 6010 D	ARSENIC	VA
EPA 6010 D	BERYLLIUM	VA
EPA 6010 D	CADMIUM	VA
EPA 6010 D	CHROMIUM	VA
EPA 6010 D	COPPER	VA
EPA 6010 D	LEAD	VA
EPA 6010 D	MAGNESIUM	VA
EPA 6010 D	MOLYBDENUM	VA
EPA 6010 D	POTASSIUM	VA
EPA 6010 D	SILICA AS SIO2	VA
EPA 6010 D	SODIUM	VA
EPA 6010 D	THALLIUM	VA
EPA 6010 D	TITANIUM	VA
EPA 6010 D	ZINC	VA
EPA 6020 B	ALUMINUM	VA
EPA 6020 B	ARSENIC	VA
EPA 6020 B	BERYLLIUM	VA
EPA 6020 B	CALCIUM	VA
EPA 6020 B	COBALT	VA
EPA 6020 B	IRON	VA
EPA 6020 B	MAGNESIUM	VA
EPA 6020 B	MOLYBDENUM	VA

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services



Scope of Accreditation

VELAP Certificate No.: 10657

Pace Analytical Services, LLC - Asheville NC
2225 Riverside Drive
Asheville, NC 28804

Virginia Laboratory ID: 460222
Effective Date: December 10, 2019
Expiration Date: June 14, 2020

NON-POTABLE WATER

METHOD	ANALYTE	PRIMARY
EPA 6020 B	NICKEL	VA
EPA 6020 B	SELENIUM	VA
EPA 6020 B	SODIUM	VA
EPA 6020 B	TIN	VA
EPA 6020 B	ZINC	VA
EPA 6020 B - EXTENDED	BORON	VA
EPA 6020 B - EXTENDED	STRONTIUM	VA
EPA 6020 B - EXTENDED	URANIUM	VA
EPA 7470 A	MERCURY	VA
EPA 9012 B	TOTAL CYANIDE	VA
EPA 9056 A	BROMIDE	VA
EPA 9056 A	FLUORIDE	VA
EPA 9056 A	NITRITE AS N	VA
EPA 9056 A	SULFATE	VA
EPA 9060 A	TOTAL ORGANIC CARBON (TOC)	VA
LACHAT QUIKCHEM 10-204-00-1-X	CYANIDE	VA
SM 2340 B-2011	TOTAL HARDNESS AS CACO3	VA
SM 2540 C-2011	RESIDUE-FILTERABLE (TDS)	VA
SM 2540 F-2011	RESIDUE-SETTLEABLE	VA
SM 4500-Cl^- E-2011	CHLORIDE	VA
SM 4500-P E-2011	ORTHOPHOSPHATE AS P	VA
SM 5210 B-2011	BIOCHEMICAL OXYGEN DEMAND (BOD)	VA
SM 5220 D-2011	CHEMICAL OXYGEN DEMAND (COD)	VA

METHOD	ANALYTE	PRIMARY
EPA 6020 B	POTASSIUM	VA
EPA 6020 B	SILVER	VA
EPA 6020 B	THALLIUM	VA
EPA 6020 B	VANADIUM	VA
EPA 6020 B - EXTENDED	BISMUTH	VA
EPA 6020 B - EXTENDED	LITHIUM	VA
EPA 6020 B - EXTENDED	TITANIUM	VA
EPA 7196 A	CHROMIUM VI	VA
EPA 9010 C	PREP: CYANIDE DISTILLATION	VA
EPA 9040 C	PH	VA
EPA 9056 A	CHLORIDE	VA
EPA 9056 A	NITRATE AS N	VA
EPA 9056 A	ORTHOPHOSPHATE AS P	VA
EPA 9056 A - EXTENDED	NITRATE/NITRITE	VA
EPA 9095 B	FREE LIQUID	VA
SM 2320 B-2011	ALKALINITY AS CACO3	VA
SM 2540 B-2011	RESIDUE-TOTAL (TS)	VA
SM 2540 D-2011	RESIDUE-NONFILTERABLE (TSS)	VA
SM 3500-CR B-2011	CHROMIUM VI	VA
SM 4500-CN^- E-2011	CYANIDE	VA
SM 4500-$S2^-$ D-2011	SULFIDE	VA
SM 5210 B-2011	CARBONACEOUS BOD (CBOD)	VA
SM 5310 B-2011	TOTAL ORGANIC CARBON (TOC)	VA

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 1010 A	FLASHPOINT	VA
EPA 1312	PREP: SYNTHETIC PRECIPITATION LEACHING PROCEDURE	VA
EPA 3050 B	PREP: ACID DIGESTION OF SEDIMENTS, SLUDGES, AND SOILS	VA
EPA 6010 D	ANTIMONY	VA
EPA 6010 D	BARIUM	VA
EPA 6010 D	BORON	VA
EPA 6010 D	CALCIUM	VA
EPA 6010 D	COBALT	VA
EPA 6010 D	IRON	VA

METHOD	ANALYTE	PRIMARY
EPA 1311	PREP: TOXICITY CHARACTERISTIC LEACHING PROCEDURE	VA
EPA 3010 A	PREP: ACID DIGESTION OF AQUEOUS SAMPLES AND EXTRACTS FOR TOTAL METALS	VA
EPA 6010 D	ALUMINUM	VA
EPA 6010 D	ARSENIC	VA
EPA 6010 D	BERYLLIUM	VA
EPA 6010 D	CADMIUM	VA
EPA 6010 D	CHROMIUM	VA
EPA 6010 D	COPPER	VA
EPA 6010 D	LEAD	VA

Commonwealth of Virginia

Department of General Services
Division of Consolidated Laboratory Services

Scope of Accreditation

VELAP Certificate No : 10657

Pace Analytical Services, LLC - Asheville NC
2225 Riverside Drive
Asheville, NC 28804

Virginia Laboratory ID: 460222
Effective Date: December 10, 2019
Expiration Date: June 14, 2020

SOLID AND CHEMICAL MATERIALS

METHOD	ANALYTE	PRIMARY
EPA 6010 D	MAGNESIUM	VA
EPA 6010 D	MOLYBDENUM	VA
EPA 6010 D	POTASSIUM	VA
EPA 6010 D	SILVER	VA
EPA 6010 D	STRONTIUM	VA
EPA 6010 D	TITANIUM	VA
EPA 6010 D	ZINC	VA
EPA 7471 B	MERCURY	VA
EPA 9060	TOTAL ORGANIC CARBON (TOC)	VA
EPA 9065	TOTAL PHENOLICS	VA
EPA 6010 D	MANGANESE	VA
EPA 6010 D	NICKEL	VA
EPA 6010 D	SELENIUM	VA
EPA 6010 D	SODIUM	VA
EPA 6010 D	THALLIUM	VA
EPA 6010 D	VANADIUM	VA
EPA 6010 D - EXTENDED	SILICON	VA
EPA 9045 D	PH	VA
EPA 9060 A	TOTAL ORGANIC CARBON (TOC)	VA
EPA 9095 B	FREE LIQUID	VA

Florida HEALTH

State of Florida
Department of Health, Bureau of Public Health Laboratories
This is to certify that

E87315

PACE ANALYTICAL SERVICES, LLC- ATLANTA GA
110 TECHNOLOGY PARKWAY
PEACHTREE CORNERS, GA 30092

has complied with Florida Administrative Code 64E-1,
for the examination of environmental samples in the following categories

DRINKING WATER - MICROBIOLOGY, DRINKING WATER - PRIMARY INORGANIC CONTAMINANTS, DRINKING WATER - SECONDARY INORGANIC CONTAMINANTS, NON-POTABLE WATER - GENERAL CHEMISTRY, NON-POTABLE WATER - METALS, NON-POTABLE WATER - MICROBIOLOGY, SOLID AND CHEMICAL MATERIALS - GENERAL CHEMISTRY, SOLID AND CHEMICAL MATERIALS - METALS, SOLID AND CHEMICAL MATERIALS - MICROBIOLOGY, SOLID AND CHEMICAL MATERIALS - PESTICIDES-HERBICIDES-PCB'S

Continued certification is contingent upon successful on-going compliance with the NELAC Standards and FAC Rule 64E-1 regulations. Specific methods and analytes certified are cited on the Laboratory Scope of Accreditation for this laboratory and are on file at the Bureau of Public Health Laboratories, P. O. Box 210, Jacksonville, Florida 32231. Clients and customers are urged to verify with this agency the laboratory's certification status in Florida for particular methods and analytes.

Date Issued: May 01, 2020 Expiration Date: June 30, 2020

Patty A. Lewandowski, MBA, MT(ASCP)
Chief Bureau of Public Health Laboratories
DH Form 1697, 7/04
NON-TRANSFERABLE E87315-45-0501/2020
Supersedes all previously issued certificates

Ron DeSantis
Governor

FLORIDA HEALTH

Laboratory Scope of Accreditation

Attachment to Certificate #: E87315-45, expiration date June 30, 2020. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: **E87315** EPA Lab Code: **GA00051** **(770) 734-4200**

E87315
Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092

Matrix: **Drinking Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Color	SM 2120 B	Secondary Inorganic Contaminants	NELAP	4/10/2002
Escherichia coli	SM 9223 B	Microbiology	NELAP	4/10/2002
Escherichia coli	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Heterotrophic plate count	SIMPLATE	Microbiology	NELAP	5/29/2012
Nitrate	EPA 300.0	Primary Inorganic Contaminants	NELAP	4/10/2002
Nitrate	EPA 353.2	Primary Inorganic Contaminants	NELAP	4/17/2020
Nitrite	EPA 300.0	Primary Inorganic Contaminants	NELAP	4/10/2002
Nitrite	EPA 353.2	Primary Inorganic Contaminants	NELAP	4/17/2020
Orthophosphate as P	SM 4500-P E	Primary Inorganic Contaminants	NELAP	4/10/2002
pH	SM 4500-H+-B	Primary Inorganic Contaminants,Secondary Inorganic Contaminants	NELAP	4/10/2002
Residual free chlorine	SM 4500-Cl G	Primary Inorganic Contaminants	NELAP	11/4/2010
Total coliforms	SM 9223 B	Microbiology	NELAP	4/10/2002
Total coliforms	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Total nitrate-nitrite	EPA 300.0	Primary Inorganic Contaminants	NELAP	4/10/2002
Total nitrate-nitrite	EPA 353.2	Primary Inorganic Contaminants	NELAP	4/17/2020
Total residual chlorine	SM 4500-Cl G	Primary Inorganic Contaminants	NELAP	11/4/2010
Turbidity	EPA 180.1	Secondary Inorganic Contaminants	NELAP	4/10/2002

Laboratory Scope of Accreditation

Attachment to Certificate #: E87315-45, expiration date June 30, 2020. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: **E87315** EPA Lab Code: **GA00051** **(770) 734-4200**

E87315
Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Chromium	EPA 200.7	Metals	NELAP	4/19/2002
Chromium	EPA 200.8	Metals	NELAP	8/30/2004
Chromium	EPA 6010	Metals	NELAP	7/1/2003
Chromium	EPA 6020	Metals	NELAP	8/30/2004
Chromium VI	SM 3500-Cr B (20th/21st/22nd Ed.)/UV-VIS	General Chemistry	NELAP	7/28/2009
Cobalt	EPA 200.7	Metals	NELAP	4/19/2002
Cobalt	EPA 200.8	Metals	NELAP	8/30/2004
Cobalt	EPA 6010	Metals	NELAP	7/1/2003
Cobalt	EPA 6020	Metals	NELAP	8/30/2004
Color	SM 2120 B	General Chemistry	NELAP	4/19/2002
Copper	EPA 200.7	Metals	NELAP	4/19/2002
Copper	EPA 200.8	Metals	NELAP	8/30/2004
Copper	EPA 6010	Metals	NELAP	4/19/2002
Copper	EPA 6020	Metals	NELAP	8/30/2004
Corrosivity (pH)	EPA 9040	General Chemistry	NELAP	7/1/2003
Cyanide	SM 4500-CN E	General Chemistry	NELAP	10/15/2007
Escherichia coli	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Fecal coliforms	COLILERT®-18 (Fecal Coliforms)	Microbiology	NELAP	11/4/2014
Fecal coliforms	SM 9222 D	Microbiology	NELAP	2/21/2002
Ferrous iron	SM 3500-Fe B (20th/21st Ed.)/UV-VIS	General Chemistry	NELAP	7/28/2009
Hardness	SM 2340 B	General Chemistry	NELAP	7/28/2009
Hardness (calc.)	EPA 200.7	Metals	NELAP	6/6/2002
Heterotrophic plate count	SIMPLATE	Microbiology	NELAP	5/29/2012
Iron	EPA 200.7	Metals	NELAP	4/19/2002
Iron	EPA 200.8	Metals	NELAP	11/6/2014
Iron	EPA 6010	Metals	NELAP	7/1/2003
Iron	EPA 6020	Metals	NELAP	8/30/2004
Iron	SM 3500-Fe D (18th/19th Ed.)/UV-VIS	General Chemistry	NELAP	2/5/2002
Lead	EPA 200.7	Metals	NELAP	4/19/2002
Lead	EPA 200.8	Metals	NELAP	8/30/2004
Lead	EPA 6010	Metals	NELAP	4/19/2002
Lead	EPA 6020	Metals	NELAP	8/30/2004
Lithium	EPA 200.8	Metals	NELAP	11/6/2014

Clients and Customers are urged to verify the laboratory's current certification status with the Environmental Laboratory Certification Program.

Laboratory Scope of Accreditation

Attachment to Certificate #: E87315-45, expiration date June 30, 2020. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: **E87315** EPA Lab Code: **GA00051** **(770) 734-4200**

E87315
Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Aluminum	EPA 200.7	Metals	NELAP	4/10/2002
Aluminum	EPA 200.8	Metals	NELAP	8/30/2004
Aluminum	EPA 6010	Metals	NELAP	7/1/2003
Aluminum	EPA 6020	Metals	NELAP	8/30/2004
Amenable cyanide	EPA 9010/9014	General Chemistry	NELAP	7/1/2003
Amenable cyanide	SM 4500-CN- G	General Chemistry	NELAP	10/15/2007
Antimony	EPA 200.7	Metals	NELAP	4/10/2002
Antimony	EPA 200.8	Metals	NELAP	8/30/2004
Antimony	EPA 6010	Metals	NELAP	7/1/2003
Antimony	EPA 6020	Metals	NELAP	8/30/2004
Arsenic	EPA 200.7	Metals	NELAP	4/10/2002
Arsenic	EPA 200.8	Metals	NELAP	8/30/2004
Arsenic	EPA 6010	Metals	NELAP	4/10/2002
Arsenic	EPA 6020	Metals	NELAP	8/30/2004
Barium	EPA 200.7	Metals	NELAP	4/10/2002
Barium	EPA 200.8	Metals	NELAP	8/30/2004
Barium	EPA 6010	Metals	NELAP	7/1/2003
Barium	EPA 6020	Metals	NELAP	8/30/2004
Beryllium	EPA 200.7	Metals	NELAP	4/10/2002
Beryllium	EPA 200.8	Metals	NELAP	8/30/2004
Beryllium	EPA 6010	Metals	NELAP	7/1/2003
Beryllium	EPA 6020	Metals	NELAP	8/30/2004
Biochemical oxygen demand	SM 5210 B	General Chemistry	NELAP	4/10/2002
Boron	EPA 200.7	Metals	NELAP	4/10/2002
Boron	EPA 200.8	Metals	NELAP	11/6/2014
Boron	EPA 6010	Metals	NELAP	7/1/2003
Boron	EPA 6020	Metals	NELAP	8/30/2004
Cadmium	EPA 200.7	Metals	NELAP	4/10/2002
Cadmium	EPA 200.8	Metals	NELAP	8/30/2004
Cadmium	EPA 6010	Metals	NELAP	4/10/2002
Cadmium	EPA 6020	Metals	NELAP	8/30/2004
Calcium	EPA 200.7	Metals	NELAP	4/10/2002
Calcium	EPA 200.8	Metals	NELAP	11/6/2014
Calcium	EPA 6010	Metals	NELAP	7/1/2003
Calcium	EPA 6020	Metals	NELAP	8/30/2004
Carbonaceous BOD (CBOD)	SM 5210 B	General Chemistry	NELAP	4/10/2002

Clients and Customers are urged to verify the laboratory's current certification status with the Environmental Laboratory Certification Program.

Laboratory Scope of Accreditation

Attachment to Certificate #: E87315-45, expiration date June 30, 2020. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: **E87315** EPA Lab Code: **GA00051** **(770) 734-4200**

E87315
Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Lithium	EPA 6020	Metals	NELAP	10/6/2016
Magnesium	EPA 200.7	Metals	NELAP	4/10/2002
Magnesium	EPA 200.8	Metals	NELAP	11/6/2014
Magnesium	EPA 6010	Metals	NELAP	7/1/2003
Magnesium	EPA 6020	Metals	NELAP	8/30/2004
Manganese	EPA 200.7	Metals	NELAP	4/10/2002
Manganese	EPA 200.8	Metals	NELAP	8/30/2004
Manganese	EPA 6010	Metals	NELAP	7/1/2003
Manganese	EPA 6020	Metals	NELAP	8/30/2004
Mercury	EPA 245.1	Metals	NELAP	4/10/2002
Mercury	EPA 7470	Metals	NELAP	4/10/2002
Molybdenum	EPA 200.7	Metals	NELAP	4/10/2002
Molybdenum	EPA 200.8	Metals	NELAP	8/30/2004
Molybdenum	EPA 6010	Metals	NELAP	4/10/2002
Molybdenum	EPA 6020	Metals	NELAP	8/30/2004
Nickel	EPA 200.7	Metals	NELAP	4/10/2002
Nickel	EPA 200.8	Metals	NELAP	8/30/2004
Nickel	EPA 6010	Metals	NELAP	4/10/2002
Nickel	EPA 6020	Metals	NELAP	8/30/2004
Nitrate	EPA 9056	General Chemistry	NELAP	7/1/2003
Nitrate as N	EPA 300.0	General Chemistry	NELAP	4/10/2002
Nitrate as N	EPA 353.2	General Chemistry	NELAP	4/17/2020
Nitrate-nitrite	EPA 300.0	General Chemistry	NELAP	4/10/2002
Nitrate-nitrite	EPA 353.2	General Chemistry	NELAP	4/17/2020
Nitrite	EPA 9056	General Chemistry	NELAP	7/1/2003
Nitrite as N	EPA 300.0	General Chemistry	NELAP	4/10/2002
Nitrite as N	EPA 353.2	General Chemistry	NELAP	4/17/2020
Orthophosphate as P	SM 4500-P E	General Chemistry	NELAP	4/10/2002
Oxygen, dissolved	ASTM D888-09C	General Chemistry	NELAP	11/6/2014
Oxygen, dissolved	SM 4500-O G	General Chemistry	NELAP	4/10/2002
pH	EPA 9040	General Chemistry	NELAP	7/1/2003
pH	SM 4500-H+-B	General Chemistry	NELAP	10/15/2007
Phosphorus, total	EPA 200.7	Metals	NELAP	9/27/2002
Phosphorus, total	EPA 6010	Metals	NELAP	7/1/2003
Potassium	EPA 200.7	Metals	NELAP	4/10/2002
Potassium	EPA 200.8	Metals	NELAP	11/6/2014

Laboratory Scope of Accreditation

Attachment to Certificate #: E87315-45, expiration date June 30, 2020. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: **E87315** EPA Lab Code: **GA00051** **(770) 734-4200**

E87315
Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Potassium	EPA 6010	Metals	NELAP	4/10/2002
Potassium	EPA 6020	Metals	NELAP	8/30/2004
Residual free chlorine	SM 4500-Cl G	General Chemistry	NELAP	11/4/2010
Residue-filterable (TDS)	SM 2540 C	General Chemistry	NELAP	10/15/2007
Residue-nonfilterable (TSS)	SM 2540 D	General Chemistry	NELAP	10/15/2007
Residue-settleable	SM 2540 F	General Chemistry	NELAP	10/15/2007
Residue-total	SM 2540 B	General Chemistry	NELAP	10/15/2007
Residue-volatile	SM 2540 E	General Chemistry	NELAP	10/6/2006
Selenium	EPA 200.7	Metals	NELAP	4/10/2002
Selenium	EPA 200.8	Metals	NELAP	8/30/2004
Selenium	EPA 6010	Metals	NELAP	4/10/2002
Selenium	EPA 6020	Metals	NELAP	8/30/2004
Silicon	EPA 200.7	Metals	NELAP	4/10/2002
Silicon	EPA 6010	Metals	NELAP	7/1/2003
Silver	EPA 200.7	Metals	NELAP	4/10/2002
Silver	EPA 200.8	Metals	NELAP	8/30/2004
Silver	EPA 6010	Metals	NELAP	7/1/2003
Silver	EPA 6020	Metals	NELAP	8/30/2004
Sodium	EPA 200.7	Metals	NELAP	4/10/2002
Sodium	EPA 200.8	Metals	NELAP	11/6/2014
Sodium	EPA 6010	Metals	NELAP	7/1/2003
Sodium	EPA 6020	Metals	NELAP	8/30/2004
Strontium	EPA 200.7	Metals	NELAP	9/25/2002
Strontium	EPA 6010	Metals	NELAP	7/1/2003
Strontium	EPA 6020	Metals	NELAP	8/30/2004
Thallium	EPA 200.7	Metals	NELAP	4/10/2002
Thallium	EPA 200.8	Metals	NELAP	8/30/2004
Thallium	EPA 6010	Metals	NELAP	7/1/2003
Thallium	EPA 6020	Metals	NELAP	8/30/2004
Tin	EPA 200.7	Metals	NELAP	4/10/2002
Tin	EPA 200.8	Metals	NELAP	11/6/2014
Tin	EPA 6010	Metals	NELAP	7/1/2003
Tin	EPA 6020	Metals	NELAP	8/30/2004
Titanium	EPA 200.7	Metals	NELAP	4/10/2002
Titanium	EPA 200.8	Metals	NELAP	11/6/2014
Titanium	EPA 6010	Metals	NELAP	7/1/2003

Laboratory Scope of Accreditation

Attachment to Certificate #: E87315-45, expiration date June 30, 2020. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: **E87315** EPA Lab Code: **GA00051** **(770) 734-4200**

E87315
Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Titanium	EPA 6020	Metals	NELAP	8/30/2004
Total coliforms	SM 9223 B /QUANTI-TRAY	Microbiology	NELAP	11/4/2010
Total cyanide	EPA 9010/9014	General Chemistry	NELAP	7/1/2003
Total nitrate-nitrite	EPA 9056	General Chemistry	NELAP	7/1/2003
Total residual chlorine	SM 4500-Cl G	General Chemistry	NELAP	11/4/2010
Total, fixed, and volatile residue	SM 2540 G	General Chemistry	NELAP	9/27/2002
Turbidity	EPA 180.1	General Chemistry	NELAP	4/10/2002
Vanadium	EPA 200.7	Metals	NELAP	4/10/2002
Vanadium	EPA 200.8	Metals	NELAP	8/30/2004
Vanadium	EPA 6010	Metals	NELAP	7/1/2003
Vanadium	EPA 6020	Metals	NELAP	8/30/2004
Zinc	EPA 200.7	Metals	NELAP	4/10/2002
Zinc	EPA 200.8	Metals	NELAP	8/30/2004
Zinc	EPA 6010	Metals	NELAP	4/10/2002
Zinc	EPA 6020	Metals	NELAP	8/30/2004

Laboratory Scope of Accreditation

Attachment to Certificate #: E87315-45, expiration date June 30, 2020. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: **E87315** EPA Lab Code: **GA00051** **(770) 734-4200**

E87315
Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092

Matrix: **Solid and Chemical Materials**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Aluminum	EPA 6010	Metals	NELAP	4/10/2002
Amenable cyanide	EPA 9010/9014	General Chemistry	NELAP	4/10/2002
Antimony	EPA 6010	Metals	NELAP	4/10/2002
Aroclor-1016 (PCB-1016)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1221 (PCB-1221)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1232 (PCB-1232)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1242 (PCB-1242)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1248 (PCB-1248)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1254 (PCB-1254)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Aroclor-1260 (PCB-1260)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	4/10/2002
Arsenic	EPA 6010	Metals	NELAP	4/10/2002
Barium	EPA 6010	Metals	NELAP	4/10/2002
Beryllium	EPA 6010	Metals	NELAP	4/10/2002
Boron	EPA 6010	Metals	NELAP	4/10/2002
Cadmium	EPA 6010	Metals	NELAP	4/10/2002
Calcium	EPA 6010	Metals	NELAP	4/10/2002
Chromium	EPA 6010	Metals	NELAP	4/10/2002
Cobalt	EPA 6010	Metals	NELAP	4/10/2002
Copper	EPA 6010	Metals	NELAP	4/10/2002
Fecal coliforms	SM 9222 D	Microbiology	NELAP	7/28/2009
Iron	EPA 6010	Metals	NELAP	4/10/2002
Lead	EPA 6010	Metals	NELAP	4/10/2002
Magnesium	EPA 6010	Metals	NELAP	4/10/2002
Manganese	EPA 6010	Metals	NELAP	4/10/2002
Mercury	EPA 7471	Metals	NELAP	4/10/2002
Molybdenum	EPA 6010	Metals	NELAP	4/10/2002
Nickel	EPA 6010	Metals	NELAP	4/10/2002
pH	EPA 9040	General Chemistry	NELAP	4/10/2002
Phosphorus, total	EPA 6010	Metals	NELAP	4/10/2002
Potassium	EPA 6010	Metals	NELAP	4/10/2002
Selenium	EPA 6010	Metals	NELAP	4/10/2002
Silicon	EPA 6010	Metals	NELAP	4/10/2002
Silver	EPA 6010	Metals	NELAP	4/10/2002
Sodium	EPA 6010	Metals	NELAP	7/9/2002
Strontium	EPA 6010	Metals	NELAP	4/10/2002
Thallium	EPA 6010	Metals	NELAP	4/10/2002

Laboratory Scope of Accreditation

Attachment to Certificate #: E87315-45, expiration date June 30, 2020. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: **E87315** EPA Lab Code: **GA00051** **(770) 734-4200**

E87315
Pace Analytical Services, LLC- Atlanta GA
110 Technology Parkway
Peachtree Corners, GA 30092

Matrix: **Solid and Chemical Materials**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Tin	EPA 6010	Metals	NELAP	4/10/2002
Titanium	EPA 6010	Metals	NELAP	9/27/2002
Total cyanide	EPA 9010/9014	General Chemistry	NELAP	4/10/2002
Toxicity Characteristic Leaching Procedure	EPA 1311	General Chemistry	NELAP	4/10/2002
Vanadium	EPA 6010	Metals	NELAP	4/10/2002
Zinc	EPA 6010	Metals	NELAP	4/10/2002

APPENDIX B

FIELD DATA FORMS AND WELL INSPECTION LOGS

Product Name: Low-Flow System

Date: 2019-08-28 12:36:56

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	Alexis
Company Name	Golder	Tubing Type	poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	7.40 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	7.00 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-17S	Final Pumping Rate	155 mL/min
Well diameter	2 in	Total System Volume	0.1230293 L
Well Total Depth	7.40 ft	Calculated Sample Rate	300 sec
Screen Length	5 ft	Stabilization Drawdown	0.34 in
Depth to Water	5.88 ft	Total Volume Pumped	3.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	12:20:09	300.03	22.22	6.24	450.56	48.10	6.20	1.44	29.84
Last 5	12:25:09	600.02	22.33	6.24	449.88	4.92	6.20	1.22	26.94
Last 5	12:30:09	900.02	22.33	6.25	449.69	2.03	6.21	1.19	26.58
Last 5	12:35:09	1200.01	22.38	6.25	449.47	1.48	6.22	1.15	24.83
Last 5									
Variance 0			0.11	0.00	-0.68			-0.21	-2.90
Variance 1			-0.00	0.00	-0.19			-0.03	-0.36
Variance 2			0.05	-0.00	-0.22			-0.04	-1.75

Notes

Purged three well volumes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 11:37:27

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	34.02 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	29.02 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-36S	Final Pumping Rate	250 mL/min
Well diameter	2 in	Total System Volume	0.2418457 L
Well Total Depth	34.02 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.16 in
Depth to Water	2.38 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	11:21:36	300.11	22.80	5.51	634.20	1.36	2.52	2.14	72.76
Last 5	11:26:36	600.02	22.35	5.51	631.55	1.00	2.54	2.02	66.94
Last 5	11:31:36	900.02	22.13	5.51	627.01	0.69	2.54	1.97	63.49
Last 5	11:36:36	1200.01	22.22	5.52	616.44	0.83	2.54	1.95	60.21
Last 5									
Variance 0			-0.45	-0.00	-2.65			-0.11	-5.82
Variance 1			-0.22	0.00	-4.54			-0.05	-3.44
Variance 2			0.09	0.01	-10.58			-0.02	-3.28

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-27 12:09:51

Project Information:		Pump Information:	
Operator Name	D.Thomas	Pump Model/Type	QED
Company Name	Golder	Tubing Type	Poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	63.82 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463072		
Turbidity Make/Model	LaMotte 2020 we	Pump placement from TOC	63.82 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-5I	Final Pumping Rate	120 mL/min
Well diameter	2 in	Total System Volume	0.5698556 L
Well Total Depth	63.82 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.6 in
Depth to Water	12.40 ft	Total Volume Pumped	3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	11:46:56	300.02	20.30	6.37	162.25	0.56	12.45	3.40	45.76
Last 5	11:51:56	600.02	20.07	6.36	162.41	0.12	12.45	3.64	44.07
Last 5	11:56:56	900.02	20.17	6.37	161.78	0.32	12.45	3.74	43.10
Last 5	12:01:56	1200.02	20.00	6.36	163.12	0.38	12.45	3.89	42.19
Last 5	12:06:56	1500.02	19.70	6.37	163.28	0.24	12.45	3.96	41.47
Variance 0			0.10	0.00	-0.62			0.11	-0.97
Variance 1			-0.17	-0.00	1.33			0.15	-0.91
Variance 2			-0.29	0.00	0.16			0.06	-0.72

Notes

Started purging at 1141

Stopped purging and began sampling at 1207

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 14:33:14

Project Information:		Pump Information:	
Operator Name	J. Quenneville	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	5 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646777		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	63.78 ft

Well Information:		Pumping Information:	
Well ID	BRGWc-37S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3073171 L
Well Total Depth	68.73 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.7 in
Depth to Water	50.18 ft	Total Volume Pumped	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			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	14:16:41	300.10	22.14	5.79	55.06	0.33	50.90	8.10	98.19
Last 5	14:21:41	600.05	22.13	5.80	55.13	0.64	50.89	8.14	97.75
Last 5	14:26:41	900.03	21.67	5.79	55.07	0.32	50.86	8.19	97.48
Last 5	14:31:41	1200.03	21.52	5.80	54.54	0.24	50.88	8.08	95.71
Last 5									
Variance 0			-0.01	0.00	0.08			0.03	-0.44
Variance 1			-0.46	-0.01	-0.06			0.05	-0.27
Variance 2			-0.15	0.01	-0.53			-0.11	-1.77

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-27 10:04:56

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	52.90 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	47.90 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-6S	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.5211151 L
Well Total Depth	52.90 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.6 in
Depth to Water	26.81 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	09:42:45	300.09	21.82	6.24	56.87	1.80	27.30	7.41	32.30
Last 5	09:47:45	600.02	20.48	6.24	55.72	2.04	27.40	7.69	23.05
Last 5	09:52:45	900.02	20.30	6.35	55.32	1.48	27.46	7.71	18.06
Last 5	09:57:45	1200.01	20.13	6.36	54.48	1.17	27.42	7.73	17.61
Last 5	10:02:45	1500.01	20.21	6.35	54.76	1.36	27.41	7.64	18.30
Variance 0			-0.18	0.11	-0.39			0.01	-4.99
Variance 1			-0.18	0.02	-0.84			0.02	-0.45
Variance 2			0.08	-0.01	0.28			-0.09	0.68

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-27 12:01:25

Project Information:		Pump Information:	
Operator Name	J. Quenneville	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	5 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646777		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	59.3 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-2I	Final Pumping Rate	140 mL/min
Well diameter	2 in	Total System Volume	0.3073171 L
Well Total Depth	64.3 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	17.4 ft	Total Volume Pumped	3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	11:39:07	300.03	20.24	6.92	223.07	1.11	17.41	0.43	-25.99
Last 5	11:44:07	600.03	20.26	6.88	214.23	0.93	17.42	0.39	-18.44
Last 5	11:49:07	900.03	20.44	6.84	208.61	0.92	17.42	0.34	-13.56
Last 5	11:54:07	1200.03	20.48	6.82	203.72	0.74	17.40	0.31	-9.32
Last 5	11:59:07	1500.03	20.39	6.79	200.30	0.81	17.40	0.28	-5.70
Variance 0			0.18	-0.03	-5.62			-0.05	4.88
Variance 1			0.05	-0.02	-4.90			-0.02	4.24
Variance 2			-0.09	-0.03	-3.42			-0.03	3.62

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-27 10:59:29

Project Information:		Pump Information:	
Operator Name	D.Thomas	Pump Model/Type	QED
Company Name	Golder	Tubing Type	Poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	43.01 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463072		
Turbidity Make/Model	LaMotte 2020 we	Pump placement from TOC	43.01 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-5S	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.4769718 L
Well Total Depth	43.01 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	12.5 ft	Total Volume Pumped	0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	10:37:43	1200.02	20.39	6.42	186.02	1.24	12.60	2.12	94.79
Last 5	10:42:43	1500.02	20.43	6.44	188.90	2.23	12.60	1.97	95.15
Last 5	10:47:43	1800.02	20.77	6.47	191.61	2.54	12.60	1.88	64.94
Last 5	10:52:44	2101.02	20.79	6.48	192.31	2.49	12.60	1.85	56.03
Last 5	10:57:44	2401.02	20.52	6.49	193.08	2.56	12.60	1.79	53.54
Variance 0			0.34	0.03	2.71			-0.09	-30.21
Variance 1			0.02	0.01	0.70			-0.03	-8.91
Variance 2			-0.27	0.01	0.77			-0.06	-2.49

Notes

Started purging at 1017

Began sampling at 1057

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-27 11:57:11

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	44.60 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	39.60 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-2S	Final Pumping Rate	180 mL/min
Well diameter	2 in	Total System Volume	0.4840687 L
Well Total Depth	44.60 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.13 in
Depth to Water	15.35 ft	Total Volume Pumped	3.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	11:38:21	300.03	20.57	6.11	62.72	0.40	15.45	3.03	8.27
Last 5	11:43:21	600.03	19.41	6.07	63.60	0.23	15.48	3.13	9.52
Last 5	11:48:21	900.02	19.38	6.07	63.58	0.34	15.48	3.31	10.44
Last 5	11:53:21	1200.02	19.47	6.09	63.68	0.33	15.48	3.20	9.33
Last 5									
Variance 0			-1.16	-0.04	0.88			0.11	1.24
Variance 1			-0.03	-0.00	-0.02			0.18	0.92
Variance 2			0.09	0.02	0.10			-0.11	-1.11

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-29 15:30:29

Project Information:		Pump Information:	
Operator Name	J. Quenneville	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	5 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646777		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	38.66 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-38S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3073171 L
Well Total Depth	43.66 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.23 in
Depth to Water	21.3 ft	Total Volume Pumped	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			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	15:13:46	300.07	21.78	3.98	854.65	0.48	22.56	1.48	160.79
Last 5	15:18:46	600.03	21.95	4.00	848.77	0.66	22.58	1.38	163.82
Last 5	15:23:46	900.03	22.03	4.01	852.06	0.48	22.60	1.30	170.52
Last 5	15:28:46	1200.03	21.99	4.01	854.34	0.89	22.58	1.24	173.54
Last 5									
Variance 0			0.18	0.02	-5.88			-0.11	3.03
Variance 1			0.07	0.01	3.29			-0.08	6.70
Variance 2			-0.04	0.00	2.28			-0.06	3.02

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-27 16:12:46

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	31.66 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	642531		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	26.66 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-33S	Final Pumping Rate	300 mL/min
Well diameter	2 in	Total System Volume	0.4263119 L
Well Total Depth	31.66 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.01 in
Depth to Water	7.88 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	15:56:00	300.03	21.28	4.69	453.34	1.08	7.88	0.15	92.82
Last 5	16:01:00	600.01	20.75	4.77	448.21	1.28	7.89	0.06	93.52
Last 5	16:06:00	900.02	20.61	4.78	447.65	0.81	7.89	0.05	93.93
Last 5	16:11:00	1200.02	20.66	4.78	447.89	0.51	7.89	0.04	93.96
Last 5									
Variance 0			-0.54	0.09	-5.12			-0.09	0.69
Variance 1			-0.13	0.00	-0.56			-0.01	0.41
Variance 2			0.04	-0.00	0.24			-0.01	0.03

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 13:24:21

Project Information:		Pump Information:	
Operator Name	J. Quenneville	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	5 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646777		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	47.64 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-34S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3073171 L
Well Total Depth	52.64 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.04 in
Depth to Water	2.56 ft	Total Volume Pumped	7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	13:01:15	900.03	23.78	5.80	709.79	0.76	2.60	1.05	66.56
Last 5	13:06:15	1200.03	23.43	5.80	708.51	0.28	2.59	0.99	70.40
Last 5	13:11:15	1500.03	23.88	5.80	705.90	0.20	2.61	0.85	72.85
Last 5	13:16:15	1800.04	23.20	5.80	708.36	0.15	2.60	0.65	74.97
Last 5	13:21:15	2100.04	23.25	5.80	704.23	0.22	2.60	0.71	76.51
Variance 0			0.45	-0.00	-2.61			-0.14	2.45
Variance 1			-0.68	-0.00	2.46			-0.19	2.12
Variance 2			0.04	-0.01	-4.13			0.05	1.54

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-28 12:10:40

Project Information:		Pump Information:	
Operator Name	J. Quenneville	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	5 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	646777		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	30.34 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-35S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.3073171 L
Well Total Depth	35.34 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.05 in
Depth to Water	2.01 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	11:48:28	300.04	21.77	5.94	656.49	1.78	2.02	0.95	64.10
Last 5	11:53:28	600.03	21.51	5.94	659.52	2.35	2.05	0.45	71.51
Last 5	11:58:28	900.03	21.53	5.94	661.38	1.30	2.05	0.23	75.12
Last 5	12:03:28	1200.03	21.45	5.95	662.43	0.83	2.03	0.17	77.70
Last 5	12:08:28	1500.03	21.31	5.95	661.24	0.79	2.06	0.13	79.41
Variance 0			0.02	0.00	1.86			-0.23	3.61
Variance 1			-0.08	0.00	1.06			-0.06	2.58
Variance 2			-0.14	-0.00	-1.19			-0.04	1.72

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-17 12:41:52

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	Alexis
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Default Site	Tubing Length	34.02 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	Lamotte 2020we	Pump placement from TOC	29.02 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-36S	Final Pumping Rate	180 mL/min
Well diameter	2 in	Total System Volume	0.2418457 L
Well Total Depth	34.02 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1.68 in
Depth to Water	2.80 ft	Total Volume Pumped	4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	12:18:56	300.02	18.01	5.62	683.36	0.26	2.95	2.05	114.65
Last 5	12:23:56	600.02	18.19	5.63	678.26	0.63	2.94	2.60	113.27
Last 5	12:28:56	900.02	18.23	5.62	658.57	0.77	2.94	2.07	111.80
Last 5	12:33:57	1201.02	18.26	5.61	644.49	0.50	2.94	2.06	110.66
Last 5	12:38:59	1503.02	18.28	5.61	636.74	0.79	2.94	2.05	109.79
Variance 0			0.04	-0.01	-19.70			-0.53	-1.47
Variance 1			0.03	-0.01	-14.08			-0.01	-1.14
Variance 2			0.01	0.01	-7.75			-0.01	-0.87

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-16 13:13:59

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Default Site	Tubing Length	68.73 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	Lamotte 2020we	Pump placement from TOC	63.73 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-37S	Final Pumping Rate	120 mL/min
Well diameter	2 in	Total System Volume	0.5907711 L
Well Total Depth	68.73 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	4.44 in
Depth to Water	50.70 ft	Total Volume Pumped	4.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	12:50:51	900.60	21.62	5.61	56.55	0.31	51.19	7.86	85.27
Last 5	12:55:51	1200.60	21.93	5.67	56.12	0.24	51.18	7.93	85.91
Last 5	13:00:51	1500.60	21.82	5.75	56.05	0.71	51.12	7.94	86.03
Last 5	13:06:01	1810.60	22.29	5.80	55.80	0.56	51.08	7.93	85.60
Last 5	13:11:05	2114.61	22.69	5.81	55.78	0.23	51.07	7.90	85.96
Variance 0			-0.11	0.08	-0.07			0.01	0.13
Variance 1			0.47	0.05	-0.25			-0.01	-0.43
Variance 2			0.40	0.01	-0.02			-0.03	0.36

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-17 10:48:09

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	Alexis
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Default Site	Tubing Length	9.88 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	Lamotte 2020we	Pump placement from TOC	7.88 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-17S	Final Pumping Rate	120 mL/min
Well diameter	2 in	Total System Volume	0.1340986 L
Well Total Depth	9.88 ft	Calculated Sample Rate	300 sec
Screen Length	5 ft	Stabilization Drawdown	13.56 in
Depth to Water	6.22 ft	Total Volume Pumped	9.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	10:25:48	3616.13	18.86	6.30	458.43	0.09	7.35	1.74	85.70
Last 5	10:30:48	3916.13	18.82	6.30	458.32	0.33	7.35	1.33	84.94
Last 5	10:35:54	4222.13	18.81	6.30	459.16	0.25	7.35	1.15	84.73
Last 5	10:40:53	4522.04	18.81	6.30	460.75	0.52	7.35	1.12	84.50
Last 5	10:45:53	4822.04	18.97	6.30	461.23	0.44	7.35	1.12	84.30
Variance 0			-0.01	-0.00	0.84			-0.18	-0.21
Variance 1			0.00	0.00	1.60			-0.03	-0.23
Variance 2			0.16	0.00	0.48			-0.01	-0.20

Notes

Purged three well volumes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-16 10:49:40

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Default Site	Tubing Length	54.64 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	Lamotte 2020we	Pump placement from TOC	49.64 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-34S	Final Pumping Rate	300 mL/min
Well diameter	2 in	Total System Volume	0.5278814 L
Well Total Depth	54.64 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.36 in
Depth to Water	2.67 ft	Total Volume Pumped	7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	10:26:04	300.03	21.03	5.83	728.14	0.51	2.70	0.16	94.35
Last 5	10:31:04	600.02	20.95	5.85	723.71	0.48	2.70	0.11	95.36
Last 5	10:36:05	900.68	20.97	5.86	720.84	0.18	2.70	0.07	95.41
Last 5	10:41:05	1200.68	20.95	5.86	716.14	0.42	2.70	0.05	95.46
Last 5	10:46:05	1500.68	20.81	5.85	710.22	0.17	2.70	0.04	95.64
Variance 0			0.02	0.02	-2.87			-0.04	0.05
Variance 1			-0.02	0.00	-4.69			-0.02	0.05
Variance 2			-0.14	-0.01	-5.93			-0.01	0.18

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-16 12:03:57

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Default Site	Tubing Length	35.34 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	Lamotte 2020we	Pump placement from TOC	30.34 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-35S	Final Pumping Rate	275 mL/min
Well diameter	2 in	Total System Volume	0.4417374 L
Well Total Depth	35.34 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.36 in
Depth to Water	2.15 ft	Total Volume Pumped	6.875 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	11:42:42	300.02	20.76	5.98	670.58	3.63	2.17	0.39	98.32
Last 5	11:47:42	600.02	20.63	6.02	671.93	4.00	2.17	0.16	98.56
Last 5	11:52:42	900.02	20.53	6.02	674.75	2.35	2.17	0.11	98.70
Last 5	11:57:42	1200.02	20.56	6.02	677.25	1.21	2.17	0.08	98.92
Last 5	12:02:42	1500.02	20.55	6.03	680.75	0.86	2.18	0.07	98.39
Variance 0			-0.10	0.00	2.82			-0.05	0.14
Variance 1			0.03	-0.00	2.50			-0.03	0.21
Variance 2			-0.01	0.01	3.50			-0.01	-0.53

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-15 11:19:42

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Default Site	Tubing Length	66.96 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	Lamotte 2020we	Pump placement from TOC	61.96 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-2I	Final Pumping Rate	155 mL/min
Well diameter	2 in	Total System Volume	0.5828708 L
Well Total Depth	66.96 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	27.6 in
Depth to Water	17.03 ft	Total Volume Pumped	9.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	10:56:57	2402.99	18.64	6.73	226.99	0.41	19.36	0.35	63.55
Last 5	11:02:00	2705.99	18.59	6.67	208.97	0.55	19.40	0.29	59.44
Last 5	11:07:00	3005.99	18.64	6.61	200.02	0.69	19.33	0.24	56.69
Last 5	11:12:00	3305.99	18.64	6.58	193.10	0.41	19.33	0.22	52.90
Last 5	11:17:16	3621.99	18.68	6.57	189.99	0.54	19.33	0.20	50.42
Variance 0			0.04	-0.05	-8.95			-0.05	-2.76
Variance 1			0.01	-0.03	-6.92			-0.02	-3.79
Variance 2			0.04	-0.01	-3.11			-0.01	-2.48

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-15 09:56:47

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Default Site	Tubing Length	47.39 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	Lamotte 2020we	Pump placement from TOC	42.39 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-2S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.4955216 L
Well Total Depth	47.39 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1.68 in
Depth to Water	17.14 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	09:35:21	300.03	18.56	5.73	68.54	1.46	17.21	2.52	76.83
Last 5	09:40:21	600.02	18.28	5.92	67.65	1.13	17.30	2.17	75.21
Last 5	09:45:21	900.02	18.26	6.02	66.51	0.68	17.28	1.80	75.28
Last 5	09:50:21	1200.02	18.28	6.04	65.88	0.61	17.28	1.80	75.32
Last 5	09:55:24	1503.02	18.31	6.06	65.89	0.66	17.28	1.82	73.23
Variance 0			-0.02	0.10	-1.14			-0.37	0.07
Variance 1			0.03	0.02	-0.63			-0.00	0.04
Variance 2			0.03	0.02	0.01			0.02	-2.09

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-16 09:49:05

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Default Site	Tubing Length	31.66 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	Lamotte 2020we	Pump placement from TOC	27.66 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-33S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.425312 L
Well Total Depth	31.66 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	8.48 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	09:28:08	300.16	20.22	4.56	462.22	0.16	8.48	0.37	113.32
Last 5	09:33:08	600.02	20.06	4.73	458.45	0.42	8.48	0.13	114.78
Last 5	09:38:08	900.02	20.02	4.76	458.42	0.31	8.48	0.10	114.84
Last 5	09:43:08	1200.02	20.02	4.78	458.10	0.23	8.48	0.08	115.52
Last 5	09:48:08	1500.02	20.04	4.78	457.87	0.23	8.48	0.07	116.58
Variance 0			-0.04	0.03	-0.02			-0.04	0.06
Variance 1			0.01	0.02	-0.32			-0.01	0.67
Variance 2			0.01	0.00	-0.23			-0.01	1.06

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-15 08:46:16

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Default Site	Tubing Length	52.90 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	Lamotte 2020we	Pump placement from TOC	47.90 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-6S	Final Pumping Rate	190 mL/min
Well diameter	2 in	Total System Volume	0.5201151 L
Well Total Depth	52.90 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	7.68 in
Depth to Water	27.79 ft	Total Volume Pumped	6.65 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	08:25:02	900.57	19.04	6.10	58.77	0.75	28.35	6.92	68.78
Last 5	08:30:02	1200.56	19.04	6.22	58.74	0.79	28.38	6.77	68.97
Last 5	08:35:02	1500.56	18.99	6.30	58.43	0.93	28.45	6.66	68.58
Last 5	08:40:02	1800.56	18.97	6.32	58.82	0.83	28.50	6.79	69.74
Last 5	08:45:02	2100.56	19.00	6.36	59.38	1.16	28.43	6.55	69.62
Variance 0			-0.04	0.08	-0.30			-0.11	-0.39
Variance 1			-0.02	0.02	0.38			0.13	1.16
Variance 2			0.02	0.04	0.57			-0.24	-0.13

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-15 09:02:03

Project Information:		Pump Information:	
Operator Name	D.Thomas	Pump Model/Type	QED Well Wizard
Company Name	Golder Associates	Tubing Type	poly
Project Name	166625418	Tubing Diameter	.170 in
Site Name	Plant Branch	Tubing Length	38.01 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	38.01 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-5S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.6546547 L
Well Total Depth	43.01 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2.16 in
Depth to Water	13.25 ft	Total Volume Pumped	5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	08:38:22	300.08	18.94	7.01	169.39	2.13	13.43	3.25	54.89
Last 5	08:43:22	600.01	18.90	7.02	173.40	2.34	13.43	3.09	51.56
Last 5	08:48:22	900.01	18.85	7.03	177.79	2.21	13.43	2.98	49.11
Last 5	08:53:22	1200.00	18.85	7.03	180.57	2.16	13.43	2.87	47.85
Last 5	08:58:22	1499.99	18.83	7.01	182.55	1.97	13.43	2.82	47.96
Variance 0			-0.04	0.02	4.40			-0.11	-2.45
Variance 1			-0.01	-0.01	2.77			-0.10	-1.26
Variance 2			-0.02	-0.01	1.98			-0.05	0.12

Notes

Began purging at 0833

Stopped purging and began sampling at 0900

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-15 10:22:32

Project Information:		Pump Information:	
Operator Name	D.Thomas	Pump Model/Type	QED Well Wizard
Company Name	Golder Associates	Tubing Type	poly
Project Name	166625418	Tubing Diameter	.170 in
Site Name	Plant Branch	Tubing Length	58 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	541714		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	58 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-5I	Final Pumping Rate	180 mL/min
Well diameter	2 in	Total System Volume	0.7438785 L
Well Total Depth	63.82 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2.4 in
Depth to Water	13.10 ft	Total Volume Pumped	**7.2** L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:00:00	1200.00	20.10	6.74	171.79	0.42	13.30	3.06	59.38
Last 5	10:05:00	1499.99	20.27	6.76	170.72	0.45	13.30	3.21	60.05
Last 5	10:10:00	1799.98	20.00	6.76	169.78	0.40	13.30	3.29	60.58
Last 5	10:15:00	2099.98	19.77	6.76	169.02	0.37	13.30	3.39	60.56
Last 5	10:20:00	2399.97	19.55	6.77	168.91	0.34	13.30	3.50	60.57
Variance 0			-0.27	0.00	-0.95			0.08	0.53
Variance 1			-0.23	0.00	-0.75			0.11	-0.02
Variance 2			-0.21	0.00	-0.11			0.11	0.00

Notes

Started purging at 0940

Stopped purging and began sampling at 1020

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-16 14:46:54

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Default Site	Tubing Length	43.66 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	647057		
Turbidity Make/Model	Lamotte 2020we	Pump placement from TOC	38.66 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-38S	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.478873 L
Well Total Depth	43.66 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	9.00 in
Depth to Water	21.90 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	14:25:34	1200.02	22.11	4.20	856.52	1.08	22.68	2.35	133.95
Last 5	14:30:43	1509.02	22.25	4.21	852.74	0.43	22.68	2.20	134.09
Last 5	14:35:43	1809.02	21.62	4.20	855.45	0.52	22.67	2.09	134.52
Last 5	14:40:44	2109.42	21.49	4.21	856.01	0.66	22.67	1.99	134.27
Last 5	14:45:52	2417.42	21.35	4.21	855.66	0.33	22.65	1.93	134.39
Variance 0			-0.62	-0.00	2.71			-0.11	0.43
Variance 1			-0.13	0.01	0.56			-0.10	-0.25
Variance 2			-0.13	-0.00	-0.36			-0.06	0.12

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-12-03 15:16:48

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	Peristaltic Pump
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Branch	Tubing Length	9.88 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte	Pump placement from TOC	8.88 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-17S	Final Pumping Rate	175 mL/min
Well diameter	2 in	Total System Volume	0.1340986 L
Well Total Depth	9.88 ft	Calculated Sample Rate	300 sec
Screen Length	5 ft	Stabilization Drawdown	0.5 in
Depth to Water	5.88 ft	Total Volume Pumped	7.875 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	14:55:19	1499.99	16.60	6.35	466.19	1.63	6.32	1.38	60.18
Last 5	15:00:19	1799.98	16.77	6.35	465.55	1.55	6.34	1.33	59.88
Last 5	15:05:19	2099.97	16.70	6.35	467.33	1.45	6.36	1.31	59.47
Last 5	15:10:18	2399.96	16.75	6.36	466.09	1.52	6.38	1.31	59.37
Last 5	15:15:18	2699.95	16.65	6.36	468.12	1.48	6.38	1.29	59.32
Variance 0			-0.07	0.00	1.79			-0.02	-0.41
Variance 1			0.06	0.00	-1.24			-0.00	-0.10
Variance 2			-0.11	0.00	2.03			-0.02	-0.05

Notes

Purged three well volumes
Three well volumes

Grab Samples

Product Name: Low-Flow System

Date: 2019-12-03 14:08:13

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	Peristaltic Pump
Company Name	Golder	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Branch	Tubing Length	34.02 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	463068		
Turbidity Make/Model	LaMotte	Pump placement from TOC	29.02 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-36S	Final Pumping Rate	240 mL/min
Well diameter	2 in	Total System Volume	0.2418457 L
Well Total Depth	34.02 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.13 in
Depth to Water	2.73 ft	Total Volume Pumped	4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 0
Last 5	13:51:33	300.06	15.39	5.83	654.89	1.86	2.86	2.19	84.91
Last 5	13:56:33	600.01	15.69	5.69	638.84	1.49	2.86	2.17	82.96
Last 5	14:01:33	900.00	15.93	5.65	640.82	1.48	2.86	2.15	81.78
Last 5	14:06:33	1199.99	16.02	5.63	634.64	1.79	2.86	2.14	81.69
Last 5									
Variance 0			0.30	-0.14	-16.06			-0.03	-1.96
Variance 1			0.24	-0.04	1.98			-0.02	-1.17
Variance 2			0.09	-0.01	-6.18			-0.01	-0.09

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-12-18 10:29:10

Project Information:		Pump Information:	
Operator Name	K. Minkara	Pump Model/Type	Alexis
Company Name	Golder	Tubing Type	polyethylene
Project Name	166625418	Tubing Diameter	0.170 in
Site Name	Plant Branch	Tubing Length	7 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	613229		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	7 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-17S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.121244 L
Well Total Depth	9.88 ft	Calculated Sample Rate	300 sec
Screen Length	5 ft	Stabilization Drawdown	2.4 in
Depth to Water	5.33 ft	Total Volume Pumped	11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	10:06:12	1200.00	13.63	6.41	410.34	3.98	5.58	4.48	107.63
Last 5	10:11:13	1500.99	13.58	6.34	421.28	5.08	5.60	4.52	107.03
Last 5	10:16:14	1801.98	13.72	6.29	409.83	5.12	5.60	4.86	105.24
Last 5	10:21:15	2102.97	13.54	6.23	429.23	6.23	5.54	4.65	107.03
Last 5	10:26:15	2402.96	13.16	6.24	419.01	4.59	5.53	4.86	104.95
Variance 0			0.14	-0.04	-11.45			0.34	-1.79
Variance 1			-0.18	-0.06	19.40			-0.21	1.79
Variance 2			-0.38	0.00	-10.22			0.22	-2.07

Notes

3 well volume purge

Resample for Radium only. Changes flow rate from 300 to 200 after 30min

Grab Samples

Product Name: Low-Flow System

Date: 2019-12-18 11:47:50

Project Information:		Pump Information:	
Operator Name	K. Minkara	Pump Model/Type	Alexis
Company Name	Golder	Tubing Type	polyethylene
Project Name	166625418	Tubing Diameter	0.170 in
Site Name	Plant Branch	Tubing Length	29 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	613229		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	29 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-36S	Final Pumping Rate	300 mL/min
Well diameter	2 in	Total System Volume	0.2194393 L
Well Total Depth	34.02 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	2.16 in
Depth to Water	2.65 ft	Total Volume Pumped	7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:25:23	300.02	11.41	6.12	644.29	0.65	2.80	2.79	118.74
Last 5	11:30:23	600.01	12.35	5.89	636.16	0.38	2.80	2.70	118.69
Last 5	11:35:23	900.00	11.34	5.75	627.62	0.09	2.81	2.92	119.93
Last 5	11:40:23	1200.00	12.21	5.69	628.74	0.24	2.83	2.80	118.39
Last 5	11:45:24	1500.99	11.42	5.65	623.68	0.22	2.83	2.94	118.64
Variance 0			-1.01	-0.14	-8.54			0.22	1.24
Variance 1			0.88	-0.06	1.12			-0.12	-1.54
Variance 2			-0.80	-0.03	-5.07			0.14	0.25

Notes

Resample for Radium

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-03 13:59:48

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	52.90 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	Lamotte2020we	Pump placement from TOC	47.90 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-6S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.5201151 L
Well Total Depth	52.90 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.62 ft
Depth to Water	16.30 ft	Total Volume Pumped	4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	13:38:37	300.02	18.63	6.12	60.05	1.07	16.74	5.16	30.71
Last 5	13:43:37	600.02	18.70	6.35	61.86	2.41	16.85	4.90	30.91
Last 5	13:48:37	900.41	18.73	6.53	61.70	1.76	16.94	4.77	29.98
Last 5	13:53:37	1200.41	18.74	6.56	61.38	3.24	16.89	4.79	32.00
Last 5	13:58:37	1500.41	18.70	6.59	61.51	3.24	16.92	4.91	32.77
Variance 0			0.02	0.18	-0.16			-0.13	-0.93
Variance 1			0.02	0.03	-0.32			0.02	2.02
Variance 2			-0.04	0.03	0.13			0.12	0.76

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-05 15:59:46

Project Information:		Pump Information:	
Operator Name	Darren Cox	Pump Model/Type	Peristaltic Pump
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	37.02 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	29.02 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-36S	Final Pumping Rate	160 mL/min
Well diameter	2 in	Total System Volume	0.4492359 L
Well Total Depth	34.02 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	1.5 in
Depth to Water	1.8 ft	Total Volume Pumped	3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	15:43:11	300.05	12.99	5.41	650.80	1.11	1.90	2.19	53.89
Last 5	15:48:11	600.04	13.06	5.40	647.80	0.46	1.91	2.18	53.08
Last 5	15:53:11	900.01	13.08	5.39	649.20	0.61	1.93	2.19	52.14
Last 5	15:58:11	1200.01	13.22	5.39	639.67	0.55	1.93	2.18	51.62
Last 5									
Variance 0			0.07	-0.01	-3.00			-0.00	-0.81
Variance 1			0.02	-0.01	1.40			0.01	-0.94
Variance 2			0.14	0.00	-9.53			-0.01	-0.52

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-05 12:17:45

Project Information:		Pump Information:	
Operator Name	Darren Cox	Pump Model/Type	QED
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	43.66 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	38.66 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-38S	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.478873 L
Well Total Depth	43.66 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	11 in
Depth to Water	16.20 ft	Total Volume Pumped	4.95 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	11:55:34	600.01	17.28	3.97	849.49	1.20	17.08	2.59	50.40
Last 5	12:00:34	900.01	17.37	3.98	848.44	0.80	17.07	2.48	50.17
Last 5	12:05:34	1200.02	17.50	4.00	842.34	0.46	17.06	2.48	50.09
Last 5	12:10:34	1500.02	17.41	4.01	839.95	0.38	17.06	2.45	49.99
Last 5	12:15:34	1800.02	17.50	4.01	842.73	0.42	17.07	2.39	49.88
Variance 0			0.13	0.02	-6.09			0.00	-0.08
Variance 1			-0.09	0.01	-2.39			-0.03	-0.10
Variance 2			0.09	-0.00	2.77			-0.06	-0.11

Notes

Low ph. Cleared to sample

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-05 14:36:50

Project Information:		Pump Information:	
Operator Name	Darren Cox	Pump Model/Type	QED
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	68.73 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	643819		
Turbidity Make/Model	LaMotte 2020we	Pump placement from TOC	63.73 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-37S	Final Pumping Rate	120 mL/min
Well diameter	2 in	Total System Volume	0.5907711 L
Well Total Depth	68.73 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	6 in
Depth to Water	49.45 ft	Total Volume Pumped	4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	14:04:03	300.04	17.24	5.43	55.86	0.38	50.09	8.28	20.85
Last 5	14:09:03	600.03	17.14	5.51	55.34	0.21	50.07	8.33	22.35
Last 5	14:14:03	900.04	17.05	5.51	55.09	0.23	50.08	8.32	26.73
Last 5	14:24:03	1500.01	17.01	5.55	54.90	0.18	50.08	8.27	27.30
Last 5	14:34:03	2100.02	16.92	5.53	54.96	0.19	50.09	8.17	28.12
Variance 0			-0.09	0.00	-0.25			-0.01	4.39
Variance 1			-0.05	0.04	-0.18			-0.05	0.57
Variance 2			-0.09	-0.02	0.05			-0.11	0.82

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-03 12:26:46

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	66.96 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	Lamotte2020we	Pump placement from TOC	61.96 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-2I	Final Pumping Rate	115 mL/min
Well diameter	2 in	Total System Volume	0.5828708 L
Well Total Depth	66.96 ft	Calculated Sample Rate	300 sec 1.31 ft
Screen Length	10 ft	Stabilization Drawdown	4.5 L
Depth to Water	10.40 ft	Total Volume Pumped	

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	12:05:02	600.02	17.30	6.43	174.52	1.63	11.48	0.67	76.63
Last 5	12:10:02	900.02	17.37	6.58	181.54	1.43	11.55	0.57	71.04
Last 5	12:15:02	1200.02	17.50	6.63	183.62	1.40	11.65	0.51	69.16
Last 5	12:20:02	1500.02	17.55	6.68	185.40	1.67	11.70	0.43	62.93
Last 5	12:25:10	1808.02	17.54	6.71	187.44	1.12	11.71	0.36	51.90
Variance 0			0.14	0.05	2.08			-0.06	-1.88
Variance 1			0.05	0.05	1.79			-0.08	-6.23
Variance 2			-0.01	0.03	2.04			-0.07	-11.03

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-03 11:41:10

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	47.39 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	Lamotte2020we	Pump placement from TOC	42.39 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-2S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.4955216 L
Well Total Depth	47.39 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.13 ft
Depth to Water	10.35 ft	Total Volume Pumped	6.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	11:20:01	600.02	17.40	6.07	43.11	3.55	10.48	2.87	64.02
Last 5	11:25:01	900.02	17.39	6.15	52.36	2.11	10.59	2.88	60.16
Last 5	11:30:01	1200.02	17.38	6.11	51.96	1.48	10.50	3.01	60.58
Last 5	11:35:01	1500.45	17.39	6.02	52.32	1.22	10.49	3.00	64.37
Last 5	11:40:04	1803.45	17.38	6.10	51.41	1.32	10.48	2.79	60.04
Variance 0			-0.01	-0.03	-0.40			0.13	0.42
Variance 1			0.01	-0.09	0.36			-0.01	3.79
Variance 2			-0.01	0.08	-0.91			-0.21	-4.34

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-03 09:42:14

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	63.82 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	Lamotte2020we	Pump placement from TOC	58.82 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-5I	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.5688556 L
Well Total Depth	63.82 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.12 ft
Depth to Water	8.50 ft	Total Volume Pumped	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			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	09:24:20	300.10	17.30	6.11	125.06	4.43	8.69	4.71	79.08
Last 5	09:29:20	600.02	17.38	6.29	133.00	1.18	8.62	5.25	73.73
Last 5	09:34:20	900.02	17.43	6.32	132.96	1.58	8.62	5.42	73.26
Last 5	09:39:20	1200.02	17.46	6.29	133.28	1.03	8.62	5.39	75.39
Last 5									
Variance 0			0.08	0.18	7.94			0.54	-5.35
Variance 1			0.05	0.03	-0.03			0.16	-0.46
Variance 2			0.02	-0.04	0.32			-0.03	2.12

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-03 10:35:29

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	43.01 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	Lamotte2020we	Pump placement from TOC	38.01 ft

Well Information:		Pumping Information:	
Well ID	BRGWA-5S	Final Pumping Rate	200 mL/min
Well diameter	2 in	Total System Volume	0.4759718 L
Well Total Depth	43.01 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0.11 ft
Depth to Water	8.50 ft	Total Volume Pumped	5.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	10:13:04	300.02	17.63	6.31	147.15	3.47	8.57	2.40	62.66
Last 5	10:18:04	600.02	17.68	6.37	147.93	3.92	8.61	1.94	56.61
Last 5	10:23:04	900.02	17.72	6.46	150.07	2.82	8.60	1.70	53.95
Last 5	10:28:04	1200.02	17.72	6.47	152.04	3.17	8.62	1.62	53.68
Last 5	10:33:04	1500.02	17.73	6.49	152.70	2.49	8.61	1.60	50.91
Variance 0			0.04	0.09	2.14			-0.24	-2.66
Variance 1			-0.00	0.01	1.98			-0.08	-0.26
Variance 2			0.01	0.02	0.65			-0.02	-2.77

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-03 15:50:05

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	Alexis Peri Pump
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	9.88 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	Lamotte2020we	Pump placement from TOC	8.88 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-17S	Final Pumping Rate	190 mL/min
Well diameter	2 in	Total System Volume	0.1340986 L
Well Total Depth	9.88 ft	Calculated Sample Rate	300 sec
Screen Length	5 ft	Stabilization Drawdown	0.14 ft
Depth to Water	5.28 ft	Total Volume Pumped	8.18 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	15:26:39	1800.02	15.76	6.34	326.30	1.71	5.41	2.77	41.73
Last 5	15:31:39	2100.02	15.71	6.34	315.97	2.22	5.41	2.99	41.35
Last 5	15:36:39	2400.02	15.57	6.34	309.64	2.48	5.41	3.18	41.44
Last 5	15:41:42	2702.45	15.58	6.35	305.03	2.62	5.42	3.25	41.19
Last 5	15:46:42	3002.45	15.62	6.34	302.08	2.68	5.42	3.33	41.76
Variance 0			-0.14	-0.00	-6.33			0.19	0.09
Variance 1			0.00	0.00	-4.61			0.07	-0.25
Variance 2			0.04	-0.00	-2.96			0.08	0.57

Notes

Purged three well volumes with peristaltic pump

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-05 09:06:04

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	31.66 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	Lamotte2020we	Pump placement from TOC	26.66 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-33S	Final Pumping Rate	300 mL/min
Well diameter	2 in	Total System Volume	0.425312 L
Well Total Depth	31.66 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	4.32 ft	Total Volume Pumped	7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	08:50:03	300.19	18.80	4.91	428.01	6.80	4.40	0.19	98.85
Last 5	08:55:03	600.16	19.01	4.92	430.36	2.48	4.32	0.12	93.47
Last 5	09:00:03	900.16	18.96	4.86	430.78	1.12	4.32	0.12	91.74
Last 5	09:05:03	1200.16	19.01	4.82	430.30	0.97	4.32	0.12	92.97
Last 5									
Variance 0			0.21	0.01	2.34			-0.06	-5.37
Variance 1			-0.04	-0.06	0.42			-0.00	-1.73
Variance 2			0.05	-0.04	-0.48			0.00	1.23

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-05 09:59:41

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	52.64 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	Lamotte2020we	Pump placement from TOC	47.74 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-34S	Final Pumping Rate	300 mL/min
Well diameter	2 in	Total System Volume	0.5189546 L
Well Total Depth	52.64 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	1.82 ft	Total Volume Pumped	6.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	09:43:30	300.03	17.68	5.85	696.51	1.60	1.82	0.59	50.58
Last 5	09:48:30	600.02	17.77	5.87	694.52	0.88	1.82	0.35	49.81
Last 5	09:53:30	900.08	17.78	5.88	691.08	0.72	1.82	0.27	49.25
Last 5	09:58:30	1200.04	17.63	5.89	689.55	0.40	1.82	0.23	48.90
Last 5 Variance 0			0.09	0.02	-1.98			-0.24	-0.77
Variance 1			0.01	0.00	-3.44			-0.09	-0.56
Variance 2			-0.15	0.01	-1.54			-0.03	-0.35

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2020-03-05 11:48:26

Project Information:		Pump Information:	
Operator Name	Travis Martinez	Pump Model/Type	QED
Company Name	Golder Associates	Tubing Type	poly
Project Name	Plant Branch	Tubing Diameter	0.17 in
Site Name	Plant Branch	Tubing Length	35.34 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	646773		
Turbidity Make/Model	Lamotte2020we	Pump placement from TOC	30.34 ft

Well Information:		Pumping Information:	
Well ID	BRGWC-35S	Final Pumping Rate	300 mL/min
Well diameter	2 in	Total System Volume	0.4417374 L
Well Total Depth	35.34 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	0 in
Depth to Water	0.65 ft	Total Volume Pumped	6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 0
Last 5	11:32:41	300.03	16.52	6.03	684.39	4.04	0.65	0.75	59.19
Last 5	11:37:41	600.02	16.92	6.03	681.59	2.75	0.65	0.38	56.26
Last 5	11:42:42	900.90	16.96	6.04	685.70	2.61	0.65	0.29	54.32
Last 5	11:47:43	1201.90	16.93	6.04	688.83	0.92	0.65	0.25	52.60
Last 5									
Variance 0			0.40	0.00	-2.81			-0.38	-2.93
Variance 1			0.04	0.01	4.11			-0.08	-1.94
Variance 2			-0.03	0.00	3.13			-0.04	-1.72

Notes

Grab Samples

Groundwater monitoring well integrity form

Site Name	Dairy Ranch
Permit Number	
Well ID	P-5
Date	8/2/24

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?			
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water, run-on and run-off control, drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from significant damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and riser pipe filled with grout/sealing?	✓		
e	Is the well locked and in the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or heaved)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the ground surface?	✓		
d	Is the well pad or concrete collar (if present) sufficiently sized and stable? (not undermined by erosion, animal burrows, conditions that may worsen when equipment on)		✓	
e	Is the pad surface clear (not covered with sediment or debris)?	✓		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (sand in the bailer)?		✓	
c	Is the well adequately vented for equilibration of air pressure?	✓		
d	Is the locking plug clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original drilling?			✓
f	Is the casing stable? (for cases that pose immediate risk, where has it been or will it be taken apart by Pathfinder to be kept in good condition and stay compliant with regulations)	✓		
5 Sampling Groundwater Wells Only				
a	Does well evacuate adequately when purged?			✓
b	If dedicated sampling equipment installed, is it in good condition and operational in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6	Based on your professional judgement, is the well construction appropriate for 1) achieving the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			✓

7 Corrective actions or notes as needed (attach)

Signature of person responsible for inspection

Groundwater monitoring well integrity form

Site Name: [illegible]
Permit Number:
Well ID:
Date:

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water, the well is not subject to ponding during heavy rain)	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradations or defects?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the casing and the borehole filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad properly sealed with the protective casing?	✓		
d	Is the well pad free of standing water? (well condition may be compromised by standing water and does not meet when completed)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4 Internal condition				
a	Does the casing prevent entry of foreign objects into the well?	✓		
b	Is the casing free of holes or debris or any obstruction from foreign objects (e.g. insects)?	✓		
c	Is the well properly sealed for equipment of the protective casing?	✓		
d	Is the locking plug properly installed on the protective casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing shallow? (no more than one pipe length above ground or cut off pipe below ground by hand due to lack of ground or risk of slip hazards or confined space)	✓		
5 Sampling & Groundwater Well Purge				
a	Does well use bailer or submersible where purged?			✓
b	If developed sample by appropriate method as to the well conditions and specified in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6	Based on your professional judgement, is the well construction / location appropriate to allow for the objectives of the Groundwater Monitoring Program and in accordance with the applicable regulatory requirements?			✓

7 Corrective actions taken and comments, by date

Signature of person responsible for inspection

Groundwater monitoring well integrity form

Site Name: Plant Project
Permit Number:
Well ID:
Date:

		Yes	no	n/a
1	**Location/Ground Surface**			
a	Is the well visible and accessible?	✓		
b	Is the well adequately identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water near to well to place to alleviate drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be locked?	✓		
b	Is there evidence of deterioration or decomposition?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and pipe of datum and water or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface Seal**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in contact with the protective casing?	✓		
d	Is the well pad an adequate size (>1 m²) to keep personnel and sampling equipment off the ground (as recommended by Provincial Protocol) and does not allow water to pond?	✓		
e	Is the pad surface in poor condition with cracks or damage?		✓	
4	**Internal Components**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of holes or cracks, or any evidence of entry of foreign objects (e.g. insects, spiders)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the casing pipe clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is free product visible? (or does the well have a history of free product? Or is there a risk of free product in the well based on type of site and contaminants of concern)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does well exchange adequately when purged?			✓
b	If dedicated sampling equipment installed, is it in good condition and appropriate for the associated groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbidity)			✓
6	Based on your professional judgement, is the well construction adequate to fulfill the objectives of the Groundwater Monitoring Program and in compliance with the applicable regulatory requirements?			✓

7 Comments (explain as required), by code

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	**Well Identification**			
a	Is the well secure and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well on a high traffic area and does the well require protective barriers?	✓	✓	
d	Is the drainage around the well adequate? (no standing water, runoff away from protective casing or pipe flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from approved damage and plug in the well?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the protective casing and the well pad filled with cement/grout?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface Pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad a complete circle with the protective casing?	✓		
d	Is the well pad a complete circle with the ground surface around it? (not excessively worn by erosion, animal burrows, and cracks not more than ¼ inch wide)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Integrity Testing**			
a	Does the well show evidence of foreign material in the well?	✓		
b	Is the casing free of kinks or bends or any obstructions from foreign objects (sediment/debris)?	✓		
c	Is the well properly secured for unobstructed use (no damage)?	✓		
d	Is the casing cap clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (no shifting [no pipe movement when touched or use of the tubing apart by hand does not result in lack of ground or wobble] or deterioration)	✓		
5	**Sampling Groundwater Well Only**			
a	Does well run purge adequately when purged?	✓		
b	Is the sampling equipment (pumps, tubing, etc.) in good condition and specified in the approved groundwater plan for the facility?	✓		
c	Does the well require redevelopment (low flow, turbid)?		✓	
6	Based on your professional judgement, is the well condition adequate to [ ] to ensure the integrity of the Groundwater Monitoring Program and [ ] comply with the applicable regulatory requirements?	✓		

7 Corrective actions identified, by date:

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	Location identification			
a	Is the well in the proper location?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? Are standing water or soils eroded from obvious drainage flow path?	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weephole?			
d	Is the annular space between casings clear of debris and water or filled with pea gravel/sand?	✓		
e	Is the well identified and in the correct location?	✓		
3	Surface Pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable (not undermined by erosion, animal burrows, and does not rock when stepped on)?	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the casing identification tag or other material match the well?	✓		
b	Is the casing free of kinks or bends or other obstructions that might impede sampling?	✓		
c	Is the well sufficiently vented to allow free exchange of air pressure?	✓		
d	Is the bottom of the casing marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing intact? (Does the bottom of the well, when sounded, produce a clear tone indicating the absence of groundwater and/or sediment build-up?)			
5	Sampling Considerations			
a	Does the well require sampling under purge?			
b	If not sampled during this event, was the well in good condition and inspected at the scheduled time for the sampling event?			
c	Does the well require maintenance during this event?		✓	
6	Based on your overall judgment, is the well construction adequate to ensure that samples collected from the Groundwater Monitoring Program will be representative of the groundwater quality?			✓

7 Corrective actions needed by date:

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Phoenix
Permit Number:
Well ID:
Date: [illegible]

		yes	no	N/A
1	**Locking/Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water, water in well box drains towards/through flush path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and well riser adequately sealed with no gaps evident?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface Pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface in good condition with no evidence of cracks?	✓		
4	**Integrity**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstruction from foreign objects (rocks, etc.)?	✓		
c	Is the well properly vented for atmospheric air pressure?	✓		
d	Is the survey point clearly marked on the riser casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing visible? (or does the pressure readily show that level of water is maintained by head rather than lack of good or secure slip coupling or construction)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does well recharge adequately when purged?			✓
b	If dedicated sampling equipment installed, is it in good condition and installed in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment? (low flow, turbid)			
6	Based on your professional judgement, is the well construction adequate to prevent the degradation of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective measures to be completed by date

Signature of person responsible for inspection

Well Number: [illegible]
Permit Number:
Well ID: P-30
Date: 8-26-15

		yes	no	n/a
1 Location/Identification				
a	Is the well number and date recorded?	✓		
b	Is the well properly identified with the number and date?	✓		
c	Is the well number/identification and date on the well cap or protective casing?		✓	
d	Is there a copy of the well construction diagram, boring log, and any other pertinent information (e.g. sampling worksheets, chain-of-custody forms) filed in the project file?	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and does it fit properly?	✓		
b	Is the casing free of obstructions or deterioration?	✓		
c	Does the casing have a functioning weep hole?			✓
d	Is the annular space between casing and borehole sealed with grout or bentonite?			✓
e	Is the well locked and is the lock in good condition?	✓		
3 Surface Pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well cap in compliance with the protective casing?	✓		
d	Is the well pad in compliance with the property use (not impeded by grass, trees, shrubs, or other obstructions)?	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4 Integrity of Casing				
a	Does the casing show evidence of damage?		✓	
b	Is the casing free of cracks or breaks, or any visible signs of deterioration?	✓		
c	Is the well properly vented for equilibrium with atmospheric pressure?	✓		
d	Is the sanitary seal clearly marked on the inner casing?			✓
e	Is the depth of the well consistent with previous well logs?			✓
f	Is the well visible? (or does the property owner need to be notified of the location of the well and given a copy of the completion report)	✓		
5 Sampling Considerations for Wells Only				
a	Does well recharge adequately after purging?			✓
b	If not a dedicated sampling equipment installed, is there a good correlation and specified in the approved groundwater plan for the site?			✓
c	Does the well require redevelopment (low flow turbid)?			✓
6 Based on your professional judgement, is the well in compliance with Division requirements for Traditional Well Operation of the Ground Water Monitoring Program and Permit with the applicable regulatory requirements?				✓

7 Corrective actions recommended, by date:

Signature of person responsible for inspection:

Groundwater Monitoring Well Integrity Form

Site Name: [illegible]
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the ID tag tamper proof, the well watertight? (no standing water, and is well located to prevent drainage from pads)	✓		
2	Protective Casing			
a	Is the protective casing free from significant damage and able to be secured?	✓		
b	Is there any loss of degradation or deformation?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the casing clear of debris and water or treated with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends or any obstructions from foreign objects (sand, insects)?	✓		
c	Is the well properly vented for atmospheric pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (no shims [for pipe above ground] where backfill or soil settled and no signs of movement by heave due to lack of proper compaction or contraction)	✓		
5	Sampling (Groundwater Wells Only)			
a	Does well recharge adequately when purged?			✓
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow turbidity)?			✓
6	Based on your professional judgement, is the well construction (location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			✓
7	Corrective actions needed by date			

Signature of person responsible for inspection

Well No.
Permit Number
Well ID
Date

		yes	no	n/a
1	**Location/Siting**			
a	Is the well's surface seal adequate?	✓		
b	Is the well properly plumbed with no cross connections?	✓		
c	Is the well free of high water, sewer, and storm flow problems?		✓	
d	Is the distance between the well and septic/sewage system adequate? (Minimum distance is 100 feet for a well with a surface seal and 50 feet for a well with a pitless adapter)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage that could be remedied?	✓		
b	Is the casing free of deterioration or corrosion?	✓		
c	Does the casing prevent entry from burrowing animals?	✓		
d	Is the annular space between the casing and the bore hole sealed with grout or bentonite?	✓		
e	Is the well log kept and is the log of good quality?	✓		
3	**Drainage**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad free of standing water? (No pooling water)	✓		
d	Is the well pad completed and is the well free of pooling water? (Pad must be sealed by concrete, bentonite, or other approved material and must extend 4 feet in all directions)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Potential Hazards**			
a	Does the area around the well appear free of potential hazards?	✓		
b	Is the casing free of known or suspected foreign objects (e.g. tools, debris)?	✓		
c	Is the well properly secured for regulatory use or abandonment?	✓		
d	Is the surface pitting clear of debris and free of standing water?	✓		
e	Is the depth of the well consistent with the approved well log?			✓
f	Is the casing stick-up (or depth below ground surface) adequate for the type of well and the future use? (Flush mount wells must be kept free of debris and water)	✓		
5	**Pumping Groundwater Supply**			
a	Does well produce adequately when pumped?	✓		
b	If flush mount well, is the equipment installed, and is the proper pad and equipment in the approved operation plan for the facility?	✓		
c	Does the well require refrigerated flow type (yes/no)?		✓	
6	Based on your professional judgment, is the well complete and adequate to achieve the objectives of the Groundwater Monitoring Program and to comply with the applicable regulatory requirements?	✓		

7 Corrective actions to be initiated by date:

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

User Name: [illegible]
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	**Locate well on site plan**			
a	Is the well's position shown accurately?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water, the well located in elevated depression flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and borehole filled with grout and sealed with gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface Seal**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the seal surface clean (not covered with sediment or debris)?	✓		
4	**Internal Casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or breaks or any obstructions from known depth (touch w/ bailer)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the locking plug easily obtained with the correct casing?	✓		
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing scalable? (e.g. check the pressure visibly when you cap or can it be taken apart by hand due to lack of grout or use of the improper size or material)	✓		
5	**Sampling, Groundwater Wells Only**			
a	Does well require adequate purging when sampled?			✓
b	If dedicated sampling equipment installed, is it in good condition and operational as the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment? (low flow, turbidity)			✓
6	Based on your professional judgement, is the well construction adequate (i.e. 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements)?			✓

7 Corrective actions to be completed by date:

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: [illegible]
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	**Locking cover/gasket**			
a	Is the well weather-proof and sealed?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well cover tight fitting and does the well require padlock from Traffic?	✓	✓	
d	Is the drainage around the well acceptable? (no standing water, rain or melt water does not enter the well through flow paths)	✓		
2	**Protective Casing**			
a	Is the protective casing free from significant damage and plumb (as assessed)?	✓		
b	Is the casing free of degradation or other weakness?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between protective casing and borehole sealed with appropriate material?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with weeds, debris or rubbish)?	✓		
4	**Internal condition**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of leaks or cracks or any obvious loss from foreign objects (such as insects)?	✓		
c	Is the well properly vented for equilibration of the pressure?	✓		
d	Is the casing plumb visually or taken on the most recent log?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (or does the pump visually appear that loss of sand has been upset by water due to lack of proper surface completion or construction)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does well evacuate adequately when purged?	✓		
b	If dedicated sampling equipment installed, is in good condition and does that is the approved groundwater plan for the facility?	✓	✓	
c	Does the well require redevelopment (low flow, turb)?		✓	
6	If answered yes your professional judgement that the well continues to function appropriately for 1) and 2) over the other items of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			✓
7	Corrective actions as needed by each			

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Number: [illegible]
Permit Number:
Well ID:
Date: 8-26-

		yes	no	n/a
1	**Location identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well at a high traffic area and does the well require protection from traffic?		✓	
d	Is there any sign around the well (standing water, mud, or well has other unknown characteristics)?	✓		
2	**Protective Casing**			
a	Is the protective casing free from excessive damage and able to be secured?	✓		
b	Is the casing free of degradations or deterioration?			
c	Does the casing have a functioning vent hole?			
d	Is the annular space between the casing and well riser free of debris and water, or filled with proper material?	✓		
e	Is the well locked and in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in compliance with local well protection ordinance?	✓		
d	Is the well pad in compliance with local well construction ordinance (proper grout material, adequate seal by annular material between outer casing and borehole, and free of voids)?	✓		
e	Is the pad surface clean (not covered with soil mud or debris)?	✓		
4	**Internal Casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is there a casing free of kinks or bends or any obstructions from foreign objects (e.g. insects, spiders)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the sanitary seal clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			
f	Is the casing stable? (pull slightly on the casing to see if any movement is detected by hand, due to the fact that grout can shrink over time)	✓		
5	**Sampling (Groundwater Wells Only)**			
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is the tubing cut and marked in the appropriate groundwater plot for the day?	✓		
c	Does the well require redevelopment (low flow, turbid)?		✓	
6	Based on your professional judgement, is the well construction adequate (appropriate to fulfill or achieve the objectives of the Groundwater Monitoring Program) and 2) comply with the applicable regulatory requirements?	✓		
7	**Corrective actions undertaken by staff**			

Signature of person responsible for inspection:

[illegible]

Well Name
Well ID
Date

		Yes	No	N/A
1. Location/Setback				
a	Is the well location plat/map provided?	✓		
b	Is the well located at least 100 feet from a public well?	✓		
c	Is the well located at least 50 feet from a public road and does the well comply with setback from traffic?	✓		
d	Is the drainage pattern such that the well is not subject to contaminated surface water from adjacent or adverse drainage flow patterns?	✓		
2. Water Well Casing				
a	Is the product casing free from apparent damages and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing appear to be structurally sound?	✓		
d	Is the annular space between the casing and borehole filled with appropriate material?	✓		
e	Is the well head and cap free of cracks and holes?	✓		
3. Surface Seal				
a	Is the well grouted at least 10 feet (and required) or bedrock?	✓		
b	Is the well seal sloped away from the product casing?	✓		
c	Is the seal free of cracks and holes to prevent surface water?	✓		
d	Is the well sealed to completely cover the annular space between the ground surface and casing? (not applicable if the well is a flowing artesian well)	✓		
e	Is the seal surface clean and covered with vegetation or concrete?	✓		
4. Inspection Opening				
a	Does the cap prevent entry of foreign material into the well?			
b	Is there a secure type of locking or bonding mechanism (type:)			
c	Is the well accessible without the requirement of a key or tool?			
d	Is the casing permanently marked with the well's name?			
e	Is the diameter of the well consistent with the drop of well log?			✓
f	Is the casing stable? (or does the pump, motor already show that the well is stable) (not applicable if the well is a flowing artesian well)	✓		
5. Complete Groundwater Supply Only				
a	Does well produce enough adequately where pumping?	✓		
b	Is the well located in the approved groundwater plan for the facility?	✓		
c	Does the well include the required pump flow system?			✓
6. Based on your professional judgement, is the well construction consistent with the intent of the Groundwater Monitoring Program and is it in compliance with the applicable regulatory requirements?				✓

7. Comments on items as marked by status:

Responsible person signature for inspection:

Groundwater Monitoring Well Integrity Form

Site Name: [illegible]
Permit Number:
Well ID:
Date: 12-12-19

		yes	no	n/a
1	**Locating/identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the groundwater protected (no well accessible)? (no standing water near well, no direct or obvious drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing functional (not damaged, corroded, able to be secured)?	✓		
b	Is there a casing free of degradation or deterioration?	✓		
c	Does the casing have a functional drainage hole?	✓		
d	Is the annular space between casing and well casing clear of debris and water, or filled with proper grout/sand?	✓		
e	Is the well secured and is the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in compliance constant with the protective casing?	✓		
d	Is the well pad in compliance constant with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends or any obstruction from foreign objects (caps, pumps, gauges)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (or does the pad move during sampling and return to level after the sampler is removed)	✓		
5	**Sampling (Groundwater Wells Only)**			
a	Does well recharge adequately when purged?			✓
b	If dedicated sampling equipment installed, is it in good condition and operational? Is the appropriate groundwater pump for the well?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6	Based on your professional judgement, is the well consistent with construction specifications as approved in the original Groundwater Monitoring Program and in compliance with the applicable regulatory requirements?			✓

7 Corrective actions are needed by date:

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID:
Date: 7-25-9
2-26-9

		yes	no	n/a
1. Locking/Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?			
c	Is the well at a high traffic area and does the well require protection from vehicle traffic?		✓	
d	Is the dedicated pump labeled the well as applicable? (no standing water, not in well location to subsurface drainage flow path)	✓		
2. Physical Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a free flowing weep hole?			
d	Is the annular space between casing & well or soil and water or fluids well pad groundwater?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3. Surface Pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad free from water from running away?	✓		
c	Is the well pad in compliance with the groundwater sampling?			
d	Is the well pad in compliance with the groundwater sampling? (not applicable well by person, animal, rainwater, and there and never shipped out)	✓		
e	Is the pad surface sloped to prevent ponding & the well cover in surface?	✓		
4. Dedicated Sampling				
a	Does the dedicated tubing or bailer remain in the well?	✓		
b	Is there sampling tape or labels or bands, or any deviations from sampling objects (ink is not bailer)?	✓		
c	Is the well properly vented for equipment or air pressure?	✓		
d	Is the sampling point clearly marked on the inner casing?			
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (no shake, the pump remains steady when hand or cord for bailer, apply by hand, the last pull of sample or cord of slip sampling is consistent)	✓		
5. Sampling Groundwater Wells Only				
a	Does well recharge adequately when pumped?			✓
b	If dedicated sampling equipment, is it in good condition and operational in the approved groundwater plan for the unit by?			✓
c	Does the well require redevelopment (new Base pulled)?			✓

8) Based on your professional judgement, is the well's condition for the above applicable for it to meet the requirements of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements? ✓

9) Corrective actions as needed by date:

Signature of person responsible for completion:

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	**Locked/Identified?**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water or erosion, located on elevated drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from objects or damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing clear of debris and water or filled with grout/cement?	✓		
e	Is the well locked and in the locks in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in compliant contact with the protective casing?	✓		
d	Is the well pad free of standing water with the ground surface and visible? (not obstructed by grasses, annual bushes, and shrubs and mowed when standing tall)	✓		
e	Is the pad surface clear and covered with sediment or debris?		✓	
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of holes or cracks, or any obstructions from foreign objects (spiders/critters)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the previous well log?	✓		
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of good water seal or signs of degradation or contamination)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does the well recharge adequately when purged?	✓		
b	If static and sampling equipment installed, is it in good condition and specified in the approved groundwater plan for that facility?	✓		
c	Does the well need re-development/new flow number?		✓	
6	Based on your professional judgement, is the well construction/location appropriate for it to remain the active point of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective measures as needed - explain

Signature of person responsible for inspection

Groundwater Monitoring Well Inspection Form

Site Name: [illegible]
Permit Number:
Well ID: P-[illegible]
Date: [illegible]-9

		YES	NO	N/A
1	Location/Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5	Sampling: Groundwater Wells Only			
a	Does well recharge adequately when purged?			✓
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			✓

7 Corrective actions as needed, by date:

Signature of person responsible for inspection:

Groundwater Monitoring Well Integrity Form

Site Name: Plant Wabash
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	Location/Well location			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water near or well to be piled in the drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and borehole sealed with grout or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface Pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in compliance with the protective casing?	✓		
d	Is the well pad in compliance with the ground surface and stable? (not broken or cut by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface in good (not covered with sediment or debris)?	✓		
4	Internal Casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of cracks or breaks or any obstructions from bent or slight to severe damage?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (or does the protective casing visibly shift or can the below cover by hand due to lack of grout or rest of the casing/pipe in place/location)	✓		
5	Sampling Groundwater Wells Only			
a	Does well use foreign substances when sampled?			✓
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow turbid)?			✓
6	Based on your professional judgement, is this well a monitoring / recovery / abandonment in the above types of the Groundwater Monitoring Program and it comply with the applicable regulatory requirements?			✓

7 Corrective actions as needed, by date

Signature of person responsible for inspection

Job Number
Permit Number
Well ID
Date

		yes	no	n/a
1 Location/Inspection				
a	Is the well vented to the atmosphere?	✓		
b	Is the well properly constructed with the correct well ID?	✓		
c	Is the well in multiple locations and does the well require people from depts to enter?	✓		
d	Is the drainage around the well adequate? (no standing water, no well located in low areas, drainage flows away)	✓		
2 Physical Integrity				
a	Is the protective casing free from rust, corrosion, damage and does it function as designed?	✓		
b	Is there any type of physical damage or deterioration?	✓		
c	Does the above ground piping have a strong enough rating?	✓		
d	Is the annular space between casing and the bore of the hole sealed with grout/cement?	✓		
e	Is the well in good condition? (No leaks in the piping/valves?)	✓	✓	
3 Surface pad				
a	Is the well pad in good condition (not cracked or pooling)?	✓		
b	Is the well pad sloped away from the well to prevent ponding?		✓	
c	Is the well pad in a compatible condition with the protective casing?	✓		
d	Is the well pad in compliance with the grout surface and sealed? (not contaminated by corrosion, gravel, concrete, dirt, trees, and covers when required)	✓		
e	Is the pad surface in good condition with evidence of cracking?	✓		
4 Potential Leaking				
a	Does the above ground piping or equipment show signs of leaks?	✓		
b	Is there any type of leaks or hazards in the surrounding area from the well? (contaminated soil)	✓		
c	Is the well properly sealed for operational and maintenance?	✓		
d	Is the gateway gate already installed on the well?		✓	
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (if there is no pressure gauge, when applied a small amount of force it does not move)	✓	✓	
5 Complete Only for Active Wells Only				
a	Does well exhibit adequately water production?			✓
b	If dedicated sampling equipment installed, is it in good condition and operational? Is the appropriate groundwater plan for this facility?			✓
c	Does the well require redevelopment? (low flow, turbid?)			✓
6 Based on your observations, is the well operation consistent with applicable laws? (i.e. is the well free of the following: Prohibited Practices and Conditions and Comply with the applicable requirements)		✓		

7 Comments/observations/recommendations:

Signature of person responsible for inspection

Site Address: [illegible]
Operator Name: [illegible]
Well ID: [illegible]
Date: [illegible]

		yes	no	n/a
1	Location of well			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well at least 100 feet from any water supply well or 250 feet from a public water supply well?	✓		
d	Is the discharge around the well adequate? (no standing water or well located in obvious drainage flow path?)	✓		
2	Protective Casing			
a	Is the protective casing free from significant damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing appear to be in emergency order?	✓		
d	Is the annular space between the casing and the drilled hole filled with pea gravel/sand?	✓		
e	Is the well locked and in the box of good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition and able to keep out [illegible]?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in adequate condition to protect the protective casing?	✓		
d	Is the well pad in adequate condition with the ground surface area visible that is sloped by approximately several inches and does not create ponding?	✓		
e	Is the pad or drainage basin free of excessive vegetation or debris?	✓		
4	Integrity of Casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is there a proper lock or bolts or any similar item from foreign objects (tape locks/bolts)?	✓		
c	Is the well properly secured for unpublished out of use purposes?	✓		
d	Is the casing pipe clearly marked on the inner casing?			✓
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (Is there too much movement when the lock or cap is tightened by hand? Is there a lack of proper use of slip couplings or construction?)	✓		
5	Sampling Requirements? Why is this?			
a	Does well exchange adequately when purged?			✓
b	If not, is the proper sampling equipment installed, in the good condition and operated in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6	Based on your answers and judgement, is the well construction adequate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?	✓		

7 Corrective actions or remedies by date

Signature of person responsible for inspection

SPE Name: Brad Woods
Federal Operator:
Well #: BEC-JA -12H
Date: 8-30-19

		Yes	No	N/A
1. Location Preparation				
a.	Is the well location and pit accessible?	✓		
b.	Is the pad prepared & constructed appropriately for well #'s?	✓		
c.	Is there any soil or topography issues that could cause the well to become flooded or have problems?	✓		
d.	Is the drainage around the well adequate? (use secondary berm, ensure well has adequate elevation & proper flow paths)	✓		
2. Production Casing				
a.	Is the production casing been tested appropriately per state & company requirements?	✓		
b.	Is there a special type of stage tool or diverting equipment?	✓		
c.	Does the casing have a centralizing program?	✓		
d.	Is the annular space between casing & hole adequate for getting cement filled with good coverage?	✓		
e.	Is the well cased and is the back of pipe secured?	✓		
3. Cementing				
a.	Is the well cased to ground & cemented from shoe to surface?	✓		
b.	Is the well cased above Dakota Formation?		✓	
c.	Is the well cased adequately & with the proper centralizers?	✓		
d.	Is the well cased adequately & with the proper type & amount of cement for stability? (cement compressive strength, thickening time, and density and volume when applicable)	✓		
e.	Is TOC and volume shown (cement circulated with sand marker or density)?	✓		
4. Intermediate Casing				
a.	Does pressure test exceed MASP for the formation with the well?	✓		
b.	Is the casing free of holes or damage or any abnormalities from handling or run?	✓		
c.	Is the well properly centered for optimal cement placement?	✓		
d.	Is the casing adequately centralized for the proper cementing?		✓	
e.	Is the depth of the well consistent with the original well log?			✓
f.	Is the casing stable? (no shoes, the pipe remains steady when pressured or can it be taken apart by hand after getting it off of the slips or the casing is not moving)	✓		
5. Sampling Encountered Water Only				
a.	Does well run through potentially water bearing?	✓		
b.	If water is encountered is the well cased and cemented to the ground surface? And is there a cement to the approved groundwater protection depth?			✓
c.	Does the well require underwater flow flow applied?			✓

6. Based on your professional judgement: Is the well's construction / location appropriate to prevent the migration of the Groundwater Monitoring Program and will comply with the applicable regulatory requirements?

✓

7. Comments and deficiencies noted by state:

Signature of BLM or Authorized Representative

Site Name: Plant Branch

Permit Number:

Well ID:

Date:

		yes	no	n/a
1. Location/Identification				
a	Is the well weather proof & accessible?	✓		
b	Is the well properly identified as in the Corrective Action Plan?	✓		
c	Is the well in a high traffic area and does the well require protection from vehicular traffic?		✓	
d	Is the downslope area of the well discernible? (i.e. standing water but the well is located in elevated drainage flow path)	✓		
2. Protective Casing				
a	Is the protective casing free from apparent observable deficiencies?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water or filled with pea gravel/sand?	✓		
e	Is the well box and cover in good condition?	✓		
3. Surface Seal				
a	Is the well pad of adequate construction (concrete or bentonite)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in acceptable condition with no large cracks?	✓		
d	Is the well pad adequately sealed with the ground surface and visible? (soil underneath by broken, unused concrete, and stone and mixed where required)	✓		
e	Is the pad surface clean and free of vegetation?	✓		
4. Polymer Casing				
a	Does the casing consist only of PVC or stainless steel for the well?	✓		
b	Is the casing free of kinks or bends or any obstruction from the ground surface to the bottom?	✓		
c	Is the well properly sealed for proper operation of the pump?	✓		
d	Is the locking cap on the well functional and in good condition?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (i.e. does the pipe move easily when touched or can it be taken apart by hand due to lack of glued or mechanical connections)	✓		
5. Sampling Groundwater Wells Only.				
a	Does well run dry (particularly when pumped)?			✓
b	If developed sampling equipment installed, is it in good condition and appropriate for the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbidity)?			✓
6. Based on your professional judgement, is the well condition from the above applicable to 15A NCAC 02C .0108 and the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?				✓
7. Corrective actions as needed by date				

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Mount Pleasant
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	**Location/Identification**			
a	Is the well on the most recent site map?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the ground surface around the well not subject to ponding water and is water directed away from the well?	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be securely locked?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the casing and the borehole filled with grout or bentonite seal?	✓		
e	Is the well locked and in the locked or closed position?	✓		
3	**Surface Seal**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in compliance standard with the proper flow casing?	✓		
d	Is the well pad or concrete apron / pads the grouted surface pad sealed? (not undermined by erosion, or cracked/loose, and does not appear when blackened on)	✓		
e	Is the pad surface clean and covered with sediment or debris?			✓
4	**Internal Casing**			
a	Does the casing prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends or any constriction from foreign objects (sand or pebbles)?	✓		
c	Is the well properly marked for identification of the protection?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (no play) (Test pvc, move gently when locked or use a tool to lift up by hand close to lock or grout or use of slip casing in construction)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does the discharge adequately when purged?			✓
b	If dedicated sample pump present installed, is it in good condition and operational in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow turbid)?			✓
6	Based on your professional judgement, is the well construction / location appropriate for 1) to have the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			✓
7	Corrective actions as needed by date			

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Mount Pleasant
Permit Number:
Well ID: P2
Date:

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?		✓	
c	Is the well in a high traffic area and does the well require protection from traffic?			
d	Is the ground around the well unobstructed? (no standing water, trash, debris, or other obstructions that may pose a hazard)	✓		
2	**Protective Cover**			
a	Is the protective cover/casing free from significant damage and able to be secured?	✓		
b	Is the casing free of perforations or deformation?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the casing and the drilled hole, or filled with proper material?	✓		
e	Is the well lid labelled with a proper identifier?	✓		
3	**Surface Seal**			
a	Is the well pad in good condition (not cracked or heaved)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and sealed? (not sunken and by drainage outside bollards, and there is no water when stagnant pit)	✓		
e	Is the bollard in place and secured with steel cable?	✓		
4	**Internal Casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends or any constriction from heave or other factors?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the screw cap/plug properly applied and appropriate?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (no shear, the pipe moves easily when pushed or pulled laterally applied by hand due to lack of ground or over-tightening of cap/plug)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does well purge adequately when pumped?			✓
b	If dedicated sampling equipment installed, is it in good condition and operated in the most recent groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6	Based on your professional judgement, is the well overall (incl. sampling) necessary to achieve the objectives of the Groundwater Monitoring Program and is it compliant with the applicable regulatory obligations?			✓

7 Corrective actions taken as recorded, by date

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID: MW-13S
Date: 8-26-19

		yes	no	n/a
1	Well Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protective bollards?		✓	
d	Is the drainage around the well acceptable? (no standing water near well, located in obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and does it be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with vegetation or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of damage or defects (e.g. corrosion, holes, breaks, cracks, or splits)?	✓		
c	Is the well locked, vented for accumulation of gas pressure?	✓		
d	Is the surface seal clean, intact at the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing sealed? (or does the bottom of the casing sit in a bentonite seal, grout, or concrete plug that is at least 2 feet thick and is free of cracks or damage?)	✓		
5	Concrete Encasement (if applicable)			
a	Does the concrete encasement appear stable?			✓
b	Is the concrete casing sealed and installed to the proper depth and specified in the approved construction plan for the well?			✓
c	Does the well require replacement due to poor condition?			✓
6	Based on your professional judgment, is the well construction adequate to achieve the objectives of the Groundwater Monitoring Program and in compliance with the applicable regulatory requirements?			✓

7 Corrective actions required by date

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Wash 1
Permit Number:
Well ID: P2-15, P2-9
Date:

		yes	no	n/a
1	**Locate and Identify Location**			
a	Is the well visible and accessible?	✓		
b	Is the well properly labeled with the proper Well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from vehicular traffic?		✓	
d	Is there a properly prepared pad around the well and sloping away from the well to allow for drainage from the pad?	✓		
2	**Protective Casing**			
a	Is the protective casing free from significant damage and able to function as intended?	✓		
b	Is the casing free of degradation on or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is there adequate space between casing & riser to add tubing and water or treat with gas production?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface Seal**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad free of cracks or holes that could allow surface water to enter the annular space?	✓		
d	Is the well pad in complete contact with the protective surface and intact? (Not determined by observation, cracked from frost and does not move when displaced)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Internal Casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of holes or breaks, or any obvious holes where foreign objects (birds or rodents) could enter?	✓		
c	Is the well properly vented for expected annual maximum?	✓		
d	Is the casing proof clearly marked on the outer casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing visible? (or does the permit indicate initially when less than 2' of casing is taken apart by hand due to lack of grout or cracked slip couplings or centralizers)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does well recharge adequately when purged?			✓
b	If dedicated sampling equipment installed, is it in good condition and operational as the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (how done, turbidity)			✓
6	Based on your professional judgement, is the well capable (with reasonable repair/upgrade (e.g. J-plug, new slip) of the Groundwater Monitoring Program and capable of compliance with the applicable regulatory requirements?	✓		

7 Corrective measures completed, by date

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Port Branch
Permit Number:
Well ID:
Date: 8-16-9

		yes	no	n/a
1	Location description			
a	Is the well easy to see and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water or soil eroded from obvious drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing protecting from riser damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clean of debris and water, or filled with gravel type?	✓		
e	Is the well locking and is the locks in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad complete contact with the protective casing?	✓	✓	
d	Is the well pad in compliance with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)		✓	
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of cracks, holes or any deterioration? (no signs of damage)	✓		
c	Is the well properly vented to allow pressure equalization?	✓		
d	Is the water level below the bottom of the internal casing?	✓		
e	Is the casing at the well permanently marked with the original well ID?	✓		
f	Is the casing secure? (does not move back and forth or up and down when pushed or pulled)	✓		
5	Sampling Equipment (if dedicated)			
a	Does the sampling equipment appear functional?			✓
b	Is dedicated sampling equipment free of debris and in good condition and labelled? (if dedicated equipment is present)			✓
c	Does the well require redevelopment? (no visible sediment)			✓
6	Based on your professional judgement, is the well construction adequate to meet the objectives of the Groundwater Monitoring Program and is it capable of producing representative samples?			✓
7	Corrective actions as needed (if any)			

Correct well pad - wobbles. Recommend re-pouring the pad apart to

Signature of person responsible for inspection

Groundwater Monitoring Well Inspection Form

Site Name:			
Well Number:			
Well ID:			
Date:			

		Yes	No	Not Applicable
1. Well Location and Condition				
a.	Is the well visible and accessible?	✓		
b.	Is the well properly identified with the correct well ID?			
c.	Is the well at a high traffic area and does the well require protection from traffic?		✓	
d.	Is the drainage around the well acceptable? (no standing water, not in well located in obvious drainage flow path)	✓		
2. Protective Casing				
a.	Is the protective casing free from apparent damage and able to be secured?	✓		
b.	Is the casing free of degradation or deterioration?	✓		
c.	Does the casing have a functioning weep hole?	✓		
d.	Is the annular space between casing clear of debris and water, or filled with clean gravel/sand?	✓		
e.	Is the well locked and is the lock in good condition?	✓		
3. Surface pad				
a.	Is the well pad in good condition (not cracked or broken)?	✓		
b.	Is the well pad sloped away from the protective casing?	✓		
c.	Is the well pad in complete contact with the protective casing?	✓		
d.	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e.	Is the well surface clean (not covered with sediment or debris)?	✓		
4. Inner well casing				
a.	Does the cap prevent entry of foreign material into the well?	✓		
b.	Is the casing free of leaks or debris or any contaminants from foreign objects (such as battery)?	✓		
c.	Is the well properly vented for equilibration of air pressure?	✓		
d.	Is the survey point clearly marked on the inner casing?	✓		
e.	Is the depth of the well consistent with the original well log?			✓
f.	Is the casing stable? (no cracks and post should stay where you set it or can it be taken apart by hand due to lack of glue or use of set screws or combination)	✓		
5. Sampling Groundwater Wells Only.				
a.	Does the discharge adequately when purged?			✓
b.	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			✓
c.	Does the well require redevelopment (low flow turbid)?		✓	
6. Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory recommends?				✓

7. Corrective actions as needed, by date

same comments as PZ-16S (wobbly pad) discovered during October event

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID:
Date: 2-17-21

		Yes	No	N/A
1	**Location Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, and is well shielded from run-off damage from rain?)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or contamination?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is there an annular space between casing and well debris and water, or insects (open ground)?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Well Pad**			
a	Is the well pad in good condition (no cracks or breaks)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion and no burrows and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Internal Casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of cracks or damage and the bottom of the foreign material such as debris?	✓		
c	Is the well properly labeled with the depth of the well?	✓		
d	Is the inner cap locked (if applicable)?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (does not move when pushed or pulled by hand and is able to give a clear sound when tapped with a metal object)	✓		
5	**Sampling Equipment Condition**			
a	Does the sampling equipment appear clean?			✓
b	Is dedicated sampling equipment present and in good condition and specified in the approved groundwater sampling plan?			✓
c	Does the well require redevelopment during this visit?			✓
6	Based on professional judgement, is the well construction adequate to accurately represent the groundwater quality in the Groundwater Monitoring Program and in accordance with the applicable regulatory requirements?			✓
7	Corrective actions to be taken by date			

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID:
Date:

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from being hit?		✓	
d	Is the ground around the well sloped away from the well to prevent ponding water, but the well pad and surrounding area drains away easily?	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deformation?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the riser and protective casing filled with pea gravel/sand?	✓		
e	Is the well cap present and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad free of standing water? (with the exception of rainfall)	✓		
d	Is the well pad in compliance contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not have deep cracks present)	✓		
e	Is the pad surface free from vegetation, debris, and other materials?	✓		
4 Integrity Testing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or breaks as may obstruct items from falling down it (can it be bailed)?	✓		
c	Is the well properly sealed for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is there casing stickup? (or does the protective casing extend to or near the same point by bailing due to lack of proof of use of slip couplings or connections)	✓		
5 Sampling Groundwater Wells Only				
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and appropriate for the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (how long, by who)?		✓	
6) Based on your professional judgement, is this well suitable for the above purposes (e.g. Is the well free of obstructions of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?				✓

7 Corrective actions as needed by who

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plum Brook
Permit Number:
Well ID: MW-18
Date: 8-26-19

		Yes	No	N/A
1 Location/Identification				
a	Is the well on site and accessible?	✓		
b	Is the Well properly identified with Permanent Well ID?	✓		
c	Is the well in a high traffic area and does the well require protective bollards?		✓	
d	Is the surface affected (for well not submersible) (i.e. stained by water, rust on well, located in drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from damage (dented, damaged post, plate bent, missing)?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a locking cap?	✓		
d	Is the annular space between protective casing and borehole filled with grout/cement?	✓		
e	Is the well located such that it is not prone to ponding?	✓		
3 Surface Pad				
a	Is the well pad in good condition (free from holes or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in compliance with the prior approved monitoring plan?	✓		
d	Is the well pad in compliance with the ground surface (not sloped? (not applicable) for aquifers, artificial barriers, and wells not flush mounted)	✓		
e	Is the pad surface free from cracks or settlement or damage?	✓		
4 Interior Casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the expansion free of holes or breaks, or any obvious leaks from foreign objects (such as bentonite)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the gasket properly installed on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (pull down the pvc riser gently when locked or cap is removed to ensure against any heave or lack of grout or cement slip or problems of construction)	✓		
5 Sampling Groundwater Wells Only				
a	Does well not purge excessively when purged?			✓
b	If static and sampling equipment installed, is it in good condition and operated in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (slow flow, turbidity)			✓
6 Based on your professional judgement, is the well construction adequate (refer to 1) to ensure the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?				✓

7 Corrective actions are required by date

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: [illegible]
Person(s) Sampling:
Well ID:
Date:

		yes	no	n/a
1. Location Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is there depression around the well necessary to drain standing water near the well to avoid ponding (allowing drainage flow path)?	✓		
2. Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a free locking weep hole?	✓		
d	Is the annular space between concrete collar of drill hole and casing filled with pea gravel/bentonite?	✓		
e	Is the well cap locked and is the lock in good condition?	✓		
3. Surface Pad				
a	Is the well pad or apron envelope free of cracks or breaks?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the ground surface?	✓		
d	Is the well pad in complete contact with the ground surface and intact (pad undermined by erosion, cracks, breaks and areas where slumping)?	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4. Internal Casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obvious issues from foreign objects (such as spiders)?	✓		
c	Is the well properly vented for expected changes in pressure?	✓		
d	Is the casing pipe clearly marked on the inner pipe?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing usable? (or does the pipe move easily when tapped or can it be taken apart by hand due to lack of gravel or use of slip couplings or corrosion pipe)	✓		
5. Completed Groundwater Wells Only				
a	Does well recharge adequately when purged?			✓
b	If contaminant sampling is proposed, is it in good condition and open during the proposed groundwater plan for the facility?	✓		
c	Does the well require redevelopment (low flow, turbidity)?			✓
6. Based on your professional judgement, is the well compliant with applicable regulatory requirements?		✓		

7. Corrective measures, if needed, by date:

Signature of person responsible for inspection:

Groundwater Monitoring Well Integrity Form

Site Name: Plank Road S
Permit Number:
Well ID: PZ-4T
Date: 9-30-19

		yes	no	n/a
1	Locked/Identified as plug			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a locked, damp proof plastic (for well caps) or glass tube (flush mount)?		✓	
d	Is the drainage around the well acceptable? (no standing water and is well not at risk of future drainage flow paths)	✓		
2	Protective Casing			
a	Is the protective casing free from signs of damage and rust to be measured?	✓		
b	Is the casing free of playground or debris?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing clear of debris and water or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?		✓	
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal Casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is there a casing lock or bolts or barrels, or pry-plug to prevent foreign objects (such as rodents)?	✓		
c	Is the well properly vented for atmospheric pressure?	✓		
d	Is the casing pipe clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (no shake from gentle manual manipulation or can it be taken apart by hand due to lack of glue or other compounds or corrosion)	✓		
5	Sampling Groundwater Wells Only			
a	Does well cap have a padlock?			✓
b	If onsite sampling equipment exists, is it in good condition and operated in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6	Based on your professional judgement, is the well construction / seal as appropriate as to continue the objectives of the Groundwater Monitoring Program and to comply with the applicable regulatory requirements?	✓		
7	Corrective work or items as needed by date			

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Rivers Is
Permit Number:
Well ID:
Date: 9-26-11

		Yes	No	N/A
1	**Locking/Identification**			
a	Is the well identification clear and accurate?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well locked to prevent people (and others) from tampering with or damaging the well?	WW	✓	
d	Is the protective casing labeled with the well or capped? (Use secondary marker tape if well identification is on inner casing)	✓		
2	**Protective Casing**			
a	Is the protective casing free from damage, deterioration, corrosion, and able to be used?	✓		
b	Is there adequate drainage to prevent standing water?	✓		
c	Does the casing have a weep hole to relieve pressure?	✓		
d	Is the inside of the protective casing free of debris, mud, water, or filled with gravel/sand?	✓		
e	Is the well head cool to the touch on a hot day?	✓		
3	**Surface Pad**	✓		
a	Is the well pad in good condition (not cracked or broken)?		✓	
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad completely intact? Is the protective casing?			
d	Is the well pad completely intact? Is the protective casing? (not undermined by erosion, gravel, etc.)	✓		
e	Is the pad appropriately sized (not extended to the road/ditch or shallow)?	✓		
4	**Integrity**			
a	Does the cap prevent entry of damage unauthorized into the well?	✓		
b	Is the casing free of debris or insects, or any objectionable liquid, foreign substance, or odor?	✓		
c	Is the well correctly vented for proper breathing of air pressure?	✓		
d	Is the gravity plate already installed on the inner casing?			
e	Is the depth of the well consistent with the original well log?			✓
f	Is the stability established? (If shown the pressure reading will not fluctuate or cannot be taken, report by stating that the lack of ground or area of slight compaction or consolidation)	✓		
5	**Sampling** (Groundwater Wells Only)			
a	Does well have multiple identifiable purposes?			✓
b	If contaminated, multiple impairment established, and in good condition and upon final or the approved groundwater plan for this facility?			✓
c	Does the well require redevelopment (Step Step) (plan)?			—

6 Based on your professional judgement, is this well compliant with the above applicable to 1) or based on the type of the Chapter 173-160 Minimum Requirements and 2) comply with the applicable regulatory requirements)? ✓

7 Comments (use or more as needed), by date:

Responsible person responsible for information:

Groundwater Monitoring Well Integrity Form

Site Name: [Site Name]
Permit Number:
Well ID: PZ-101I
Date: 8-Dec-19

		yes	no	n/a
1 Locks/weatherproofing given				
a	Is the well visible and not covered?	✓		
b	Is the well properly identified with the correct Well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water over or well box and no obvious drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from significant damage and able to be secured?	✓		
b	Is the casing free of paint and other deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and well filled with protective material?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?		✓	
c	Is the well pad in compliance with the protective casing?	✓		
d	Is the well pad or grout/sonotube collar with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when displaced)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4 Internal components				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends or any obstructions from foreign objects (e.g. rocks or plants)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (or does the cap move easily when touched or is out of the sediment and by hand shake test is it free of any cracking or deterioration)	✓		
5 Sampling Groundwater Wells Only				
a	Does well recharge adequately after purging?			✓
b	If dedicated sampling equipment, is the equipment in good condition and operational? Is the approved groundwater plan for the facility			✓
c	Does the well require redevelopment (low flow turbid)?			✓
6 Based on your professional judgement, is the well construction / location appropriate for it's current use? Does the operation of the Groundwater Monitoring Program and it comply with the applicable regulatory requirements?		✓		
7 Corrective measures as needed by date				

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Date Monitored: [illegible]
Personnel Monitored:
Well ID: PZ-215
Design:

		yes	no	n/a
A. Groundcover/Protective Structure				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well ID at eye level, clean and clear that well requires identification/visible traffic?	✓		✓
d	Is the above-ground casing damaged/ bent, missing locking cap, or well box broken, cracked or otherwise damaged? (see attached photos)	✓		
B. Protective Casing				
a	Is the protective casing/ cover free from corrosion, damage, and able to be secured?	✓		
b	Is the casing free of obstructions or debris?	✓		
c	Does the casing protect the well from structural damage?	✓		
d	Is the structural support or hardware damaged, loose or missing, not working, or filled with poor groundcover?	✓		
e	Is the well box kept clean so that lock is in good condition?	✓		
C. Surface seal				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in compliance with the Well Design Specification?	✓		
d	Is the well pad in compliance with the grounds (surface seal, bollards and visible) and identification for obstructions, accidental damage, and clean and visible identification)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
D. Inherent Concern				
a	Does the annular pressure] reading of 5psig or greater upon purging?	✓		
b	Is there a steady flow of bubbles or foaming, or any observable fluid from annular pressure relief valve?	✓		
c	Is the well properly vented for depressurization of the annulus?	✓		
d	Is the annulus visually monitored for fluid accumulation?	✓		
e	Is the depth of the well consistent with the log and well log?			✓
f	Is there a gauge reading? (or check the pressure gauge to see if it is working properly)	✓		
E. Corrective Groundwater Well Only				
a	Does well run longer automatically when purged?			✓
b	If check valve/ sampling equipment] installed] in a to avoid contention and open flow] is the pressure] gauge/ groundwater plan for the facility?			✓
c	Does the well require pressure relief flow below 10 psi?			✓
F. [Screen] for water pressure relief problems: Is the well connection from the above pressure to 15 psi range for operation of the Groundwater Monitoring Program in accordance with the applicable Regulatory requirements?		✓		
G. Current Issues or Issues to Remedy, Replace				

Signature of person responsible for monitoring:

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch

Permit Number:

Well ID: MW-215

Date:

		yes	no	n/a
1	**Locking/Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the current well ID?	✓		
c	Is the well in a high traffic area and does the well require protective bollards?			✓
d	Is the drainage around the well adequate? (no standing water, nor a well located in elevation drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to secure properly?	✓		
b	Is the casing free of degradation or deformation?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space in between the casing and pipe filled with gravel and pea gravel/sealant?	✓		
e	Is the well locked and in the locked position?	✓		
3	**Surface Seal**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the seal surface clean (not covered with mulch or debris)?	✓		
4	**Internal Casing**			
a	Does there appear evidence of foreign material into the well?	✓		
b	Is the casing free of kinks or bends or any obstructions from foreign objects (such as barnacles)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with what the well log says?			✓
f	Is the casing stable? (ie does the pvc move easily when load is applied or can it be taken apart by hand due to lack of glue or use of screw couplings at certain joints)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does well require purging prior to sampling?			✓
b	If dedicated sampling equipment installed, is it in good condition and operational in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6	Based on your professional judgement, is the well construction adequate and appropriate to facilitate the objectives of the Groundwater Monitoring Program and it's comply with the applicable regulatory requirements?	✓		

7 Corrective actions as needed, by date

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: [illegible]
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	**Well Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the well damaged or could the well be exploited (for example, can a well cap be placed to obviate damaged flow bars)		✓	
2	**Protective Casing**			
a	Is the protective casing free from corrosion, damage and debris and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the casing and the well filled with grout/cement?	✓		
e	Is the well locked and in the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not worn out or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in compliance with the protective casing?	✓		
d	Is the well pad in competent contact with the ground surface and stable? (not undermined by erosion, animal burrows, and signs of creep where applicable)	✓		
e	Is the pad surface clean (not covered with mud or debris)?	✓		
4	**Internal casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is there casing free of holes or damage to prevent foreign objects (such as rodents)?	✓		
c	Is the well physically sealed for expectations of no pressure?	✓		
d	Is the annular space clearly marked for flow pressure sensing?	✓		
e	Is the depth of the well consistent with that of original well log?			✓
f	Is the casing visible? (or does the pad have double wall construction or could the casing be confirmed by borehole camera to be in good condition and complete as constructed)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does well recharge adequately when purged?	✓		
b	If needs dedicated sampling equipment installed, is it in good condition and operational or the appropriate pump type for the purpose?	✓		
c	Does the well require redevelopment (low flow turbid)?		✓	
6	Based on your professional judgement – is this well consistent with / compliant with the Groundwater Monitoring Program and is comply with the applicable regulatory requirements?			✓

7 Corrective actions and comments, if any, below

Signature of person responsible for inspection

Groundwater Monitoring Well Inspection Form

Site Name: Plant Branch
Permit Number:
Well ID: [illegible]
Date: [illegible]

		Yes	No	N/A
1. Location/Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well acceptable? (no standing water, nor is well located in obvious drainage flow path)	✓		
2. Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3. Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4. Internal casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (or does the pvc move easily when touched or can it be taken apart by hand due to lack of grout or use of slip couplings in construction)	✓		
5. Sampling: Groundwater Wells Only:				
a	Does well recharge adequately when purged?			✓
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6.	Based on your professional judgement, is the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			✓

7. Corrective actions as needed, by date:

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: [illegible]
Date of Inspection:
Well ID: BK Lwr 2-34
Status:

		yes	no	n/a
1	**Location/General Condition**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well or its vault/cover damaged, flooded, or otherwise compromised from traffic?		✓	
d	Is there any reason to suspect the well is unacceptable for sampling (e.g., standing water, mud in well box, obstructions, or other issues)?	✓		
2	**Protective Casing**			
a	Is the protective casing free from significant damage and able to function properly?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and pipe clear of debris and water, or filled with pea gravel/sand?	✓		
e	Is the well cap and lock in good condition?	✓		
3	**Surface Pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in acceptable contact with the ground surface?	✓		
d	Is the well pad in acceptable contact with the ground surface and backfill material (i.e., no evidence of subsidence, cracking, or voids around edges where slumping occurs)?	✓		
e	Is the pad surface clean (free of debris and standing water)?	✓		
4	**Internal Casing**			
a	Does the only permanent marker of the well remain?	✓		
b	Is the internal face of locks or bolts or any combustible components adequately functional?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is there a survey point clearly engraved on the riser casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (i.e., does the pipe remain steady when top cap or cap is removed) by hand (no tools or lack of ground or use of slip resistance or personal gear)	✓		
5	**Sampling (Groundwater Wells Only)**			
a	Does well contain adequate purge water?			✓
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6	Based on your professional judgement, is the well operating in a manner appropriate to the objectives of the Groundwater Monitoring Program and in compliance with the most stable regulatory requirements?			✓

7 Corrective actions required, by whom

Signature of person responsible for inspection

Location
Permit Number
Well ID
Date

		yes	no	n/a
1 Location/Identification				
a	Is the well weather and tamper proof?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is there room to safely drive around the well to perform periodic maintenance?	✓		
d	Is the area around the well free of debris? (eg. garbage, weeds, vegetation)	✓		
2 Physical Condition				
a	Is the protective casing free from corrosion, cracks, or damage?	✓		
b	Is the casing cap free of cracks or deterioration?	✓		
c	Does the casing have a hole for water level measurements?		✓	
d	Is the annular space between the casing and the borehole sealed with bentonite grout to prevent surface water from entering the well?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?		✓	
c	Is the well pad at an acceptable height above the protective casing?	✓		
d	Is the well pad at an acceptable size (at least 1 m square and 10 cm thick)? (Not shown because the well is in a remote location and inaccessible for maintenance)	✓		
e	Is the pad sealed to the casing (not cracked, eroded or deteriorated)?	✓		
4 Integrity				
a	Does the cap prevent entry of foreign objects into the well?	✓		
b	Is there a vent hole at the top of the casing (not blocked by insects, debris or other objects)?	✓		
c	Is the well properly marked for easy identification?	✓		
d	Is the necessary permit/supply contract for the other wells?		✓	
e	Is the plaque of the well in accordance with the original work log?	✓		
f	Is there a pump installed? (If there is no pump, only check the box if the well is not in use and the owner has indicated that they do not plan to use the well in the future)			
5 Sampling Equipment Working Properly				
a	Does the well run dry unexpectedly when pumped?			
b	If a submersible pump is required, is it installed at the correct depth and does it have adequate power to run properly?			
c	Does the well require redevelopment (low flow, turbid)?			
6 Does the well meet all regulatory requirements? (Is the well identification plate in place and legible, and does the well comply with the applicable regulatory requirements?)		✓		

7 Comments on deficiencies found during inspection

8 Signature of certified professional performing inspection

Groundwater Monitoring Well Integrity Form

Site Name: [illegible]
Permit Number:
Well ID:
Date: [illegible]

		yes	no	n/a
1. Locking/protective cap				
a	Is the well vandal-proof or secured?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Do the well ID and GPS coordinates shown on the well diagram match the actual location?		✓	
d	Is the check sample proposed that was collected? (no standing water, but a wet location is otherwise observed)	✓		
2. Protective Casing				
a	Is the protective casing free from apparent damage and obstruction?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and riser pipe dry and free of debris and water or filled with clean groundwater?	✓		
e	Is the well locked and in working order (good condition)?	✓		
3. Surface seal				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?		✓	
c	Is the well pad free of standing water (pooling) around the protective casing?	✓		
d	Is the well pad in compliance with the ground surface seal visible? (not obstructed by vegetation, animal burrows, soil mounds, or other obstructions)	✓		
e	Is the seal surface clean (not covered with sediment or debris)?	✓		
4. Internal casing				
a	Does the well have internal casing or tubing installed into the well?	✓		
b	Is the casing free of holes or damage or any obstruction from foreign objects in the borehole?	✓		
c	Is the well properly sealed for unpublished use purposes?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the diameter of the well consistent with the original well log?			✓
f	Is the casing stable? (no shifts that prevent ready water level or use of the bottom opening by hand due to lack of grout or use of improper construction)	✓		
5. Sampling Groundwater Supply Only				
a	Does well purge adequately when pumped?			✓
b	If not a dedicated sampling equipment, is it in good condition and operating according to the approved groundwater plan for this facility?			✓
c	Does the well require maintenance? (how many, [illegible])		✓	

6. Based on your professional judgment, is the well construction and condition adequate to fully achieve the objectives of the Groundwater Monitoring Program and the supply well (for applicable regulatory requirements)? ✓

7. Please explain any "no" answers:

[illegible]

Signature of person completing the inspection form

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID: BRGWC-27I
Date: 3-26-19

		yes	no	n/a
1	**Locking/identification**			
a	Is the well cap locked and secured?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from vehicular traffic?	✓		
d	Is the drainage around the well accessible? (no standing water or soil erosion around the protective casing)	✓		
2	**Protective Casing**			
a	Is the protective casing functional and in good condition?	✓		
b	Is the casing free of damage or distortion?	✓		
c	Does the casing have a functional weep hole?	✓		
d	Is the annular space between casing, riser or datum and water or labeled with proper identification?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition? (not cracked or broken)	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, gravel heaving, and does not move when stepped on)	✓		
e	Is the pad free of cracks that may allow water infiltration?	✓		
4	**Inner casing**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (leaves or insects)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the sounding point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (no shake, flex or movement by when hand or can it be taken apart by hand due to lack of grout or use of slip couplings or gasket nut)	✓		
5	**Optional Groundwater Wells Only**			
a	Does well use bungee cord properly when present?	✓		
b	If well is actively sampling equipment installed, and in good condition and specified in the approved groundwater plan for the unit key?			✓
c	Does the well require redevelopment (low flow turbid)?			

6 Based on your professional judgement, is the well construction adequate to achieve the objectives of the Groundwater Monitoring Program and is currently with the applicable regulatory requirements? ✓

7 Corrective Action as needed, by date

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: [illegible]
Permit Number:
Well ID: BRGW(-211
Date: 8-24-19

		yes	no	n/a
1	Locate/Identify location			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well on a high traffic area and does the well require protection from traffic?		✓	
d	Is the Operator reported that well is accessible? (no flooding water and no debris and no obvious slip/trip/fall hazards)	✓		
2	Protective Casing			
a	Is the protective casing free from significant damage and not in the way of use?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and protective pad water, or filled with [illegible] grout?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	Surface seal			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?		✓	
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the Cap prevent entry of foreign material into the well?	✓		
b	Is the cap in place or locked or bonded, or any identification tape for groundwater protection?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the casing pipe clearly marked on the casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (no shims that can move easily when inspected or can't be taken apart by more than 10 lbs of force or need of slip, trip/fall or eyesight use)	✓		
5	Sampling Groundwater Wells Only.			
a	Does well use bungee sling/pulley when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and specified in the maintained groundwater plan for that facility?			✓
c	Does the well require maintenance? (type those [illegible])			✓
6	Based on your professional judgement, is the well construction / the plan appear are to be adequate for the objectives of the Groundwater Monitoring Program and / comply with the applicable regulatory requirements?	✓		

7 Comments on items as checked, by date

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID:
Date:

		yes	no	n/a
1. Location Identification				
a.	Is the well visible and accessible?	✓		
b.	Is the well properly identified with the correct well ID?			
c.	Is the well at a high traffic area and does the well require protection from traffic?		✓	
d.	Is the surrounding ground around the well not degraded (no standing water near the well and adequate drainage away from it)?	✓		
2. Protective Casing				
a.	Is the protective casing in good repair (no damage and able to be secured)?	✓		
b.	Is the casing free of degradation or contamination?			
c.	Does the casing have a functioning weep hole?			
d.	Is the annular space between casing and well riser free of debris and water, or filled with pea gravel/sand?	✓		
e.	Is the well locked and is the lock in good condition?			
3. Surface pad				
a.	Is the well pad in good condition (not cracked or broken)?	✓		
b.	Is the well pad sloped away from the protective casing?			
c.	Is the well pad at a completion similar to what was present from January?	✓		
d.	Is the well pad at completion similar with the ground surface and visible? (not undermined by erosion, not tilted, no cracks, and shows where required)	✓		
e.	Is the pad apron at slope (not grooved with replacement or cleaning)?			
4. Internal Casing				
a.	Does the casing require?			
b.	Is the casing free of kinks or bends, or any obstruction from [illegible]?			
c.	Is the well properly marked for easy location?	✓		
d.	Is the locking plug in the well casing?	✓		
e.	Is the depth of the well consistent with the original well log?			✓
f.	Is the casing stable? (or does the pump remain steady when [illegible] or a set of [illegible] apart by hand due to lack of grout or use of sup [illegible]? Confirm both)	✓		
5. Sampling (Groundwater Wells Only)				
a.	Did the well purge adequately when pumped?	✓		
b.	If data is not sampling requirements, is it in good overall condition and operational as the approved groundwater plan for the facility?	✓		
c.	Does the well require redevelopment (how flow, turbid)?		✓	
6.	Overall are your professional judgement, is the well currently not in compliance or will not meet the requirements of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			✓

7. Further items or issues are identified, by date:

Signature of person responsible for completion:

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water, can the well be identified obvious drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to do the job?	✓		
b	Is the casing free of degradation or deformation?	✓		
c	Does the casing have a functional lock?	✓		
d	Is the annular space between the casing and the well riser, or filled with grout/cement?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface Seal**			
a	Is the well pad or gravel compacted (not cracked or broken)?	✓		
b	Is the well pad a slight away from the protective casing?	✓		
c	Is the well pad in a complete circle around the protective casing?	✓		
d	Is the well pad in a complete condition with no gaps or cracks (not undermined by erosion, animal burrows, and does not cause water to pond around)	✓		
e	Is the pad surface free (not covered with soil, mud, or debris)?	✓		
4	**Internal Casing**			
a	Does the casing show signs of foreign material (dirt, etc.)?		✓	
b	Is the casing free of kinks or bends or any other issues from foreign objects (can it be locked)?		✓	
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the locking plug clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (no shaking the pump supply when touched or moved by hand due to lack of grout or cement integrity, or deterioration)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does the well purge adequately when pumped?			✓
b	If static and sampling appropriately completed, is it in good condition and operating as the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (how long, for how)?			✓
6	Based on your professional judgement, is the well constructed / functioning adequately to fulfill the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			✓

7 Corrective actions needed, by date

Signature of primary professional for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Dublin
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	**Locking/identification**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with [insert unique well ID]?	✓		
c	Is the well at high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no signs of ponding, rain is well directed to site stormwater flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage that could let the environment?	✓		
b	Is the casing free of signs of corrosion or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the casing and the well (gravel, bentonite, or filled with grout/cement)?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in contact with the protective casing?	✓		
d	Is the well pad in acceptable condition with the ground surface (not eroded, not undermined by erosion, grout [concrete, cement] does not move when tampered on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Internal casing**			
a	Does the well appear free of foreign material into the well?	✓		
b	Is the casing free of kinks or bends, or any obstructions from foreign objects (such as bailers)?	✓		
c	Is the well properly vented for equilibrium of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?		✓	
f	Is the casing stable? (pull above the pad, move easily when hand applied, no sand in the annular space by hand, or lack of grout or use of slip couplings in construction)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does the well sample adequately when purged?	✓		
b	If static water sampling equipment installed, is it an approved type and specified in the approved groundwater plan for the facility?	✓		
c	Does the well require redevelopment (low flow, turbid)?		✓	
6	Based on your professional judgement, is the well construction / location acceptable to 1) ensure the attainment of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			✓

7 Corrective actions needed, by date

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Hammond
Permit Number:
Well ID: MW-23
Date:

		yes	no	n/a
1 Locking well plug/cap				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the well properly capped (no water/debris in well, no standing water near well located in a location that might flow past)?	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damages and able to be used?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have at least 3 weep holes?	✓		
d	Is the annular space between casing (clear of debris and water or filled with pea gravel/bentonite?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface seal				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion or animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean and current with site grade?	✓		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of holes or breaks or any obvious issues from damage other than paint?	✓		
c	Is the well properly vented for atmospheric pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (or does the protective casing shift when touched at all? If the bottom is held by hand should not move at all or only slightly with pressure)	✓		
5 Damaged Groundwater Wells Only				
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is the pump condition and operational for the approved groundwater plan for the facility?	✓		
c	Does the well maintain redevelopment (see flow, turbid)?	✓		
6	Based on your professional judgement, is the well constructed / located appropriate to fit for Purpose (the objectives of the Groundwater Monitoring Program) and in compliance with the applicable regulatory requirements?			✓

7 Corrective actions as needed, by date

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Wansta
Permit Number:
Well ID: MW-4
Date: [illegible]

		yes	no	n/a
1 Location/geomorphology				
a	Is the well on the landscape?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water, not in wet location or obvious drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or contamination?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and riser or sleeve and water or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad free of vegetation and debris that could harm casing?	✓		
d	Is the well pad in acceptable condition with the ground surface and stable? (not undermined by erosion, animal burrows, and does not cover when displaced)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4 Internal casing				
a	Does the cap prevent entry of foreign matter into the well?	✓		
b	Is the casing free of holes or breaks or any obvious issues from foreign objects (up to pad height)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the water level or survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (or does the well move during when removed or can it be taken apart by hand due to lack of proper or use of slip couplings or a combination)	✓		
5 Dedicated Groundwater Wells Only				
a	Does the well evacuate adequately when pumped?	✓		
b	If sediment is present, is the equipment installed and in good condition and operational as the approved groundwater plan for the facility?	✓	✓	
c	Does the well require redevelopment (low flow, surged)?			
6	Based on your professional judgement, is the well compliant (yes / exception approved in 5) to ensure the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			✓

7 Corrective actions are required, by date:

Signature of person responsible for inspection:

Groundwater Monitoring Well Integrity Evaluation

Site Name: [illegible]
Permit Number:
Well ID:
Date:

		yes	no	n/a
1 Location Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water, care should be taken to observe drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is there any form of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is there a visible separation between the casing and the surface and water, or blind well pad construction?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in consistent contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when displaced)	✓		
e	Is the pad surface clear (not covered with debris or obstructions)?	✓		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is there casing free of holes or bends, or any obstructions from foreign objects (such as spiders)?	✓		
c	Is the well properly vented for expansion and pressure?	✓		
d	Is the casing properly anchored and secured?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing visible? (or does the pad provide ability when lowered or can it be taken apart by hand due to be at ground or ease of slip couplings or a combination)	✓		
5 Sampling Groundwater Wells Only				
a	Does well recharge adequately when sampled?	✓		
b	If dedicated sampling equipment is installed, is it in good condition and operational in the approved groundwater plan for the facility?			
c	Does the well require redevelopment (low flow, turbid)?		✓	
6	Based on your professional judgement, is the well construction adequate to allow the objectives of the Groundwater Monitoring Program and to comply with the applicable regulatory requirements?	✓		
7	Corrective actions as required by date			

Signature of person responsible for inspection:

Groundwater Monitoring Well Integrity Exam

Site Name: Plant Branch

Permit Number:

Well ID:

Date:

		yes	no	n/a
1	**Location/Identification**			
a	Is the well visible and accessible?	✓		
b	Is the well correctly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water, and is well located at elevation drainage flows path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or contamination?	✓		
c	Does the casing have a functioning weep hole?			
d	Is the annular space between casing and bore of native soil and water, or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓	✓	
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad a sound away from the protective casing?	✓		
c	Is the well pad free of standing water from the protective casing?	✓	✓	
d	Is the well pad in compliance regarding both ground surface and slope? (pad is maintained by mowing, prompt borrows, and debris not known when backyard out)	✓		
e	Is the pad surface clean and covered with sand/gravel or concrete?	✓		
4	**Internal Casing**			
a	Does the casing prevent entry of foreign material into the well?	✓		
b	Is the casing free of holes or breaks, or any obstructions from foreign objects (such as bugs)?	✓		
c	Is the well properly vented for equal pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓	✓	
e	Is the depth of the well consistent with the original well log?	✓		
f	Is the casing stable? (for dual the pvc moves easily when touched or can be taken apart by hand due to the sand gravel or use of slip couplings to construction)	✓		
5	**Sampled Groundwater Wells Only**			
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and specified in the approved groundwater plan for the facility?	✓	✓	✓
c	Does the well require redevelopment? (low flow, turbid)?		✓	
6	Based on your professional judgement in the well construction / location appropriate to 1) achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?			✓
7	Corrective actions as needed by note			

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: [illegible]
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	**Locking/identification plug**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the current Well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water, well is well located in elevated drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from significant damage and able to be locked?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and well riser filled with gravel/sand?	✓		
e	Is the well locked and in working condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (free of cracks or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, pad does not move when stepped on)	✓		
e	Is the pad surface clean (free of debris with exception of stones)?	✓		
4	**Integrity testing**			
a	Does the data provide a copy of from groundwater into the well?	✓		
b	Is there a casing free of kinks or bends or any obstructions from foreign objects such as bailers?	✓		
c	Is the well properly secured for unauthorized use prevention?	✓		
d	Is the survey point properly engraved on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (or does the pvc flutter easily when tapped or can it be taken apart by hand due to lack of grout or use of slip couplings in casing joints)	✓		
5	**Complete Groundwater Wells Only**			
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and operational? Is the approved groundwater plan for the facility?	✓		
c	Does the well require redevelopment (low flow turbidity)?		✓	
6	Pursuant to your geotechnical judgement, is this well a condition that 1) is appropriate for the purpose of the Groundwater Monitoring Program and 2) complies with the applicable regulatory requirements?			✓

7 Corrective actions to be Recorded By Water

Signature of person responsible for inspection:

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID: MW-1, MW-2, MW-3
Date: 8-2-19

		Yes	No	N/A
1 Locking/Identification				
a)	Is the well visible and accessible?	✓		
b)	Is the well properly identified with the current well ID?	✓		
c)	Is the well in a locked bollard/ pump and meter box well requires protection from traffic?		✓	
d)	Is the standpipe secured (for well or manhole)? (for observation wells, note if well has other acceptable protection (flow path)	✓		
2 Protective Casing				
a)	Is the protective casing free from excessive damage and does not need to be repaired?	✓		
b)	Is the concrete surface around the casing in good condition?	✓		
c)	Does the casing have a weep hole? If yes, is it clear?	✓		
d)	Is the annular space between the casing and the well riser filled with gravel or bentonite?	✓		
e)	Is the well locked and in good working condition?	✓		
3 Surface Seal				
a)	Is the well pad in good condition (not cracked or crumbling)?	✓		
b)	Is the well pad sloped to drain away from the protective casing?	✓		
c)	Is the well pad free of standing water?	✓		
d)	Is the well pad in compliance with the permit? (Is the surface seal at least 2' wide and 4" thick, and does not appear to have settled or cracked)	✓		
e)	Is the pad surface in usage (not covered with sediment or debris)?	✓		
4 Integrity Testing				
a)	Does the most recent survey of the casing indicate no loss of integrity?	✓		
b)	Is the casing free of kinks or bends, or any obstruction to access to the bottom of the well?	✓		
c)	Is the well properly marked for easy location of the protective?	✓		
d)	Is the standpipe visibly cracked or broken?		✓	
e)	Is the depth of the well consistent with the original well log?	✓		
f)	Is the casing stable? (or does the protective casing shift when touched or a load has been applied by hand due to lack of grout or deterioration of the annular fill material?)		✓	
5 Sampling Groundwater Wells Only				
a)	Does well purge adequately when pumped?	✓		
b)	If static water sampling equipment installed, is it in good condition and operated in accordance with approved groundwater plan for the facility?	✓		
c)	Does the well require redevelopment (low flow, turbid)?		✓	
6)	Based on your professional judgement, is this well construction record accurate to the achieved the requirements of the Groundwater Monitoring Program and complies with the applicable regulatory requirements?	✓		
7 Corrective actions recommended, by date				

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Pilgrim Project

Permit Number:

Well ID:

Date:

		yes	no	n/a
1	Aboveground/Flush to grade			
a	Is the well readily visible and accessible?	✓		
b	Is the well properly identified with permanent marking?	✓		
c	Is the well in a high traffic, pump and dispose the well requires protection from vehicles?		✓	
d	Is the drainage around the well acceptable? (no standing water and no evidence of erosion that may pose a hazard)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or damage?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and drilling and water or bentonite grout?	✓		
e	Is the well locked and in the lock in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition and not cracked or broken?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in compliance with the grounds surface and slope? (not compromised by excessive ponding, heaving, and does not cause water to pond)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the well prevent entry of foreign material into the well?	✓		
b	Is the casing free of cracks or breaks, or any evidence from foreign objects (such as bailers)?	✓		
c	Is the well adequately secured for appropriate use of the environment?	✓		
d	Is the casing pipe clearly marked on the inner casing?		✓	
e	Is the depth of the well consistent with the original well log?			✓
f	Is there any standing water (or does the pressure readily equalize when bailed or can not be taken again by hand due to lack of space or size of slip couplings or reception pipe)	✓		
5	Casing cap, Groundwater Well ID Tag			
a	Does well cap have adequately sized gasket?			✓
b	If monitored with pressure equipment installed, is it in good condition and described in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (see flow failed)?			✓
6	Based on your professional judgement, is the well condition (for the steps applicable to 1) achieved the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements)?	✓		

7 Comments (please reference by item)

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Ogmore Depot
Permit Number:
Well ID: P2-413
Date: 8-6-19

		Yes	No	N/A
1	**Local considerations**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water near to well or will be due to adequate drainage flow path)	✓		
2	**Protective Casing**			
a	Is the protective casing free from any apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning lockable cap?	✓		
d	Is the annular space between casing & bore sealed and water tight with no ingress evident?	✓		
e	Is the well locked and in the lock in good condition?	✓		
3	**Surface seal**			
a	Is the well pad in good condition (not fractured or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, post driving (or) moss when inspected etc)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Physical Damage**			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends or any obvious holes from foreign objects (such as screws)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing intact? (or does the pea shower survey when carried out or could be taken apart by hand due to lack of grout or use of high strength concrete mix)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does well dip gauge adequately when purged?			✓
b	If dedicated sampling equipment installed, is it in good condition and operational in the proposed groundwater plan for the day?			✓
c	Does the well require dedicated equipment (new flow, bailer)?			✓
6	Based on your professional judgement, is the well construction considered appropriate to the purpose for the objectives of the Groundwater Monitoring Program and is it comply with the applicable regulatory requirements?	✓		

7 Comments or issues encountered, by exception

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Pine Branch
Permit Number:
Well ID:
Date:

		Yes	No	N/A
1	Location Identification			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water near the well, location is not in a drainage flow path)	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casings clear of debris and water or filled with pea gravel sand?	✓		
e	Is the well identification sign in a good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in complete contact with the protective casing?	✓		
d	Is the well pad in complete contact with the ground surface and stable (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	Internal casing			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of damage or defects (not cracked, missing pieces, or bent)?	✓		
c	Is the well identification sign in place and legible?	✓		
d	Is the water level below the bottom of the protective casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing inside diameter consistent with the original well log?	✓		
5	Surface Drainage Protection			
a	Does the well have adequate surface drainage?			✓
b	Is the ground surface around the well sloped to prevent ponding and direct surface water away from the well?			✓
c	Does the well have adequate protection from vehicular traffic?			✓
6	Based on your professional judgment, is the well construction adequate to accurately monitor groundwater conditions? (Consider the well's ability to yield representative groundwater samples.)			✓

7 Comments and Recommendations for Use

Signature of person responsible for inspection

Job Number
Permit Number
Well ID
Date

PZ-13
2-24-21

		Yes	No	N/A
1	**Locks/Identification**			
a	Is the well secure and locked as needed?	✓		
b	Is the well properly identified with the approved well ID?	✓		
c	Is the well in a high traffic area, and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water, and no well head or elevation damage) Explain	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and plug to cap secured?	✓		
b	Is free of evidence of vandalism or disturbance?		✓	
c	Does the casing have a functioning weep hole?			✓
d	Is the annular space between casing and protective casing filled with pea gravel/sand?			✓
e	Is the well locked and is the lock in good condition?			✓
3	**Surface Seal**			
a	Is the well pad or grout envelope intact and sealed to casing?			✓
b	Is the well pad adequately sloped for positive drainage?			✓
c	Is there any evidence of ponding around the protective casing?			✓
d	Is the well pad or completion material free of cracks and visible voids? (and sealed/repaired by appropriate material including caulking and epoxy where applicable)			✓
e	Is the pad surface clean and free of mud and debris?			✓
4	**Integrity of Casing**			
a	Does the casing show evidence of damage or distress?	✓		
b	Is there casing free of kinks or bends or any obvious pipe deformation (use A or B as applicable)?	✓		
c	Is the well properly vented for atmospheric pressure?	✓		
d	Is the locking cap/seal present and functional?	✓		
e	Is the depth of the well consistent with the original log?			✓
f	Is the casing stable? (no shifts that prevent accurately obtaining measurements or use of the tubing or pump by hand, and no risk of drop of tools or equipment down the hole)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does well run to ground adequately with output?	✓		
b	If dedicated sampling equipment installed – is it in good condition and operational per the approved groundwater plan for the project?	✓		
c	Does the well require redevelopment (see flow trends)?	✓		
6	If there are any problems identified, is the well considered to be adequate for the Groundwater Monitoring Program and in compliance with the applicable regulatory requirements?	✓		

7 Corrective actions completed, by whom

Signature of person responsible for report data

Groundwater Monitoring Well Integrity Form

Site Name: [illegible]
Permit Number:
Well ID: [illegible]
Date: [illegible]

		yes	no	n/a
1 Locate/Identify				
a	Is the well readily located and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is (or should) a temporary well be established? (i.e. abandoning water over a well located on a frequently driven flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is there casing free of deformations or deterioration?	✓		
c	Does the casing protect from intruding weep holes?	✓		
d	Is the annular space between casing and well pipe free of debris and water or filled with pea gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓	✓	
c	Is the well pad at completion contact with the protective casing?	✓		
d	Is the well pad a complete concrete pad with the proper surface seal visible? (not cracked and by corrosion, annular fissures, and there are no visible signs of water ponding)	✓		
e	Is the pad sloped or has pad covered with sediment or debris?	✓		
4 Physical Access				
a	Does the well present risk of damage to physical aids the well?	✓		
b	Is the casing free of bends or kinks or any obstruction to the bottom (check by lowering an object)?	✓		
c	Is the well properly sealed for proper function of the pressure?	✓		
d	Is the survey point clearly marked on the well casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (or does the well move during sampling? Should an effort be taken to put by hand due to lack of proper or the condition of construction)	✓		
5 Sampling Groundwater Wells Only				
a	Does well recharge adequately after purging?			✓
b	If dedicated sampling equipment present, is it in good condition and specified in the approved groundwater plan for this facility?			✓
c	Does the well require redevelopment (low flow turbid)?			✓

6 Please describe your professional judgement on the well construction. Include any actions taken to remedy the deficiencies. Does the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?

✓

7 Corrective actions taken or needed: By date

Signature of person responsible for inspection

[illegible]

Groundwater Monitoring Well Integrity Form

Site Name: Mount Olivet Pt
Permit Number:
Well ID: BR Gwt - 93
Date: 9-26-19

		yes	no	n/a
1	**Location/Identification**			
a	Is this well readily found/accessible?	✓		
b	Is this well properly placed/spaced with respect to other wells?	✓		
c	Is this well identified with a legible tag/marker and does this well match the proper map/log number?	✓		
d	Is the area around this well free of debris and does this well have adequate protection from vehicular traffic (if necessary)?	✓		
2	**Protective Casing**			
a	Is the protective casing in good condition (no significant damage and able to be secured)?	✓		
b	Is the casing free of degradations or obstructions?	✓		
c	Does the casing have an intact locking cap?	✓		
d	Is the annular space between the casing and borehole sealed properly with filled with proper grout/cement?	✓		
e	Is this well free from evidence of settling or grout cracking?	✓		
3	**Surface Pad**			
a	Is this well pad at ground surface (not above or below)?	✓		
b	Is this well pad integral with the protective casing?		✓	
c	Is this well pad in compliance with the protective casing?	✓		
d	Is this well pad in compliance with the general surface at the site? (not undermined by erosion, animal burrows, and does not prevent water from draining away)	✓		
e	Is this pad free of cracks or other evidence of settling?	✓		
4	**Potential Concern**			
a	Does this site pose a potential source of contamination to this well?	✓		
b	Is there a potential source of leaks or spills on this site that could affect this well? (Consider chemicals stored, vehicle traffic, etc.)	✓		
c	Is this well adequately protected from potential contamination?	✓		
d	Is this well easily identifiable from a distance?	✓		
e	Is the depth of this well consistent with the original well log?		✓	
f	Is there standing water? (If so, note depth below ground surface. Please identify whether water is from precipitation or groundwater.)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does well run dry prior to adequately volume purged?	✓		
b	If dedicated sampling equipment installed, is it operational and free of debris and operated in the appropriate groundwater sampling flow rate?			✓
c	Does this well require redevelopment? (low flow, turbid)			✓
6	Record any other maintenance/improvements this well requires that are beyond the scope of this Compliance Monitoring Program and why it is important to the integrity of the monitoring program?	✓		

7 Comments (use reverse or attach additional pages as necessary)

Evaluation performed by: [signature]

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID: PZ-4
Date: 2-24-11

		yes	no	n/a
1	**Locking/Identification Option**			
	a. Is the well locked and secured?	✓		
	b. Is the well properly identified with the correct well ID?	✓		
	c. Is the well in a high traffic area and does the well require protection from traffic?		✓	
	d. Is the drainage around the well adequate? (no standing water near the well (ponding) or any signs of improper flow path)	✓		
2	**Protective Casing**			
	a. Is the protective casing free from apparent damage and able to be locked?	✓		
	b. Is the casing free of degradation or deterioration?	✓		
	c. Does the casing have a functioning weep hole?		✓	
	d. Is the annular space between casing and well riser at ground surface sealed with grout/cement?	✓		
	e. Is the well labeled and is the label in good condition?	✓		
3	**Surface pad**			
	a. Is the well pad in good condition (not cracked or broken)?	✓		
	b. Is the well pad sloped away from the protective casing?	✓		
	c. Is the well pad at complete contact with the protective casing?	✓		
	d. Is the well pad at complete contact with the ground surface and stable? (not undermined by erosion, animal burrows, and does not move when stepped on)	✓		
	e. Is the pad surface clean (not covered with mulch or debris)?	✓		
4	**Internal Condition**			
	a. Does the well prevent entry of foreign material into the well?	✓		
	b. Is there plenty free of water or debris, or any obvious issues from foreign objects (sand or sediment)?	✓		
	c. Is the well accessibly vented for equilibration of air pressure?	✓		
	d. Is the sampling point clearly marked on the inner casing?	✓		
	e. Is the depth of the well consistent with the original well log?			✓
	f. Is the casing stable? (for stick-up wells, the protective casing should not be used to lift the well; if grout or cement is cracked or has separated from the casing, it should be repaired)	✓		
5	**Sampling Groundwater Wells Only**			
	a. Does well recharge adequately when purged?			✓
	b. Is dedicated sampling equipment installed, in working condition and operated in the approved groundwater plan for the facility?			✓
	c. Does the well require redevelopment (low flow, turbid)?			✓
6	Based on your professional judgement, is the well construction adequate and appropriate for the objectives of the Groundwater Monitoring Program and is it being operated in accordance with the applicable regulatory requirements?	✓		
7	Corrective actions or needed repairs:			

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID: BRCW-47
Date:

		yes	no	n/a
1	Locked protective cover			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the protective cover (not the well casing) free of water and is water not ponded or otherwise drainage flow poor?	✓		
2	Protective Casing			
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is there evidence of degradation or deformation?	✓		
c	Does the casing have a functional weep hole?			
d	Is the annular area between casing and protective cover free of debris and water or filled with gravel/sand?			
e	Is the well locked and in the work or guard condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (free of cracks or breaks)?		✓	
b	Is the well pad sloped away from the casing to prevent ponding?		✓	
c	Is the well pad at adequate radius and free of vegetation?	✓		
d	Is the well pad at adequate depth (well pad extends below frost line, and does not move when displaced on)	✓		
e	Is the pad surface clean (not covered with equipment or debris)?	✓		
4	Protective Covers			
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of holes or breaks or any other holes that foreign objects (water or insects)?	✓		
c	Is the well properly vented for equilibration of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with historical or good well log?			✓
f	Is the casing labeled? (or does the pipe move easily when disturbed or could be taken apart by hand (or tools) or rusted or cracked or damaged in construction)	✓		
5	Sampling Groundwater Wells Only			
a	Does well recharge adequately when purged?	✓		
b	If dedicated sampling equipment installed, is it in good condition and operational? Is the approved sampling plan for the facility?			✓
c	Does the well require redevelopment (slow flow, turbid)?			✓
6	Based on your professional judgment, is the well construction / location appropriate for (1) or below the objectives of the Groundwater Monitoring Program and (2) comply with the applicable regulatory requirements?	✓		
7	Corrective actions recorded, by date			

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: [illegible]
Permit Number:
Well ID:
Date:

		yes	no	n/a
1	**Legal considerations**			
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the current well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from traffic?	✓		
d	Is the groundwater treated the well accessible? Does stagnant water or well overflow indicate drainage flow path?	✓		
2	**Protective Casing**			
a	Is the protective casing free from significant damage and able to be secured?	✓		
b	Is there a weep hole at designated location?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and borehole sealed with proper grout/cement?	✓		
e	Is the well locked and in the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in compliance with the protective casing?	✓		
d	Is the well pad in compliance with the proper surface pad size? (Not undermined by erosion, seasonal decreases, and there not proper where required)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓		
4	**Physical condition**			
a	Does the casing prevent entry of foreign material into the well?	✓		
b	Is the casing free of kinks or bends or any obstructions from foreign objects (such as pebbles)?	✓		
c	Is the well properly secured for appropriate use of the monument?	✓		
d	Is the survey point clearly marked on the riser casing?	✓		
e	Is the height of the well consistent with the original well log?			✓
f	Is the casing stable? (no down the pipe knows easily when touched or seen if the lower part by hand due to lack of grout or use of stabilizers to confirm)	✓		
5	**Sampling Groundwater Water Only**			
a	Does well recharge adequately when purged?			✓
b	If check after sampling no approved sampling or pump cannot complete and how does it the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment flow flow turbid?			

6 Based on your professional judgement is this well construction / location appropriate for 1) an Environmental Monitoring Program and 2) comply with the applicable regulatory requirements? ✓

7 Corrective actions are needed by date

Signature of person responsible for inspection

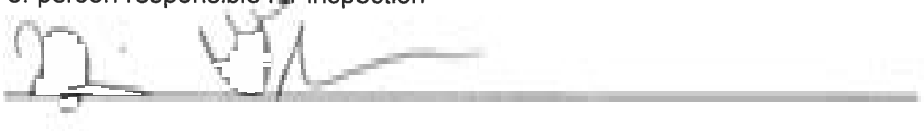
Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch
Permit Number:
Well ID:
Date:

		yes	no	n/a
1 Locking/identification				
a	Is the well secure and locked?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from vehicles?	✓		
d	Is the drainage around the well acceptable? (no standing water or is well located to minimize drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from damage and able to function as designed?	✓		
b	Is the casing free of degradation or deformation?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the casing and the well riser, or filled with gas properly?	✓		
e	Is the well box and cover in good condition?	✓		
3 Surface pad				
a	Is the well pad at ground level (not collecting water)?	✓		
b	Is the well pad sloped away from the protective casing?	✓	✓	
c	Is the well pad free of cracks and gaps that may allow water to enter?	✓		
d	Is the well pad in good condition and free of excessive vegetation? Does the pad show signs of settling, cracking, or movement that may compromise the integrity of the well?	✓		
e	Is the pad free of debris? (not collected with routine well duties)?	✓		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is there a vent hole or locking or specific or any other device from foreign objects (not to be broken)?	✓		
c	Is the well properly vented for short duration of air pressure?	✓		
d	Is the casing properly labeled on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (no objects that may move easily when tapped) or could it be taken apart by hand due to lack of proof or use of any tools/keys or combination	✓		
5 Sampling Groundwater Wells Only				
a	Does well need purge immediately when purged?			✓
b	If dedicated sampling equipment installed, is it properly operating and operated in the approved groundwater plan for the facility?			✓
c	Does the well need redevelopment (low flow started)?			✓
6 Based on your professional judgement in this well construction / location appropriate for it to meet the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?		✓		

7 Corrective actions to be taken by date

Signature of person responsible for inspection



Date Started: [illegible]
Permit Number:
Well ID: PZ-WC-50
Date: R-26-14

		Yes	No	N/A
1	Cap and Vault Location			
a	Is the cap/ vault clean and accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well cap and locking mechanism in good condition (no damage, corrosion, or missing parts)?	✓		
d	Is the drainage around the well adequate? (no standing water, water is sloped away from well)	✓		
2	Protective Casing			
a	Is the protective casing free of significant rust, damage, and other issues?	✓		
b	Is the protective casing free of significant rust or deformation?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the casing and the well riser pipe sealed with the proper material?	✓		
e	Is the well box and lid in the back in good condition?	✓		
3	Surface pad			
a	Is the well pad in good condition (no cracks or deterioration)?	✓		
b	Is the well pad sloped away from the protective casing?		✓	
c	Is the well pad an adequate size? (with the protective casing)	✓		
d	Is the well pad an adequate size? (with all appurtenances, including bollards and signs)	✓		
e	Is the grout surface clean (not covered with sediment or debris)?	✓		
4	Integrity Casing			
a	Does there appear to be any damage to the well?		✓	
b	Is the casing free of kinks or bends, or any obstructions from damage, signs of frost heave?	✓		
c	Is the well properly sealed for accommodation of the pressure?	✓		
d	Is the casing pipe at least 2 inches above the ground surface?	✓		
e	Is the depth of the well consistent with that of the well log?			✓
f	Is there any sediment? (for wells that are not actively sampled, should be covered or have a bolt tightened by hand down to the bottom of the well or cover of the sampler pump should be)	✓		
5	Sampling Equipment (if Applicable)			
a	Does the pump operate adequately when prompted?	✓		
b	Is the tubing and sampling equipment installed in a proper manner and appropriate for the purpose? (no kinks, bends, or damage)			✓
c	Does the well purge to the recommended three times the volume?			✓
6	Based on your professional judgement, is the well serving its purpose and in appropriate condition to be left in service? (Consider items 1-5 and Groundwater Monitoring Requirements and Best Practices for Water Supply Wells)	/		
7	Other (as necessary, as applicable) (Optional)			

Signature of persons completing the inspection:

Well ID

Date

		yes	no	n/a
1. Well development				
a	Is the well visible and not overgrown?	✓		
b	Is the well permanently identified with the correct well ID?	✓		
c	Is the well cap/cover, riser and casing in good condition and secured to prevent tampering?	✓		
d	Is the drainage around the well adequate? (no standing water and water is well away from the well head)	✓		
2. Protective Covering				
a	Is the protective covering in good condition and secured and does it prevent water entry?	✓		
b	Is there a permanent label with the correct well ID?	✓		
c	Does the covering have a lock and is it working properly?	✓		
d	Is the annular space between the casing and the protective covering filled with gravel/grout?	✓		
e	Is the well kept clear of debris, vegetation and ground contaminants?	✓		
3. Surface seal				
a	Is the well pad in good condition and free from cracks and breaks?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in acceptable condition with the protective casing?	✓		
d	Is the well pad in acceptable condition with no gaps between the protective casing and the well pad (sealed with grout/bentonite)?	✓		
e	Is the pad surface clean and free of material with sediment or algae on it?	✓		
4. Depth of well				
a	Does the well present as a safety hazard to people or animals?	✓		
b	Is the casing free of debris or damage, or any obstructions from damage or past use that could affect sampling?	✓		
c	Is the well properly secured for the duration of the assessment?	✓		
d	Is the casing pipe clearly marked and the water accessible?	✓		
e	Is the depth of the well consistent with the depth of well log?			✓
f	Is there any sediment? (or others [not the most recently visited time] or can it be taken from the well base by bailing or pump or even of sufficient depth for sampling)	✓		
5. Sampling Equipment Available				
a	Does the well have adequate volume?			
b	Is the dedicated sampling equipment installed in the well appropriate and suitable for the purpose?			
c	Does the well require dedicated pump? (low flow, bailer?)			✓
6. Based on your professional judgement, is the well construction adequate for the purpose of the monitoring program and is it capable of providing representative samples?		✓		

7. Comments (use back of page as needed, eg. sketch)

Signature of person responsible for inspection:

Well No.

Date

		Yes	No	N/A
1	**Drilling Rig and Equipment**			
a	Is the well sample log available?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a straight, plumb, open and clear line with adequate protection from traffic?	✓		
d	Is the drainage around the well adequate to prevent ponding water and is the well located above any known flood zone?	✓		
2	**Pitless Adapter Casing**			
a	Is the pitless adapter casing from above ground to the pitless unit at least 6 inches in diameter?	✓		
b	Is the casing free of any obstructions or debris on the inside?	✓		
c	Does the casing have a firm bearing where it enters the pitless unit?	✓		
d	Is the annular space between the casing and the hole filled with cement or bentonite grout?	✓		
e	Is the well located in a dry and accessible location?	✓		
3	**Casing**			
a	Is the well casing extended above the ground surface?	✓		
b	Is the well casing at least 12 inches above the ground surface?		✓	
c	Is the well casing free of cracks or defects?	✓		
d	Is the well casing properly sealed with the ground surface around the casing? (Soil, bentonite, grout, or concrete)	✓		
e	Is the casing watertight with no leaks?	✓		
4	**Grouting**			
a	Does the well have adequate grout around the casing?	✓		
b	Is the grout free of cracks or voids?	✓		
c	Is the well properly sealed to prevent contamination?	✓		
d	Is the well free of any signs of leakage?	✓		
e	Is the depth of the well appropriate for the intended use?			✓
f	Is the casing stable? (Do not check this box if the well is not accessible or if you do not have the tools to check)			✓
5	**Disinfection**			
a	Was the well disinfected after construction?	✓		
b	Is the well free of any signs of contamination?	✓		
c	Is the well properly labeled with its location and depth?	✓		
6	If you answered "No" to any of the questions above, please explain:			

7 Comments (if any):

8 Signature of person responsible for inspection:

Site Name
Permit Number
Well ID
Date

		yes	no	n/a
1	**Drilling/Installation**			
a	Is the well shallow and unconfined?	✓		
b	Is the well properly identified with [illegible] well ID?	✓		
c	Is the well in a high traffic area, and given the need for [illegible] protective posts (bollards)?	✓		
d	Is the well straight and vertical? (no standing water, and a weight can be lowered down the well to the bottom)	✓		
2	**Protective Casing**			
a	Is the protective casing free from apparent damage and able to [illegible]?	✓		
b	Is the casing free of dirt, debris or displacement?	✓		
c	Does the casing have a [illegible] vented lid?	✓		
d	Is the annular space between the casing and the [illegible] sealed, or filled with gravel to ground level?	✓		
e	Is it well labelled and is the lock in good condition?	✓		
3	**Surface Seal**			
a	Is the well set in good condition (not cracked or [illegible])?	✓		
b	Is the well set sloped away from the protective casing?		✓	
c	Is the well set in a compacted, durable material over the [illegible]?	✓		
d	Is the well [illegible] with [illegible] and the ground surface around it? (not [illegible] by erosion, cracked, loose, [illegible] or [illegible] when stepped on)	✓		
e	Is the seal sufficient to [illegible] well and free of debris?	✓		
4	**Infiltration Zone**			
a	Does the [illegible] consist of [illegible] that [illegible]?	✓		
b	Is the casing free of [illegible] or [illegible] of impermeable [illegible] [illegible] (such as [illegible])?	✓		
c	Is the [illegible] properly sealed to [illegible] of the casing?	✓		
d	Is the casing [illegible] [illegible] from the [illegible]?	✓		
e	Is the [illegible] of the well consistent with the [illegible]?			✓
f	Is the casing [illegible]? (no [illegible] [illegible]. Please verify when [illegible] or [illegible] [illegible] by [illegible] to be at [illegible] or [illegible] of slip [illegible] or [illegible])	✓		
5	**Sampling Considerations/ Water Quality**			
a	Does the well [illegible] adequately when [illegible]?	✓		
b	If [illegible] sampling equipment [illegible] is it [illegible] [illegible] [illegible] [illegible] or [illegible] [illegible]?			✓
c	Does the well [illegible] [illegible]? (how [illegible])			✓
6	Based on your professional judgement, is the well construction adequate to allow for the representative collection of groundwater samples? (Consider 5a, 5b and 5c)	✓		

7 Corrective actions recommended, by date

Signature of person responsible for inspection

Groundwater Monitoring Well Inspection Form

Site Name: Plant Branch
Permit Number:
Well ID: [illegible]
Date: [illegible]

		yes	no	n/a
1 Locks/Identification				
a	Is the well display post in good condition?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well in a high traffic area and does the well require protection from being hit?		✓	
d	Is the drainage around the well adequate? (no standing water, and is well located to minimize drainage flow path)	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the Casing free of degradation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing & well riser at ground level sealed with proper gravel/sand?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface Pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the Well pad sloped away from the protective casing?	✓		
c	Is the well pad in a complete condition with no protective bollards?	✓		
d	Is the well pad in a complete concrete with the ground surface around it stable? (not washed out by erosion, animal burrows, and cracks and crevices adequately filled)	✓		
e	Is the well apron in place (not covered with sediment or debris)?	✓		
4 Internal Casing				
a	Does the cap provide a seal of the casing to prevent water from entering the well?	✓		
b	Is the casing free of holes or breaks or any obvious issues from damage since the last inspection?	✓		
c	Is the well properly vented for subsurface control of pressure?	✓		
d	Is the casing plumb (clearly observed on the inner casing)?	✓		
e	Is the diameter of the well consistent with the original well log?			✓
f	Is the casing visible? (or does the pipe marker notify which location of a well is below ground in case it is buried or covered with complete grass or overgrowth)	✓		
5 Sampling Groundwater Wells Only				
a	Does the well exchange adequately when sampled?			✓
b	If there is not sampling equipment installed, is the ground condition and apron free of debris and in good condition?	✓		✓
c	Does the well require redevelopment (low flow turbidity)?			✓
6 Based on your professional judgement, is the well construction adequate (appropriate for its purpose) to achieve the objectives of the Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?				✓

7 Corrective actions as needed, by date

Signature of person responsible for inspection

Groundwater Protection Inspection Form

Site Name: Opal Branch
Permit Number:
Well ID:
Date:

		yes	no	n/a
1 Location/Identification				
a	Is the well visible and accessible?	✓		
b	Is the well properly identified with the correct well ID?			—
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	—
d	Is the drainage around the well adequate? (no standing water, the well should be above ground level)	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deformation?	✓		—
c	Does the casing have a functioning weep hole?	✓	—	—
d	Is the annular space between the casing and the well filled with grout/cement?	✓	—	
e	Is the well locked and is the lock in good condition?	✓	—	
3 Surface pad				
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓	—	
c	Is the well pad in complete contact with the protective casing?	✓	—	
d	Is the well pad in complete contact with the ground surface and stable? (not undermined by erosion, ponding, burrows, and does not move when pressed on)	✓		
e	Is the pad surface clean (not covered with sediment or debris)?	✓	—	—
4 Internal Casing				
a	Does the cap prevent entry of foreign material into the well?	✓	—	
b	Is the correct type of bolts or bolting or other obstructions from foreign objects (not bent, broken)?	✓		
c	Is the vent properly covered for proper breathing of the annulus?	✓	—	—
d	Is the locking plug clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?	—	—	✓
f	Is the casing stable? (no shake, the pipe moves easily when tapped or pulled by hand, or lack of grout or other of signs instability of construction)	✓		
5 Sampling Groundwater Wells Only				
a	Does well run through uninterrupted when purged?			✓
b	If dedicated sampling equipment installed, is it in good condition and aligned so that the appropriate groundwater flows for the facility?			✓
c	Does the well empty or overpressurize (low flow, bailing)?			✓
6	Based on your professional judgement, is the well construction (i.e. all responses for 1-5) as listed in the approved Groundwater Monitoring Protection and 25 comply with the applicable regulatory requirements?			✓

7 Corrective actions (if needed), by date

Signature of person responsible for inspection

Site Name: Hyde Branch

Permit Number:

Well ID's:

Date:

		Yes	No	n/a
1	**Location Identification**			
a	Is the well visually and accessible?	✓		
b	Is the Well properly identified with the current well ID?			
c	Is the well in a high traffic area and does the well require protection from traffic?		✓	
d	Is the drainage around the well adequate? (no standing water, and the well head elevation appropriate)	✓		
2	**Protective Casing**			
a	Is the protective casing free from excessive damage and able to be secured?	✓		
b	Is the casing free of deformation or deterioration?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between casing and riser pipe filled with granular material, or filled with grout properly?	✓		
e	Is the well locked and in working condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad a complete circle with the proper diameter?	✓		
d	Is the well pad a complete circle with the proper diameter (measured surface area shown) and undisturbed by frequent mowing, compaction, or other activities (measured surface area shown on diagram above when completed)?	✓		
e	Is the pad surface intact (not cracked with exposure) or damaged?	✓		
4	**Locking Casing**			
a	Does the casing prevent entry of foreign material into the well?	✓		
b	Is the casing free of holes or bolts or other protrusions from foreign objects (such as feathers)?	✓		
c	Is the well properly vented for expansion of air pressure?	✓		
d	Is the survey point clearly marked on the inner casing?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (or does the protective casing shift when touched or could be taken apart by hand due to lack of grout or some other complication with construction)	✓		
5	**Sampling Groundwater Wells Only**			
a	Does well run have adequate tubing when sampled?			✓
b	If dedicated sampling equipment installed, is it in good condition and should it be in the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, surge)?			✓
6	Based on your professional judgement, is the well construction (for the proper aquifer selected) adequate for the purposes of the Groundwater Monitoring Program and does it comply with the applicable regulatory requirements?			✓
7	Corrective actions to be completed, by date			

Signature of person responsible for inspection

Groundwater Monitoring Well Integrity Form

Site Name: Plant Branch

Permit Number:

Well ID: MW-1

Date: 8/15/17

		yes	no	n/a
1. Locking/protective cover				
a	Is the well locked and secure?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the area around the well clean and does the well require painting/new bollards?		✓	
d	Is the protective casing (if applicable) and cap damaged? (Use Inspection Notes to describe damage)		✓	
2. Casing/Cap Integrity				
a	Is the protective casing free from significant damage and able to function as intended?	✓		
b	Is the casing free of dents or deformations?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the casing and the protective cover, or filled with proper grout/sand?	✓		
e	Is the well cap locked or does it have a padlock?	✓		
3. Surface pad				
a	Is the well pad in good condition (free of cracks and spalling)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in compliance with the 10ft x 10ft requirement?	✓		
d	Is the well pad in compliance with the ground monument standard? (Post should be flush with pad, concrete around monument should be flush with pad, and there should be no standing water)	✓		
e	Is the locking mechanism (post monument or flush monument) functional?	✓		
4. Integrity Logging				
a	Does the sign present clearly the unique monument ID for the well?	✓		
b	Is the casing free of kinks or bends, or any deviation from a perfectly straight vertical line?	✓		
c	Is the well properly secured to prevent tampering?	✓		
d	Is the annular space properly sealed per the approved design?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is the casing stable? (no shake like your tongue can easily given pressure) or is it at the bottom apart by hand due to lack of ground or type of pipe compromise or corrosion issue)	✓		
5. Submersible Groundwater Quality Only				
a	Does well automatically without purging?			✓
b	If submersible, is the pump installed at the appropriate depth for the groundwater gradient and consistent with the approved groundwater plan for this facility?			✓
c	Does the well require redevelopment (how does it look)?			✓
6. Additional well performance justification. Is the well sufficient for the above stipulations for Groundwater Protection and Monitoring? Does the well comply with the applicable regulatory requirements?				✓

7. Describe how all boxes are completed, key codes

Signature of person completing the inspection

Site Name
Permit Number
Well ID
Date

		Yes	No	n/a
1 Location/Identification				
a	Is the well easily and safely accessible?	✓		
b	Is the well properly identified with the correct well ID?	✓		
c	Is the well free of high traffic areas and signs the well requires protection from being hit by?		✓	
d	Is there an emergency shower that will be operational if the secondary water for the well is not available for eyewash drainage (see page)?	✓		
2 Protective Casing				
a	Is the protective casing free from apparent damage and able to be secured?	✓		
b	Is the casing free of degradation or deformation?	✓		
c	Does the casing have a functioning weep hole?	✓		
d	Is the annular space between the casing clear of debris and water, or filled with proper material?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3 Surface seal				
a	Is the well pad in good condition for current and/or intended use?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad free of cracks that could allow contamination?	✓		
d	Is the well pad in complete contact with the ground for the seal and solid? (not undermined by erosion, animal burrows, and does not allow standing water)	✓		
e	Is the pad surface (not covered with accumulation of debris)?	✓		
4 Internal casing				
a	Does the cap prevent entry of foreign material into the well?	✓		
b	Is the casing free of holes or cracks or any other issues from being caught in (see to be broken)?	✓		
c	Is the well properly vented for expansion and air pressure?	✓		
d	Is the sanitary panel locked and in the correct place?	✓		
e	Is the depth of the well consistent with the original well log?			✓
f	Is there a casing stickup? (or other indication that the well is not buried or can be found again by public due to be in good condition of sign (display or orientation line))	✓		
5 Surrounding Groundwater Wells Only				
a	Does well run freely automatically when pumped?			✓
b	If decommissioned, is the well abandoned in accordance with the approved groundwater plan for the facility?			✓
c	Does the well require redevelopment (low flow, turbid)?			✓
6 Based on your professional judgement, is the well compliance (Regulatory Applicable to 1) or have the steps been (Groundwater Monitoring Program and 2) comply with the applicable regulatory requirements?				✓

7 Corrective actions are needed? by date

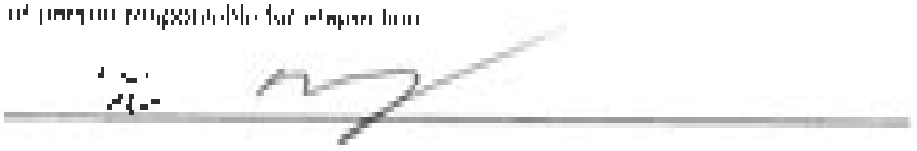
Signature of person responsible for inspection

Well ID

Date

		yes	no	n/a
1	**Location/Topography**			
a	Is the well accessible and not overgrown?	✓		
b	Is the well properly identifying signs that are visible?	✓		
c	Is the well in a flood-prone area and does the well comply with flood-resistant features?			✓
d	Is the drainage around the well adequate? (no standing water around well head or observable depression greater than 2 cm)	✓		
2	**Physical Condition**			
a	Is the protective casing free from apparent defects and able to be secured?	✓		
b	Is the casing free of cracks or other damage?	✓		
c	Does the casing have a functioning vermin screen?	✓		
d	Is the annular space adequately sealed (type of material used, and well head protection)?	✓		
e	Is the well locked and is the lock in good condition?	✓		
3	**Surface pad**			
a	Is the well pad in good condition (not cracked or broken)?	✓		
b	Is the well pad sloped away from the protective casing?	✓		
c	Is the well pad in compliance with the provincial regulations?	✓		
d	Is the well pad in compliance with the ground water circular (if applicable) (not applicable to pre-1988 water wells, and does not have to meet future requirements)	✓		
e	Is the pad surface intact (not cracking with evidence of failure)?	✓		
4	**Historical review**			
a	Does the operator have any history of issues with the well?	✓		
b	Is there a long term trend of water levels or any other issues from historical physical observations?	✓		
c	Is the well properly recorded for accidental use of non-potable?	✓		
d	Is the sanitary seal adequately registered on the well log?	✓		
e	Is the depth of the well consistent with the log of well log?	✓		
f	Is there any additional [redacted] that should be kept on record of any concerns with the well?	✓		
5	**Sampling (Groundwater Wells Only)**			
a	Does well have purge adequately when purged?			✓
b	If static and sampling equipment appropriate? Is it [redacted] and appropriate for the [redacted]			✓
c	Does the well have an [redacted]			✓
6	Cannot see [redacted]			✓
7	Comments on [redacted]			

Signature of person responsible for inspection



PLANT BRANCH GROUNDWATER SAMPLING
WELL CONDITION SPREADSHEET ON 03-02-2020

Well-ID	Old Well-ID	Location - visibility, accessibility, identified with ID and well drainage	Protective Casing - damaged, weep hole, annular space, lock	Surface Pad - pad condition	Internal casing - sealed cap, ventilated, stability	Pond ↑ or ↓	Sampling - recharge, turbidity, pump status	Comments
BRGWA-2S	PZ-2S	ok	ok	ok	ok	↑E	ok	
BRGWA-2I	PZ-2I	ok	ok	ok	ok	↑E	ok	
BRGWA-5S	PZ-5S	ok	ok	ok	ok	↑E	ok	
BRGWA-5I	PZ-5I	ok	ok	ok	ok	↑E	ok	
BRGWA-6S	PZ-6S	ok	ok	ok	ok	↑E	ok	
BRGWA-12S	PZ-12S	ok	ok	ok	ok	↑BCD	ok	
BRGWA-12I	PZ-12I	ok	ok	ok	ok	↑BCD	ok	
BRGWA-23S	PZ-23S	ok	ok	ok	ok	↑BCD	ok	
BRGWC-25I	PZ-25I	ok	ok	ok	ok	↓BCD	ok	
BRGWC-27I	PZ-27S	ok	ok	ok	ok	↓BCD	ok	
BRGWC-29I	PZ-29I	ok	ok	ok	ok	↓BCD	ok	
BRGWC-30I	PZ-30I	ok	ok	ok	ok	↓BCD	ok	
BRGWC-32S	PZ-32S	ok	ok	ok	ok	↓BCD	ok	
BRGWC-33S	PZ-33S	ok	ok	ok	ok	↓E	ok	
BRGWC-34S	PZ-34S	ok	ok	ok	ok	↓E	ok	
BRGWC-35S	PZ-35S	ok	ok	ok	ok	↓E	ok	
BRGWC-17S	PZ-17S	ok	ok	ok	ok	↓E	ok	
BRGWC-36S	PZ-36S	ok	ok	ok	ok	↓E	ok	
BRGWC-37S	PZ-37S	ok	ok	ok	ok	↓E	ok	
BRGWC-38S	PZ-38S	ok	ok	ok	ok	↓E	ok	
BRGWC-45	PZ-45	ok	ok	ok	ok	↓BCD	ok	Had to fish out a transducer prior to sampling
BRGWC-47	PZ-47	ok	ok	ok	ok	↓BCD	ok	
BRGWC-50	PZ-50	ok	ok	ok	ok	↓BCD	ok	
BRGWC-52I	PZ-52	ok	ok	ok	ok	↓BCD	ok	
PZ-1S	NA	ok	ok	ok	ok		N/A	
PZ -1I	NA	ok	ok	ok	ok		N/A	
PZ-1D	NA	ok	ok	ok	ok		N/A	
PZ -3S	NA	ok	ok	ok	ok		N/A	
PZ - 3I	NA	ok	ok	ok	ok		N/A	
PZ- 3D	NA	ok	ok	ok	ok		N/A	
PZ- 4S	NA	ok	ok	ok	ok		N/A	
PZ - 4I	NA	ok	ok	ok	ok		N/A	
PZ-7S	NA	ok	ok	ok	ok		N/A	
PZ- 8S	NA	ok	ok	ok	ok		N/A	
PZ-9S	NA	ok	ok	ok	ok		N/A	
PZ-10S	NA	ok	ok	ok	ok		N/A	
PZ-11S	NA	ok	ok	ok	ok		N/A	
PZ-12D	NA	ok	ok	ok	ok		N/A	
PZ-13S	NA	ok	ok	ok	ok		N/A	

PLANT BRANCH GROUNDWATER SAMPLING
WELL CONDITION SPREADSHEET ON 03-02-2020

Well-ID	Old Well-ID	Location - visibility, accessibility, identified with ID and well drainage	Protective Casing - damaged, weep hole, annular space, lock	Surface Pad - pad condition	Internal casing - sealed cap, ventilated, stability	Pond ↑ or ↓	Sampling - recharge, turbidity, pump status	Comments
PZ-14S	NA	ok	ok	ok	ok		N/A	
PZ -14I	NA	ok	ok	ok	ok		N/A	
PZ-15S	NA	ok	ok	ok	ok		N/A	
PZ -15I	NA	ok	ok	ok	ok		N/A	
PZ-16S	NA	ok	ok	ok	ok		N/A	
PZ -16I	NA	ok	ok	ok	ok		N/A	
PZ -17I	NA	ok	ok	ok	ok		N/A	
PZ-18S	NA	ok	ok	ok	ok		N/A	
PZ -18I	NA	ok	ok	ok	ok		N/A	
PZ-19S	NA	ok	ok	ok	ok		N/A	
PZ -19I	NA	ok	ok	ok	ok		N/A	
PZ-20S	NA	ok	ok	ok	ok		N/A	
PZ -20I	NA	ok	ok	ok	ok		N/A	
PZ-21S	NA	ok	ok	ok	ok		N/A	
PZ -21I	NA	ok	ok	ok	ok		N/A	
PZ-22S	PZ-39S	ok	ok	ok	ok		N/A	
BRGWC-24S	PZ-24S	ok	ok	ok	ok		N/A	
PZ-26I	NA	ok	ok	ok	ok		N/A	
PZ-28I	NA	ok	ok	ok	ok		N/A	
PZ-31S	NA	ok	ok	ok	ok		N/A	
PZ-23I	NA	ok	ok	ok	ok		N/A	
PZ-40S	NA	ok	ok	ok	ok		N/A	
PZ-41S	NA	ok	ok	ok	ok		N/A	
PZ-42S	NA	ok	ok	ok	ok		N/A	
PZ-43	NA	ok	ok	ok	ok		N/A	
PZ-44	NA	ok	ok	ok	ok		N/A	
PZ-46	NA	ok	ok	ok	ok		N/A	
PZ-48	NA	ok	ok	ok	ok		N/A	
PZ-49	NA	ok	ok	ok	ok		N/A	
PZ-51S	NA	ok	ok	ok	ok		N/A	
PZ-51I	N/A	ok	ok	ok	ok		N/A	
IW-C-1	N/A	--	--	--	--		N/A	Unable to access well due to ponded water
IW-B-1	N/A	ok	ok	ok	ok		N/A	
IW-D-1	N/A	ok	ok	ok	ok		N/A	
IW-E-1	N/A	ok	ok	ok	ok		N/A	
IW-B-2	N/A	ok	ok	ok	ok		N/A	
IW-C-2	N/A	ok	ok	ok	ok		N/A	
IW-D-2	N/A	ok	ok	ok	ok		N/A	
DW-01	DBW-01	ok	ok	ok	ok		N/A	
DW-02	DBW-02	ok	ok	ok	ok		N/A	

PLANT BRANCH GROUNDWATER SAMPLING
WELL CONDITION SPREADSHEET ON 03-02-2020

Well-ID	Old Well-ID	Location - visibility, accessibility, identified with ID and well drainage	Protective Casing - damaged, weep hole, annular space, lock	Surface Pad - pad condition	Internal casing - sealed cap, ventilated, stability	Pond ↑ or ↓	Sampling - recharge, turbidity, pump status	Comments
PB-1S	N/A	ok	ok	ok	ok		N/A	
PB-2D	N/A	ok	ok	ok	ok		N/A	
PB-4S	N/A	ok	ok	ok	ok		N/A	
PB-4D	N/A	ok	ok	ok	ok		N/A	
PB-7S	N/A	ok	ok	ok	ok		N/A	
PB-8D	N/A	ok	ok	ok	ok		N/A	
PB-8S	N/A	ok	ok	ok	ok		N/A	
PB-10D	N/A	ok	ok	ok	ok		N/A	
PB-10S	N/A	ok	ok	ok	ok		N/A	
PB-13D	N/A	ok	ok	ok	ok		N/A	
PB-13S	N/A	ok	ok	ok	ok		N/A	

APPENDIX B

DATA VALIDATION SUMMARIES

Quality Control Review of Analytical Data- Ash Pond E
Submitted by Pace Analytical Services
August - December 2019

This narrative presents results of the quality control (QC) data review performed on analytical data submitted by Pace Analytical Services, LLC, for groundwater samples collected at Plant Branch CCR Ash Pond E (Site) between August 27, 2019 and December 18, 2019. The chemical data were reviewed to identify quality issues which could affect the use of the data for decision making purposes.

Information regarding the primary sample locations, analytical parameters, QC samples, sampling dates, and laboratory sample delivery group (SDG) designations is summarized in Table 1. In accordance with groundwater monitoring and corrective action procedures discussed in Title 40 CFR, Subpart D - Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, the samples were analyzed for detection monitoring constituents listed in 40 CFR, Part 257, Appendix III and assessment monitoring constituents listed in 40 CFR, Part 257, Appendix IV. Test methods included Inductively Coupled Plasma- Mass Spectrometry (USEPA Method 6020B), Mercury in Liquid Wastes (USEPA Method 7470A), Determination of Inorganic Anions By Ion Chromatography (USEPA Method 300.0), Total Dissolved Solids (Standard Methods 2540C), Radium-226 (USEPA Method 9315) and Radium-228 (USEPA Method 9320).

Data were reviewed in accordance with the US EPA Region IV Data Validation Standard Operating Procedures for Contract Laboratory Program (CLP) Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy (September 2011, Rev. 2.0), US EPA Region IV Data Validation Standard Operating Procedures for CLP Mercury Data by Cold Vapor Atomic Absorption (September 2011, Rev. 2.0), the National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017), and US Department of Energy, Evaluation of Radiochemical Data Usability (April 1997). The review included an assessment of the results for completeness, precision (laboratory duplicates, matrix spike/matrix spike duplicates), accuracy (laboratory control samples and matrix spike samples), and blank contamination (including field, equipment and laboratory blanks). Additionally, sample procedures, holding times and chains-of-custody were reviewed. Where there was a discrepancy between the QC criteria in the guidelines and the QC criterion established in the analytic methodology, method-specific criteria or professional judgment was used.

DATA QUALITY OBJECTIVES

Laboratory Precision: Laboratory goals for precision were met.

Field Precision: Field goals for precision were met with the exception of total dissolved solids (TDS) in BRGWC-34S as described in the qualifications section below.

Accuracy: Laboratory goals for accuracy were met exception of fluoride for BRGWC-17S and chloride for BRGWC-36S as described in the qualifications section below.

Detection Limits: Project goals for detection limits were met. Certain samples were diluted due to elevated concentrations of target analytes. Dilutions do not require qualifications based on USEPA guidelines. Detection and reporting limits of non-detect compounds are elevated proportional to the dilution when undiluted sample results are not provided by the laboratory. The data usability of diluted results was evaluated by the data user in the context of site-wide characterization.

Completeness: There were no rejected analytical results for this event, resulting in a completion of 100%.

Holding Times: All holding time requirements were met in accordance with specific analytical methods.

QUALIFICATIONS

In general, chemical results for the samples collected at the Site were qualified on the basis of low precision or accuracy, or on the basis of professional judgment. The following definitions provide brief explanations of the qualifiers which may have been assigned to data by the laboratory during the data validation process.

J	The analyte was positively identified above the method detection limit; however, the associated numerical value is the approximate concentration of the analyte in the sample.
J-	The analyte was reported above the method detection limit; however, the concentration reported is an estimated value that may be biased low.
J+	The analyte was reported above the method detection limit; however, the concentration reported is an estimated value that may be biased high.
U	The analyte was not detected above the method detection limit.

The data generated as part of this sampling event met the QC criteria established in the respective analytical methods and data validation guidelines except as specified below. Although these qualifications were applied to some data from samples collected at the Site and reported in the sample delivery group (SDGs), qualifications may not have been required or applied to all samples collected. A summary of sample qualifications can be found in Table 2.

- Certain arsenic chromium, molybdenum, sulfate, TDS, radium-226, radium-228 and total radium results were qualified as non-detect (U) when the analyte was detected at a similar level in an associated blank sample. As shown in Table 2, if the original sample results were below the reporting limit (RL) or the minimum detectable concentration (MDC), the results were qualified as non-detect (U) and the results were raised to the RL or MDC. If results were above the RL or MDC, the results were qualified U and the RL or MDC was raised to the sample result.

- Total radium was qualified as biased high (J+) in sample BRGWC-38S when one radium isotope was detected above the MDC and the other isotope was U qualified.

- Fluoride for DGWC-17S and chloride for BRGWC-36S were qualified as estimated biased low (J-) as the associated matrix spike/matrix spike duplicate (MS/MSD) recoveries were below the QC criteria.

- TDS for BRGWC-34S was qualified as estimated (J) as the field duplicate relative percent difference was outside QC criteria.

Golder reviewed the data from samples collected at Plant Branch CCR Ash Pond E between August 27, 2019 and December 18, 2019 in accordance with the analytical methods, the laboratory specific QC criteria, and the guidelines. As described above, 100% of the results were acceptable for project use.

REFERENCE

Paar, J.G. & Porterfield, D.R. *Evaluation of Radiochemical Data Usability.* United States Department of Energy, Office of Environmental Restoration and Waste Management, Oak Ridge National Laboratory, April 1997.

USEPA, January 2017, National, Office of Superfund Remediation and Technology Innovation, *National Functional Guidelines for Inorganic Superfund Methods Data Review,* Revision 0.0.

USEPA, September 2011, Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, *Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data By Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy,* Revision 2.0.

USEPA, September 2011, Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, *Data Validation Standard Operating Procedures for Contract Laboratory Program Mercury Data By Cold Vapor Atomic Absorption,* Revision 2.0.

TABLE 1

Sample Summary Table
SCS Plant Branch - Pond E

						Analyses			
SDGs	*Field Identification*	*Collection Date*	*Lab Identification*	*Matrix*	*QC Samples*	Total Metals (6020)	Anions (300.0)	TDS (SM 2540C)	Radium 226, Radium 228 (9315, 9320)
2622483/2622484	BRGWA-2I	8/27/2019	2622483005/2622484005	GW	-	X	X	-	X
2622483/2622484	BRGWA-2S	8/27/2019	2622483004/2622484004	GW	-	X	X	-	X
2622483/2622484	BRGWA-5I	8/27/2019	2622483003/2622484003	GW	-	X	X	-	X
2622483/2622484	BRGWA-5S	8/27/2019	2622483002/2622484002	GW	-	X	X	-	X
2622483/2622484	BRGWA-6S	8/27/2019	2622483001/2622484001	GW	-	X	X	-	X
2622483/2622484	BRGWC-33S	8/27/2019	2622483006/2622484006	GW	-	X	X	-	X
2622483/2622484	Dup-1	8/27/2019	2622483007/2622484007	GW	DUP (BRGWC-33S)	X	X	-	X
2622563/2622564	BRGWC-17S	8/28/2019	2622563001/2622564001	GW	-	X	X	-	X
2622563/2622564	BRGWC-34S	8/28/2019	2622563002/2622564002	GW	-	X	X	-	X
2622563/2622564	BRGWC-35S	8/28/2019	2622563003/2622564003	GW	-	X	X	-	X
2622563/2622564	BRGWC-36S	8/28/2019	2622563004/2622564004	GW	-	X	X	-	X
2622563/2622564	BRGWC-37S	8/28/2019	2622563005/2622564005	GW	-	X	X	-	X
2622604/2622605	BRGWC-38S	8/29/2019	2622604001/2622605001	GW	-	X	X	-	X
2624391/2624389	BRGWA-2I	10/15/2019	2624391005/2624389005	GW	-	X	X	X	X
2624391/2624389	BRGWA-2S	10/15/2019	2624391004/2624389004	GW	-	X	X	X	X
2624391/2624389	BRGWA-5I	10/15/2019	2624391003/2624389003	GW	-	X	X	X	X
2624391/2624389	BRGWA-5S	10/15/2019	2624391002/2624389002	GW	-	X	X	X	X
2624391/2624389	BRGWA-6S	10/15/2019	2624391001/2624389001	GW	-	X	X	X	X
2624484/2624486	BRGWC-33S	10/16/2019	2624484001/2624486001	GW	-	X	X	X	X
2624484/2624486	BRGWC-34S	10/16/2019	2624484002/2624486002	GW	-	X	X	X	X
2624484/2624486	BRGWC-35S	10/16/2019	2624484003/2624486003	GW	-	X	X	X	X
2624484/2624486	BRGWC-37S	10/16/2019	2624484004/2624486004	GW	-	X	X	X	X
2624484/2624486	BRGWC-38S	10/16/2019	2624484005/2624486005	GW	-	X	X	X	X
2624484/2624486	Dup-1	10/16/2019	2624484006/2624486006	GW	DUP (BRGWC-34S)	X	X	X	X
2626394	BRGWC-17S	12/3/2019	2626394001	GW	-	X	X	-	X
2626394	BRGWC-36S	12/3/2019	2626394002	GW	-	X	X	-	X
2627067	BRGWC-17S	12/18/2019	2627067001	GW	-	-	-	-	X
2627067	BRGWC-36S	12/18/2019	2627067002	GW	-	-	-	-	X

Abbreviations:

DUP - Field duplicate
GW - Groundwater
TDS - Total Dissolved Solids
SDG - Sample Delivery Group
QC - Quality Control

TABLE 2
Qualifier Summary Table
Plant Branch - Pond E

SDG	Sample Name	Constituent	New Result	New RL or MDC	Qualifier	Reason
2622563	BRGWC-17S	Arsenic	0.005	-	U	Blank contamination
2622563	BRGWC-35S	Arsenic	0.005	-	U	Blank contamination
2622563	BRGWC-36S	Arsenic	0.005	-	U	Blank contamination
2622563	BRGWC-37S	Arsenic	0.005	-	U	Blank contamination
2622563	BRGWC-37S	Chromium	0.01	-	U	Blank contamination
2622483	BRGWA-5I	Molybdenum	0.01	-	U	Blank contamination
2622484	BRGWA-2I	Radium-226	-	0.596	U	Blank contamination
2622484	BRGWA-2S	Radium-226	-	0.950	U	Blank contamination
2622484	BRGWA-5I	Radium-226	-	0.512	U	Blank contamination
2622484	BRGWA-5S	Radium-226	-	0.520	U	Blank contamination
2624486	BRGWC-33S	Radium-226	-	0.474	U	Blank contamination
2622564	BRGWC-34S	Radium-226	-	0.364	U	Blank contamination
2624486	BRGWC-35S	Radium-226	-	0.523	U	Blank contamination
2622564	BRGWC-36S	Radium-226	-	0.541	U	Blank contamination
2622605	BRGWC-38S	Radium-226	-	1.370	U	Blank contamination
2624486	BRGWC-38S	Radium-226	-	0.539	U	Blank contamination
2622484	BRGWA-5S	Radium-228	-	0.922	U	Blank contamination
2622484	BRGWC-33S	Radium-228	-	0.947	U	Blank contamination
2624486	BRGWC-35S	Radium-228	-	1.17	U	Blank contamination
2624486	BRGWC-38S	Radium-228	-	2.12	U	Blank contamination
2622484	BRGWA-2I	Total Radium	-	1.11	U	Blank contamination
2622484	BRGWA-2S	Total Radium	-	1.47	U	Blank contamination
2622484	BRGWA-5I	Total Radium	-	1.19	U	Blank contamination
2622484	BRGWA-5S	Total Radium	-	1.44	U	Blank contamination
2622484	BRGWC-33S	Total Radium	-	1.38	U	Blank contamination
2624486	BRGWC-35S	Total Radium	-	1.69	U	Blank contamination
2622605	BRGWC-38S	Total Radium	-	-	J+	Blank contamination
2624486	BRGWC-38S	Total Radium	-	2.66	U	Blank contamination
2624484	BRGWC-37S	Sulfate	1	-	U	Blank contamination
2624484	BRGWC-33S	Arsenic	0.005	-	U	Blank contamination
2624484	BRGWC-35S	Arsenic	0.005	-	U	Blank contamination
2624484	BRGWC-37S	Arsenic	0.005	-	U	Blank contamination
2624484	BRGWC-38S	Arsenic	0.005	-	U	Blank contamination
2624389	BRGWA-5I	Molybdenum	0.01	-	U	Blank contamination
2624389	BRGWA-2I	TDS	-	140	U	Blank contamination
2624389	BRGWA-2S	TDS	-	66	U	Blank contamination
2624389	BRGWA-5I	TDS	-	175	U	Blank contamination
2624389	BRGWA-5S	TDS	-	144	U	Blank contamination
2624389	BRGWA-6S	TDS	-	63	U	Blank contamination
2624484	BRGWC-37S	TDS	-	49	U	Blank contamination
2624389	BRGWA-2I	Arsenic	0.005	-	U	Blank contamination
2624389	BRGWA-2S	Arsenic	0.005	-	U	Blank contamination
2624389	BRGWA-5I	Arsenic	0.005	-	U	Blank contamination
2624389	BRGWA-5S	Arsenic	0.005	-	U	Blank contamination
2624391	BRGWA-5I	Radium-226	-	0.651	U	Blank contamination
2626394	BRGWC-36S	Chloride	-	-	J-	MS and/or MSD recovered below lower limit
2626394	BRGWC-17S	Fluoride	-	-	J-	MS and/or MSD recovered below lower limit
2624487	BRGWC-34S	TDS	-	-	J	RPD exceedance between field duplicate and parent sample
2622484	Dup-1	Radium-226	-	0.534	U	Blank contamination
2624486	Dup-1	Radium-226	-	0.698	U	Blank contamination
2624486	Dup-1	Radium-228	-	1.34	U	Blank contamination
2624486	Dup-1	Total Radium	-	2.04	U	Blank contamination
2624486	Dup-1	TDS	-	-	J	RPD exceedance between field duplicate and parent sample

Abbreviations:
MDC: Minimum detectable concentration
MDL: Method detection limit
RL : Reporting limit
SDG : Sample delivery group

Qualifiers:
J+ : Estimated result, biased high
J- : Estimated result, biased low
J : Estimated result
U : Non-detect result

Attachment A
Quality Control Review of Analytical Data submitted by Pace Analytical
Plant Branch CCR Ash Pond E

This narrative presents results of the Quality Control (QC) data review performed on analytical data submitted by Pace Analytical Services, LLC for groundwater samples collected at the Plant Branch CCR Ash Pond AP-E on March 5, 2020. The chemical data were reviewed to identify quality issues which could affect the use of the data for decision making purposes.

Information regarding the primary sample locations, analytical parameters, QC samples, sampling dates, and laboratory sample delivery group (SDG) designations is summarized in Table 1. In accordance with groundwater monitoring and corrective action procedures discussed in Title 40 CFR, Subpart D - Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, the samples were analyzed for detection monitoring constituents listed in 40 CFR, Part 257, Appendix III. Test methods included Inductively Coupled Plasma- Mass Spectrometry (USEPA Method 6020B), Inductively Coupled Plasma (USEPA Method 6010D), Determination of Inorganic Anions (USEPA Method 300.0), Solids in Water (Standard Methods 2540C), Radium-226 (USEPA Method 9315) and Radium-228 (USEPA Method 9320).

Data were reviewed in accordance with the US EPA Region IV Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data by Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy (September 2011, Rev. 2.0) and the National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017). In addition, Southern Company Services, Inc. provided data validation guidance. The review included an assessment of the results for completeness, precision (laboratory duplicates, matrix spike/matrix spike duplicates), accuracy (laboratory control samples, matrix spike/matrix spike duplicates), and blank contamination (including laboratory blanks). Additionally, sample procedures, holding times and chains-of-custody were reviewed. Where there was a discrepancy between the QC criteria in the guidelines and the QC criterion established in the analytic methodology, method-specific criteria or professional judgment was used.

DATA QUALITY OBJECTIVES

Laboratory Precision:	Laboratory goals for precision were met
Field Precision:	Field goals for precision were met.
Accuracy:	Laboratory goals for accuracy were met.
Detection Limits:	Project goals for detection limits were met. Certain samples were diluted due to the concentration of the target analytes. Dilutions do not require qualifications based on USEPA guidelines. Detection and reporting limits of non-detect compounds are elevated proportional to the dilution when undiluted sample results are not provided by the laboratory. The data usability of diluted results was evaluated by the data user in the context of site-wide characterization.
Completeness:	There were no rejected analytical results for this event, resulting in a completion of 100%.
Holding Times:	All holding time requirements were met.

QUALIFICATIONS

In general, chemical results for the samples collected at the Site were qualified on the basis of low precision or accuracy, or on the basis of professional judgment. The following definitions provide brief explanations of the qualifiers which may have been assigned to data by the laboratory during the data validation process.

J	The analyte was positively identified above the method detection limit; however, the associated numerical value is the approximate concentration of the analyte in the sample.
J-	The analyte was positively identified above the method detection limit; however, the concentration reported is an estimated value that may be biased low.
U	The analyte was not detected above the method detection limit.

The data generated as part of this sampling event met the QC criteria established in the respective analytical methods and data validation guidelines, except as specified below. Although these qualifications were applied to some data from of the samples collected at the site, the qualifications may not have been required or applied to all samples collected. A summary of sample qualifications can be found in Table 2.

- Certain arsenic and boron results in SDG 2829734 were qualified as non-detect (U) as the analyte was detected at a similar level in an associated blank sample. As shown in Table 2, when the original sample result was below the reporting limit (RL), the results were qualified as non-detect (U) and the results were raised to the RL.
- Certain radium-226 and total radium results were qualified as non-detect (U) when radium-226 was detected at a similar concentration in an associated blank sample. As shown in Table 2, the minimum detectable concentration (MDC) was raised to the sample result as part of the qualification process.

Golder reviewed the data from samples collected at the Plant Branch CCR Ash Ponds between March 3, 2020 and March 5, 2020 in accordance with the analytical methods, the laboratory specific QC criteria, and the guidelines. As described above, 100% of the results were acceptable for project use.

REFERENCE

USEPA, September 2011, Region 4, Science and Ecosystem Support Division, Quality Assurance Section, MTSB, *Data Validation Standard Operating Procedures for Contract Laboratory Program Inorganic Data By Inductively Coupled Plasma – Atomic Emission Spectroscopy and Inductively Coupled Plasma – Mass Spectroscopy,* Revision 2.0.

USEPA, January 2017, National, Office of Superfund Remediation and Technology Innovation, *National Functional Guidelines for Inorganic Superfund Methods Data Review*, Revision 0.0.

TABLE 1

Sample Summary Table
SCS Plant Branch

						Analysis				
SDGs	***Field Identification***	***Collection Date***	***Lab Identification***	***Matrix***	***QC Samples***	**Total Metals (EPA 6020B)**	**Calcium (EPA 6010D)**	**Anions (EPA 300.0)**	**TDS (SM 2540C)**	**Radium-226 & 228 (EPA 9315 & 9320)**
2629734	BRGWA-2I	3/3/2020	2629734001	GW	-	X	X	X	X	-
2629734	BRGWA-2S	3/3/2020	2629734002	GW	-	X	X	X	X	-
2629734	BRGWA-5I	3/3/2020	2629734003	GW	-	X	X	X	X	-
2629734	BRGWA-5S	3/3/2020	2629734004	GW	-	X	X	X	X	-
2629734	BRGWA-6S	3/3/2020	2629734005	GW	-	X	X	X	X	-
2629734	BRGWC-17S	3/3/2020	2629734006	GW	-	X	X	X	X	-
2629734	BRGWC-33S	3/5/2020	2629734007	GW	-	X	X	X	X	-
2629734	BRGWC-34S	3/5/2020	2629734008	GW	-	X	X	X	X	-
2629734	BRGWC-35S	3/5/2020	2629734009	GW	-	X	X	X	X	-
2629734	BRGWC-36S	3/5/2020	2629734010	GW	-	X	X	X	X	-
2629734	BRGWC-37S	3/5/2020	2629734011	GW	-	X	X	X	X	-
2629734	BRGWC-38S	3/5/2020	2629734012	GW	-	X	X	X	X	-
2629734	DUP-3	3/5/2020	2629734013	GW	FD (BRGWC-35S)	X	X	X	X	-
2629734	FB-2	3/5/2020	2629734014	WQ	FB	X	X	X	X	-
30353316	BRGWA-6S	3/3/2020	2629734001	GW	-	-	-	-	-	X
30353316	BRGWA-2S	3/3/2020	2629734002	GW	-	-	-	-	-	X
30353316	BRGWA-2I	3/3/2020	2629734003	GW	-	-	-	-	-	X
30353316	BRGWA-5S	3/3/2020	2629734004	GW	-	-	-	-	-	X
30353316	BRGWA-5I	3/3/2020	2629734005	GW	-	-	-	-	-	X
30353316	BRGWC-17S	3/3/2020	2629734006	GW	-	-	-	-	-	X
30353315	BRGWC-33S	3/5/2020	2629734007	GW	-	-	-	-	-	X
30353315	BRGWC-34S	3/5/2020	2629734008	GW	-	-	-	-	-	X
30353315	BRGWC-35S	3/5/2020	2629734009	GW	-	-	-	-	-	X
30353315	BRGWC-38S	3/5/2020	2629734010	GW	-	-	-	-	-	X
30353315	DUP-3	3/5/2020	2629734011	GW	FD (BRGWC-35S)	-	-	-	-	X
30353315	FB-2	3/5/2020	2629734012	WQ	FB	-	-	-	-	X
30353315	BRGWC-37S	3/5/2020	2629734013	GW	-	-	-	-	-	X
30353315	BRGWC-36S	3/5/2020	2629734014	GW	-	-	-	-	-	X

Abbreviations:

FB - Field blank
FD - Field duplicate
GW - Groundwater
WQ - Water Quality
TDS - Total Dissolved Solids
SDG - Sample Delivery Group
QC - Quality Control

TABLE 2
Qualifier Summary Table
Plant Branch

SDG	*Sample Name*	*Constituent*	*New Result*	*New RL or MDC*	*Qualifier*	*Reason*
2829734	BRGWC-37S	Arsenic	0.005	-	U	Blank contamination
2829734	BRGWC-38S	Arsenic	0.005	-	U	Blank contamination
2829734	BRGWC-37S	Boron	0.1	-	U	Blank contamination
30353315	BRGWC-33S	Radium-226	-	0.462	U	Blank contamination
30353315	BRGWC-34S	Radium-226	-	0.463	U	Blank contamination
30353315	BRGWC-35S	Radium-226	-	0.657	U	Blank contamination
30353315	BRGWC-36S	Radium-226	-	0.92	U	Blank contamination
30353315	BRGWC-37S	Radium-226	-	1.3	U	Blank contamination
30353315	BRGWC-38S	Radium-226	-	0.71	U	Blank contamination
30353315	BRGWC-38S	Total Radium	-	1.5	U	Blank contamination
30353315	DUP-3	Radium-226	-	0.667	U	Blank contamination

Abbreviations:
RL : Reporting limit
SDG : Sample delivery group
MDC : Minimum Detectable Concentration

Qualifiers:
U : Non-detect result

APPENDIX C

STATISTICAL ANALYSES

AP-E October 2019 Inter-Well Prediction Limit Statistically Significant Increase Summary	
Appendix III Parameter	**AP-E Monitoring Wells**
Boron	BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S
Calcium	BRGWC-17S, BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S
Chloride	BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S
Fluoride	BRGWC-38S
pH	BRGWC-33S, BRGWC-34S, BRGWC-37S, BRGWC-38S
Sulfate	BRGWC-17S, BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S
Total Dissolved Solids	BRGWC-17S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

AP-E March 2020 Inter-Well Prediction Limit Statistically Significant Increase Summary	
Appendix III Parameter	**AP-E Monitoring Wells**
Boron	BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S
Calcium	BRGWC-17S, BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S
Chloride	BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S
Fluoride	BRGWC-38S
pH	BRGWC-33S, BRGWC-34S, BRGWC-36S, BRGWC-37S, BRGWC-38S
Sulfate	BRGWC-17S, BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S
Total Dissolved Solids	BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

Interwell Prediction Limit

Branch Client: Golder Associates Data: Plant Branch Ash Pond Printed 3/26/2020, 8:02 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**BRGWC-33S**	**0.5**	**n/a**	**10/16/2019**	**1.1**	**Yes**	**50**	**64**	**n/a**	**0.000...**	NP (NDs) 1 of 2
Boron (mg/L)	**BRGWC-34S**	**0.5**	**n/a**	**10/16/2019**	**2.3**	**Yes**	**50**	**64**	**n/a**	**0.000...**	NP (NDs) 1 of 2
Boron (mg/L)	**BRGWC-35S**	**0.5**	**n/a**	**10/16/2019**	**2.2**	**Yes**	**50**	**64**	**n/a**	**0.000...**	NP (NDs) 1 of 2
Boron (mg/L)	**BRGWC-36S**	**0.5**	**n/a**	**12/3/2019**	**1**	**Yes**	**50**	**64**	**n/a**	**0.000...**	NP (NDs) 1 of 2
Boron (mg/L)	**BRGWC-38S**	**0.5**	**n/a**	**10/16/2019**	**1.5**	**Yes**	**50**	**64**	**n/a**	**0.000...**	NP (NDs) 1 of 2
Calcium (mg/L)	**BRGWC-17S**	**24**	**n/a**	**12/3/2019**	**37.7**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Calcium (mg/L)	**BRGWC-33S**	**24**	**n/a**	**10/16/2019**	**46.5**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Calcium (mg/L)	**BRGWC-34S**	**24**	**n/a**	**10/16/2019**	**78.2**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Calcium (mg/L)	**BRGWC-35S**	**24**	**n/a**	**10/16/2019**	**61.2**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Calcium (mg/L)	**BRGWC-36S**	**24**	**n/a**	**12/3/2019**	**47.8**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Calcium (mg/L)	**BRGWC-38S**	**24**	**n/a**	**10/16/2019**	**38.4**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Chloride (mg/L)	**BRGWC-33S**	**4.8**	**n/a**	**10/16/2019**	**5.4**	**Yes**	**50**	**0**	**n/a**	**0.000...**	NP (normality) 1 of 2
Chloride (mg/L)	**BRGWC-34S**	**4.8**	**n/a**	**10/16/2019**	**7.3**	**Yes**	**50**	**0**	**n/a**	**0.000...**	NP (normality) 1 of 2
Chloride (mg/L)	**BRGWC-35S**	**4.8**	**n/a**	**10/16/2019**	**6.6**	**Yes**	**50**	**0**	**n/a**	**0.000...**	NP (normality) 1 of 2
Chloride (mg/L)	**BRGWC-36S**	**4.8**	**n/a**	**12/3/2019**	**7.7**	**Yes**	**50**	**0**	**n/a**	**0.000...**	NP (normality) 1 of 2
Chloride (mg/L)	**BRGWC-38S**	**4.8**	**n/a**	**10/16/2019**	**6.4**	**Yes**	**50**	**0**	**n/a**	**0.000...**	NP (normality) 1 of 2
Fluoride (mg/L)	**BRGWC-38S**	**0.1667**	**n/a**	**10/16/2019**	**0.6737**	**Yes**	**55**	**49.09**	**sqrt(x)**	**0.000...**	Param 1 of 2 Deseas
pH (S.U)	**BRGWC-33S**	**7.203**	**5.875**	**10/16/2019**	**4.78**	**Yes**	**54**	**0**	**No**	**0.000...**	Param 1 of 2
pH (S.U)	**BRGWC-34S**	**7.203**	**5.875**	**10/16/2019**	**5.85**	**Yes**	**54**	**0**	**No**	**0.000...**	Param 1 of 2
pH (S.U)	**BRGWC-36S**	**7.203**	**5.875**	**10/17/2019**	**5.61**	**Yes**	**54**	**0**	**No**	**0.000...**	Param 1 of 2
pH (S.U)	**BRGWC-38S**	**7.203**	**5.875**	**10/16/2019**	**4.21**	**Yes**	**54**	**0**	**No**	**0.000...**	Param 1 of 2
pH (S.U)	**BRGWC-37S**	**7.203**	**5.875**	**10/16/2019**	**5.81**	**Yes**	**54**	**0**	**No**	**0.000...**	Param 1 of 2
Sulfate (mg/L)	**BRGWC-17S**	**7.5**	**n/a**	**12/3/2019**	**180**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Sulfate (mg/L)	**BRGWC-33S**	**7.5**	**n/a**	**10/16/2019**	**226**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Sulfate (mg/L)	**BRGWC-34S**	**7.5**	**n/a**	**10/16/2019**	**325**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Sulfate (mg/L)	**BRGWC-35S**	**7.5**	**n/a**	**10/16/2019**	**277**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Sulfate (mg/L)	**BRGWC-36S**	**7.5**	**n/a**	**12/3/2019**	**256**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Sulfate (mg/L)	**BRGWC-38S**	**7.5**	**n/a**	**10/16/2019**	**432**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-17S**	**242.8**	**n/a**	**12/3/2019**	**378**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-33S**	**242.8**	**n/a**	**10/16/2019**	**281**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-34S**	**242.8**	**n/a**	**10/16/2019**	**473**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-35S**	**242.8**	**n/a**	**10/16/2019**	**481**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-36S**	**242.8**	**n/a**	**12/3/2019**	**498**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-38S**	**242.8**	**n/a**	**10/16/2019**	**630**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2

Interwell Prediction Limit

Branch Client: Golder Associates Data: Plant Branch Ash Pond Printed 3/26/2020, 8:02 PM

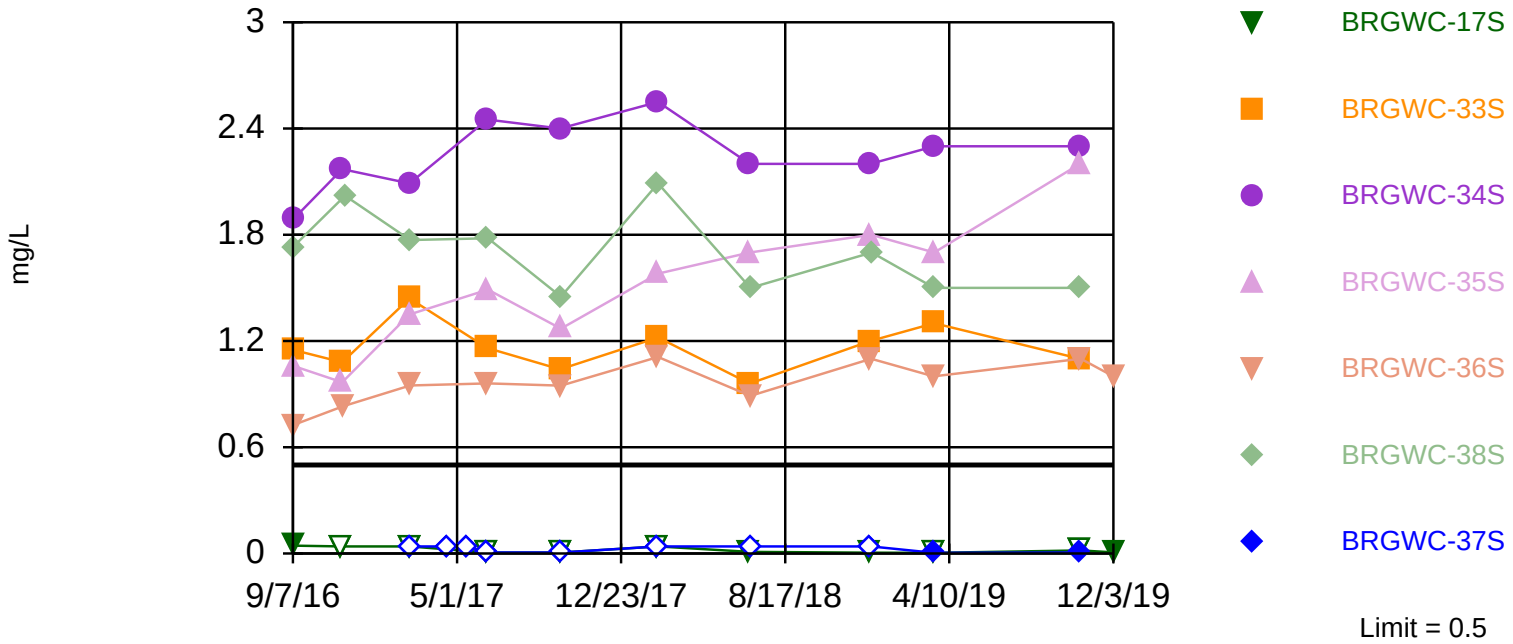
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	BRGWC-17S	0.5	n/a	12/3/2019	0.0063	No	50	64	n/a	0.000...	NP (NDs) 1 of 2
Boron (mg/L)	**BRGWC-33S**	**0.5**	**n/a**	**10/16/2019**	**1.1**	**Yes**	**50**	**64**	**n/a**	**0.000...**	NP (NDs) 1 of 2
Boron (mg/L)	**BRGWC-34S**	**0.5**	**n/a**	**10/16/2019**	**2.3**	**Yes**	**50**	**64**	**n/a**	**0.000...**	NP (NDs) 1 of 2
Boron (mg/L)	**BRGWC-35S**	**0.5**	**n/a**	**10/16/2019**	**2.2**	**Yes**	**50**	**64**	**n/a**	**0.000...**	NP (NDs) 1 of 2
Boron (mg/L)	**BRGWC-36S**	**0.5**	**n/a**	**12/3/2019**	**1**	**Yes**	**50**	**64**	**n/a**	**0.000...**	NP (NDs) 1 of 2
Boron (mg/L)	**BRGWC-38S**	**0.5**	**n/a**	**10/16/2019**	**1.5**	**Yes**	**50**	**64**	**n/a**	**0.000...**	NP (NDs) 1 of 2
Boron (mg/L)	BRGWC-37S	0.5	n/a	10/16/2019	0.0055	No	50	64	n/a	0.000...	NP (NDs) 1 of 2
Calcium (mg/L)	**BRGWC-17S**	**24**	**n/a**	**12/3/2019**	**37.7**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Calcium (mg/L)	**BRGWC-33S**	**24**	**n/a**	**10/16/2019**	**46.5**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Calcium (mg/L)	**BRGWC-34S**	**24**	**n/a**	**10/16/2019**	**78.2**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Calcium (mg/L)	**BRGWC-35S**	**24**	**n/a**	**10/16/2019**	**61.2**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Calcium (mg/L)	**BRGWC-36S**	**24**	**n/a**	**12/3/2019**	**47.8**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Calcium (mg/L)	**BRGWC-38S**	**24**	**n/a**	**10/16/2019**	**38.4**	**Yes**	**50**	**6**	**n/a**	**0.000...**	NP (normality) 1 of 2
Calcium (mg/L)	BRGWC-37S	24	n/a	10/16/2019	3.4	No	50	6	n/a	0.000...	NP (normality) 1 of 2
Chloride (mg/L)	BRGWC-17S	4.8	n/a	12/3/2019	4.8	No	50	0	n/a	0.000...	NP (normality) 1 of 2
Chloride (mg/L)	**BRGWC-33S**	**4.8**	**n/a**	**10/16/2019**	**5.4**	**Yes**	**50**	**0**	**n/a**	**0.000...**	NP (normality) 1 of 2
Chloride (mg/L)	**BRGWC-34S**	**4.8**	**n/a**	**10/16/2019**	**7.3**	**Yes**	**50**	**0**	**n/a**	**0.000...**	NP (normality) 1 of 2
Chloride (mg/L)	**BRGWC-35S**	**4.8**	**n/a**	**10/16/2019**	**6.6**	**Yes**	**50**	**0**	**n/a**	**0.000...**	NP (normality) 1 of 2
Chloride (mg/L)	**BRGWC-36S**	**4.8**	**n/a**	**12/3/2019**	**7.7**	**Yes**	**50**	**0**	**n/a**	**0.000...**	NP (normality) 1 of 2
Chloride (mg/L)	**BRGWC-38S**	**4.8**	**n/a**	**10/16/2019**	**6.4**	**Yes**	**50**	**0**	**n/a**	**0.000...**	NP (normality) 1 of 2
Chloride (mg/L)	BRGWC-37S	4.8	n/a	10/16/2019	2.3	No	50	0	n/a	0.000...	NP (normality) 1 of 2
Fluoride (mg/L)	BRGWC-17S	0.1667	n/a	12/3/2019	0.125	No	55	49.09	sqrt(x)	0.000...	Param 1 of 2 Deseas
Fluoride (mg/L)	BRGWC-33S	0.1667	n/a	10/16/2019	0.2337	No	55	49.09	sqrt(x)	0.000...	Param 1 of 2 Deseas
Fluoride (mg/L)	BRGWC-34S	0.1667	n/a	10/16/2019	0.1937	No	55	49.09	sqrt(x)	0.000...	Param 1 of 2 Deseas
Fluoride (mg/L)	BRGWC-35S	0.1667	n/a	10/16/2019	0.1437	No	55	49.09	sqrt(x)	0.000...	Param 1 of 2 Deseas
Fluoride (mg/L)	BRGWC-36S	0.1667	n/a	12/3/2019	0.075	No	55	49.09	sqrt(x)	0.000...	Param 1 of 2 Deseas
Fluoride (mg/L)	**BRGWC-38S**	**0.1667**	**n/a**	**10/16/2019**	**0.6737**	**Yes**	**55**	**49.09**	**sqrt(x)**	**0.000...**	Param 1 of 2 Deseas
Fluoride (mg/L)	BRGWC-37S	0.1667	n/a	10/16/2019	0.1227	No	55	49.09	sqrt(x)	0.000...	Param 1 of 2 Deseas
pH (S.U)	BRGWC-17S	7.203	5.875	10/17/2019	6.3	No	54	0	No	0.000...	Param 1 of 2
pH (S.U)	**BRGWC-33S**	**7.203**	**5.875**	**10/16/2019**	**4.78**	**Yes**	**54**	**0**	**No**	**0.000...**	Param 1 of 2
pH (S.U)	**BRGWC-34S**	**7.203**	**5.875**	**10/16/2019**	**5.85**	**Yes**	**54**	**0**	**No**	**0.000...**	Param 1 of 2
pH (S.U)	BRGWC-35S	7.203	5.875	10/16/2019	6.03	No	54	0	No	0.000...	Param 1 of 2
pH (S.U)	**BRGWC-36S**	**7.203**	**5.875**	**10/17/2019**	**5.61**	**Yes**	**54**	**0**	**No**	**0.000...**	Param 1 of 2
pH (S.U)	**BRGWC-38S**	**7.203**	**5.875**	**10/16/2019**	**4.21**	**Yes**	**54**	**0**	**No**	**0.000...**	Param 1 of 2
pH (S.U)	**BRGWC-37S**	**7.203**	**5.875**	**10/16/2019**	**5.81**	**Yes**	**54**	**0**	**No**	**0.000...**	Param 1 of 2
Sulfate (mg/L)	**BRGWC-17S**	**7.5**	**n/a**	**12/3/2019**	**180**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Sulfate (mg/L)	**BRGWC-33S**	**7.5**	**n/a**	**10/16/2019**	**226**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Sulfate (mg/L)	**BRGWC-34S**	**7.5**	**n/a**	**10/16/2019**	**325**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Sulfate (mg/L)	**BRGWC-35S**	**7.5**	**n/a**	**10/16/2019**	**277**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Sulfate (mg/L)	**BRGWC-36S**	**7.5**	**n/a**	**12/3/2019**	**256**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Sulfate (mg/L)	**BRGWC-38S**	**7.5**	**n/a**	**10/16/2019**	**432**	**Yes**	**50**	**12**	**n/a**	**0.000...**	NP (normality) 1 of 2
Sulfate (mg/L)	BRGWC-37S	7.5	n/a	10/16/2019	0.29	No	50	12	n/a	0.000...	NP (normality) 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-17S**	**242.8**	**n/a**	**12/3/2019**	**378**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-33S**	**242.8**	**n/a**	**10/16/2019**	**281**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-34S**	**242.8**	**n/a**	**10/16/2019**	**473**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-35S**	**242.8**	**n/a**	**10/16/2019**	**481**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-36S**	**242.8**	**n/a**	**12/3/2019**	**498**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2
Total Dissolved Solids (mg/L)	**BRGWC-38S**	**242.8**	**n/a**	**10/16/2019**	**630**	**Yes**	**50**	**10**	**sqrt(x)**	**0.000...**	Param 1 of 2
Total Dissolved Solids (mg/L)	BRGWC-37S	242.8	n/a	10/16/2019	49	No	50	10	sqrt(x)	0.000...	Param 1 of 2

Hollow symbols indicate censored values.

Exceeds Limit: BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

Prediction Limit

Interwell Non-parametric



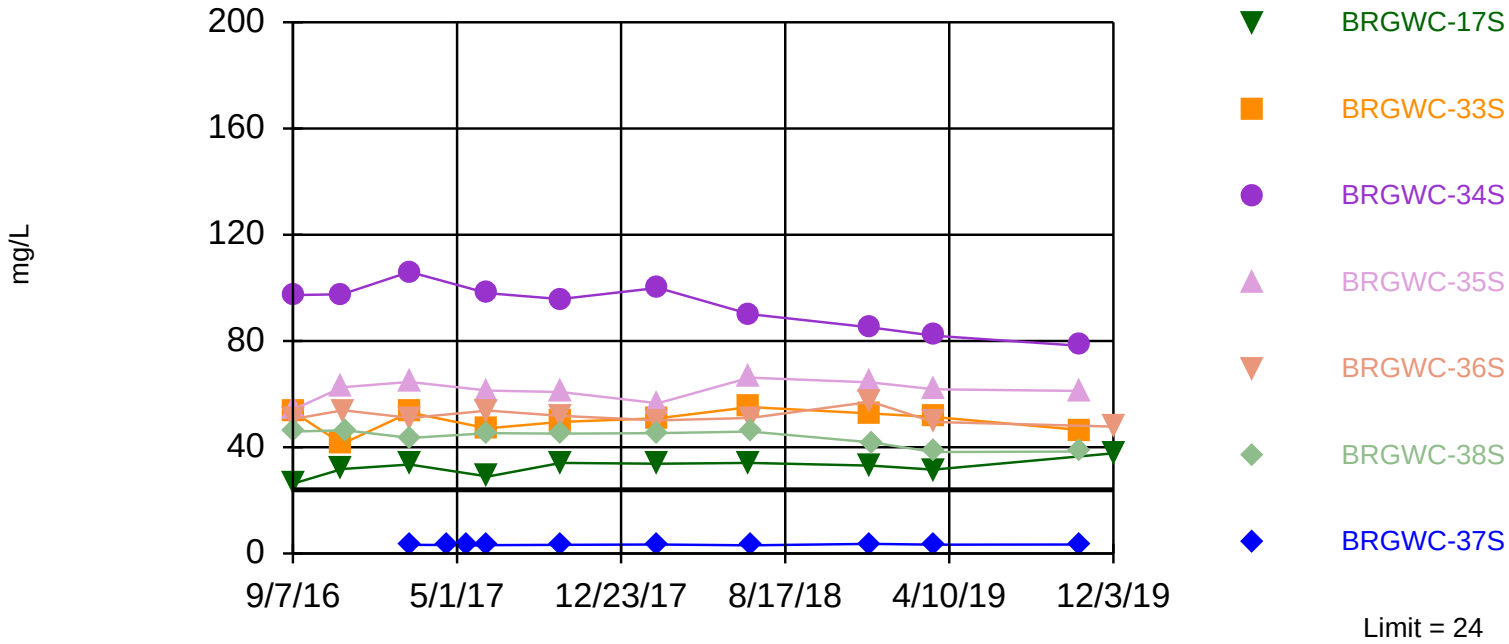
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 50 background values. 64% NDs. Annual per-constituent alpha = 0.0131. Individual comparison alpha = 0.0007324 (1 of 2). Comparing 7 points to limit. Assumes 2 future values. Seasonality was not detected with 95% confidence.

Constituent: Boron Analysis Run 3/26/2020 8:01 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

Exceeds Limit: BRGWC-17S, BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

Prediction Limit

Interwell Non-parametric



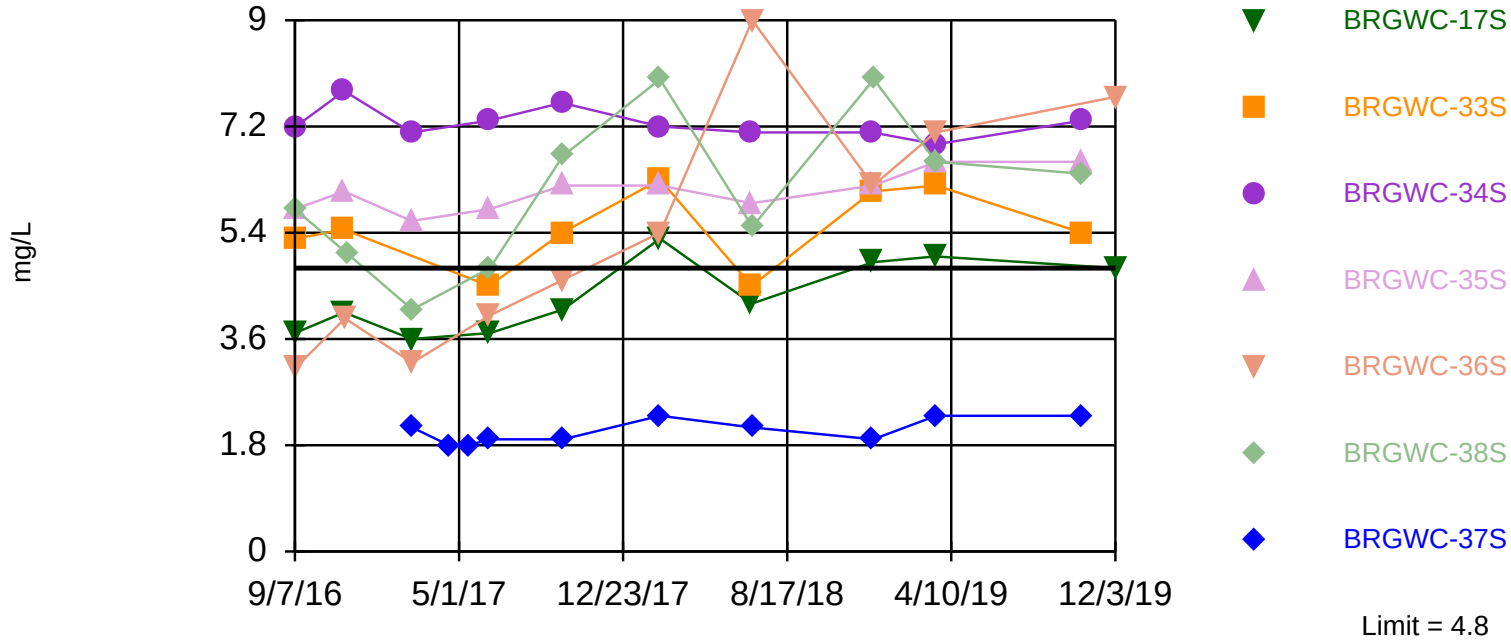
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 50 background values. 6% NDs. Annual per-constituent alpha = 0.0131. Individual comparison alpha = 0.0007324 (1 of 2). Comparing 7 points to limit. Assumes 2 future values. Seasonality was not detected with 95% confidence.

Constituent: Calcium Analysis Run 3/26/2020 8:01 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

Exceeds Limit: BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 50 background values. Annual per-constituent alpha = 0.0131. Individual comparison alpha = 0.0007324 (1 of 2). Comparing 7 points to limit. Assumes 2 future values. Seasonality was not detected with 95% confidence.

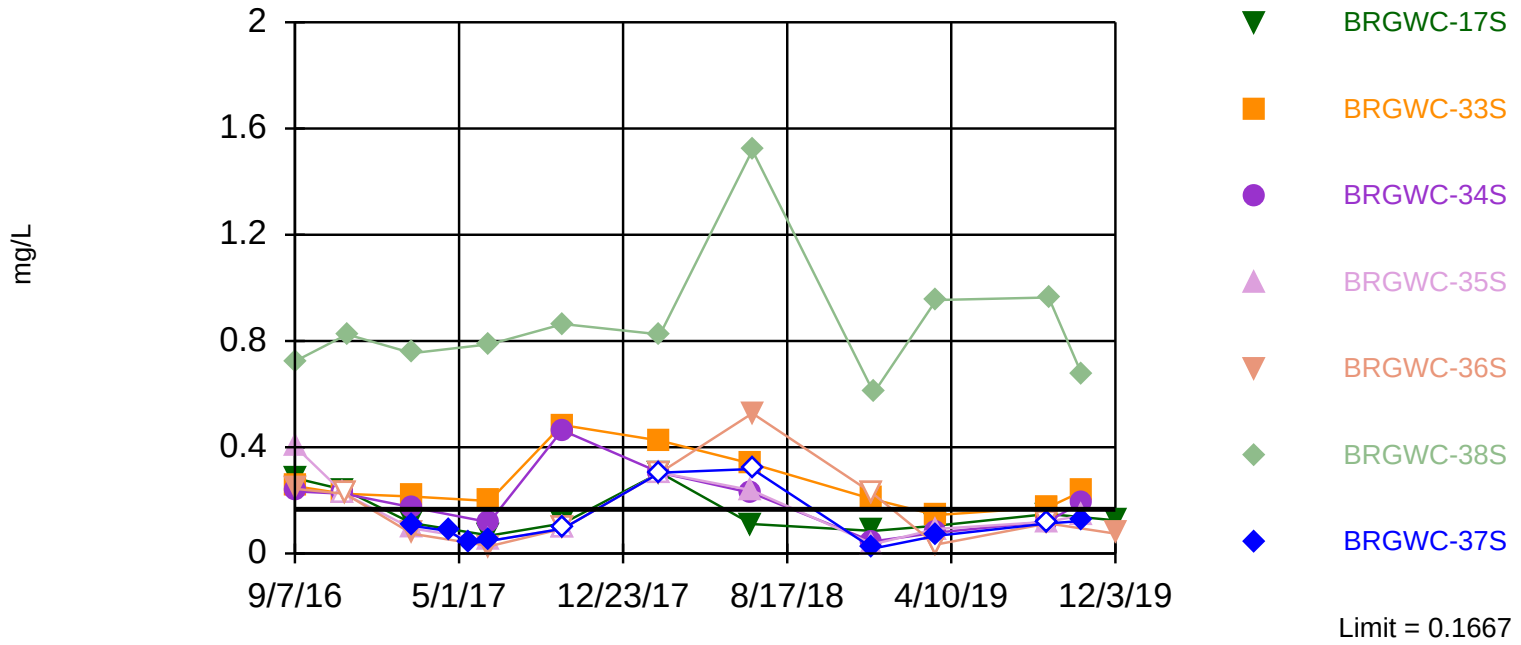
Constituent: Chloride Analysis Run 3/26/2020 8:01 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

Exceeds Limit: BRGWC-38S

Prediction Limit

Interwell Parametric



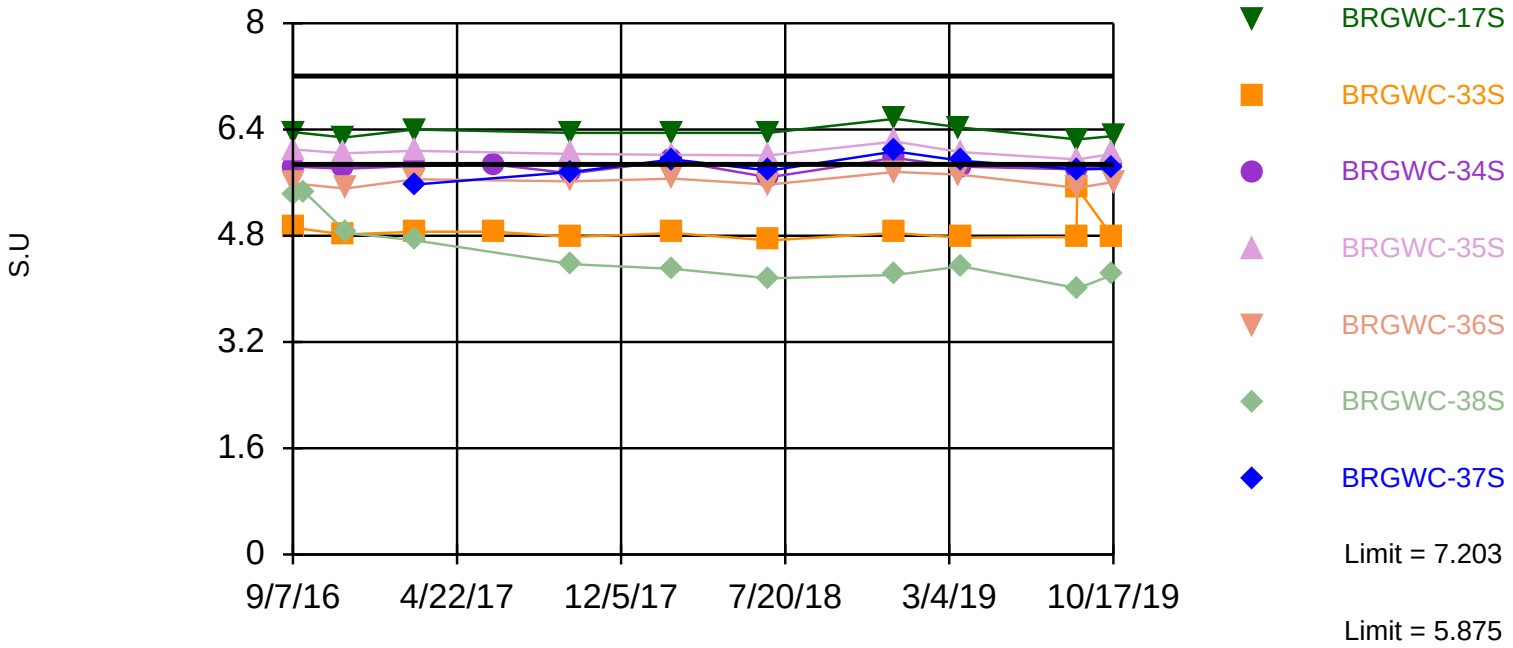
Background Data Summary (based on square root transformation) (after Aitchison`s Adjustment): Mean=0.1302, Std. Dev.=0.1394, n=55, 49.09% NDs. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.943, critical = 0.94. Kappa = 1.995 (c=7, w=9, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0008358. Comparing 7 points to limit. Assumes 2 future values.

Constituent: Fluoride Analysis Run 3/26/2020 8:01 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

Exceeds Limits: BRGWC-33S, BRGWC-34S, BRGWC-36S, BRGWC-38S, BRGWC-37S

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=6.539, Std. Dev.=0.3324, n=54. Seasonality was not detected with 95% confidence. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9722, critical = 0.939. Kappa = 1.997 (c=7, w=9, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0004179. Comparing 7 points to limit. Assumes 2 future values.

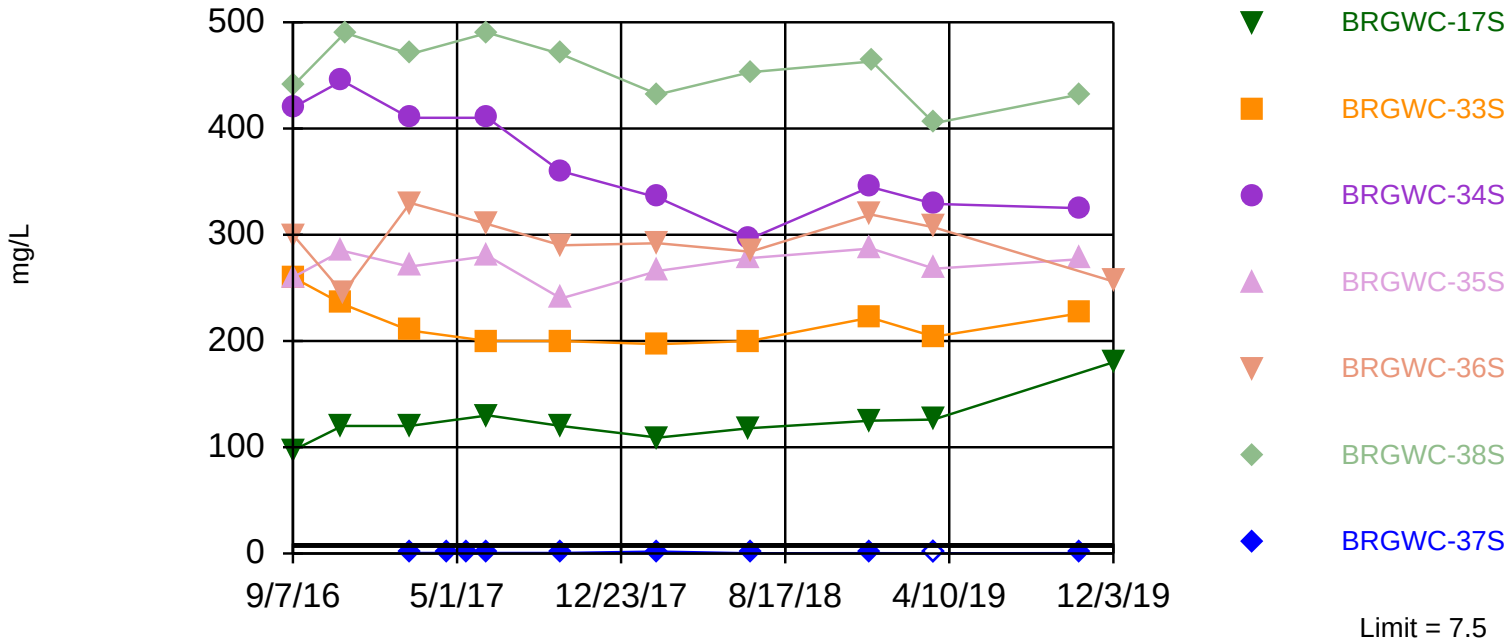
Constituent: pH Analysis Run 3/26/2020 8:01 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

Exceeds Limit: BRGWC-17S, BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 50 background values. 12% NDs. Annual per-constituent alpha = 0.0131. Individual comparison alpha = 0.0007324 (1 of 2). Comparing 7 points to limit. Assumes 2 future values. Seasonality was not detected with 95% confidence.

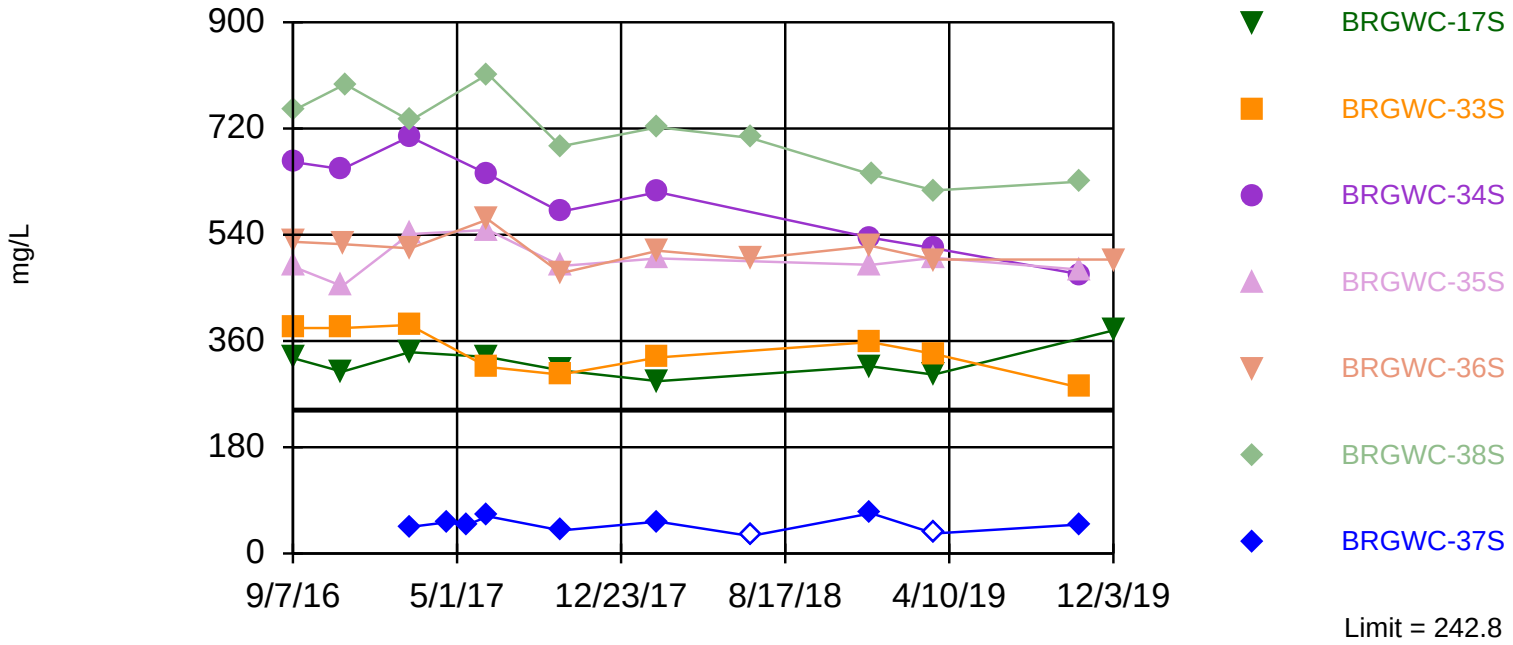
Constituent: Sulfate Analysis Run 3/26/2020 8:01 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

Exceeds Limit: BRGWC-17S, BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

Prediction Limit

Interwell Parametric

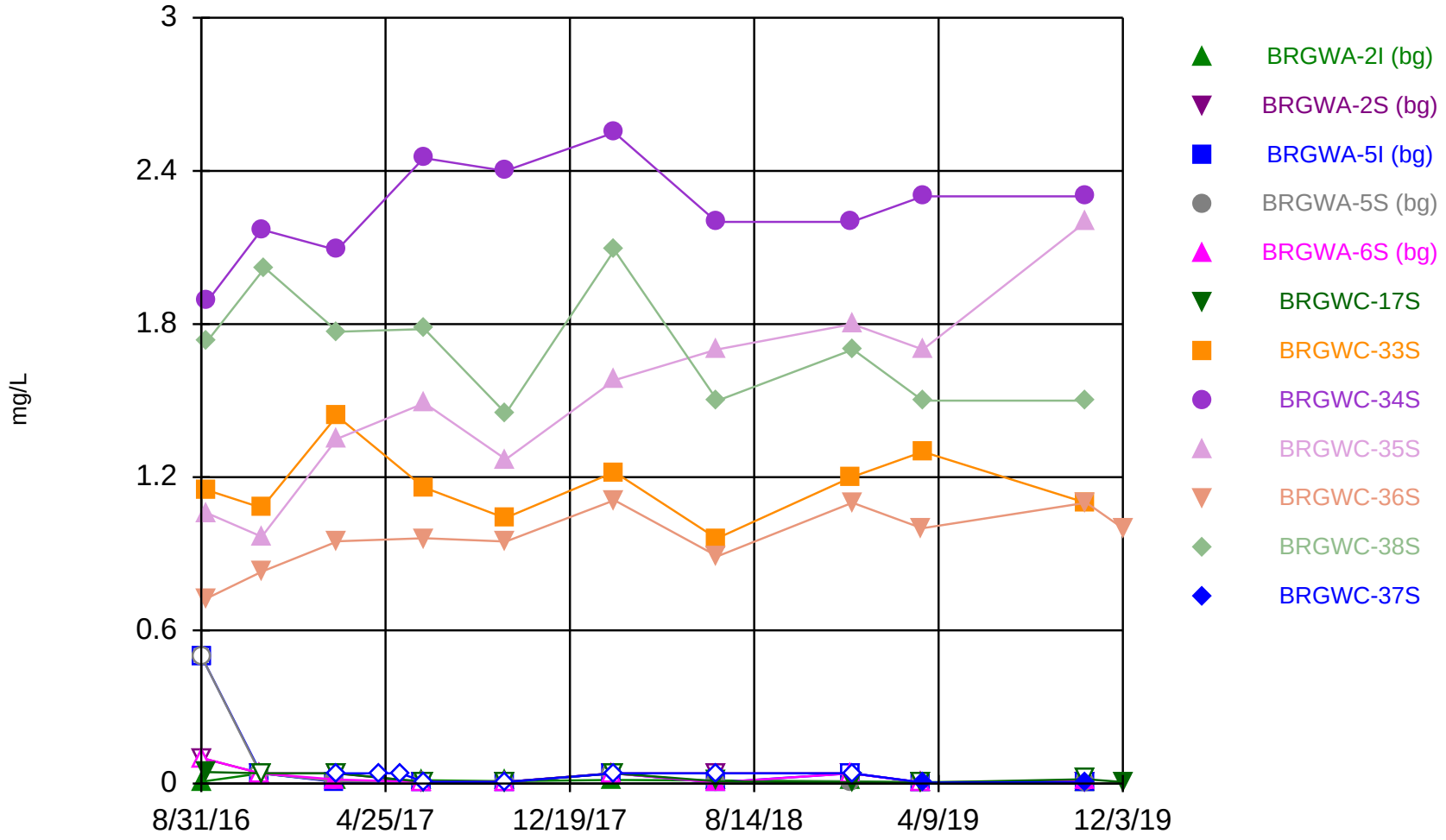


Background Data Summary (based on square root transformation): Mean=10.1, Std. Dev.=2.731, n=50, 10% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9359, critical = 0.935. Kappa = 2.007 (c=7, w=9, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0008358. Comparing 7 points to limit. Assumes 2 future values.

Constituent: Total Dissolved Solids Analysis Run 3/26/2020 8:01 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

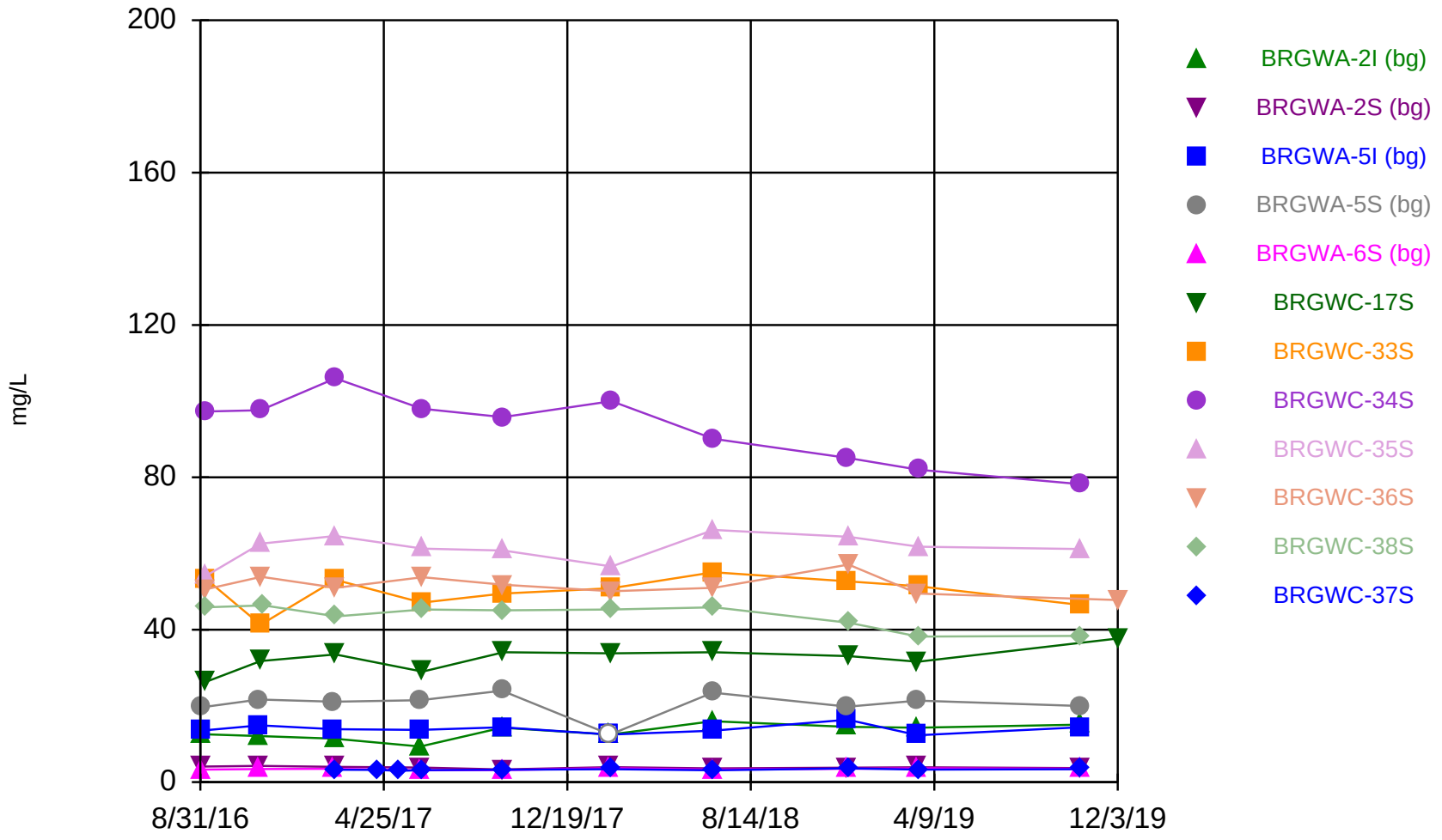
Time Series



Constituent: Boron Analysis Run 3/26/2020 7:19 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

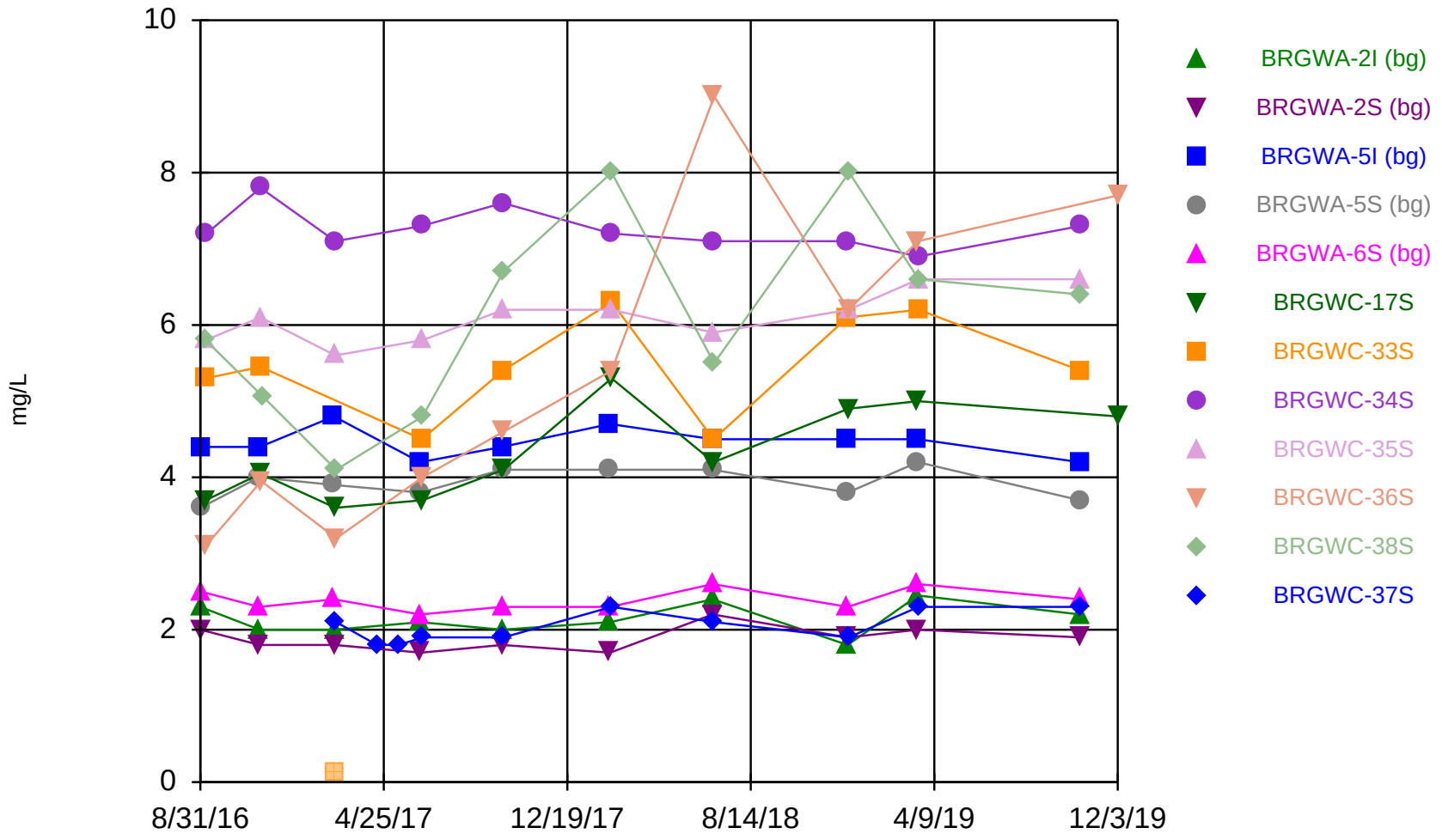
Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Calcium Analysis Run 3/26/2020 7:19 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

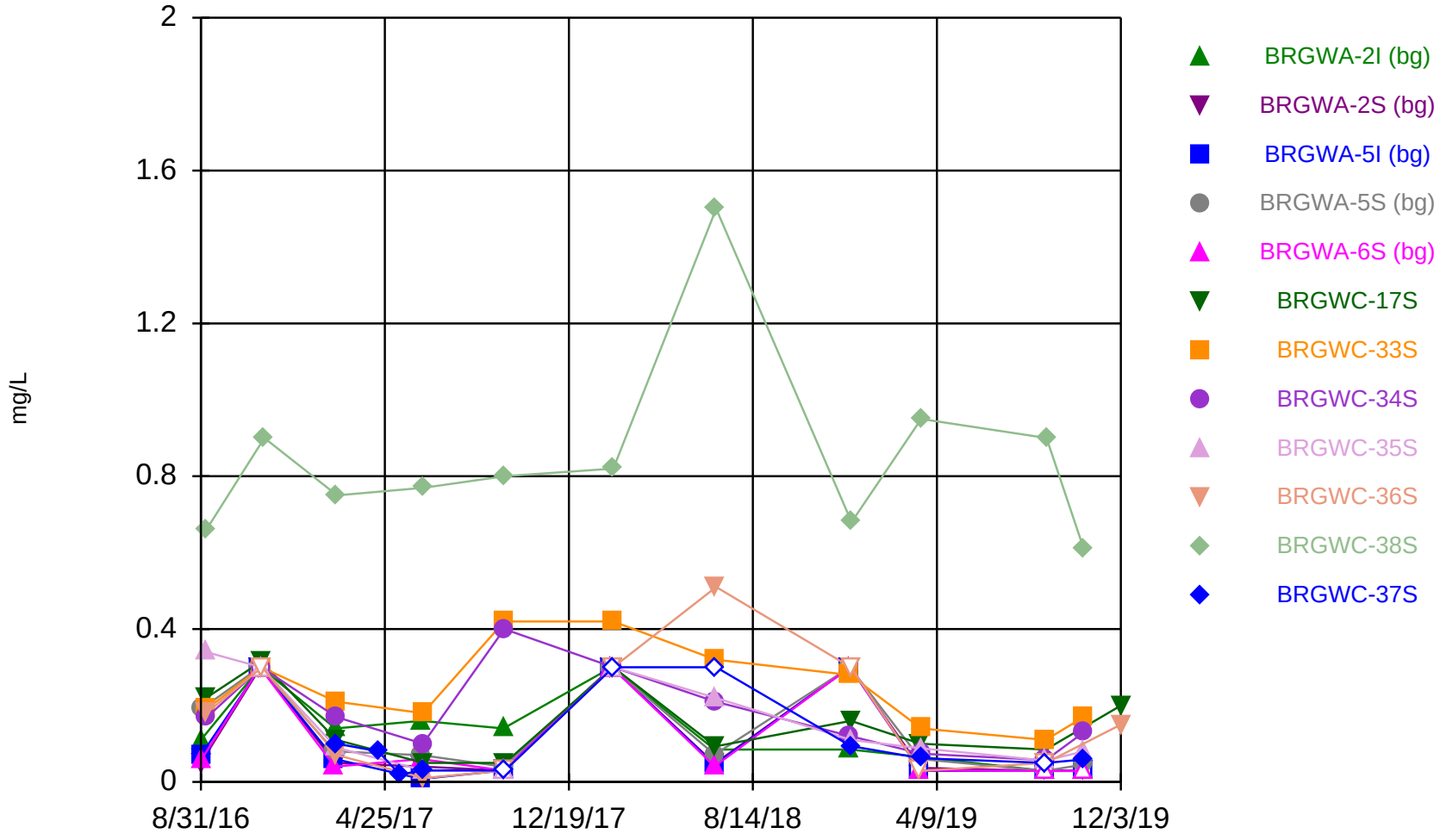
Time Series



Constituent: Chloride Analysis Run 3/26/2020 7:19 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

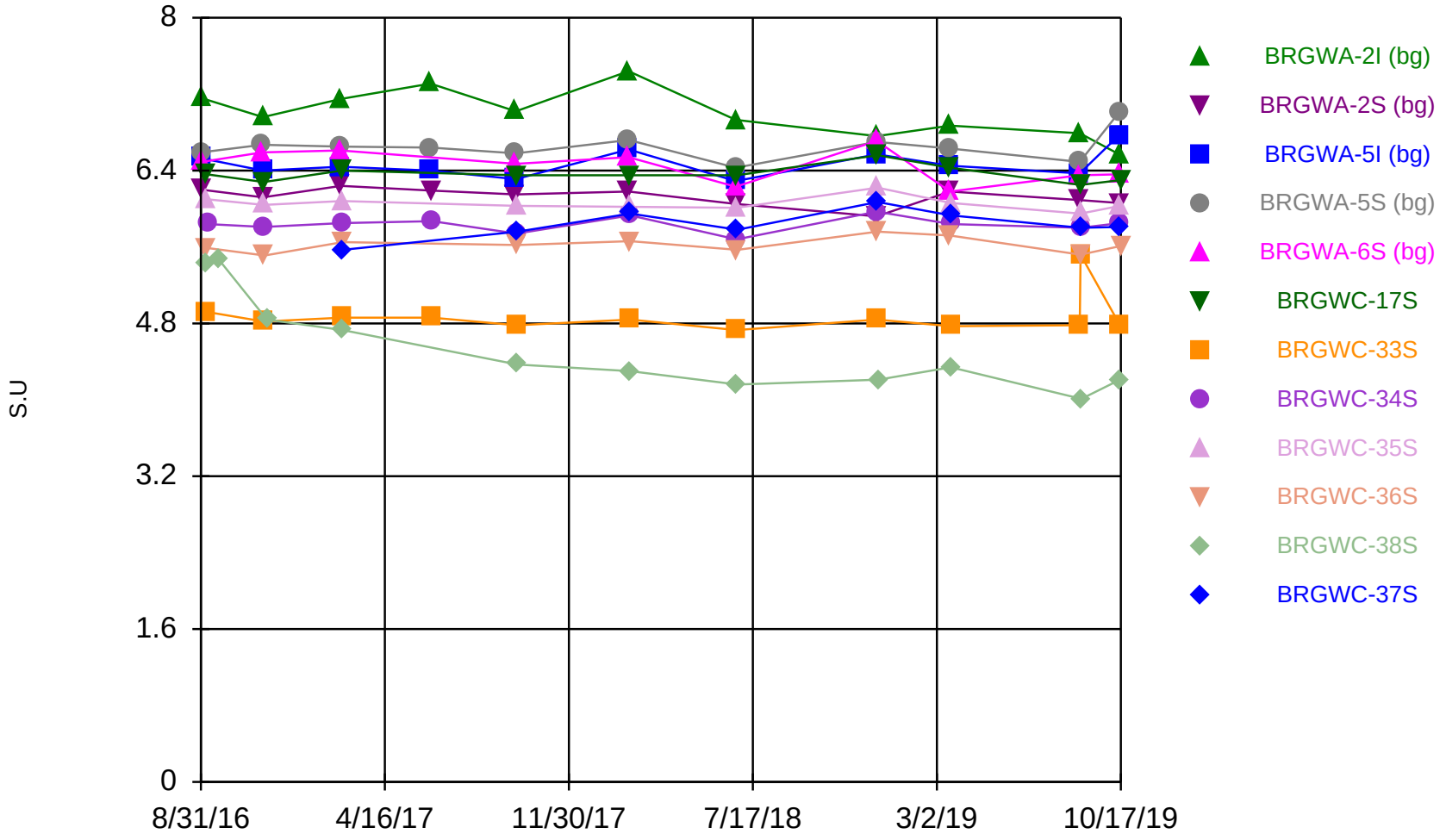
Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Fluoride Analysis Run 3/26/2020 7:19 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

Time Series

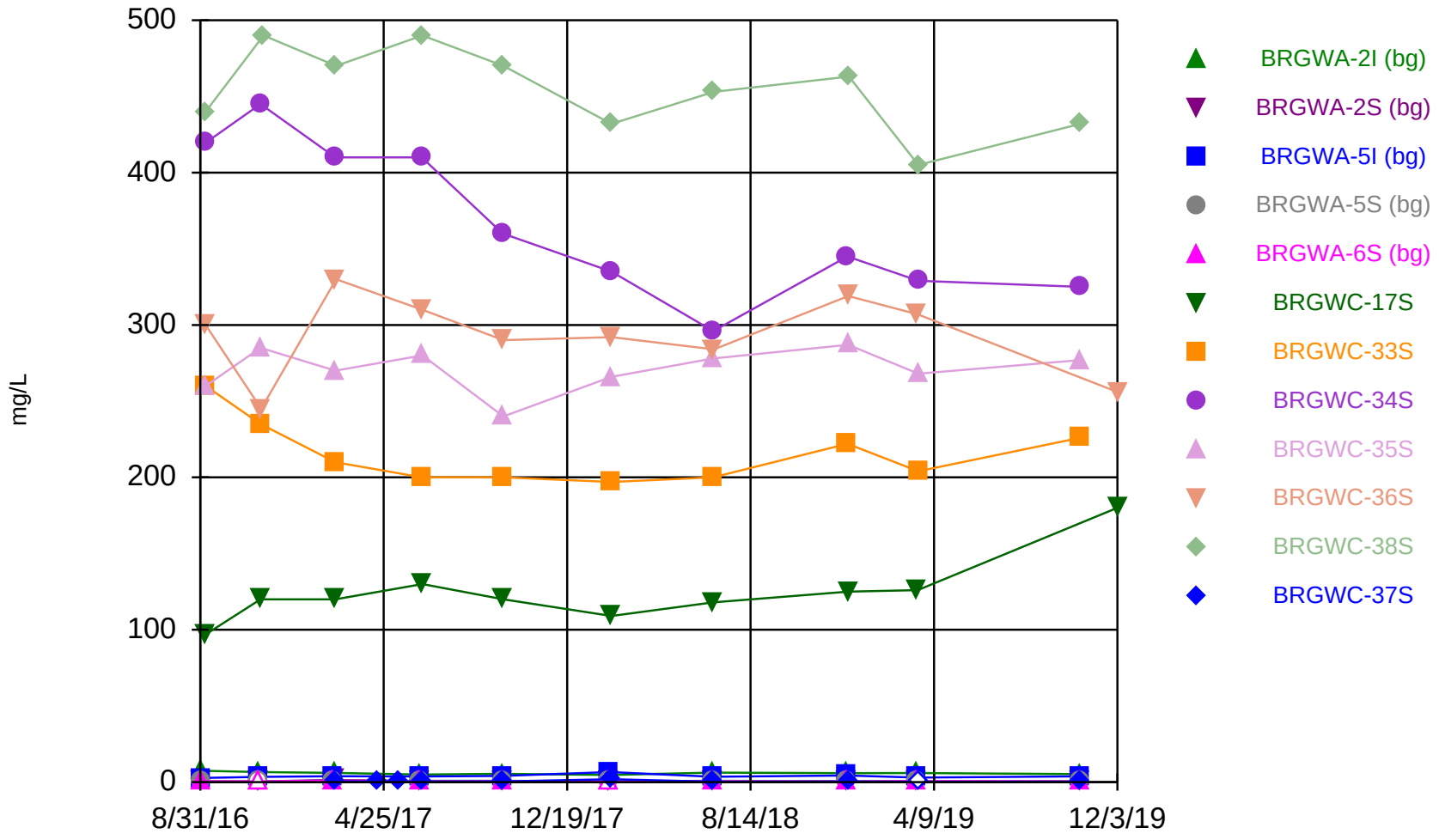


Constituent: pH Analysis Run 3/26/2020 7:19 PM View: Pond E Appendix III

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

Time Series

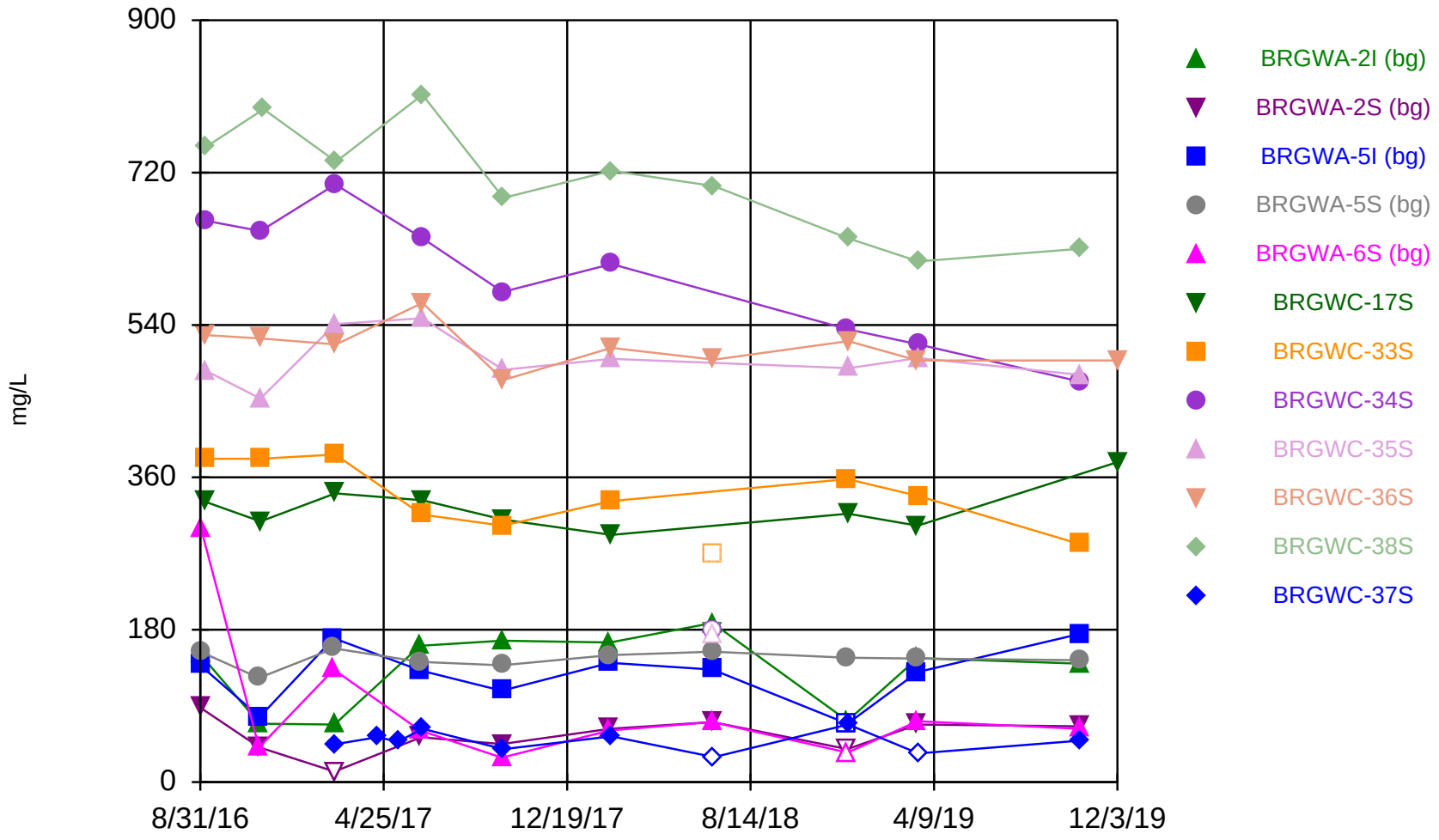


Constituent: Sulfate Analysis Run 3/26/2020 7:19 PM View: Pond E Appendix III

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Total Dissolved Solids Analysis Run 3/26/2020 7:19 PM View: Pond E Appendix III Branch Client: Golder Associates Data: Plant Branch Ash Pond

Tolerance Limit

Branch Client: Golder Associates Data: Plant Branch Ash Pond Printed 3/19/2020, 4:19 PM

Constituent	Well	Upper Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	n/a	0.0011	n/a	n/a	n/a	50	92	n/a	0.07694	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.001	n/a	n/a	n/a	50	76	n/a	0.07694	NP Inter(NDs)
Barium (mg/L)	n/a	0.063	n/a	n/a	n/a	50	0	n/a	0.07694	NP Inter(normal...
Beryllium (mg/L)	n/a	0.000037	n/a	n/a	n/a	50	100	n/a	0.07694	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.000055	n/a	n/a	n/a	50	100	n/a	0.07694	NP Inter(NDs)
Chromium (mg/L)	n/a	0.016	n/a	n/a	n/a	50	24	n/a	0.07694	NP Inter(normal...
Cobalt (mg/L)	n/a	0.005	n/a	n/a	n/a	50	52	n/a	0.07694	NP Inter(normal...
Combined Radium 226 + 228 (pCi/L)	n/a	3.164	n/a	n/a	n/a	50	22	No	0.05	Inter
Fluoride (mg/L)	n/a	0.19	n/a	n/a	n/a	55	49.09	n/a	0.05954	NP Inter(normal...
Lead (mg/L)	n/a	0.00036	n/a	n/a	n/a	50	78	n/a	0.07694	NP Inter(NDs)
Lithium (mg/L)	n/a	0.089	n/a	n/a	n/a	50	50	n/a	0.07694	NP Inter(normal...
Mercury (mg/L)	n/a	0.00021	n/a	n/a	n/a	45	88.89	n/a	0.09944	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.008	n/a	n/a	n/a	50	72	n/a	0.07694	NP Inter(normal...
Selenium (mg/L)	n/a	0.00065	n/a	n/a	n/a	50	100	n/a	0.07694	NP Inter(NDs)
Thallium (mg/L)	n/a	0.000026	n/a	n/a	n/a	50	100	n/a	0.07694	NP Inter(NDs)

Confidence Interval

Branch Client: Golder Associates Data: Plant Branch Ash Pond Printed 3/19/2020, 4:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Beryllium (mg/L)	**BRGWC-38S**	**0.01012**	**0.008477**	**0.004**	**Yes**	**11**	**0**	**No**	**0.01**	**Param.**
Cobalt (mg/L)	**BRGWC-33S**	**0.05641**	**0.04655**	**0.0135**	**Yes**	**11**	**0**	**No**	**0.01**	**Param.**
Cobalt (mg/L)	**BRGWC-38S**	**0.2806**	**0.2256**	**0.0135**	**Yes**	**10**	**0**	**No**	**0.01**	**Param.**

Confidence Interval

Branch Client: Golder Associates Data: Plant Branch Ash Pond Printed 3/19/2020, 4:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	BRGWA-2I ...	0.003	0.00047	0.006	No	10	80	No	0.011	NP (NDs)
Antimony (mg/L)	BRGWA-2S ...	0.003	0.00027	0.006	No	10	90	No	0.011	NP (NDs)
Antimony (mg/L)	BRGWA-5I ...	0.003	0.00027	0.006	No	10	100	No	0.011	NP (NDs)
Antimony (mg/L)	BRGWA-5S ...	0.003	0.00027	0.006	No	10	90	No	0.011	NP (NDs)
Antimony (mg/L)	BRGWA-6S ...	0.003	0.00027	0.006	No	10	100	No	0.011	NP (NDs)
Antimony (mg/L)	BRGWC-17S	0.003	0.00027	0.006	No	10	90	No	0.011	NP (NDs)
Antimony (mg/L)	BRGWC-33S	0.003	0.00027	0.006	No	11	100	No	0.006	NP (NDs)
Antimony (mg/L)	BRGWC-34S	0.003	0.00027	0.006	No	10	100	No	0.011	NP (NDs)
Antimony (mg/L)	BRGWC-35S	0.003	0.00027	0.006	No	10	100	No	0.011	NP (NDs)
Antimony (mg/L)	BRGWC-36S	0.003	0.00049	0.006	No	10	70	No	0.011	NP (normality)
Antimony (mg/L)	BRGWC-38S	0.003	0.00027	0.006	No	10	90	No	0.011	NP (NDs)
Antimony (mg/L)	BRGWC-37S	0.003	0.00027	0.006	No	10	80	No	0.011	NP (NDs)
Arsenic (mg/L)	BRGWA-2I ...	0.005	0.00062	0.01	No	10	60	No	0.011	NP (normality)
Arsenic (mg/L)	BRGWA-2S ...	0.005	0.0005	0.01	No	10	90	No	0.011	NP (NDs)
Arsenic (mg/L)	BRGWA-5I ...	0.005	0.00058	0.01	No	10	70	No	0.011	NP (normality)
Arsenic (mg/L)	BRGWA-5S ...	0.005	0.00039	0.01	No	10	70	No	0.011	NP (normality)
Arsenic (mg/L)	BRGWA-6S ...	0.005	0.00035	0.01	No	10	90	No	0.011	NP (NDs)
Arsenic (mg/L)	BRGWC-17S	0.005	0.00058	0.01	No	10	70	No	0.011	NP (normality)
Arsenic (mg/L)	BRGWC-33S	0.005	0.00035	0.01	No	11	81.82	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-34S	0.005	0.00035	0.01	No	10	100	No	0.011	NP (NDs)
Arsenic (mg/L)	BRGWC-35S	0.005	0.00044	0.01	No	10	70	No	0.011	NP (normality)
Arsenic (mg/L)	BRGWC-36S	0.005	0.0005	0.01	No	10	70	No	0.011	NP (normality)
Arsenic (mg/L)	BRGWC-38S	0.00509	0.001637	0.01	No	10	20	No	0.01	Param.
Arsenic (mg/L)	BRGWC-37S	0.005	0.0005	0.01	No	10	80	No	0.011	NP (NDs)
Barium (mg/L)	BRGWA-2I ...	0.01739	0.009514	2	No	10	0	No	0.01	Param.
Barium (mg/L)	BRGWA-2S ...	0.01001	0.009313	2	No	10	0	No	0.01	Param.
Barium (mg/L)	BRGWA-5I ...	0.04109	0.02879	2	No	10	0	x^(1/3)	0.01	Param.
Barium (mg/L)	BRGWA-5S ...	0.05903	0.04929	2	No	10	0	No	0.01	Param.
Barium (mg/L)	BRGWA-6S ...	0.0141	0.01294	2	No	10	0	No	0.01	Param.
Barium (mg/L)	BRGWC-17S	0.04212	0.03792	2	No	10	0	No	0.01	Param.
Barium (mg/L)	BRGWC-33S	0.02336	0.02033	2	No	11	0	No	0.01	Param.
Barium (mg/L)	BRGWC-34S	0.03917	0.02711	2	No	10	0	No	0.01	Param.
Barium (mg/L)	BRGWC-35S	0.07331	0.03857	2	No	10	0	sqrt(x)	0.01	Param.
Barium (mg/L)	BRGWC-36S	0.05261	0.03241	2	No	10	0	No	0.01	Param.
Barium (mg/L)	BRGWC-38S	0.03732	0.01546	2	No	10	10	No	0.01	Param.
Barium (mg/L)	BRGWC-37S	0.02478	0.02214	2	No	10	0	No	0.01	Param.
Beryllium (mg/L)	BRGWA-2I ...	0.003	0.000074	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	BRGWA-2S ...	0.003	0.000074	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	BRGWA-5I ...	0.003	0.000074	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	BRGWA-5S ...	0.003	0.000074	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	BRGWA-6S ...	0.003	0.000074	0.004	No	10	100	No	0.011	NP (NDs)
Beryllium (mg/L)	BRGWC-17S	0.003	0.000074	0.004	No	11	100	No	0.006	NP (NDs)
Beryllium (mg/L)	BRGWC-33S	0.003	0.0018	0.004	No	11	18.18	No	0.006	NP (normality)
Beryllium (mg/L)	BRGWC-34S	0.003	0.0001	0.004	No	10	30	No	0.011	NP (normality)
Beryllium (mg/L)	BRGWC-35S	0.003	0.0001	0.004	No	10	30	No	0.011	NP (normality)
Beryllium (mg/L)	BRGWC-36S	0.003	0.00009	0.004	No	11	45.45	No	0.006	NP (normality)
Beryllium (mg/L)	**BRGWC-38S**	**0.01012**	**0.008477**	**0.004**	**Yes**	**11**	**0**	**No**	**0.01**	**Param.**
Beryllium (mg/L)	BRGWC-37S	0.003	0.000074	0.004	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	BRGWA-2I ...	0.001	0.0001	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	BRGWA-2S ...	0.001	0.0001	0.005	No	10	100	No	0.011	NP (NDs)

Confidence Interval

Branch Client: Golder Associates Data: Plant Branch Ash Pond Printed 3/19/2020, 4:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Cadmium (mg/L)	BRGWA-5I ...	0.001	0.0001	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	BRGWA-5S ...	0.001	0.0001	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	BRGWA-6S ...	0.001	0.0001	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	BRGWC-17S	0.001	0.0001	0.005	No	11	100	No	0.006	NP (NDs)
Cadmium (mg/L)	BRGWC-33S	0.001	0.00032	0.005	No	11	18.18	No	0.006	NP (normality)
Cadmium (mg/L)	BRGWC-34S	0.001035	0.000245	0.005	No	10	30	No	0.01	Param.
Cadmium (mg/L)	BRGWC-35S	0.001	0.0001	0.005	No	10	100	No	0.011	NP (NDs)
Cadmium (mg/L)	BRGWC-36S	0.001	0.0001	0.005	No	11	81.82	No	0.006	NP (NDs)
Cadmium (mg/L)	BRGWC-38S	0.0009006	0.0004921	0.005	No	10	20	No	0.01	Param.
Cadmium (mg/L)	BRGWC-37S	0.001	0.0001	0.005	No	10	100	No	0.011	NP (NDs)
Chromium (mg/L)	BRGWA-2I ...	0.01	0.0004	0.1	No	10	60	No	0.011	NP (normality)
Chromium (mg/L)	BRGWA-2S ...	0.01096	0.004325	0.1	No	10	20	No	0.01	Param.
Chromium (mg/L)	BRGWA-5I ...	0.01	0.0039	0.1	No	10	20	No	0.011	NP (Cohens/xfrm)
Chromium (mg/L)	BRGWA-5S ...	0.01	0.0037	0.1	No	10	20	No	0.011	NP (Cohens/xfrm)
Chromium (mg/L)	BRGWA-6S ...	0.01535	0.01423	0.1	No	10	0	No	0.01	Param.
Chromium (mg/L)	BRGWC-17S	0.01376	0.009778	0.1	No	10	0	ln(x)	0.01	Param.
Chromium (mg/L)	BRGWC-33S	0.01	0.00039	0.1	No	11	90.91	No	0.006	NP (NDs)
Chromium (mg/L)	BRGWC-34S	0.01	0.00039	0.1	No	10	100	No	0.011	NP (NDs)
Chromium (mg/L)	BRGWC-35S	0.009271	0.003641	0.1	No	10	20	No	0.01	Param.
Chromium (mg/L)	BRGWC-36S	0.008944	0.007436	0.1	No	10	10	No	0.01	Param.
Chromium (mg/L)	BRGWC-38S	0.005884	0.002495	0.1	No	10	10	ln(x)	0.01	Param.
Chromium (mg/L)	BRGWC-37S	0.01	0.0013	0.1	No	10	30	No	0.011	NP (normality)
Cobalt (mg/L)	BRGWA-2I ...	0.01	0.0003	0.0135	No	10	90	No	0.011	NP (NDs)
Cobalt (mg/L)	BRGWA-2S ...	0.01	0.0012	0.0135	No	10	20	No	0.011	NP (Cohens/xfrm)
Cobalt (mg/L)	BRGWA-5I ...	0.01	0.00068	0.0135	No	10	20	No	0.011	NP (normality)
Cobalt (mg/L)	BRGWA-5S ...	0.01	0.00042	0.0135	No	10	50	No	0.011	NP (normality)
Cobalt (mg/L)	BRGWA-6S ...	0.01	0.0003	0.0135	No	10	80	No	0.011	NP (NDs)
Cobalt (mg/L)	BRGWC-17S	0.01	0.0003	0.0135	No	11	100	No	0.006	NP (NDs)
Cobalt (mg/L)	**BRGWC-33S**	**0.05641**	**0.04655**	**0.0135**	**Yes**	**11**	**0**	**No**	**0.01**	**Param.**
Cobalt (mg/L)	BRGWC-34S	0.01	0.0029	0.0135	No	10	20	No	0.011	NP (normality)
Cobalt (mg/L)	BRGWC-35S	0.01	0.0003	0.0135	No	10	60	No	0.011	NP (normality)
Cobalt (mg/L)	BRGWC-36S	0.01	0.0003	0.0135	No	11	100	No	0.006	NP (NDs)
Cobalt (mg/L)	**BRGWC-38S**	**0.2806**	**0.2256**	**0.0135**	**Yes**	**10**	**0**	**No**	**0.01**	**Param.**
Cobalt (mg/L)	BRGWC-37S	0.01	0.0003	0.0135	No	10	100	No	0.011	NP (NDs)
Combined Radium 226 + 228 (pCi/L)	BRGWA-2I ...	1.799	0.3274	5	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWA-2S ...	2.129	0.5051	5	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWA-5I ...	1.28	0.254	5	No	10	20	No	0.011	NP (Cohens/xfrm)
Combined Radium 226 + 228 (pCi/L)	BRGWA-5S ...	1.78	0.394	5	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWA-6S ...	2.412	0.2341	5	No	10	30	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-17S	1.895	0.2065	5	No	10	30	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-33S	1.476	0.7477	5	No	10	10	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-34S	1.494	0.7693	5	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-35S	1.658	0.3815	5	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-36S	1.639	0.5238	5	No	10	20	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-38S	3.379	1.776	5	No	10	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-37S	1.63	0.2081	5	No	10	30	No	0.01	Param.
Fluoride (mg/L)	BRGWA-2I ...	0.3299	0.09423	4	No	11	36.36	No	0.01	Param.
Fluoride (mg/L)	BRGWA-2S ...	0.3	0.029	4	No	11	54.55	No	0.006	NP (normality)
Fluoride (mg/L)	BRGWA-5I ...	0.3	0.029	4	No	11	63.64	No	0.006	NP (Cohens/xfrm)
Fluoride (mg/L)	BRGWA-5S ...	0.3	0.04	4	No	11	36.36	No	0.006	NP (Cohens/xfrm)

Confidence Interval

Branch Client: Golder Associates Data: Plant Branch Ash Pond Printed 3/19/2020, 4:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Fluoride (mg/L)	BRGWA-6S ...	0.3	0.029	4	No	11	54.55	No	0.006	NP (normality)
Fluoride (mg/L)	BRGWC-17S	0.2315	0.07452	4	No	11	9.091	No	0.01	Param.
Fluoride (mg/L)	BRGWC-33S	0.3235	0.1515	4	No	12	8.333	No	0.01	Param.
Fluoride (mg/L)	BRGWC-34S	0.3032	0.09229	4	No	11	18.18	No	0.01	Param.
Fluoride (mg/L)	BRGWC-35S	0.3	0.03	4	No	11	27.27	No	0.006	NP (Cohens/xfrm)
Fluoride (mg/L)	BRGWC-36S	0.3087	0.04204	4	No	11	54.55	No	0.01	Param.
Fluoride (mg/L)	BRGWC-38S	1.009	0.6739	4	No	11	0	ln(x)	0.01	Param.
Fluoride (mg/L)	BRGWC-37S	0.3	0.03	4	No	11	36.36	No	0.006	NP (Cohens/xfrm)
Lead (mg/L)	BRGWA-2I ...	0.005	0.000046	0.005	No	10	80	No	0.011	NP (NDs)
Lead (mg/L)	BRGWA-2S ...	0.005	0.000058	0.005	No	10	80	No	0.011	NP (NDs)
Lead (mg/L)	BRGWA-5I ...	0.005	0.000046	0.005	No	10	100	No	0.011	NP (NDs)
Lead (mg/L)	BRGWA-5S ...	0.005	0.0001	0.005	No	10	50	No	0.011	NP (normality)
Lead (mg/L)	BRGWA-6S ...	0.005	0.000046	0.005	No	10	80	No	0.011	NP (NDs)
Lead (mg/L)	BRGWC-17S	0.005	0.000046	0.005	No	10	100	No	0.011	NP (NDs)
Lead (mg/L)	BRGWC-33S	0.005	0.000088	0.005	No	11	36.36	No	0.006	NP (normality)
Lead (mg/L)	BRGWC-34S	0.005	0.000046	0.005	No	10	80	No	0.011	NP (NDs)
Lead (mg/L)	BRGWC-35S	0.005	0.000046	0.005	No	10	80	No	0.011	NP (NDs)
Lead (mg/L)	BRGWC-36S	0.005	0.000046	0.005	No	10	100	No	0.011	NP (NDs)
Lead (mg/L)	BRGWC-38S	0.0005	0.00035	0.005	No	10	10	No	0.011	NP (normality)
Lead (mg/L)	BRGWC-37S	0.005	0.000046	0.005	No	10	80	No	0.011	NP (NDs)
Lithium (mg/L)	BRGWA-2I ...	0.0608	0.0201	0.03	No	10	10	No	0.01	Param.
Lithium (mg/L)	BRGWA-2S ...	0.05	0.00078	0.03	No	10	100	No	0.011	NP (NDs)
Lithium (mg/L)	BRGWA-5I ...	0.05	0.0019	0.03	No	10	30	No	0.011	NP (normality)
Lithium (mg/L)	BRGWA-5S ...	0.05	0.00078	0.03	No	10	100	No	0.011	NP (NDs)
Lithium (mg/L)	BRGWA-6S ...	0.003	0.0024	0.03	No	10	10	No	0.011	NP (normality)
Lithium (mg/L)	BRGWC-17S	0.05	0.001	0.03	No	10	80	No	0.011	NP (NDs)
Lithium (mg/L)	BRGWC-33S	0.011	0.0097	0.03	No	11	9.091	No	0.006	NP (normality)
Lithium (mg/L)	BRGWC-34S	0.05	0.0009	0.03	No	10	80	No	0.011	NP (NDs)
Lithium (mg/L)	BRGWC-35S	0.0023	0.0021	0.03	No	10	10	No	0.011	NP (normality)
Lithium (mg/L)	BRGWC-36S	0.05	0.0024	0.03	No	10	20	No	0.011	NP (normality)
Lithium (mg/L)	BRGWC-38S	0.0254	0.02	0.03	No	10	10	No	0.011	NP (normality)
Lithium (mg/L)	BRGWC-37S	0.05	0.00078	0.03	No	10	100	No	0.011	NP (NDs)
Mercury (mg/L)	BRGWA-2I ...	0.0005	0.000036	0.002	No	9	77.78	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWA-2S ...	0.0005	0.000036	0.002	No	9	88.89	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWA-5I ...	0.0005	0.000036	0.002	No	9	100	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWA-5S ...	0.0005	0.000036	0.002	No	9	77.78	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWA-6S ...	0.0005	0.000036	0.002	No	9	100	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-17S	0.0005	0.000036	0.002	No	9	88.89	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-33S	0.0005	0.00007	0.002	No	10	80	No	0.011	NP (NDs)
Mercury (mg/L)	BRGWC-34S	0.0005	0.00004	0.002	No	9	77.78	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-35S	0.0005	0.000036	0.002	No	9	88.89	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-36S	0.0005	0.000036	0.002	No	9	88.89	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-38S	0.0005	0.00007	0.002	No	9	22.22	No	0.002	NP (Cohens/xfrm)
Mercury (mg/L)	BRGWC-37S	0.0005	0.000036	0.002	No	9	88.89	No	0.002	NP (NDs)
Molybdenum (mg/L)	BRGWA-2I ...	0.01	0.00095	0.01	No	10	50	No	0.011	NP (normality)
Molybdenum (mg/L)	BRGWA-2S ...	0.01	0.00095	0.01	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	BRGWA-5I ...	0.007236	0.003364	0.01	No	10	10	No	0.01	Param.
Molybdenum (mg/L)	BRGWA-5S ...	0.01	0.00095	0.01	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	BRGWA-6S ...	0.01	0.00095	0.01	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	BRGWC-17S	0.01	0.00095	0.01	No	10	100	No	0.011	NP (NDs)

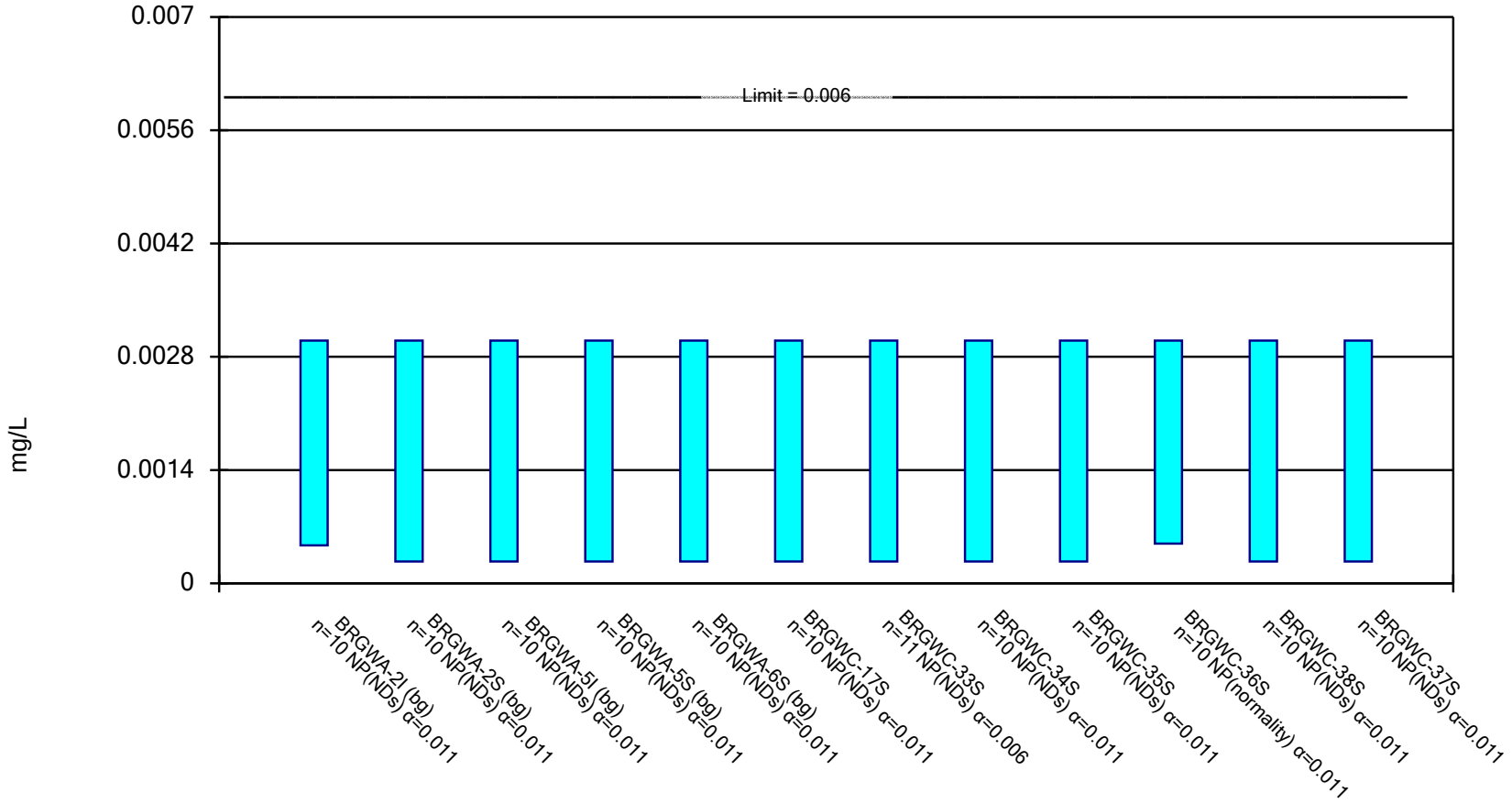
Confidence Interval

Branch Client: Golder Associates Data: Plant Branch Ash Pond Printed 3/19/2020, 4:03 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Molybdenum (mg/L)	BRGWC-33S	0.01	0.00095	0.01	No	11	100	No	0.006	NP (NDs)
Molybdenum (mg/L)	BRGWC-34S	0.01	0.00095	0.01	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	BRGWC-35S	0.01	0.00095	0.01	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	BRGWC-36S	0.01	0.00095	0.01	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	BRGWC-38S	0.01	0.00095	0.01	No	10	100	No	0.011	NP (NDs)
Molybdenum (mg/L)	BRGWC-37S	0.01	0.00095	0.01	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	BRGWA-2I ...	0.01	0.0013	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	BRGWA-2S ...	0.01	0.0013	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	BRGWA-5I ...	0.01	0.0013	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	BRGWA-5S ...	0.01	0.0013	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	BRGWA-6S ...	0.01	0.0013	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	BRGWC-17S	0.01	0.0018	0.05	No	10	30	No	0.011	NP (Cohens/xfrm)
Selenium (mg/L)	BRGWC-33S	0.01	0.0013	0.05	No	11	45.45	No	0.006	NP (Cohens/xfrm)
Selenium (mg/L)	BRGWC-34S	0.01	0.0013	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	BRGWC-35S	0.01	0.0013	0.05	No	10	100	No	0.011	NP (NDs)
Selenium (mg/L)	BRGWC-36S	0.00696	0.003482	0.05	No	10	10	sqrt(x)	0.01	Param.
Selenium (mg/L)	BRGWC-38S	0.04518	0.0335	0.05	No	10	0	No	0.01	Param.
Selenium (mg/L)	BRGWC-37S	0.01	0.0013	0.05	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	BRGWA-2I ...	0.001	0.00005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	BRGWA-2S ...	0.001	0.00005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	BRGWA-5I ...	0.001	0.00005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	BRGWA-5S ...	0.001	0.00005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	BRGWA-6S ...	0.001	0.00005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	BRGWC-17S	0.001	0.00005	0.002	No	10	90	No	0.011	NP (NDs)
Thallium (mg/L)	BRGWC-33S	0.00024	0.00016	0.002	No	11	9.091	No	0.006	NP (normality)
Thallium (mg/L)	BRGWC-34S	0.001	0.00005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	BRGWC-35S	0.001	0.00005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	BRGWC-36S	0.001	0.00005	0.002	No	10	100	No	0.011	NP (NDs)
Thallium (mg/L)	BRGWC-38S	0.001	0.0002	0.002	No	10	30	No	0.011	NP (normality)
Thallium (mg/L)	BRGWC-37S	0.001	0.00005	0.002	No	10	100	No	0.011	NP (NDs)

Non-Parametric Confidence Interval

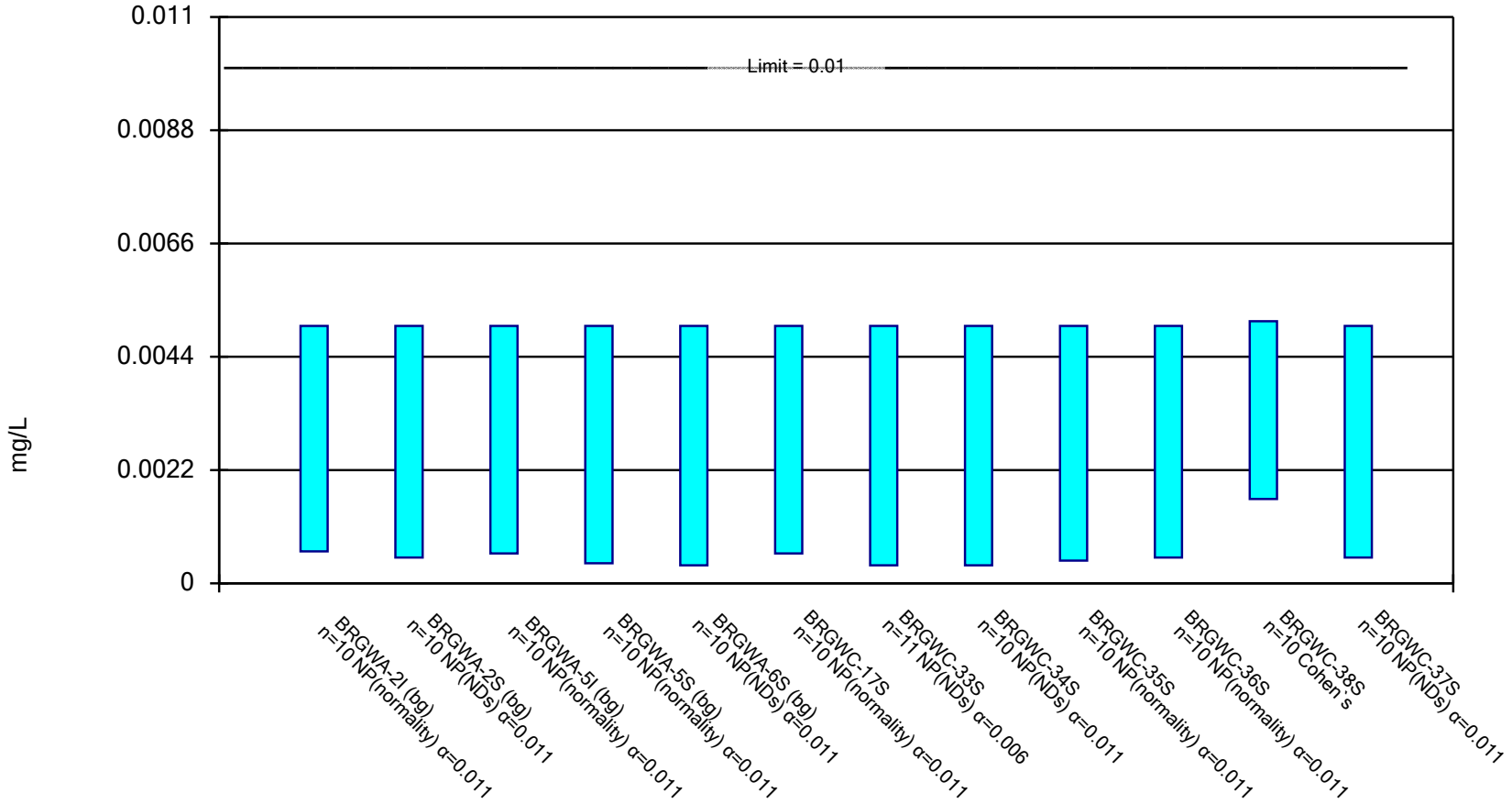
Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 3/19/2020 4:01 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

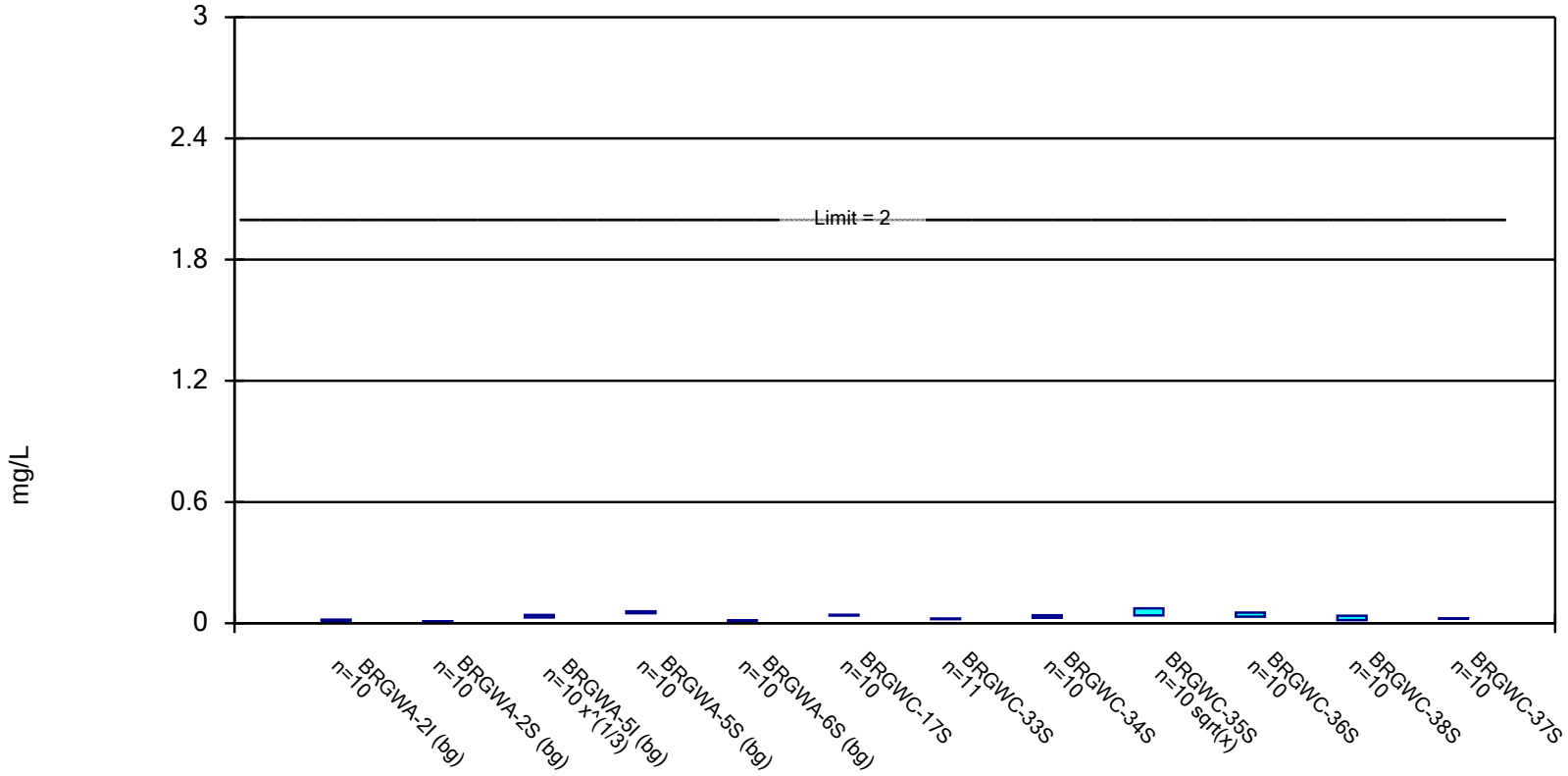


Constituent: Arsenic Analysis Run 3/19/2020 4:01 PM View: Pond E Appendix IV

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

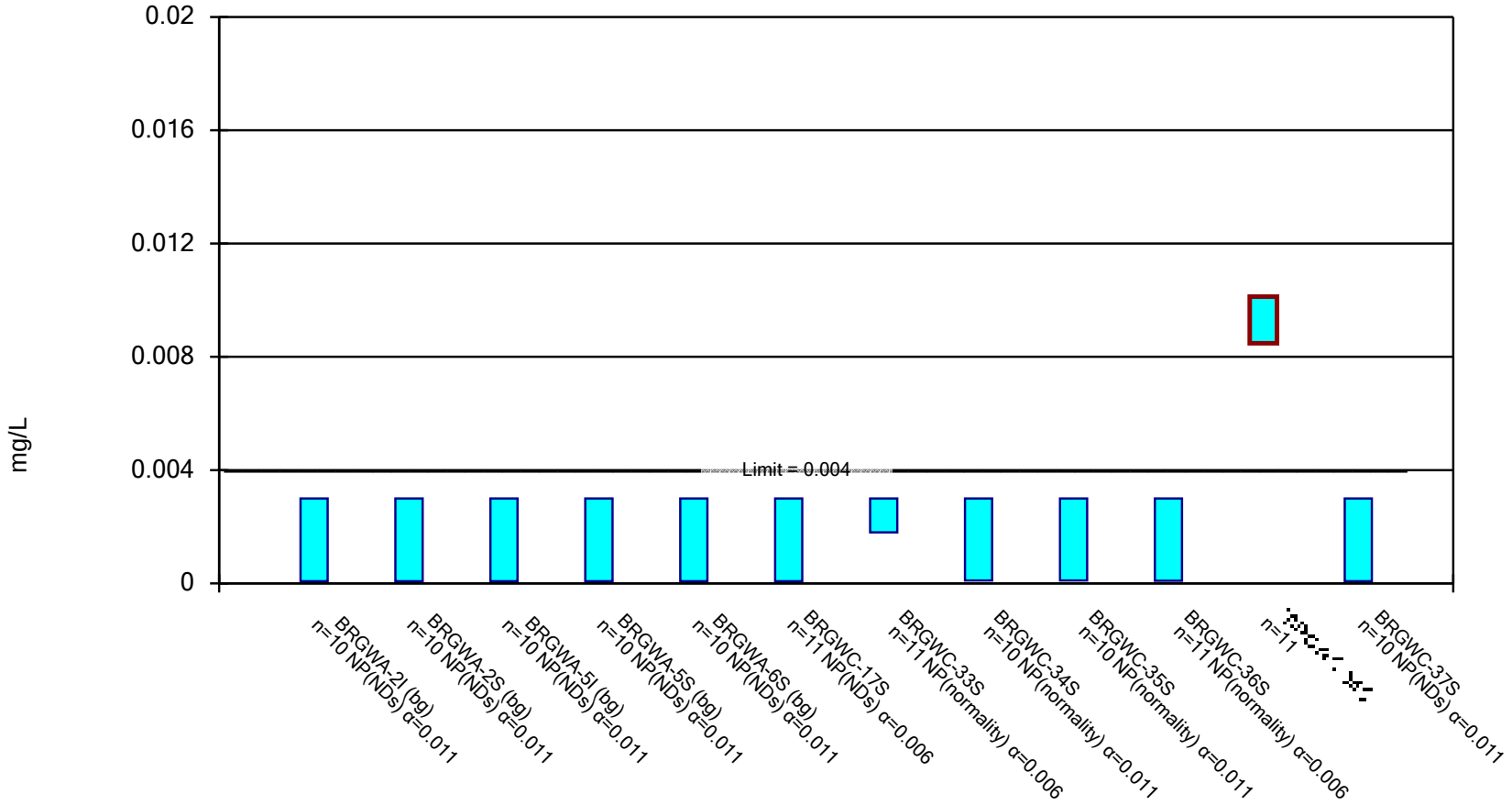


Constituent: Barium Analysis Run 3/19/2020 4:01 PM View: Pond E Appendix IV

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

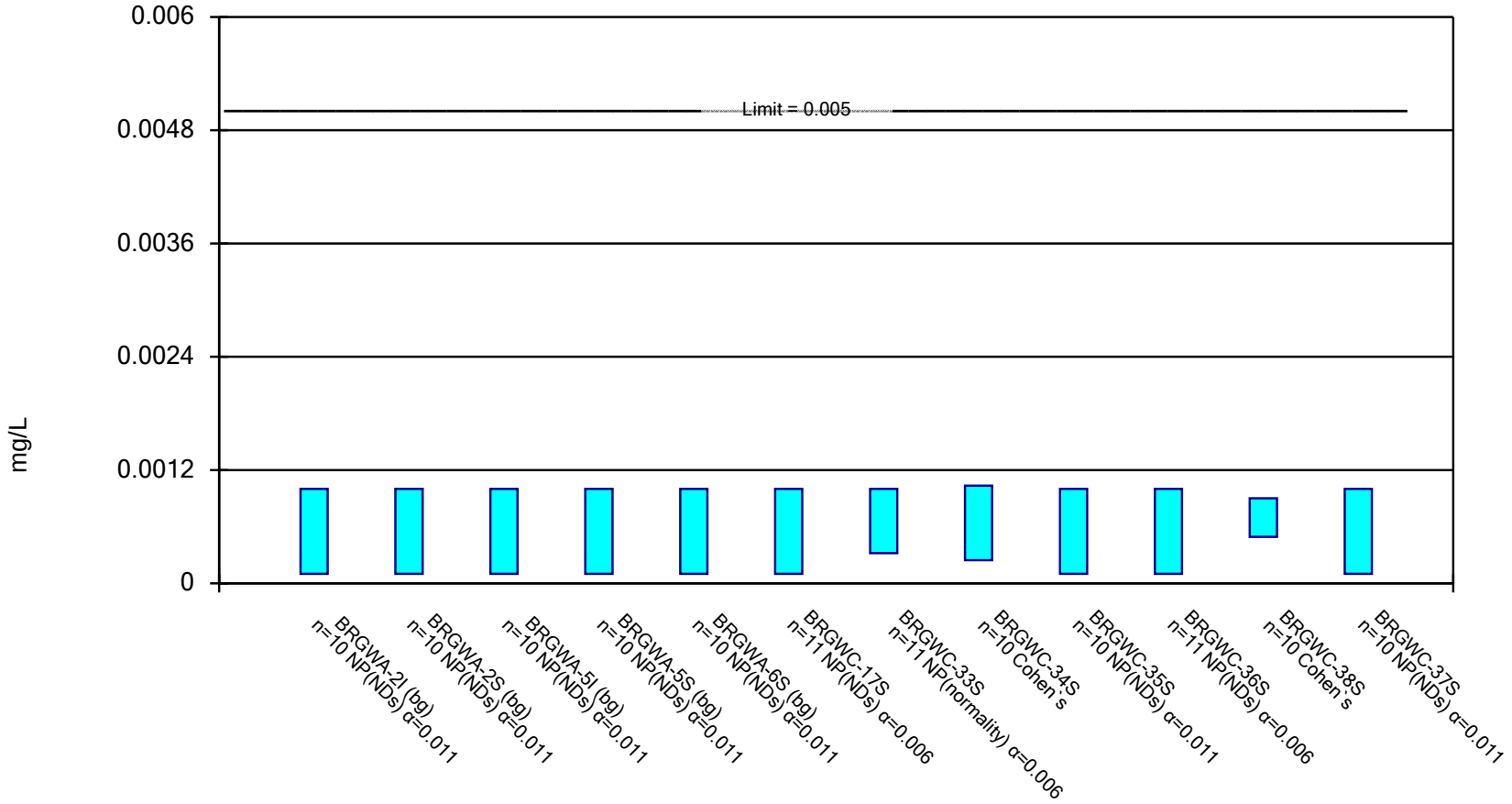


Constituent: Beryllium Analysis Run 3/19/2020 4:01 PM View: Pond E Appendix IV

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

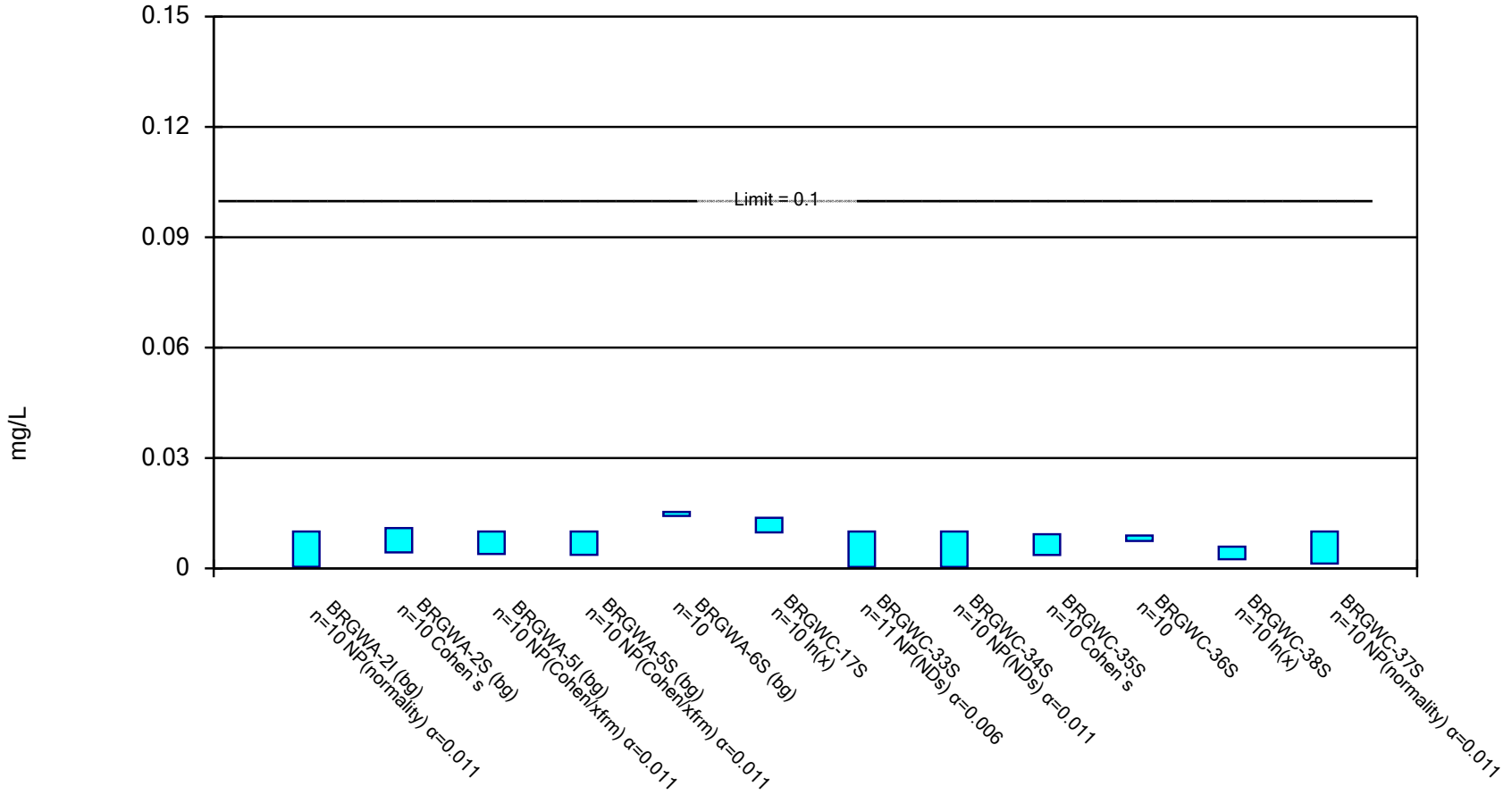


Constituent: Cadmium Analysis Run 3/19/2020 4:02 PM View: Pond E Appendix IV

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

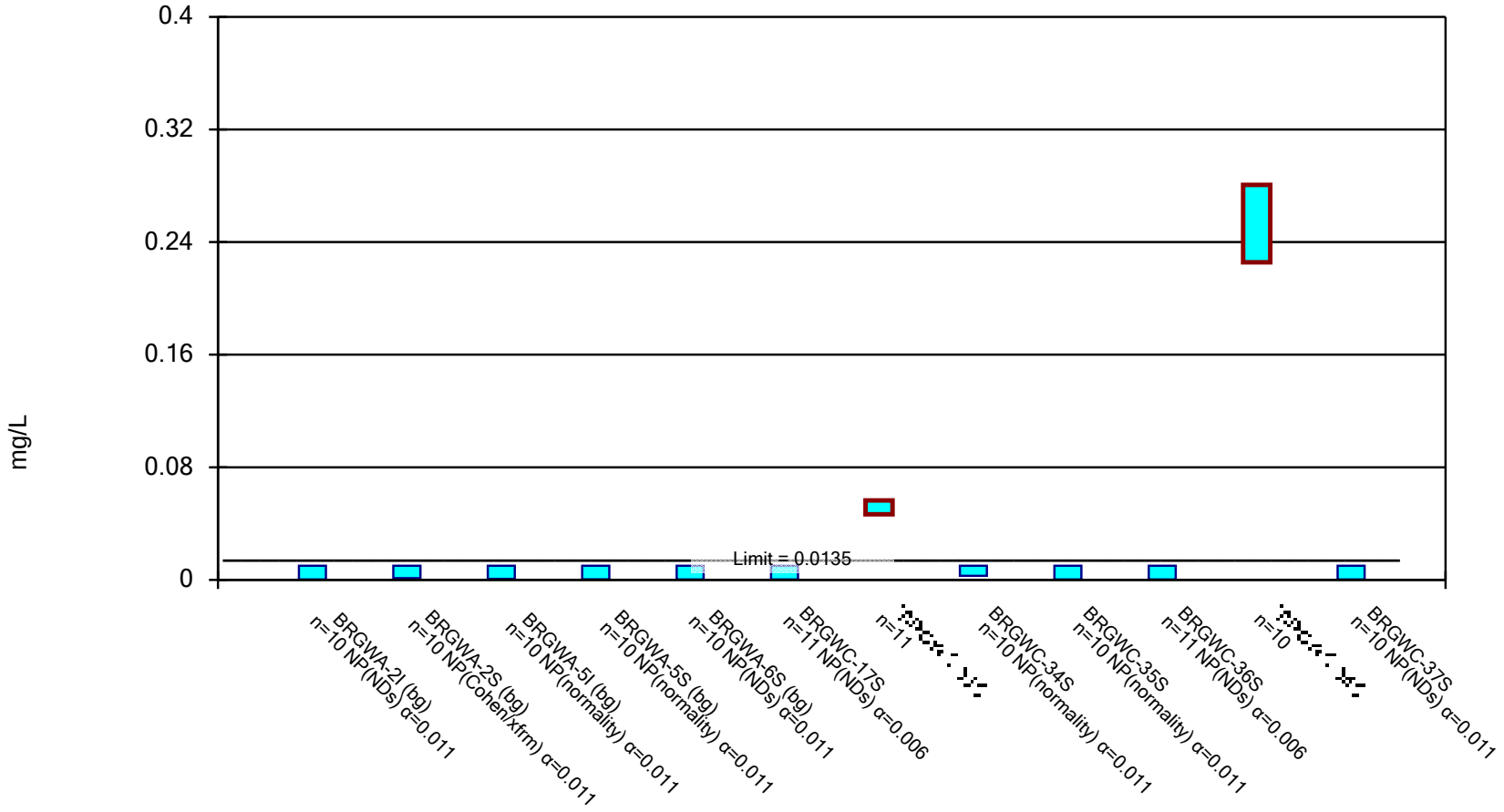


Constituent: Chromium Analysis Run 3/19/2020 4:02 PM View: Pond E Appendix IV

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

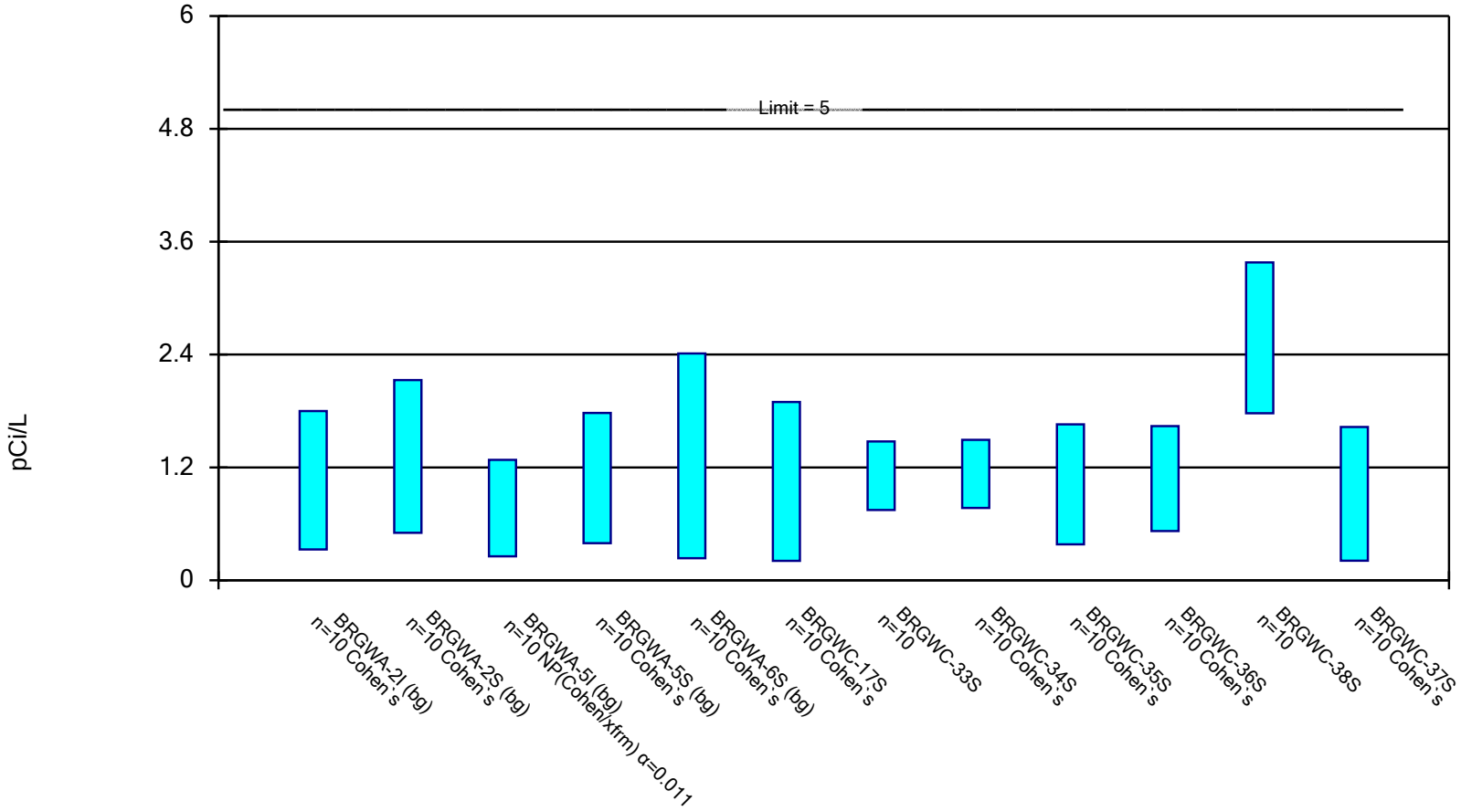


Constituent: Cobalt Analysis Run 3/19/2020 4:02 PM View: Pond E Appendix IV

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

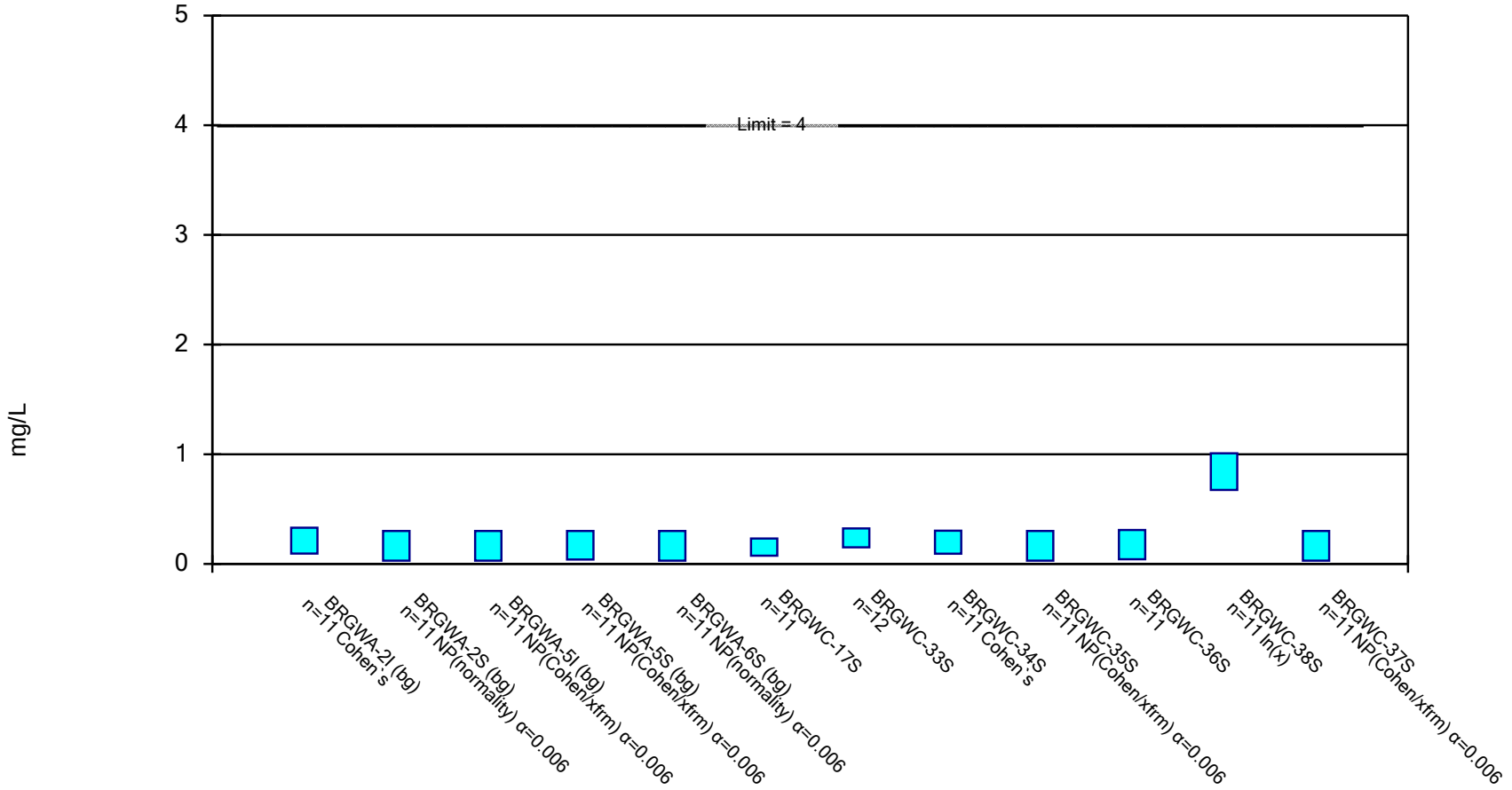
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 3/19/2020 4:02 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

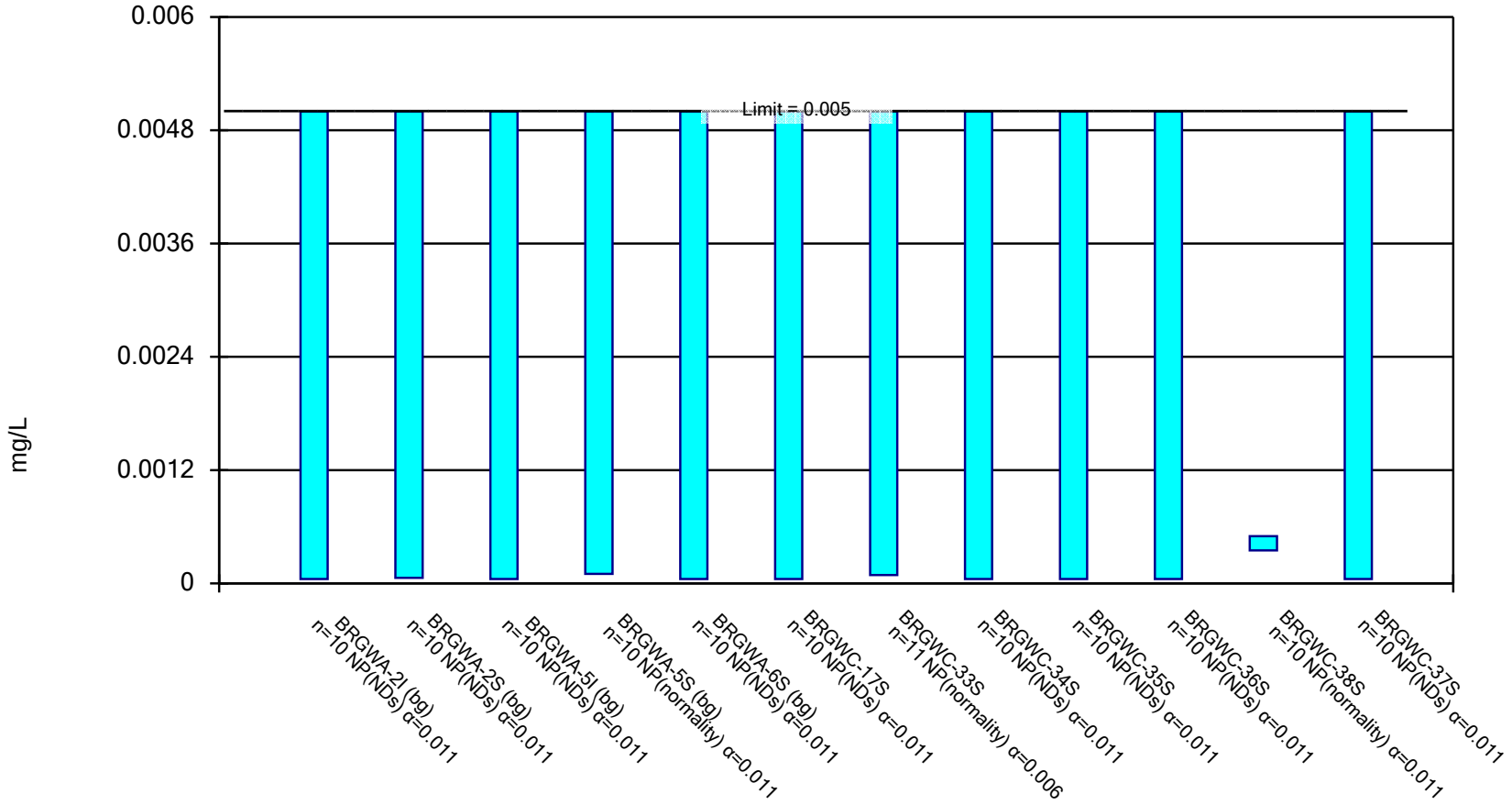


Constituent: Fluoride Analysis Run 3/19/2020 4:02 PM View: Pond E Appendix IV

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

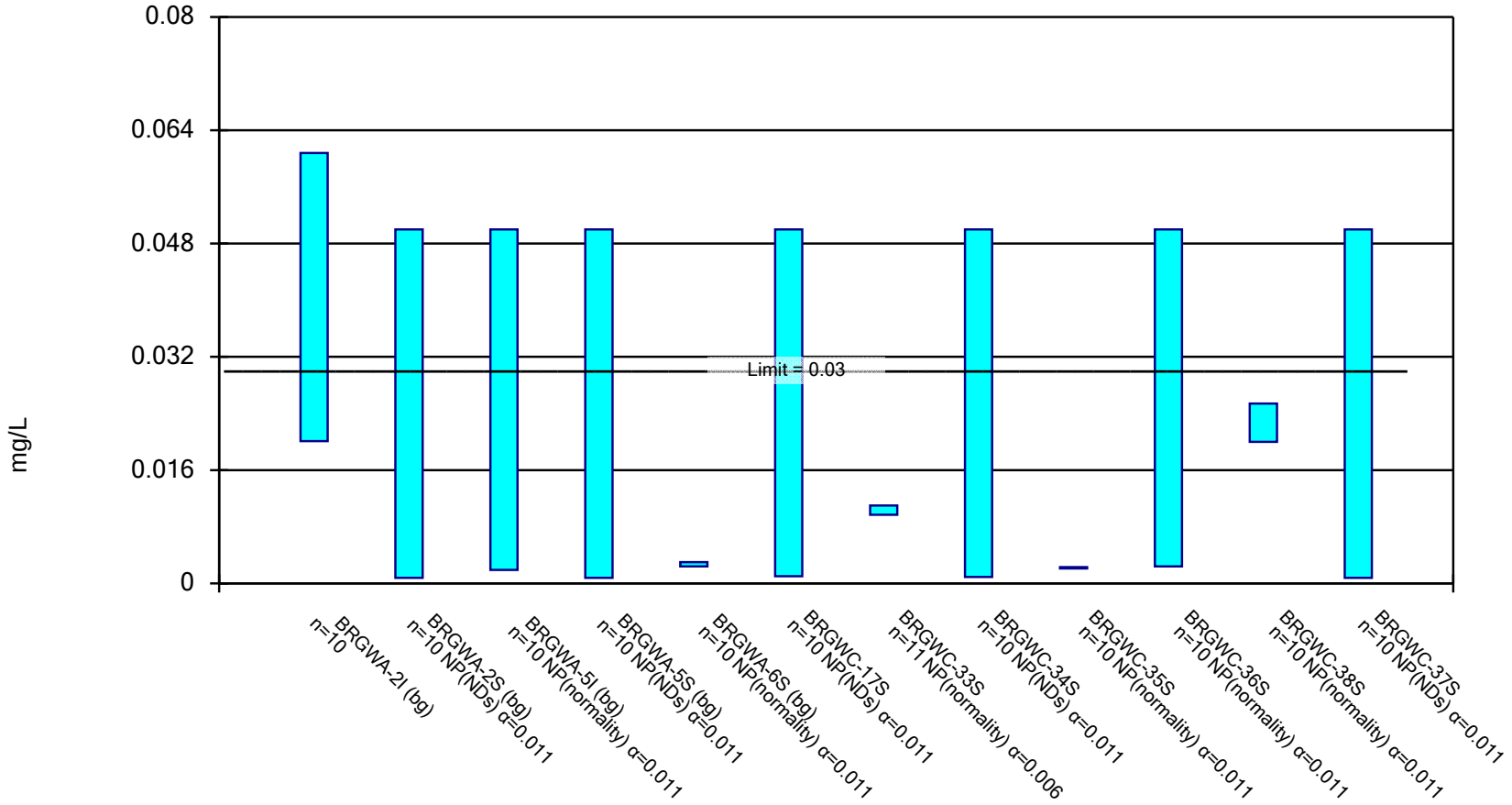


Constituent: Lead Analysis Run 3/19/2020 4:02 PM View: Pond E Appendix IV

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

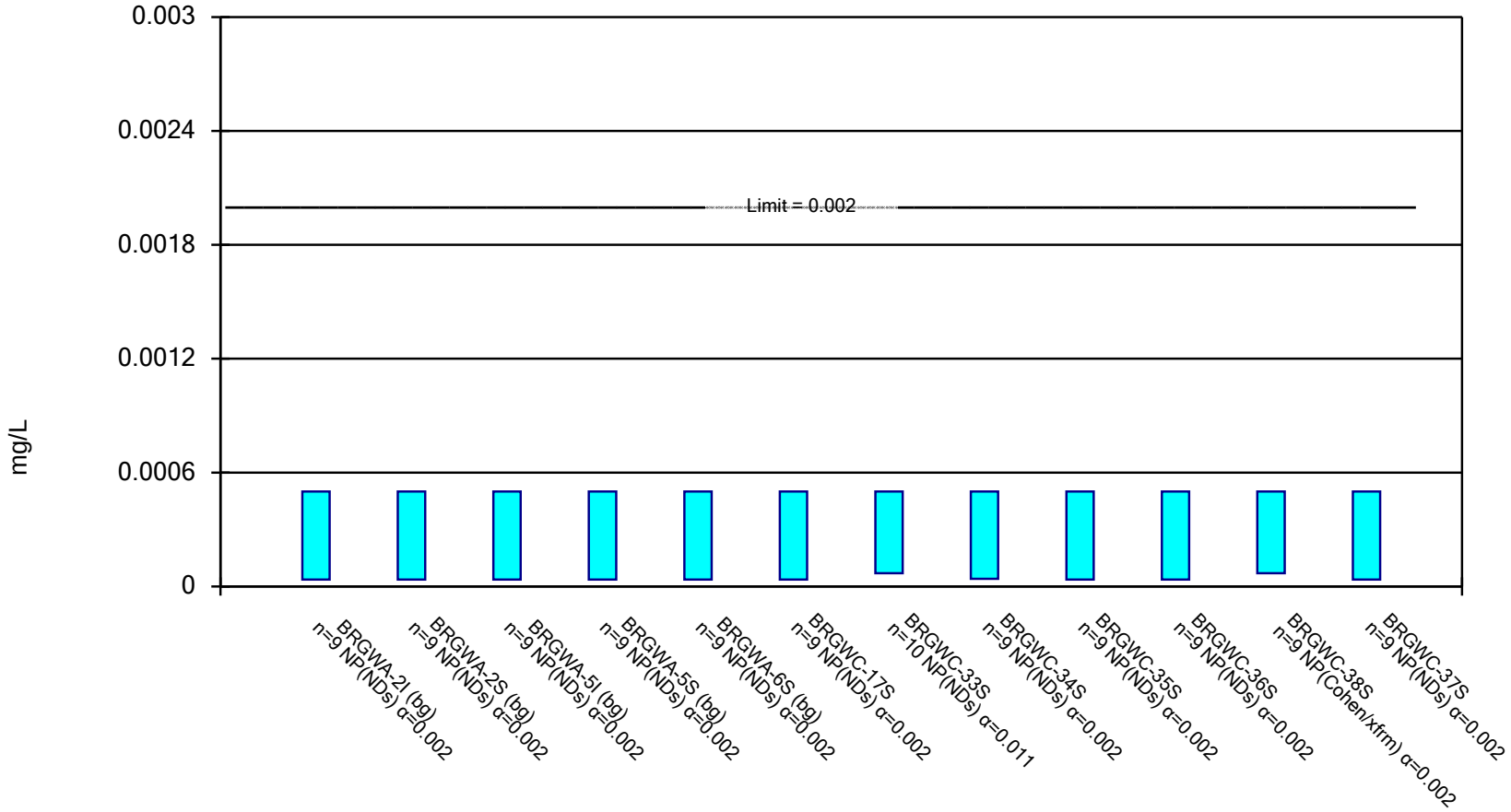


Constituent: Lithium Analysis Run 3/19/2020 4:02 PM View: Pond E Appendix IV

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Non-Parametric Confidence Interval

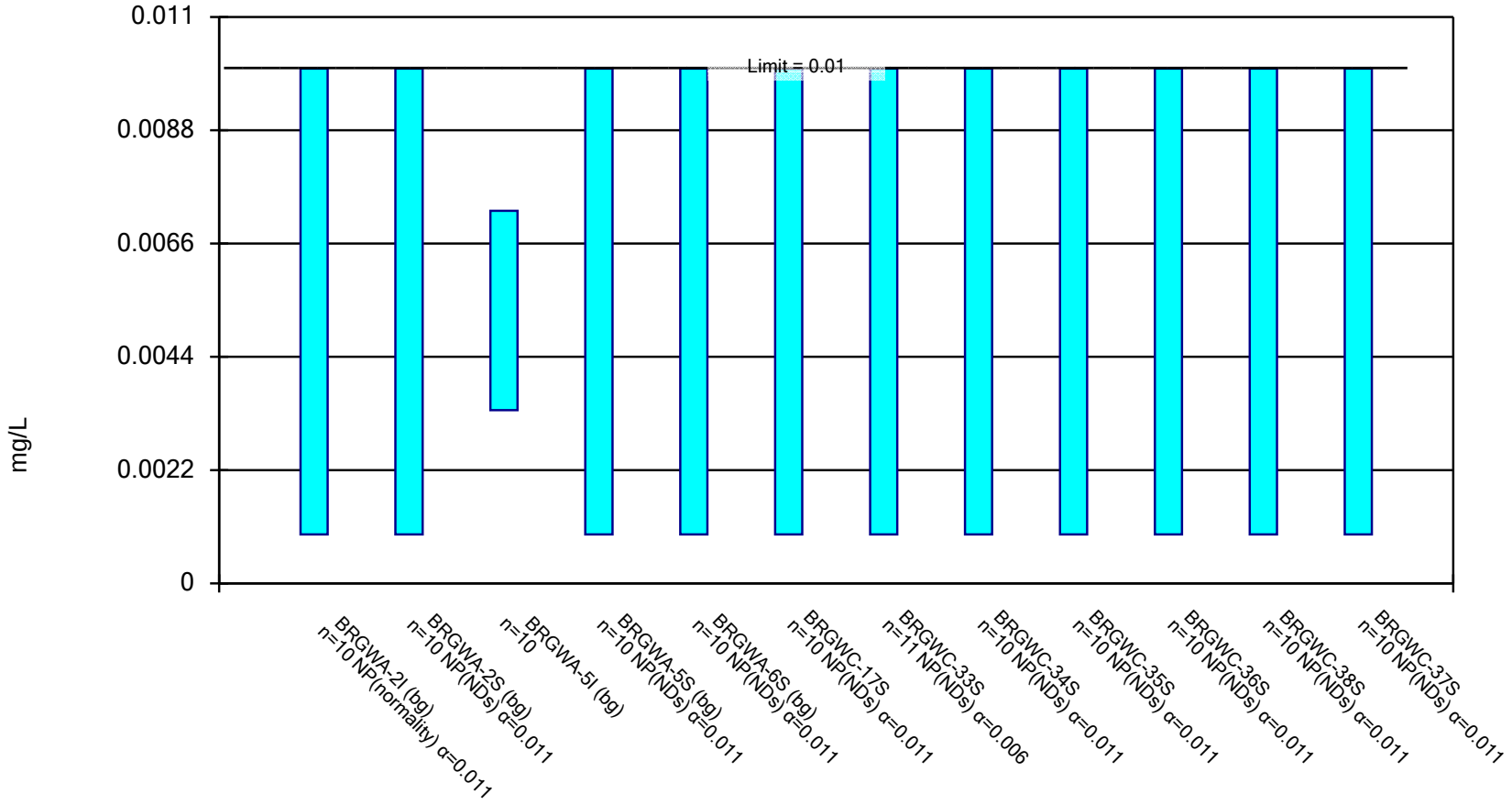
Compliance Limit is not exceeded.



Constituent: Mercury Analysis Run 3/19/2020 4:02 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

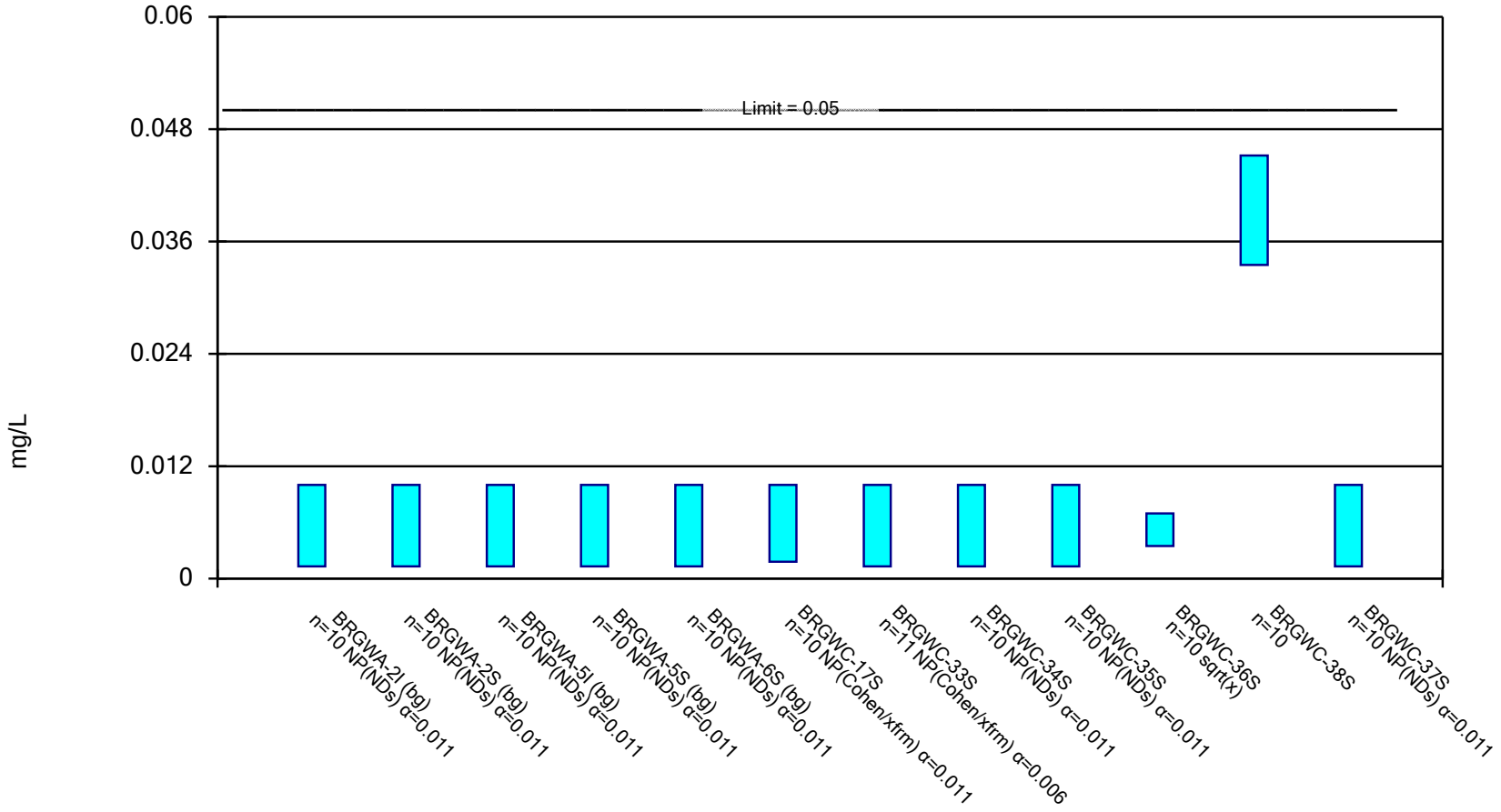
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 3/19/2020 4:02 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

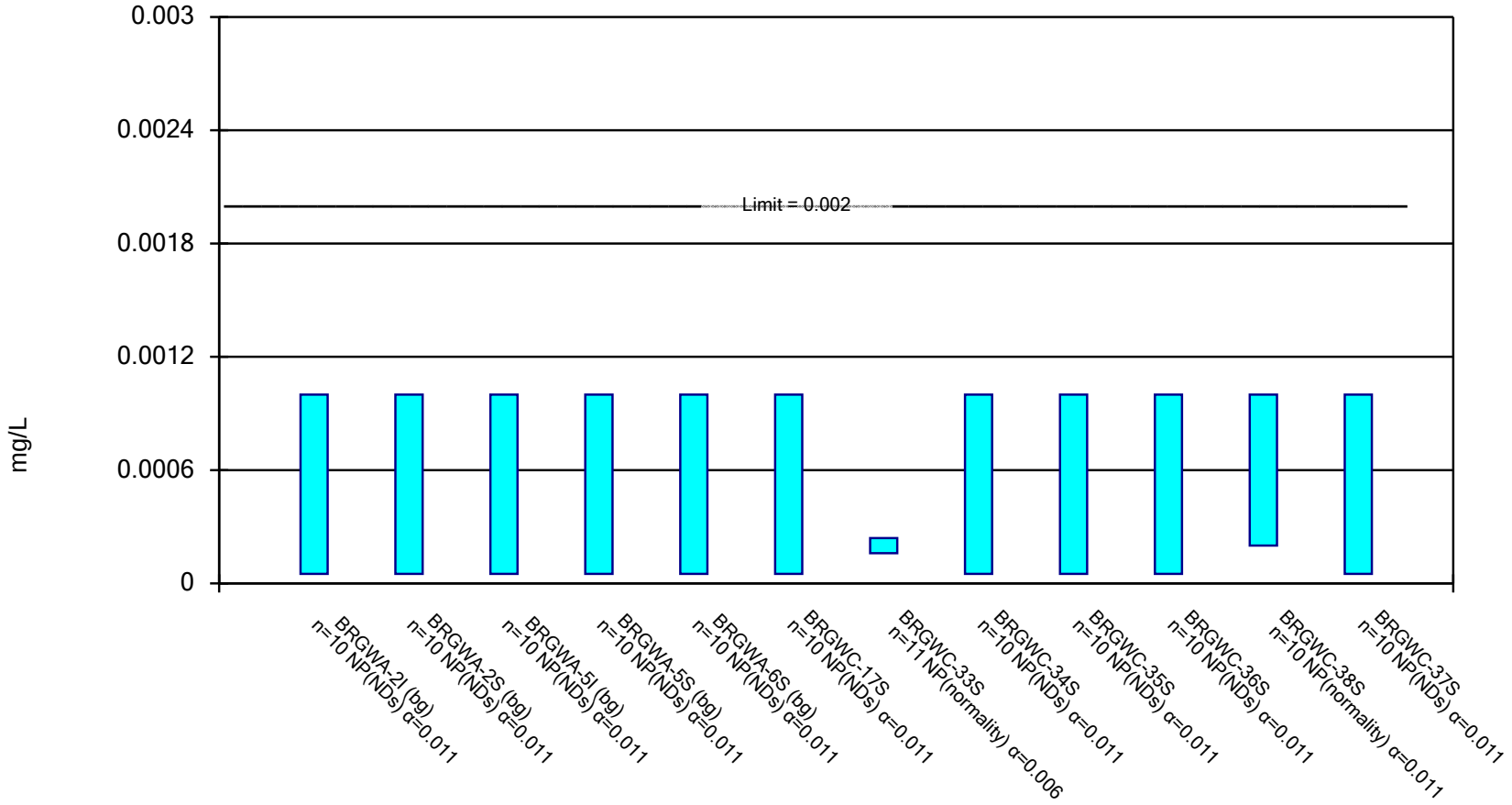


Constituent: Selenium Analysis Run 3/19/2020 4:02 PM View: Pond E Appendix IV

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Non-Parametric Confidence Interval

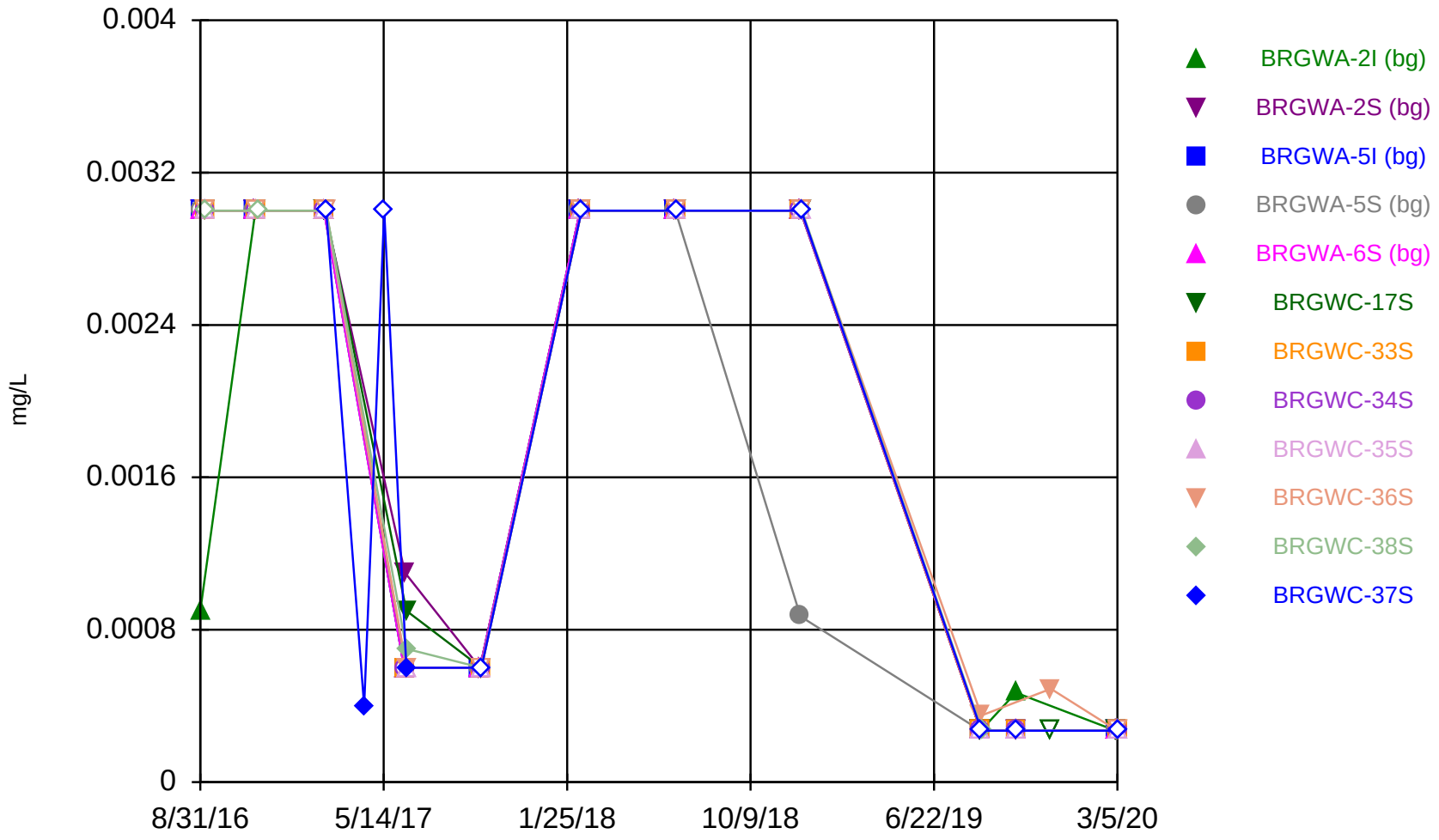
Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 3/19/2020 4:02 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

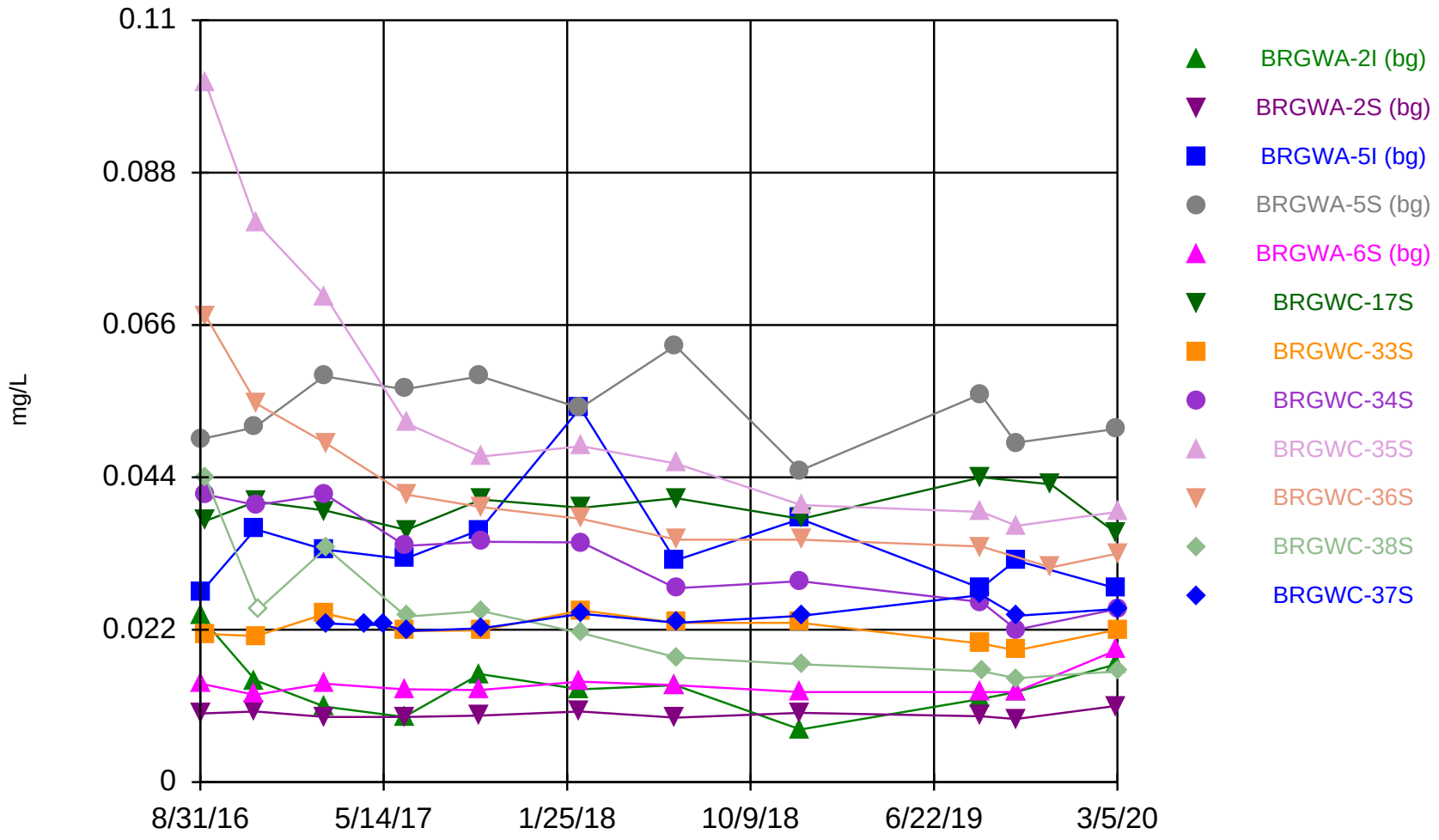
Time Series



Constituent: Antimony Analysis Run 3/26/2020 7:29 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

Time Series

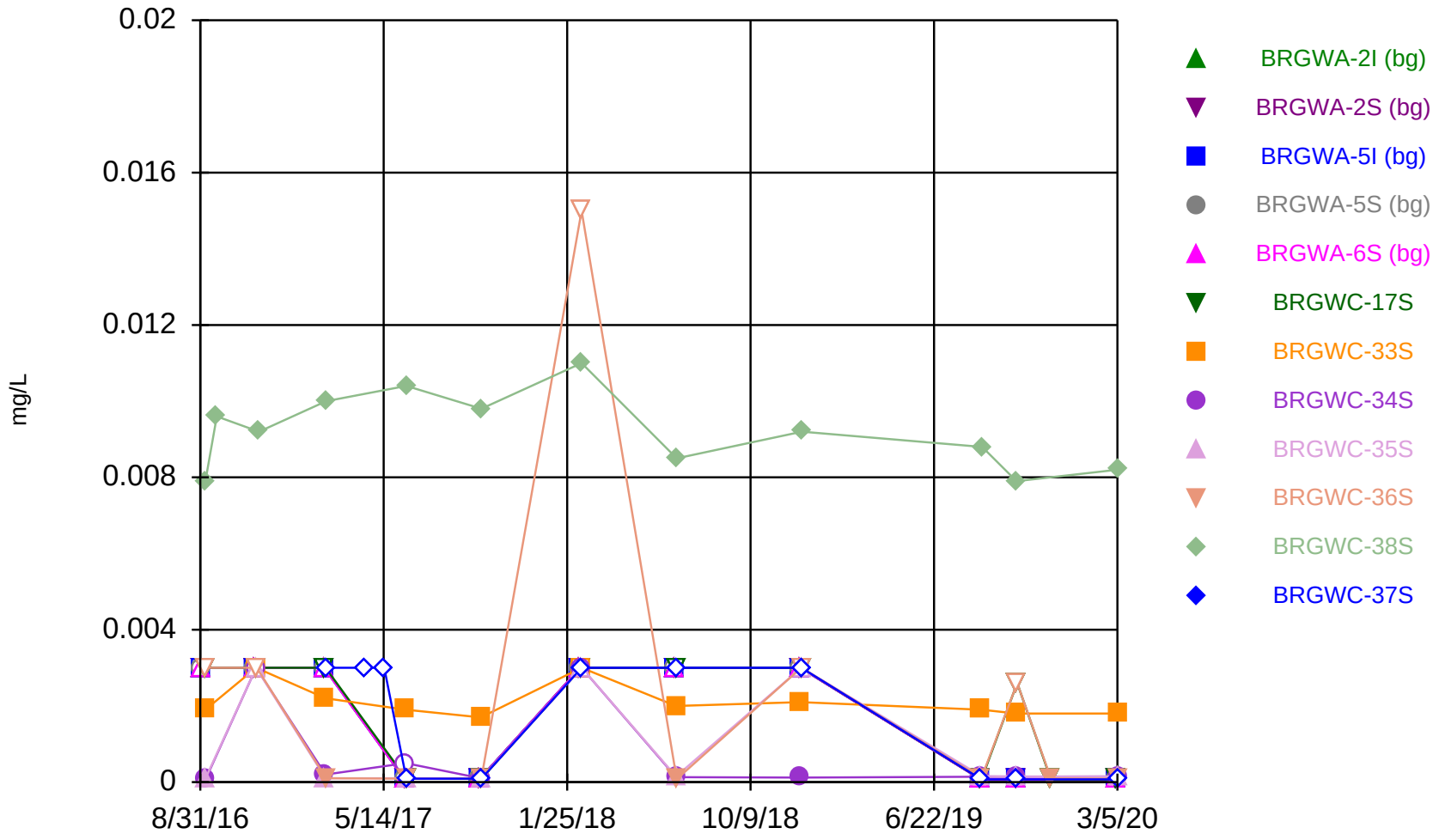


Constituent: Barium Analysis Run 3/26/2020 7:29 PM View: Pond E Appendix IV

Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

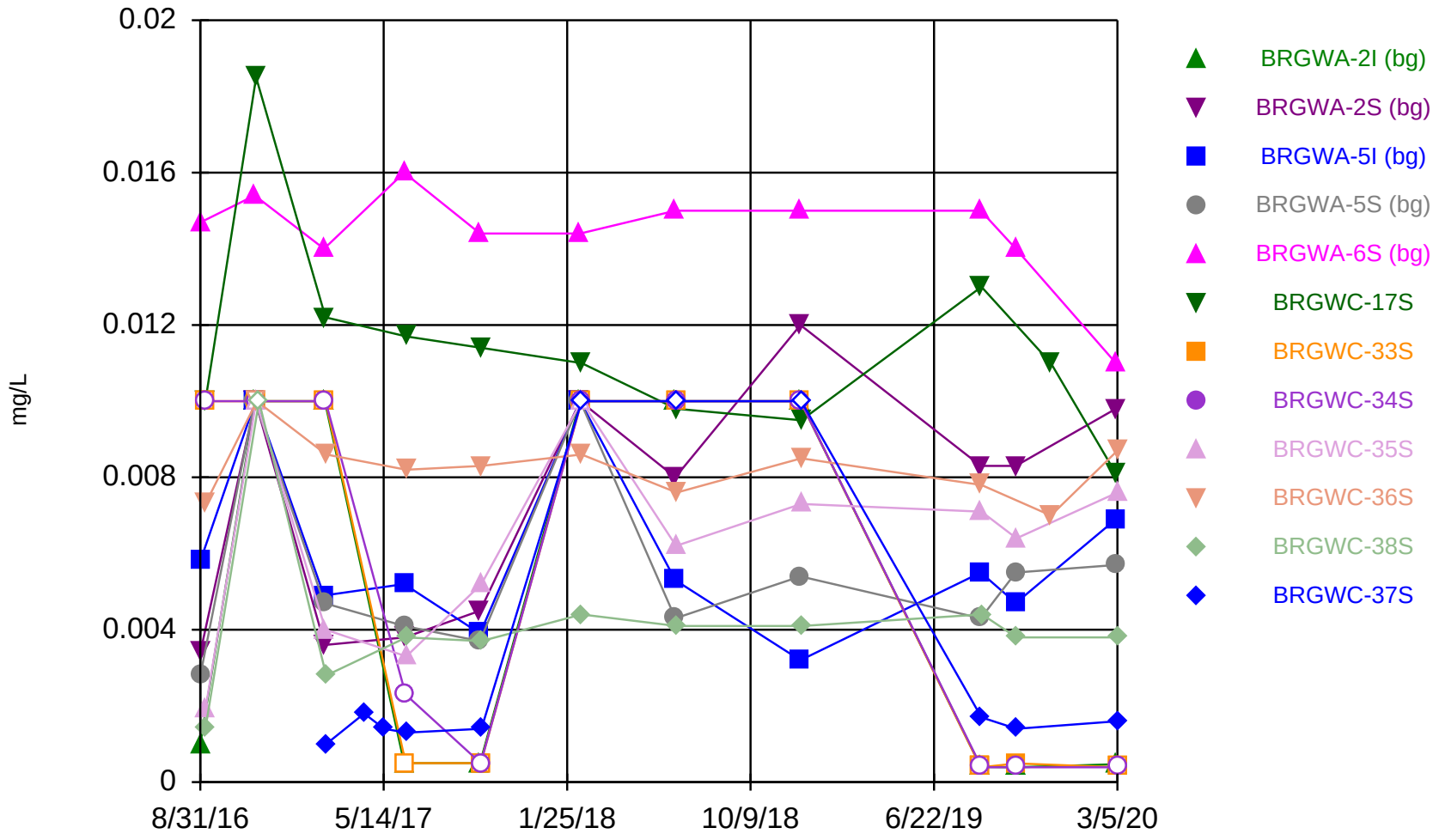
Time Series



Constituent: Beryllium Analysis Run 3/26/2020 7:29 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

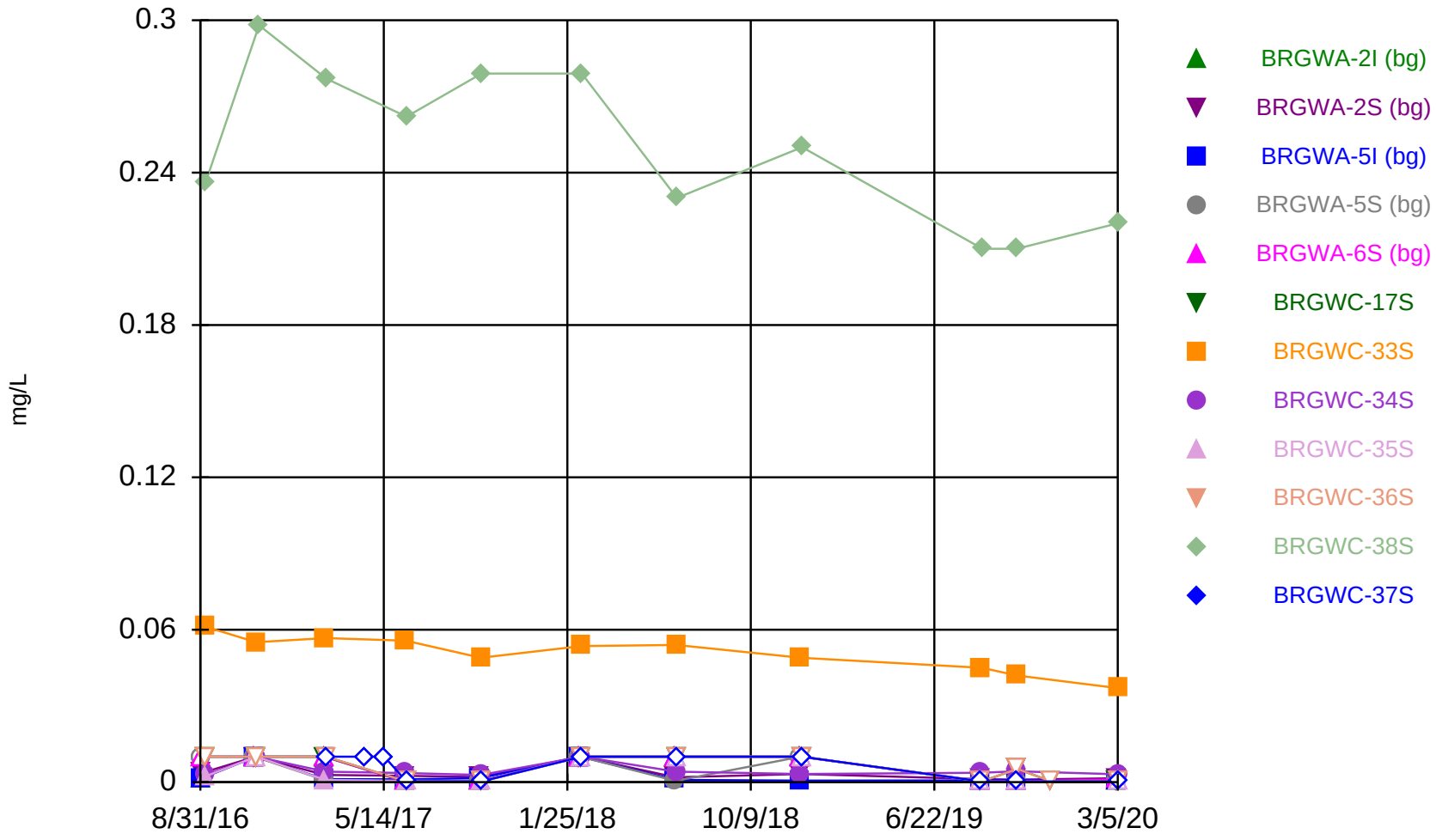
Time Series



Constituent: Chromium Analysis Run 3/26/2020 7:29 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

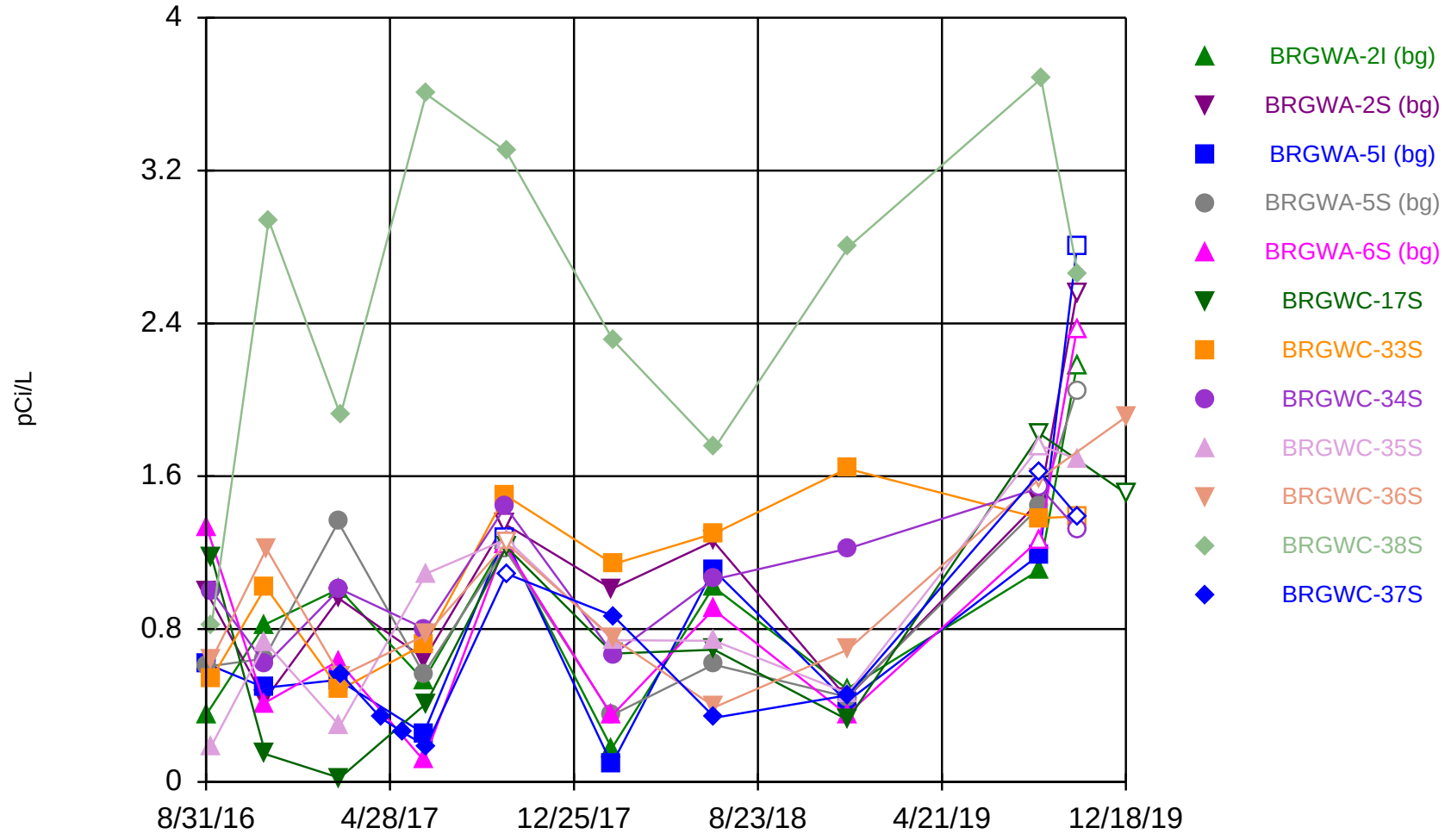
Time Series



Constituent: Cobalt Analysis Run 3/26/2020 7:29 PM View: Pond E Appendix IV
Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

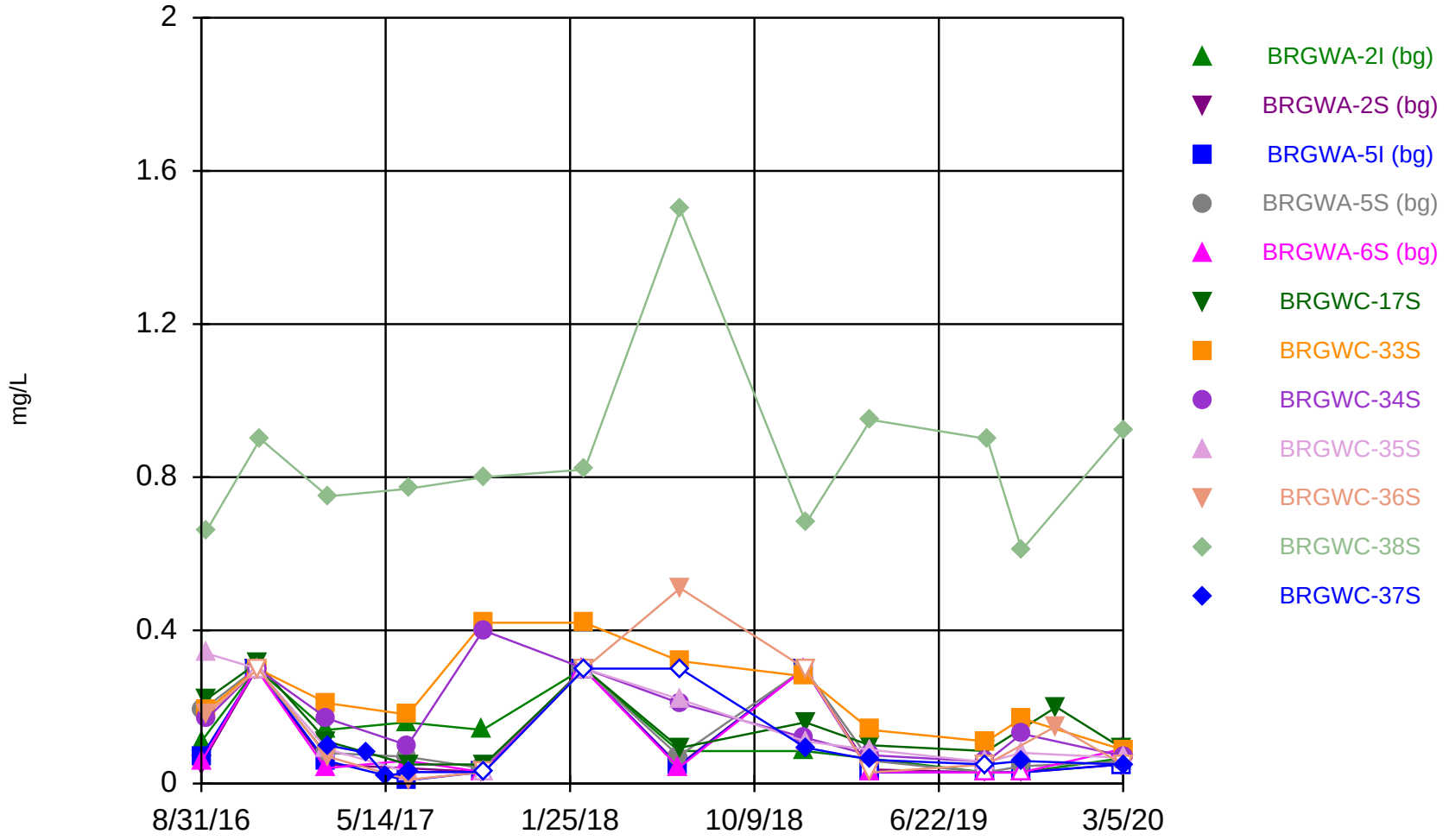
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 3/26/2020 7:29 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

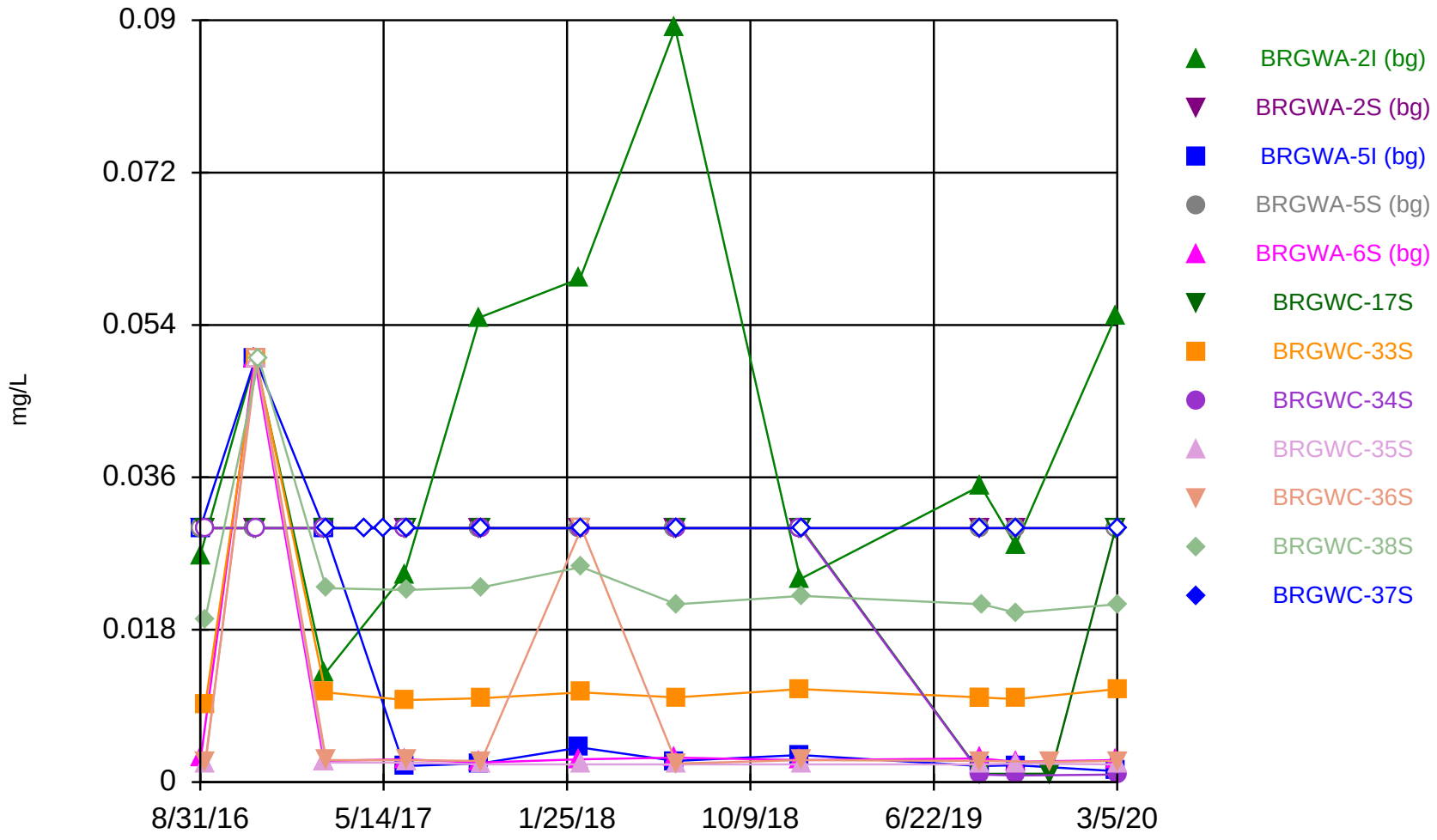
Time Series



Constituent: Fluoride Analysis Run 3/26/2020 7:29 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

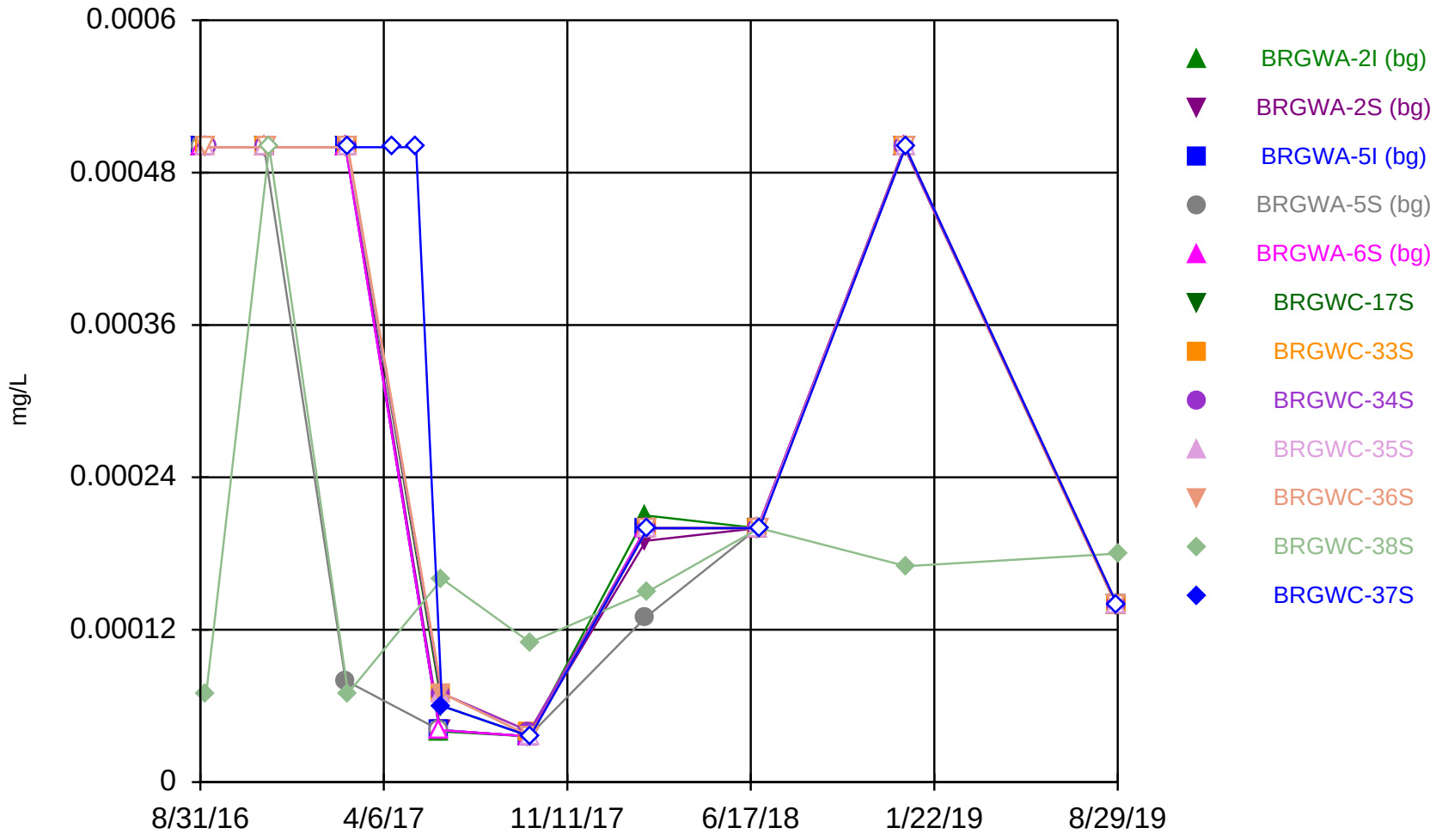
Time Series



Constituent: Lithium Analysis Run 3/26/2020 7:29 PM View: Pond E Appendix IV
Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

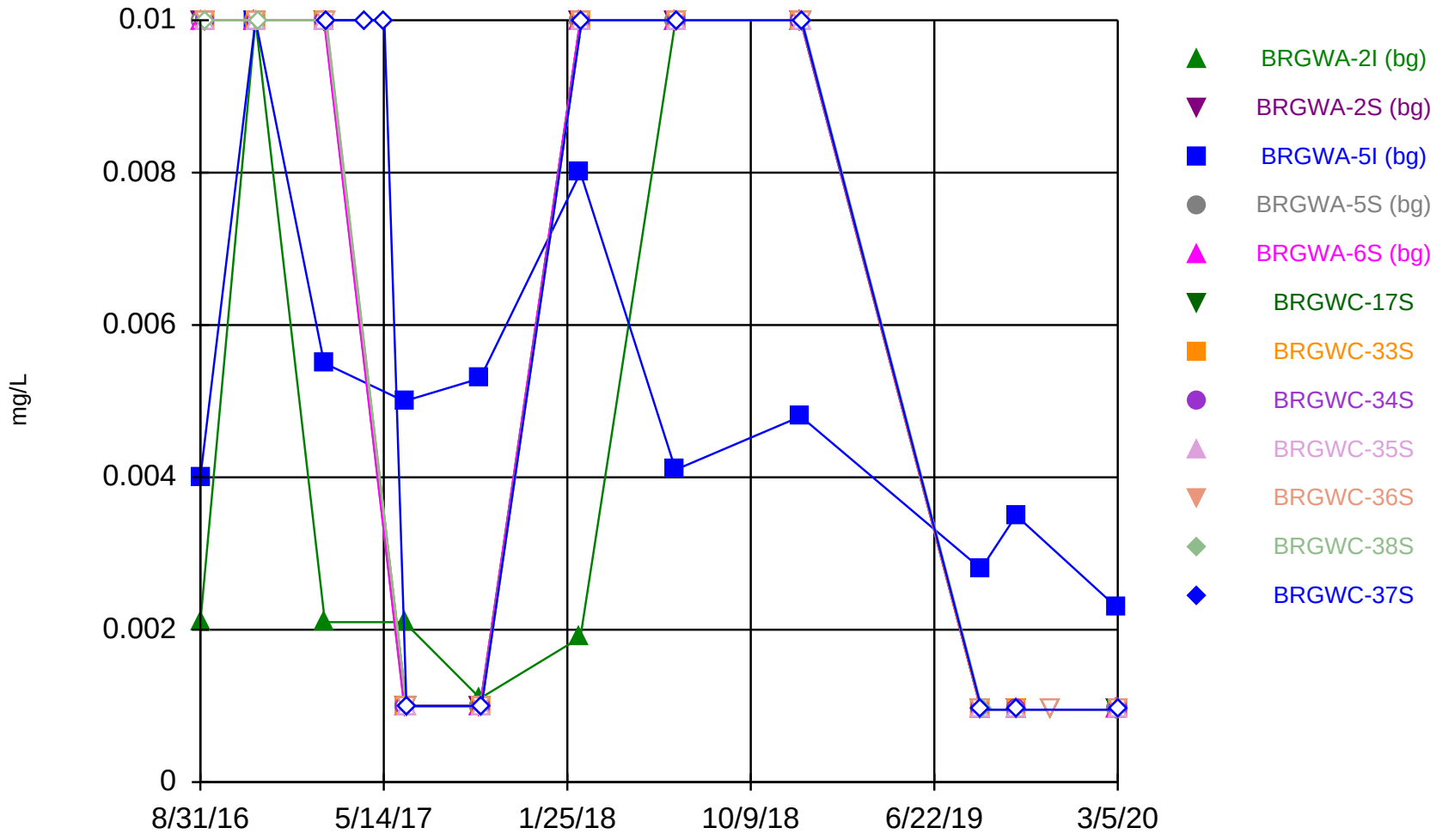
Time Series



Constituent: Mercury Analysis Run 3/26/2020 7:29 PM View: Pond E Appendix IV
Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

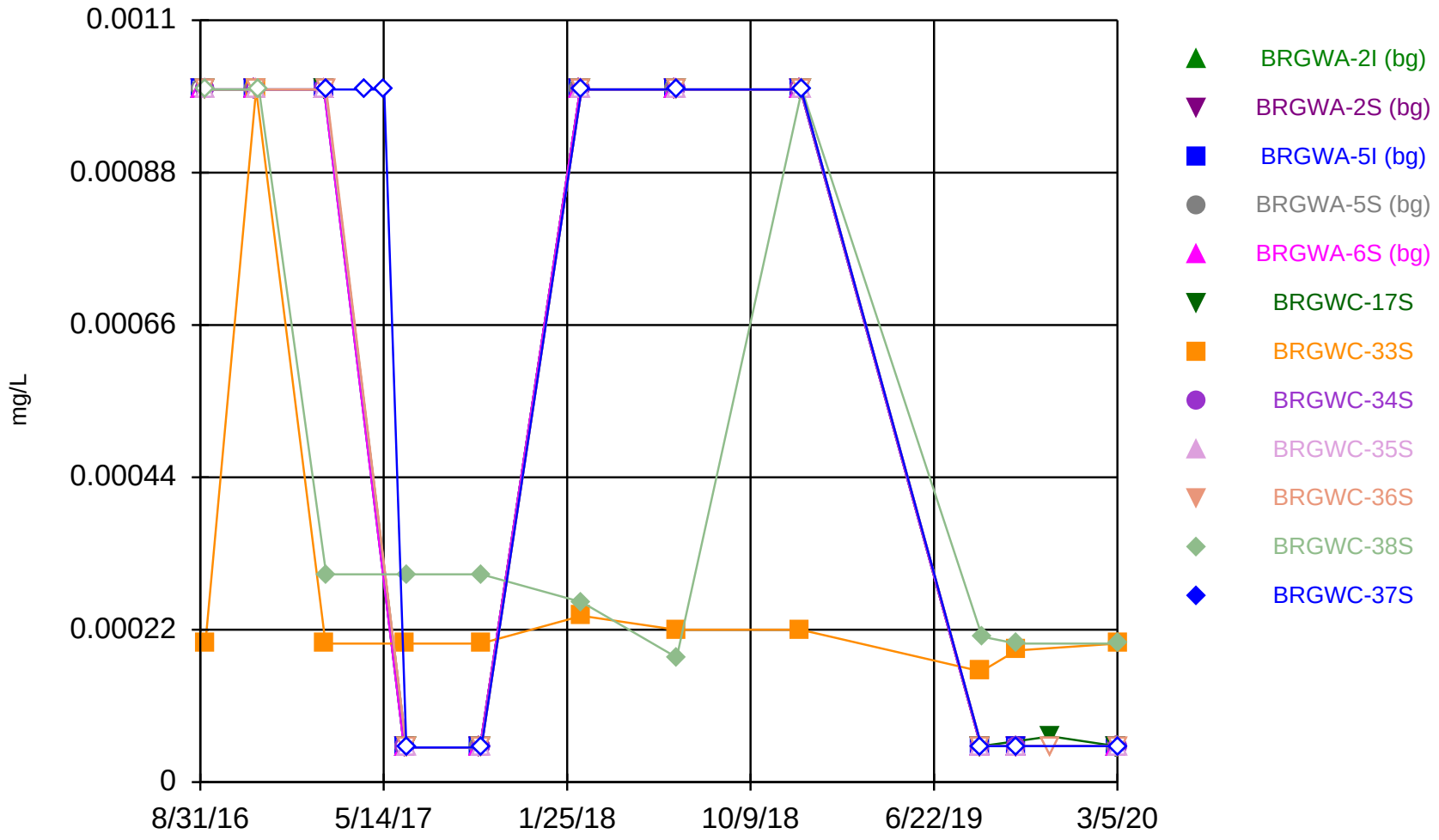
Time Series



Constituent: Molybdenum Analysis Run 3/26/2020 7:29 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 For the statistical analyses of ground water by Golder Associates only. UG
Hollow symbols indicate censored values.

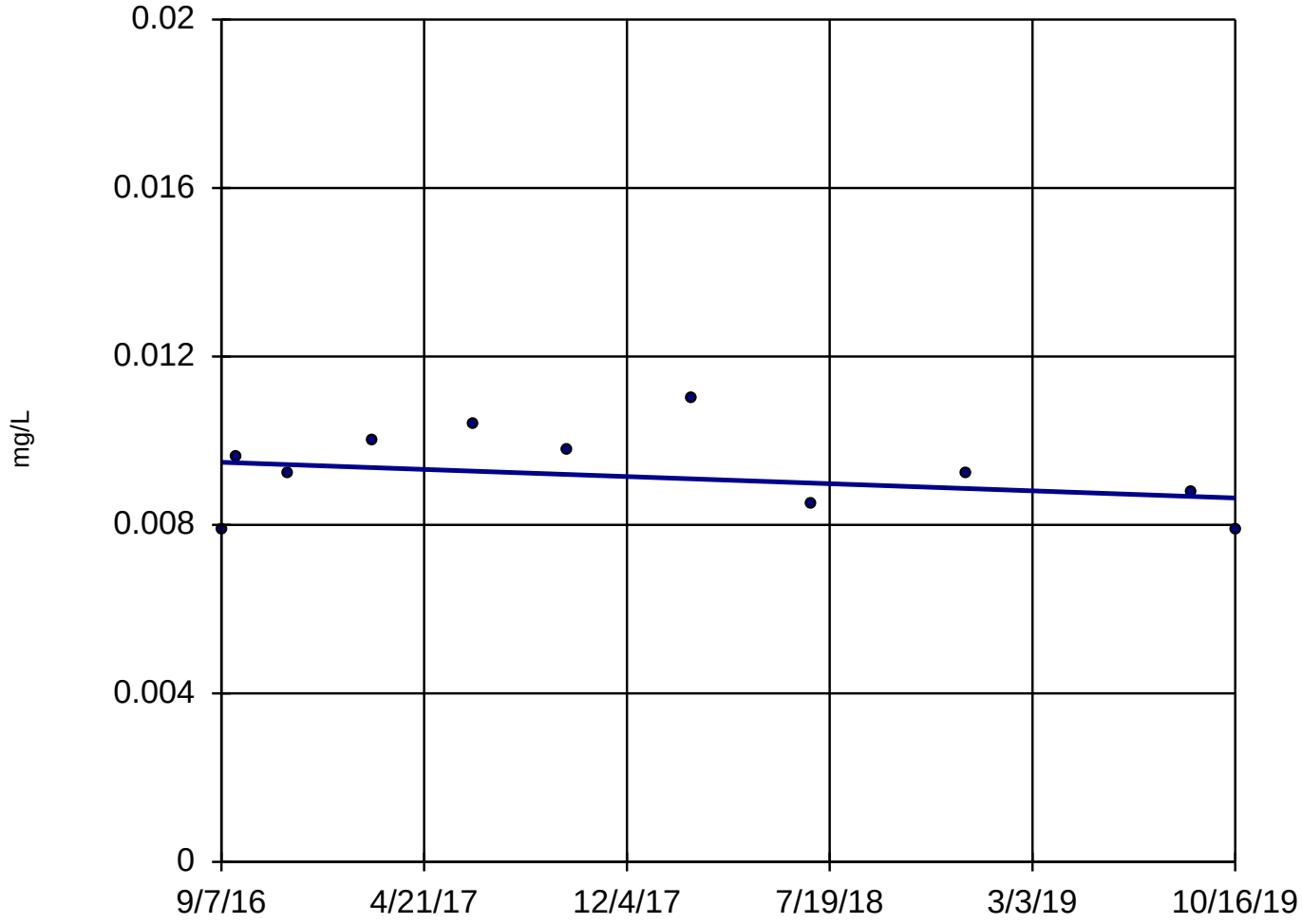
Time Series



Constituent: Thallium Analysis Run 3/26/2020 7:29 PM View: Pond E Appendix IV Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWC-38S



n = 11

Slope = -0.0002729 units per year.

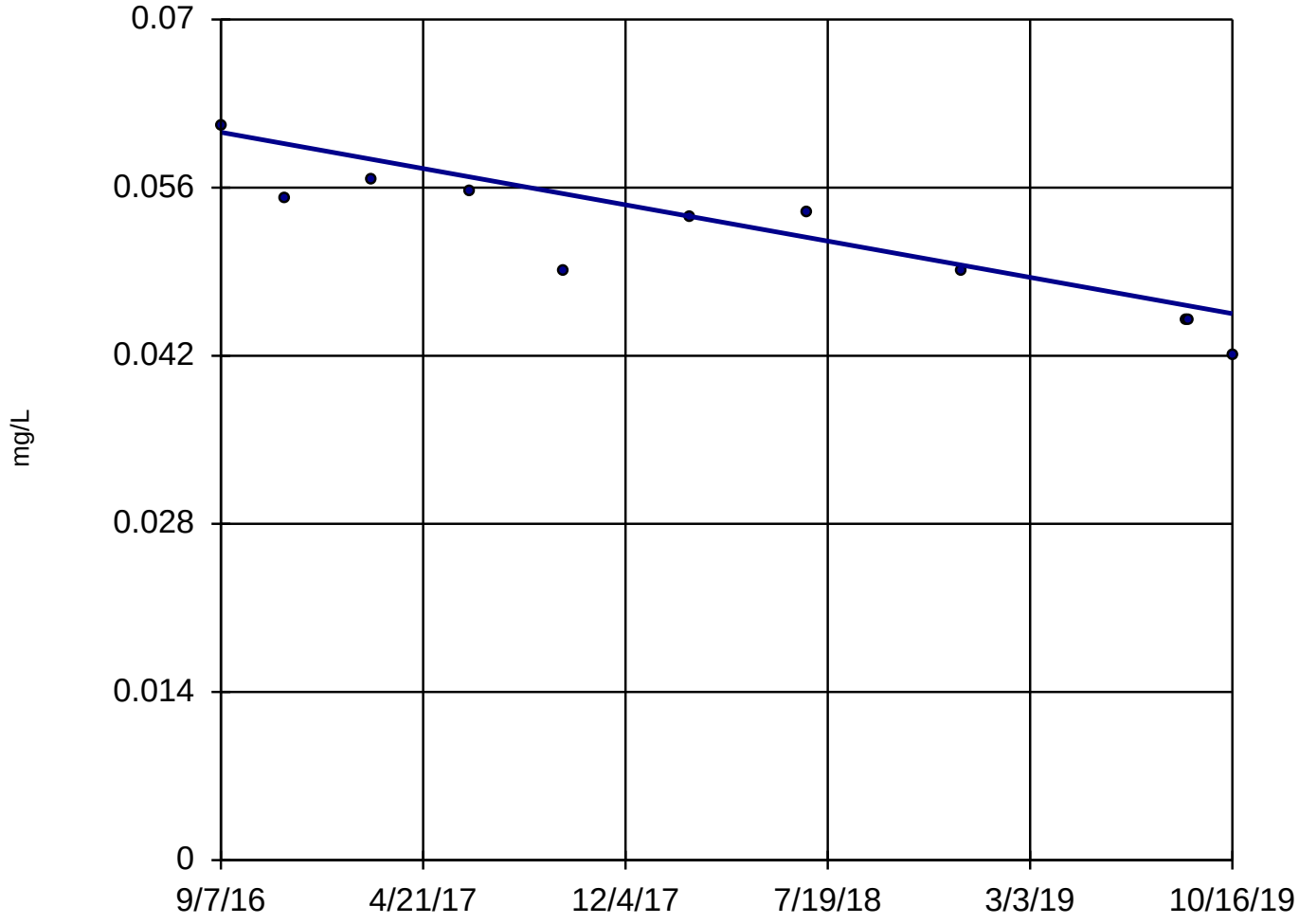
Mann-Kendall statistic = -7
critical = -31

Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Beryllium Analysis Run 3/26/2020 6:35 PM View: Default Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWC-33S



n = 11

Slope = -0.004858 units per year.

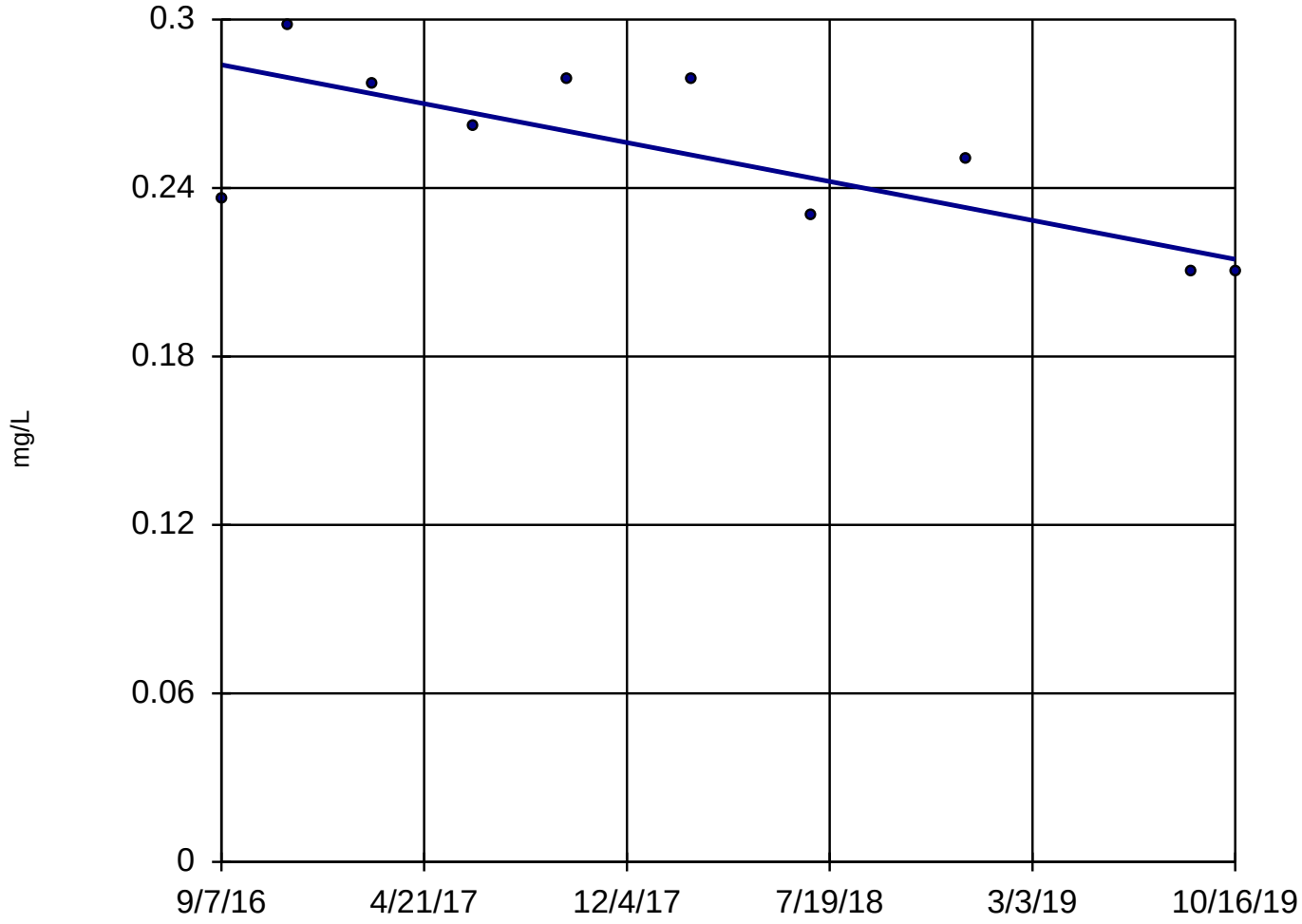
Mann-Kendall statistic = -43
critical = -31

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Constituent: Cobalt Analysis Run 3/26/2020 6:33 PM View: Default Branch Client: Golder Associates Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWC-38S



n = 10

Slope = -0.0223 units per year.

Mann-Kendall statistic = -21
critical = -27

Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Cobalt Analysis Run 3/26/2020 6:34 PM View: Default Branch Client: Golder Associates Data: Plant Branch Ash Pond

GROUNDWATER STATS CONSULTING

July 27, 2020

Southern Company Services
Attn: Mr. Joju Abraham
241 Ralph McGill Blvd NE, Bin 10160
Atlanta, Georgia 30308-3374

Re: Plant Branch Pond E – March 2020 Statistical Analysis

Dear Mr. Abraham,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the March 2020 Semi-Annual Groundwater Monitoring and Corrective Action Statistical summary of groundwater data for Georgia Power Company's Plant Branch Pond E. The analysis complies with the Georgia Environmental Protection Division (EPD) Rules for Solid Waste Management Chapter 391-3-4-.10 as well as with the United States Environmental Protection Agency (USEPA) Unified Guidance (2009). The site is in Assessment Monitoring

Sampling for the Appendix III parameters began in 2016, and at least 8 background samples were collected at each of the groundwater monitoring wells. Semi-annual sampling of the majority of Appendix IV constituents has been performed for several years in accordance with the Georgia Department of Natural Resources, Environmental Protection Division groundwater monitoring regulations. A list of all parameters is provided below.

The monitoring well network, as provided by Southern Company Services, consists of the following:

- **Upgradient well:** BRGWA-2I, BRGWA-2S, BRGWA-5I, BRGWA-5S, BRGWA-6S
- **Downgradient wells:** BRGWC-17S, BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-37S, BRGWC-38S

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting.

The monitoring program consists of the following constituents:

- **Appendix III** (Detection Monitoring) **-** boron, calcium, chloride, fluoride, pH, sulfate, and TDS
- **Appendix IV** (Assessment Monitoring) **–** antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, combined radium 226 + 228, fluoride, lead, lithium, mercury, molybdenum, selenium, and thallium.

Time series plots for Appendix III and IV parameters at all wells are provided for the purpose of screening data at these wells (Figure A). Additionally, a separate section of box plots is included for all constituents at upgradient and downgradient wells (Figure B). The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells. Values in background which have been flagged as outliers may be seen in a lighter font and as a disconnected symbol on the graphs. A summary of flagged outliers follows this report (Figure C).

In earlier analyses, data at all wells were evaluated for the following: 1) outliers; 2) trends; 3) most appropriate statistical method for Appendix III parameters based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of downgradient wells when intrawell statistical methods are recommended. Power curves were provided with the previous screening to demonstrate that the selected statistical methods for Appendix III parameters comply with the USEPA Unified Guidance. The EPA suggests the selected statistical method should provide at least 55% power at 3 standard deviations or at least 80% power at 4 standard deviations.

Summary of Statistical Methods – Appendix III Parameters:

Based on the earlier evaluation described above, the following methods were selected:

- Interwell prediction limits, combined with a 1-of-2 resample plan for boron, calcium, chloride, fluoride, pH, sulfate, and TDS

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are nondetects, a nonparametric test is utilized. While the false positive rate

associated with the parametric limits is based on an annual 10% (5% per semi-annual event) as recommended by the EPA Unified Guidance (2009), the false positive rate associated with the nonparametric limits is dependent upon the available background sample size, number of future comparisons, and verification resample plan. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits.

- No statistical analyses are required on wells and analytes containing 100% nondetects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% nondetects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for nondetects is the practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% nondetects, the Kaplan-Meier nondetect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% nondetects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the interwell case, prediction limits are updated with upgradient well data during each event after careful screening for any new outliers. In the intrawell case, data for all wells and constituents may be re-evaluated when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater quality. In some cases, the earlier portion of data are deselected prior to construction of limits to provide sensitive limits that will rapidly detect changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

Background Screening – Conducted in March 2019

Outlier and Trend Testing

Time series plots were used to identify suspected outliers, or extreme values that would result in limits that are not conservative from a regulatory perspective, in proposed background data. Suspected outliers at all wells for Appendix III and Appendix IV

parameters were formally tested using Tukey's box plot method and, when identified either visually or by Tukey's test, flagged in the computer database with "o" and deselected prior to construction of statistical limits. A list of flagged values is provided in the outlier summary. Although outliers are screened for all wells, only outliers in upgradient wells will affect the interwell prediction limits.

When suspected outliers were evaluated using the Tukey box plot method during the previous screening, a few outliers were identified. In cases where the most recent value was identified as an outlier, values were not flagged in the database as they may represent a future trend. If future values do not remain at similar concentrations, these values will be flagged as outliers and deselected. Several low values exist in the data sets and appear on the graphs as possible low outliers relative to the Practical Quantitation Limit. However, these values are observed trace values (i.e. measurements reported by the laboratory between the Method Detection Limit and the Practical Quantitation Limit) and, therefore, were not flagged as outliers.

When any values are flagged in the database as outliers, they were plotted in a disconnected and lighter symbol on the time series graph. A substitution of the most recent reporting limit was applied when varying detection limits existed in data.

No obvious seasonal patterns were observed on the time series plots for any of the detected data; therefore, no deseasonalizing adjustments were made to the data. When seasonal patterns are observed, data may be deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

While trends may be identified by visual inspection, a quantification of the trend and its significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each well to identify statistically significant increasing or decreasing trends. In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of prediction limits. This step serves to eliminate the trend and, thus, reduce variation in background. When statistically significant decreasing trends are present, earlier data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and will be deselected as necessary. When the historical records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits.

The results of the trend analyses showed a handful of statistically significant decreasing and increasing trends for the Appendix III parameters. All trends noted were relatively low

in magnitude when compared to average concentrations and were in downgradient wells; therefore, they did not affect the interwell limits, and no adjustments were made to the data sets. Trend test results were included with the background screening report.

Appendix III – Determination of Spatial Variation

The Analysis of Variance (ANOVA) was used to statistically evaluate differences in average concentrations among upgradient wells, which assists in identifying the most appropriate statistical approach. Interwell tests, which compare downgradient well data to statistical limits constructed from pooled upgradient well data, are appropriate when average concentrations are similar across upgradient wells. Intrawell tests, which compare compliance data from a single well to screened historical data within the same well, are appropriate when upgradient wells exhibit spatial variation; when statistical limits constructed from upgradient wells would not be conservative from a regulatory perspective; and when downgradient water quality is unimpacted compared to upgradient water quality for the same parameter.

The ANOVA identified no variation among upgradient well data for fluoride, making this constituent eligible for interwell analyses. Variation was noted for boron, calcium, chloride, pH, sulfate and TDS. While data were further tested for intrawell eligibility during the screening, interwell methods will be used for all Appendix III constituents in accordance with Georgia EPD requirements.

Evaluation of Appendix III Parameters – March 2020

Interwell prediction limits, combined with a 1-of-2 resample plan, were constructed using all historical upgradient well data through March 2020 (Figure D). Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are statistically significant increases (SSIs). Note that due to an increased reporting limit (RL) of <0.1 mg/L for the most recent sampling event, an RL of 0.04 mg/L was substituted for boron to maintain conservative statistical limits.

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When resamples confirm the initial exceedance, a statistically significant increase is identified and further research would be required to identify the cause of the exceedance (i.e. impact from the site, natural variation, or an off-site source). If the resample falls within the statistical limit, the initial exceedance is considered to be a false

positive result and, therefore, no exceedance is noted and no further action is necessary. If no resample is collected, the original result is considered a confirmed exceedance. Prediction limit exceedances were noted for Appendix III parameters. A summary table of the background prediction limits follows this letter.

When prediction limit exceedances are identified in downgradient wells, data are further evaluated using the Sen's Slope/Mann Kendall trend test to determine whether concentrations are statistically increasing, decreasing, or stable (Figure E). Upgradient wells are included in the trend analyses to identify whether similar patterns exist upgradient of the site which is an indication of natural variability in groundwater unrelated to practices at the site. Statistically significant increasing trends were noted for boron in downgradient well BRGWC-35S and for chloride in downgradient well BRGWC-36S. Statistically significant decreasing trends were noted for pH in upgradient well BRGWA-2I and downgradient well BRGWC-38S; sulfate in downgradient well BRGWC-34S; and TDS in downgradient wells BRGWC-34S and BRGWC-38S. A summary of the trend test results follows this letter.

Evaluation of Appendix IV Parameters – March 2020

Interwell tolerance limits were used to calculate the site-specific background limits from pooled upgradient well data for Appendix IV constituents (Figure F). Parametric tolerance limits are used when data follow a normal or transformed-normal distribution such as for barium and radium. When data contained greater than 50% nondetects or did not follow a normal or transformed-normal distribution, non-parametric tolerance limits were used. The background limits were then used when determining the groundwater protection standard (GWPS) under 40 CFR §257.95(h) and Georgia EPD Rule 391-3-4-.10(6)(a) (Figure G).

As described in 40 CFR §257.95(h) (1-3), the GWPS is:

- The maximum contaminant level (MCL) established under §141.62 and §141.66 of this title
- Where an MCL has not been established for a constituent, CCR-rule specified level have been specified for cobalt (0.006 mg/L), lead (0.015 mg/L), lithium (0.040 mg/L), and molybdenum (0.100 mg/L)
- The respective background level for a constituent when the background level is higher than the MCL or Federal CCR Rule identified GWPS

On July 30, 2018, USEPA revised the Federal CCR rule updating GWPS for cobalt, lead, lithium, and molybdenum as described above in 40 CFR §257.95(h)(2). Georgia EPD has

not incorporated the updated GWPS into the current Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a); therefore, for sites regulated under Georgia EPD Rules, the GWPS is:

- The MCL or
- The background concentration when an MCL is not established or when the background concentration is higher than the MCL.

Following the above Georgia EPD Rule requirements, GWPS were established for statistical comparison of Appendix IV constituents for the March 2020 sample event. To complete the statistical comparison to GWPS, confidence intervals were constructed for each of the Appendix IV constituents in each downgradient well (Figure H). The Sanitas software was used to calculate the tolerance limits and the confidence intervals. Those confidence intervals were compared to the GWPS established using the Georgia EPD Rules 391-3-4-.10(6)(a). Only when the entire confidence interval is above a GWPS is the downgradient well/constituent pair considered to exceed its respective standard. If there is an exceedance of the GWPS, a statistically significant level (SSL) exceedance is identified. Exceedances were noted for beryllium in well BRGWC-38S and for cobalt in wells BRGWC-33S and BRGWC-38S. A summary of the confidence intervals follows this letter.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for Plant Branch Pond E. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,

Andrew T. Collins
Groundwater Analyst

Kristina L. Rayner
Groundwater Statistician

100% Nondetect Well-Constituent Pairs

Date: 3/31/2020 3:16 PM

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Antimony (mg/L)

BRGWA-5I, BRGWA-6S, BRGWC-33S, BRGWC-34S, BRGWC-35S

Arsenic (mg/L)

BRGWC-34S

Beryllium (mg/L)

BRGWA-2I, BRGWA-2S, BRGWA-5I, BRGWA-5S, BRGWA-6S, BRGWC-17S, BRGWC-37S

Cadmium (mg/L)

BRGWA-2I, BRGWA-2S, BRGWA-5I, BRGWA-5S, BRGWA-6S, BRGWC-17S, BRGWC-35S, BRGWC-37S

Chromium (mg/L)

BRGWC-34S

Cobalt (mg/L)

BRGWC-17S, BRGWC-36S, BRGWC-37S

Lead (mg/L)

BRGWA-5I, BRGWC-17S, BRGWC-36S

Lithium (mg/L)

BRGWA-2S, BRGWA-5S, BRGWC-37S

Mercury (mg/L)

BRGWA-5I, BRGWA-6S

Molybdenum (mg/L)

BRGWA-2S, BRGWA-5S, BRGWA-6S, BRGWC-17S, BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S, BRGWC-37S

Selenium (mg/L)

BRGWA-2I, BRGWA-2S, BRGWA-5I, BRGWA-5S, BRGWA-6S, BRGWC-34S, BRGWC-35S, BRGWC-37S

Thallium (mg/L)

BRGWA-2I, BRGWA-2S, BRGWA-5I, BRGWA-5S, BRGWA-6S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-37S

Outlier Summary

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:31 PM

	BRGWA-5I Cobalt (mg/L)	BRGWC-37S Sulfate as SO4 (mg/L)
2/13/2018	<0.01 (o)	
2/15/2018		1.9 (J,o)

Interwell Prediction Limits Summary Table - Significant Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Alpha	Method
Boron (mg/L)	BRGWC-33S	0.04	n/a	3/5/2020	1.5	Yes	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Boron (mg/L)	BRGWC-34S	0.04	n/a	3/5/2020	2.1	Yes	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Boron (mg/L)	BRGWC-35S	0.04	n/a	3/5/2020	1.9	Yes	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Boron (mg/L)	BRGWC-36S	0.04	n/a	3/5/2020	1.1	Yes	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Boron (mg/L)	BRGWC-38S	0.04	n/a	3/5/2020	1.6	Yes	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Calcium (mg/L)	BRGWC-17S	24	n/a	3/3/2020	29.7	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Calcium (mg/L)	BRGWC-33S	24	n/a	3/5/2020	48.1	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Calcium (mg/L)	BRGWC-34S	24	n/a	3/5/2020	89.6	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Calcium (mg/L)	BRGWC-35S	24	n/a	3/5/2020	69.9	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Calcium (mg/L)	BRGWC-36S	24	n/a	3/5/2020	51.7	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Calcium (mg/L)	BRGWC-38S	24	n/a	3/5/2020	39.8	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-34S	4.8	n/a	3/5/2020	6.4	Yes	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-35S	4.8	n/a	3/5/2020	5.8	Yes	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-36S	4.8	n/a	3/5/2020	7.6	Yes	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-38S	4.8	n/a	3/5/2020	5.8	Yes	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-38S	0.3	n/a	3/5/2020	0.92	Yes	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
pH, Field (S.U)	BRGWC-33S	7.156	5.905	3/5/2020	4.82	Yes	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	BRGWC-34S	7.156	5.905	3/5/2020	5.89	Yes	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	BRGWC-36S	7.156	5.905	3/5/2020	5.39	Yes	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	BRGWC-38S	7.156	5.905	3/5/2020	4.01	Yes	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	BRGWC-37S	7.156	5.905	3/5/2020	5.53	Yes	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-17S	7.5	n/a	3/3/2020	95.4	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-33S	7.5	n/a	3/5/2020	173	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-34S	7.5	n/a	3/5/2020	287	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-35S	7.5	n/a	3/5/2020	269	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-36S	7.5	n/a	3/5/2020	262	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-38S	7.5	n/a	3/5/2020	370	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-34S	299	n/a	3/5/2020	489	Yes	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-35S	299	n/a	3/5/2020	535	Yes	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-36S	299	n/a	3/5/2020	457	Yes	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-38S	299	n/a	3/5/2020	608	Yes	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2

Interwell Prediction Limits Summary Table - All Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Alpha	Method
Boron (mg/L)	BRGWC-17S	0.04	n/a	3/3/2020	0.0075	No	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Boron (mg/L)	**BRGWC-33S**	**0.04**	**n/a**	**3/5/2020**	**1.5**	**Yes**	**55**	**n/a**	**n/a**	**65.45**	**n/a**	**0.0006289**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**BRGWC-34S**	**0.04**	**n/a**	**3/5/2020**	**2.1**	**Yes**	**55**	**n/a**	**n/a**	**65.45**	**n/a**	**0.0006289**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**BRGWC-35S**	**0.04**	**n/a**	**3/5/2020**	**1.9**	**Yes**	**55**	**n/a**	**n/a**	**65.45**	**n/a**	**0.0006289**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**BRGWC-36S**	**0.04**	**n/a**	**3/5/2020**	**1.1**	**Yes**	**55**	**n/a**	**n/a**	**65.45**	**n/a**	**0.0006289**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**BRGWC-38S**	**0.04**	**n/a**	**3/5/2020**	**1.6**	**Yes**	**55**	**n/a**	**n/a**	**65.45**	**n/a**	**0.0006289**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	BRGWC-37S	0.04	n/a	3/5/2020	0.0076	No	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Calcium (mg/L)	**BRGWC-17S**	**24**	**n/a**	**3/3/2020**	**29.7**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**BRGWC-33S**	**24**	**n/a**	**3/5/2020**	**48.1**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**BRGWC-34S**	**24**	**n/a**	**3/5/2020**	**89.6**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**BRGWC-35S**	**24**	**n/a**	**3/5/2020**	**69.9**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**BRGWC-36S**	**24**	**n/a**	**3/5/2020**	**51.7**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**BRGWC-38S**	**24**	**n/a**	**3/5/2020**	**39.8**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	BRGWC-37S	24	n/a	3/5/2020	3.7	No	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-17S	4.8	n/a	3/3/2020	3.8	No	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-33S	4.8	n/a	3/5/2020	4.8	No	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	**BRGWC-34S**	**4.8**	**n/a**	**3/5/2020**	**6.4**	**Yes**	**55**	**n/a**	**n/a**	**0**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Chloride, Total (mg/L)	**BRGWC-35S**	**4.8**	**n/a**	**3/5/2020**	**5.8**	**Yes**	**55**	**n/a**	**n/a**	**0**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Chloride, Total (mg/L)	**BRGWC-36S**	**4.8**	**n/a**	**3/5/2020**	**7.6**	**Yes**	**55**	**n/a**	**n/a**	**0**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Chloride, Total (mg/L)	**BRGWC-38S**	**4.8**	**n/a**	**3/5/2020**	**5.8**	**Yes**	**55**	**n/a**	**n/a**	**0**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Chloride, Total (mg/L)	BRGWC-37S	4.8	n/a	3/5/2020	1.8	No	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-17S	0.3	n/a	3/3/2020	0.093	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-33S	0.3	n/a	3/5/2020	0.088	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-34S	0.3	n/a	3/5/2020	0.072	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-35S	0.3	n/a	3/5/2020	0.067	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-36S	0.3	n/a	3/5/2020	0.3ND	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
Fluoride (mg/L)	**BRGWC-38S**	**0.3**	**n/a**	**3/5/2020**	**0.92**	**Yes**	**60**	**n/a**	**n/a**	**46.67**	**n/a**	**0.0005205**	**NP Inter (normality) 1 of 2**
Fluoride (mg/L)	BRGWC-37S	0.3	n/a	3/5/2020	0.05	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
pH, Field (S.U)	BRGWC-17S	7.156	5.905	3/3/2020	6.34	No	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	**BRGWC-33S**	**7.156**	**5.905**	**3/5/2020**	**4.82**	**Yes**	**59**	**6.531**	**0.3254**	**0**	**None**	**0.0005373**	**Param Inter 1 of 2**
pH, Field (S.U)	**BRGWC-34S**	**7.156**	**5.905**	**3/5/2020**	**5.89**	**Yes**	**59**	**6.531**	**0.3254**	**0**	**None**	**0.0005373**	**Param Inter 1 of 2**
pH, Field (S.U)	BRGWC-35S	7.156	5.905	3/5/2020	6.04	No	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	**BRGWC-36S**	**7.156**	**5.905**	**3/5/2020**	**5.39**	**Yes**	**59**	**6.531**	**0.3254**	**0**	**None**	**0.0005373**	**Param Inter 1 of 2**
pH, Field (S.U)	**BRGWC-38S**	**7.156**	**5.905**	**3/5/2020**	**4.01**	**Yes**	**59**	**6.531**	**0.3254**	**0**	**None**	**0.0005373**	**Param Inter 1 of 2**
pH, Field (S.U)	**BRGWC-37S**	**7.156**	**5.905**	**3/5/2020**	**5.53**	**Yes**	**59**	**6.531**	**0.3254**	**0**	**None**	**0.0005373**	**Param Inter 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-17S**	**7.5**	**n/a**	**3/3/2020**	**95.4**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-33S**	**7.5**	**n/a**	**3/5/2020**	**173**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-34S**	**7.5**	**n/a**	**3/5/2020**	**287**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-35S**	**7.5**	**n/a**	**3/5/2020**	**269**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-36S**	**7.5**	**n/a**	**3/5/2020**	**262**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-38S**	**7.5**	**n/a**	**3/5/2020**	**370**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	BRGWC-37S	7.5	n/a	3/5/2020	0.5ND	No	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-17S	299	n/a	3/3/2020	263	No	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-33S	299	n/a	3/5/2020	292	No	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-34S**	**299**	**n/a**	**3/5/2020**	**489**	**Yes**	**55**	**n/a**	**n/a**	**3.636**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-35S**	**299**	**n/a**	**3/5/2020**	**535**	**Yes**	**55**	**n/a**	**n/a**	**3.636**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-36S**	**299**	**n/a**	**3/5/2020**	**457**	**Yes**	**55**	**n/a**	**n/a**	**3.636**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-38S**	**299**	**n/a**	**3/5/2020**	**608**	**Yes**	**55**	**n/a**	**n/a**	**3.636**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	BRGWC-37S	299	n/a	3/5/2020	39	No	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2

Trend Tests Summary Table - PL Exceedances - Significant Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:43 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**BRGWC-35S**	**0.2828**	**44**	**34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, Total (mg/L)	**BRGWC-36S**	**1.42**	**43**	**34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, Field (S.U)	**BRGWA-2I (bg)**	**-0.1345**	**-40**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, Field (S.U)	**BRGWC-38S**	**-0.2947**	**-50**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate as SO4 (mg/L)	**BRGWC-34S**	**-41.2**	**-44**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-34S**	**-61.12**	**-39**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-38S**	**-55.23**	**-41**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Tests Summary Table - PL Exceedances - All Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:43 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	BRGWA-2I (bg)	-0.001267	-19	-34	No	11	9.091	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWA-2S (bg)	0	0	34	No	11	100	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWA-5I (bg)	0	3	34	No	11	81.82	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWA-5S (bg)	0	-10	-34	No	11	63.64	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWA-6S (bg)	0	-5	-34	No	11	72.73	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWC-33S	0.02924	11	34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWC-34S	0.04464	9	34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	**BRGWC-35S**	**0.2828**	**44**	**34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	BRGWC-36S	0.07328	34	38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWC-38S	-0.07403	-16	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWA-2I (bg)	1.558	30	34	No	11	9.091	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWA-2S (bg)	-0.08179	-17	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWA-5I (bg)	0.1887	4	34	No	11	9.091	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWA-5S (bg)	0.1446	5	34	No	11	9.091	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWA-6S (bg)	0.1665	23	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-17S	0.9749	12	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-33S	-0.3071	-5	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-34S	-6.153	-31	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-35S	1.748	13	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-36S	-0.6675	-12	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-38S	-1.949	-29	-34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWA-2I (bg)	0	1	34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWA-2S (bg)	0.03034	9	34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWA-5I (bg)	-0.06867	-10	-34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWA-5S (bg)	0	0	34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWA-6S (bg)	0.05993	17	34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWC-34S	-0.1931	-24	-34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWC-35S	0.1753	22	34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	**BRGWC-36S**	**1.42**	**43**	**34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, Total (mg/L)	BRGWC-38S	0.3672	13	34	No	11	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWA-2I (bg)	-0.01107	-10	-38	No	12	33.33	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWA-2S (bg)	0	2	38	No	12	50	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWA-5I (bg)	0	18	38	No	12	66.67	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWA-5S (bg)	-0.008236	-16	-38	No	12	33.33	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWA-6S (bg)	0	6	38	No	12	50	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWC-38S	0.05214	15	38	No	12	0	n/a	n/a	0.01	NP
pH, Field (S.U)	**BRGWA-2I (bg)**	**-0.1345**	**-40**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, Field (S.U)	BRGWA-2S (bg)	-0.03789	-29	-38	No	12	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWA-5I (bg)	-0.01219	-6	-38	No	12	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWA-5S (bg)	-0.01337	-7	-38	No	12	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWA-6S (bg)	-0.04166	-8	-34	No	11	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWC-33S	-0.01407	-18	-43	No	13	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWC-34S	0.01346	10	38	No	12	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWC-36S	-0.01108	-3	-34	No	11	0	n/a	n/a	0.01	NP
pH, Field (S.U)	**BRGWC-38S**	**-0.2947**	**-50**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, Field (S.U)	BRGWC-37S	0.01901	2	25	No	9	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWA-2I (bg)	-0.2487	-9	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWA-2S (bg)	0.09547	18	34	No	11	18.18	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWA-5I (bg)	0.04269	3	34	No	11	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWA-5S (bg)	-0.04162	-13	-34	No	11	18.18	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWA-6S (bg)	-0.006861	-3	-34	No	11	18.18	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWC-17S	2.901	10	34	No	11	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWC-33S	-10.94	-18	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	**BRGWC-34S**	**-41.2**	**-44**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate as SO4 (mg/L)	BRGWC-35S	1.04	3	34	No	11	0	n/a	n/a	0.01	NP

Trend Tests Summary Table - PL Exceedances - All Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:43 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Sulfate as SO4 (mg/L)	BRGWC-36S	-9.456	-11	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWC-38S	-22.73	-30	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWA-2I (bg)	6.016	5	34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWA-2S (bg)	4.65	6	34	No	11	9.091	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWA-5I (bg)	-1.132	-2	-34	No	11	9.091	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWA-5S (bg)	-3.285	-12	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWA-6S (bg)	-3.411	-6	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-34S**	**-61.12**	**-39**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids [TDS] (mg/L)	BRGWC-35S	1.315	5	34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWC-36S	-13.41	-32	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-38S**	**-55.23**	**-41**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Tolerance Limit Summary Table

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/23/2020, 9:29 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	n/a	55	n/a	n/a	92.73	n/a	n/a	0.05954	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	n/a	55	n/a	n/a	69.09	n/a	n/a	0.05954	NP Inter(NDs)
Barium (mg/L)	n/a	0.063	n/a	n/a	n/a	n/a	55	n/a	n/a	0	n/a	n/a	0.05954	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	n/a	55	n/a	n/a	100	n/a	n/a	0.05954	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	n/a	n/a	n/a	n/a	55	n/a	n/a	100	n/a	n/a	0.05954	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01416	n/a	n/a	n/a	n/a	55	0.005614	0.004197	21.82	Kaplan-Meier	No	0.05	Inter
Cobalt (mg/L)	n/a	0.005	n/a	n/a	n/a	n/a	54	n/a	n/a	50	n/a	n/a	0.06267	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	1.467	n/a	n/a	n/a	n/a	55	0.7126	0.3703	0	None	No	0.05	Inter
Fluoride (mg/L)	n/a	0.3	n/a	n/a	n/a	n/a	60	n/a	n/a	46.67	n/a	n/a	0.04607	NP Inter(normality)
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	n/a	55	n/a	n/a	76.36	n/a	n/a	0.05954	NP Inter(NDs)
Lithium (mg/L)	n/a	0.089	n/a	n/a	n/a	n/a	55	n/a	n/a	49.09	n/a	n/a	0.05954	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	n/a	45	n/a	n/a	88.89	n/a	n/a	0.09944	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	n/a	55	n/a	n/a	72.73	n/a	n/a	0.05954	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	n/a	55	n/a	n/a	100	n/a	n/a	0.05954	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	n/a	55	n/a	n/a	100	n/a	n/a	0.05954	NP Inter(NDs)

PLANT BRANCH POND E GWPS			
Constituent Name	**MCL**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006	0.003	0.006
Arsenic, Total (mg/L)	0.01	0.005	0.01
Barium, Total (mg/L)	2	0.063	2
Beryllium, Total (mg/L)	0.004	0.003	0.004
Cadmium, Total (mg/L)	0.005	0.0025	0.005
Chromium, Total (mg/L)	0.1	0.01416	0.1
Cobalt, Total (mg/L)		0.005	0.005
Combined Radium, Total (pCi/L)	5	1.467	5
Fluoride, Total (mg/L)	4	0.3	4
Lead, Total (mg/L)		0.005	0.005
Lithium, Total (mg/L)		0.089	0.089
Mercury, Total (mg/L)	0.002	0.0005	0.002
Molybdenum, Total (mg/L)		0.01	0.01
Selenium, Total (mg/L)	0.05	0.01	0.05
Thallium, Total (mg/L)	0.002	0.001	0.002

**Highlighted cells indicated Background is higher than MCLs.*

**MCL = Maximum Contaminant Level*

**GWPS = Groundwater Protection Standard*

Confidence Intervals - Significant Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/23/2020, 1:14 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Cadmium (mg/L)	**BRGWC-50**	**0.05875**	**0.01327**	**0.005**	**Yes**	**11**	**0.03601**	**0.02729**	**0**	**None**	**No**	**0.01**	**Param.**
Cobalt (mg/L)	**BRGWC-50**	**1.5**	**1.3**	**0.0135**	**Yes**	**11**	**1.391**	**0.07006**	**0**	**None**	**No**	**0.006**	**NP (normality)**
Lithium (mg/L)	**BRGWC-47**	**0.04447**	**0.04009**	**0.03**	**Yes**	**12**	**0.04228**	**0.002791**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium (mg/L)	**BRGWC-50**	**0.04217**	**0.03747**	**0.03**	**Yes**	**11**	**0.03982**	**0.002822**	**0**	**None**	**No**	**0.01**	**Param.**

Confidence Intervals - All Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/23/2020, 1:14 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	BRGWC-29I	0.003	0.003	0.012	No	11	0.002791	0.0006935	90.91	None	No	0.006	NP (NDs)
Antimony (mg/L)	BRGWC-32S	0.003	0.003	0.012	No	11	0.002855	0.0004824	90.91	None	No	0.006	NP (NDs)
Antimony (mg/L)	BRGWC-45	0.003	0.00088	0.012	No	12	0.002445	0.0009327	66.67	None	No	0.01	NP (NDs)
Antimony (mg/L)	BRGWC-52I	0.003	0.00085	0.012	No	11	0.002571	0.0009593	81.82	None	No	0.006	NP (NDs)
Antimony (mg/L)	BRGWC-50	0.003	0.003	0.012	No	11	0.002775	0.0007477	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-25I	0.005	0.0006	0.01	No	11	0.003432	0.002178	63.64	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-27I	0.005	0.0009	0.01	No	11	0.003555	0.002012	63.64	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-29I	0.005	0.00051	0.01	No	11	0.0032	0.002117	54.55	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-30I	0.005	0.005	0.01	No	11	0.004596	0.001339	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-32S	0.005	0.005	0.01	No	11	0.004594	0.001348	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-45	0.005	0.0007	0.01	No	12	0.003341	0.002084	58.33	None	No	0.01	NP (NDs)
Arsenic (mg/L)	BRGWC-47	0.001962	0.0008551	0.01	No	12	0.002695	0.001798	33.33	Kaplan-Meier	sqrt(x)	0.01	Param.
Arsenic (mg/L)	BRGWC-52I	0.003528	0.001325	0.01	No	11	0.003279	0.001587	27.27	Kaplan-Meier	No	0.01	Param.
Arsenic (mg/L)	BRGWC-50	0.005	0.00074	0.01	No	11	0.003873	0.001943	72.73	Kaplan-Meier	No	0.006	NP (NDs)
Barium (mg/L)	BRGWC-25I	0.03965	0.02842	2	No	11	0.03404	0.006738	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-27I	0.01753	0.01494	2	No	11	0.01624	0.001552	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-29I	0.02046	0.01629	2	No	11	0.01839	0.002615	9.091	None	sqrt(x)	0.01	Param.
Barium (mg/L)	BRGWC-30I	0.02578	0.02096	2	No	11	0.02337	0.002891	9.091	None	No	0.01	Param.
Barium (mg/L)	BRGWC-32S	0.04928	0.03203	2	No	11	0.04065	0.01035	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-45	0.1014	0.08129	2	No	12	0.09133	0.0128	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-47	0.04704	0.03578	2	No	12	0.04141	0.007178	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-52I	0.0291	0.01617	2	No	11	0.02264	0.007762	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-50	0.02142	0.0184	2	No	11	0.01991	0.001814	0	None	No	0.01	Param.
Beryllium (mg/L)	BRGWC-27I	0.003	0.0001	0.004	No	12	0.0011	0.001404	33.33	None	No	0.01	NP (normality)
Beryllium (mg/L)	BRGWC-29I	0.003	0.00072	0.004	No	11	0.001315	0.0008624	18.18	None	No	0.006	NP (normality)
Beryllium (mg/L)	BRGWC-45	0.003	0.000079	0.004	No	13	0.002775	0.0008101	92.31	None	No	0.01	NP (NDs)
Beryllium (mg/L)	BRGWC-47	0.003	0.000056	0.004	No	12	0.002509	0.001146	83.33	None	No	0.01	NP (NDs)
Beryllium (mg/L)	BRGWC-50	0.00405	0.002619	0.004	No	11	0.003409	0.0008443	18.18	Kaplan-Meier	No	0.01	Param.
Cadmium (mg/L)	BRGWC-27I	0.0025	0.001	0.005	No	12	0.002172	0.0007902	91.67	None	No	0.01	NP (NDs)
Cadmium (mg/L)	BRGWC-32S	0.0025	0.00011	0.005	No	12	0.001976	0.0009735	83.33	None	No	0.01	NP (NDs)
Cadmium (mg/L)	BRGWC-45	0.0025	0.00011	0.005	No	13	0.002131	0.0008998	84.62	None	No	0.01	NP (NDs)
Cadmium (mg/L)	BRGWC-47	0.0025	0.00014	0.005	No	12	0.0007567	0.001052	25	None	No	0.01	NP (normality)
Cadmium (mg/L)	**BRGWC-50**	**0.05875**	**0.01327**	**0.005**	**Yes**	**11**	**0.03601**	**0.02729**	**0**	**None**	**No**	**0.01**	**Param.**
Chromium (mg/L)	BRGWC-25I	0.01	0.0016	0.1	No	11	0.008416	0.003526	81.82	None	No	0.006	NP (NDs)
Chromium (mg/L)	BRGWC-27I	0.01	0.003	0.1	No	11	0.008545	0.003267	81.82	None	No	0.006	NP (NDs)
Chromium (mg/L)	BRGWC-29I	0.01	0.01	0.1	No	11	0.01091	0.003015	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	BRGWC-30I	0.01	0.01	0.1	No	11	0.009555	0.001477	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	BRGWC-32S	0.01	0.0011	0.1	No	11	0.005264	0.004541	45.45	None	No	0.006	NP (normality)
Chromium (mg/L)	BRGWC-45	0.01	0.00053	0.1	No	12	0.009211	0.002734	91.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	BRGWC-47	0.01	0.00092	0.1	No	12	0.007792	0.004002	75	None	No	0.01	NP (NDs)
Chromium (mg/L)	BRGWC-52I	0.01	0.01	0.1	No	11	0.009245	0.002503	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	BRGWC-50	0.01	0.00071	0.1	No	11	0.007101	0.004154	63.64	None	No	0.006	NP (NDs)
Cobalt (mg/L)	BRGWC-25I	0.007708	0.004759	0.0135	No	11	0.006464	0.002081	18.18	Kaplan-Meier	No	0.01	Param.
Cobalt (mg/L)	BRGWC-27I	0.0149	0.0081	0.0135	No	12	0.01267	0.008844	8.333	None	No	0.01	NP (normality)
Cobalt (mg/L)	BRGWC-29I	0.01131	0.006181	0.0135	No	11	0.008745	0.003078	9.091	None	No	0.01	Param.
Cobalt (mg/L)	BRGWC-30I	0.005	0.0007	0.0135	No	12	0.002082	0.001786	25	None	No	0.01	NP (normality)
Cobalt (mg/L)	BRGWC-32S	0.01	0.0025	0.0135	No	12	0.005208	0.001671	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	BRGWC-45	0.04	0.0071	0.0135	No	13	0.01684	0.01795	7.692	None	No	0.01	NP (normality)
Cobalt (mg/L)	BRGWC-47	0.005189	0.0007867	0.0135	No	12	0.003224	0.003618	8.333	None	sqrt(x)	0.01	Param.
Cobalt (mg/L)	BRGWC-52I	0.005	0.0012	0.0135	No	11	0.003457	0.001752	45.45	None	No	0.006	NP (normality)
Cobalt (mg/L)	**BRGWC-50**	**1.5**	**1.3**	**0.0135**	**Yes**	**11**	**1.391**	**0.07006**	**0**	**None**	**No**	**0.006**	**NP (normality)**
Combined Radium 226 + 228 (pCi/L)	BRGWC-25I	1.265	0.828	5	No	11	1.046	0.2622	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-27I	1.308	0.6207	5	No	11	0.9643	0.4124	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-29I	1.769	1.207	5	No	11	1.488	0.3375	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-30I	1.281	0.6362	5	No	11	0.9584	0.3866	0	None	No	0.01	Param.

Confidence Intervals - All Results

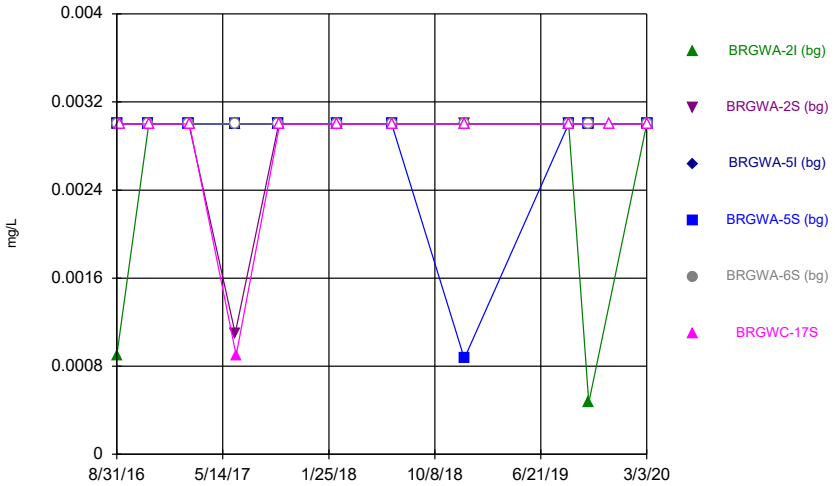
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/23/2020, 1:14 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Combined Radium 226 + 228 (pCi/L)	BRGWC-32S	1.281	0.5121	5	No	11	0.8965	0.4614	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-45	0.9417	0.4005	5	No	12	0.6711	0.3449	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-47	1.572	0.9088	5	No	12	1.24	0.4223	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-52I	1.976	1.085	5	No	11	1.53	0.5345	9.091	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-50	1.977	1.218	5	No	11	1.597	0.455	0	None	No	0.01	Param.
Fluoride (mg/L)	BRGWC-25I	0.3211	0.1107	4	No	12	0.2517	0.1579	16.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	BRGWC-27I	0.2949	0.148	4	No	12	0.2603	0.08764	25	Kaplan-Meier	No	0.01	Param.
Fluoride (mg/L)	BRGWC-29I	0.2941	0.09779	4	No	12	0.2434	0.1298	16.67	Kaplan-Meier	No	0.01	Param.
Fluoride (mg/L)	BRGWC-30I	0.4938	0.1251	4	No	12	0.3334	0.2333	16.67	Kaplan-Meier	No	0.01	Param.
Fluoride (mg/L)	BRGWC-32S	0.3	0.09	4	No	12	0.23	0.094	58.33	Kaplan-Meier	No	0.01	NP (NDs)
Fluoride (mg/L)	BRGWC-45	0.69	0.12	4	No	13	0.3389	0.2312	61.54	Kaplan-Meier	No	0.01	NP (NDs)
Fluoride (mg/L)	BRGWC-47	0.4595	0.1295	4	No	13	0.3507	0.2584	30.77	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	BRGWC-52I	0.2768	0.1399	4	No	11	0.2084	0.08217	9.091	None	No	0.01	Param.
Fluoride (mg/L)	BRGWC-50	1.109	0.2724	4	No	12	0.6908	0.5332	0	None	No	0.01	Param.
Lead (mg/L)	BRGWC-25I	0.005	0.005	0.005	No	11	0.004555	0.001474	90.91	None	No	0.006	NP (NDs)
Lead (mg/L)	BRGWC-27I	0.005	0.005	0.005	No	11	0.004551	0.001489	90.91	None	No	0.006	NP (NDs)
Lead (mg/L)	BRGWC-29I	0.0006	0.00027	0.005	No	10	0.000844	0.001464	10	None	No	0.011	NP (normality)
Lead (mg/L)	BRGWC-45	0.005	0.00026	0.005	No	12	0.004605	0.001368	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	BRGWC-47	0.005	0.00012	0.005	No	12	0.004593	0.001409	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	BRGWC-50	0.005	0.000085	0.005	No	11	0.002825	0.002502	54.55	None	No	0.006	NP (NDs)
Lithium (mg/L)	BRGWC-27I	0.025	0.0014	0.03	No	11	0.005882	0.009454	18.18	None	No	0.006	NP (normality)
Lithium (mg/L)	BRGWC-29I	0.0043	0.0029	0.03	No	11	0.005436	0.006503	9.091	None	No	0.006	NP (normality)
Lithium (mg/L)	BRGWC-30I	0.01659	0.01079	0.03	No	11	0.01384	0.004206	9.091	None	ln(x)	0.01	Param.
Lithium (mg/L)	BRGWC-32S	0.025	0.0021	0.03	No	11	0.006327	0.009233	18.18	None	No	0.006	NP (normality)
Lithium (mg/L)	BRGWC-45	0.003463	0.002991	0.03	No	11	0.003227	0.0002832	0	None	No	0.01	Param.
Lithium (mg/L)	**BRGWC-47**	**0.04447**	**0.04009**	**0.03**	**Yes**	**12**	**0.04228**	**0.002791**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium (mg/L)	BRGWC-52I	0.009418	0.002994	0.03	No	11	0.006836	0.006404	9.091	None	ln(x)	0.01	Param.
Lithium (mg/L)	**BRGWC-50**	**0.04217**	**0.03747**	**0.03**	**Yes**	**11**	**0.03982**	**0.002822**	**0**	**None**	**No**	**0.01**	**Param.**
Mercury (mg/L)	BRGWC-25I	0.0005	0.00004	0.002	No	9	0.0004489	0.0001533	88.89	None	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-27I	0.0005	0.000047	0.002	No	9	0.0003997	0.0001991	77.78	None	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-29I	0.0005	0.00004	0.002	No	9	0.0004011	0.0001964	77.78	None	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-30I	0.0005	0.00004	0.002	No	9	0.0004011	0.0001964	77.78	None	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-32S	0.0005	0.00009	0.002	No	9	0.00041	0.0001786	77.78	None	No	0.002	NP (NDs)
Molybdenum (mg/L)	BRGWC-52I	0.01	0.0032	0.01	No	10	0.00735	0.003014	50	None	No	0.011	NP (normality)
Molybdenum (mg/L)	BRGWC-50	0.01	0.0033	0.01	No	10	0.00855	0.003068	80	None	No	0.011	NP (NDs)
Selenium (mg/L)	BRGWC-27I	0.003534	0.001816	0.05	No	11	0.004845	0.003436	27.27	Kaplan-Meier	sqrt(x)	0.01	Param.
Selenium (mg/L)	BRGWC-29I	0.01	0.0039	0.05	No	11	0.007718	0.002986	54.55	Kaplan-Meier	No	0.006	NP (NDs)
Selenium (mg/L)	BRGWC-30I	0.01	0.0034	0.05	No	11	0.007591	0.003401	63.64	Kaplan-Meier	No	0.006	NP (NDs)
Selenium (mg/L)	BRGWC-32S	0.01532	0.001391	0.05	No	11	0.02802	0.0388	36.36	Kaplan-Meier	ln(x)	0.01	Param.
Selenium (mg/L)	BRGWC-45	0.01	0.0029	0.05	No	12	0.009408	0.00205	91.67	Kaplan-Meier	No	0.01	NP (NDs)
Selenium (mg/L)	BRGWC-47	0.01	0.0017	0.05	No	12	0.007933	0.00374	75	Kaplan-Meier	No	0.01	NP (NDs)
Selenium (mg/L)	BRGWC-50	0.01	0.002	0.05	No	11	0.006491	0.004047	54.55	Kaplan-Meier	No	0.006	NP (NDs)
Thallium (mg/L)	BRGWC-29I	0.0002	0.00017	0.002	No	10	0.000212	0.0001023	10	None	No	0.011	NP (normality)

FIGURE A.

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

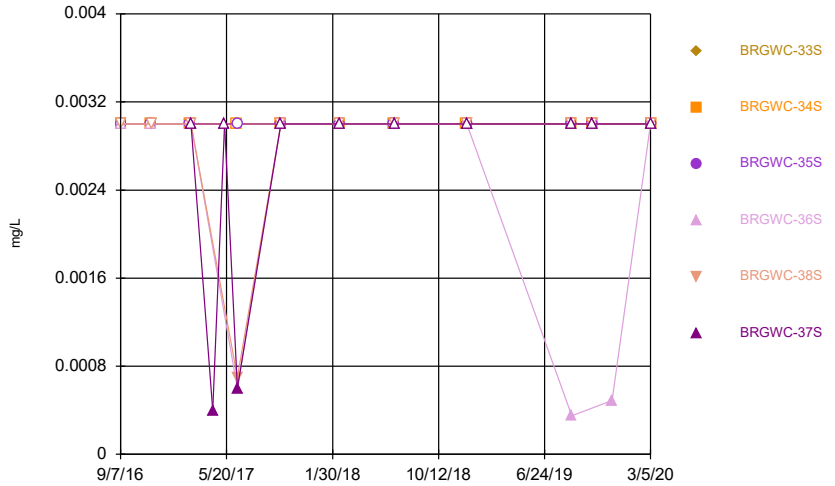
Time Series



Constituent: Antimony Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

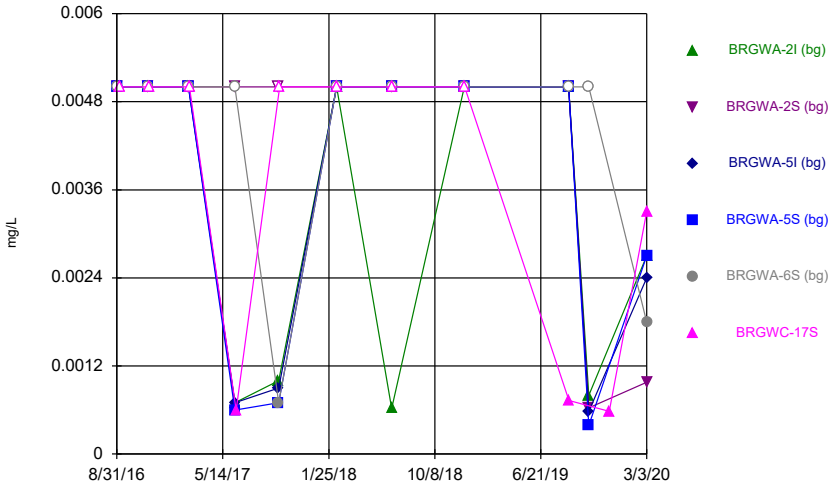
Time Series



Constituent: Antimony Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

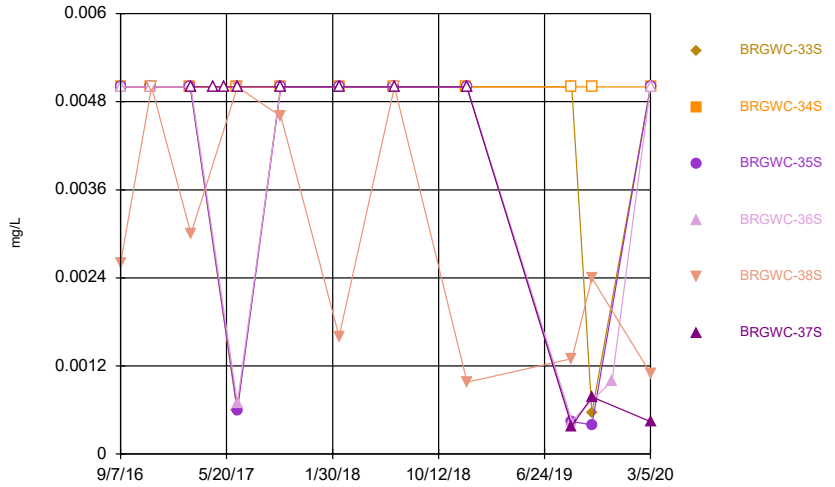
Time Series



Constituent: Arsenic Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

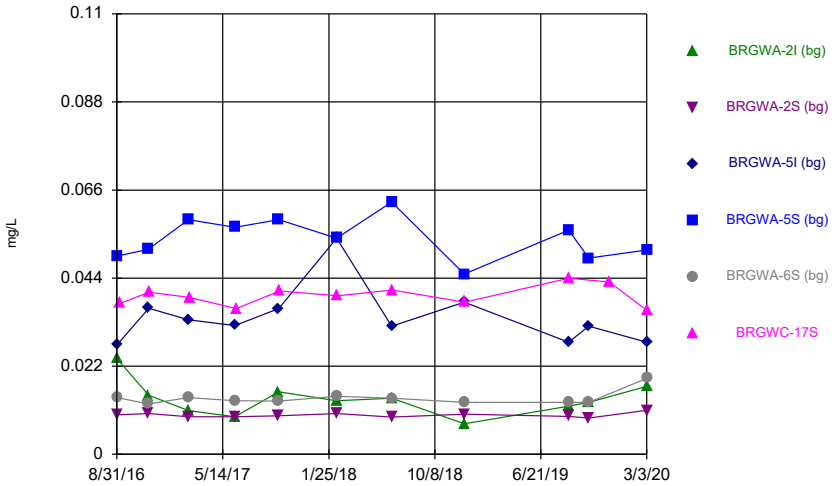
Time Series



Constituent: Arsenic Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

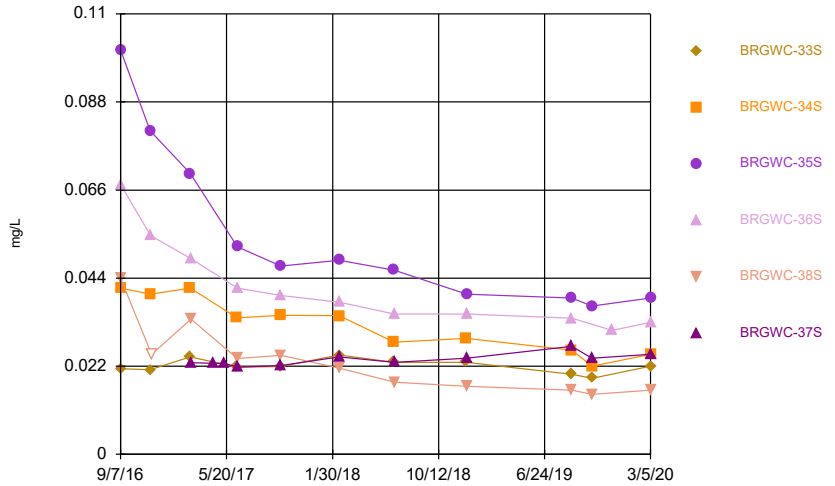
Time Series



Constituent: Barium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

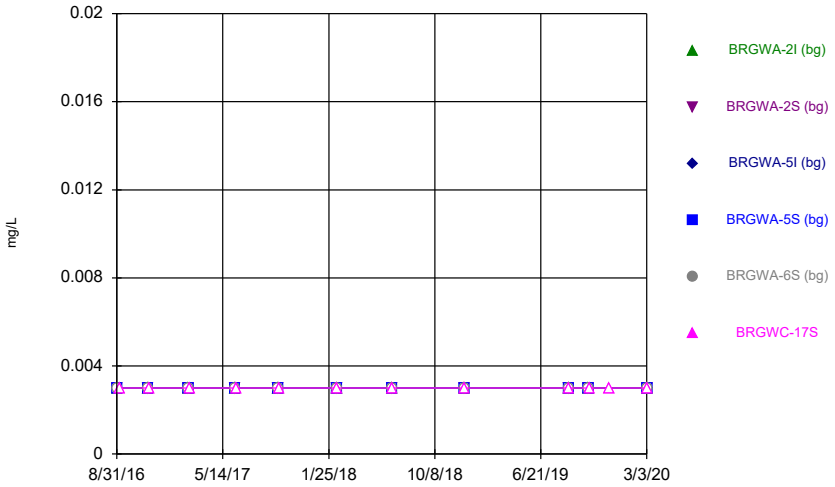
Time Series



Constituent: Barium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

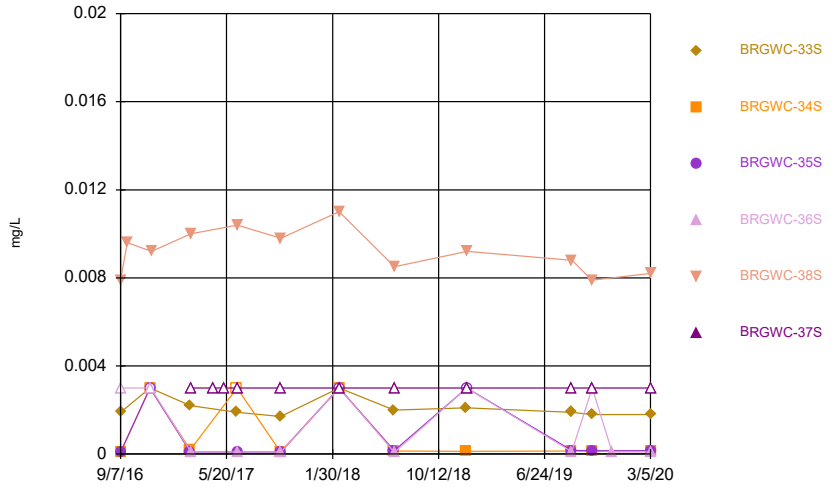
Time Series



Constituent: Beryllium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

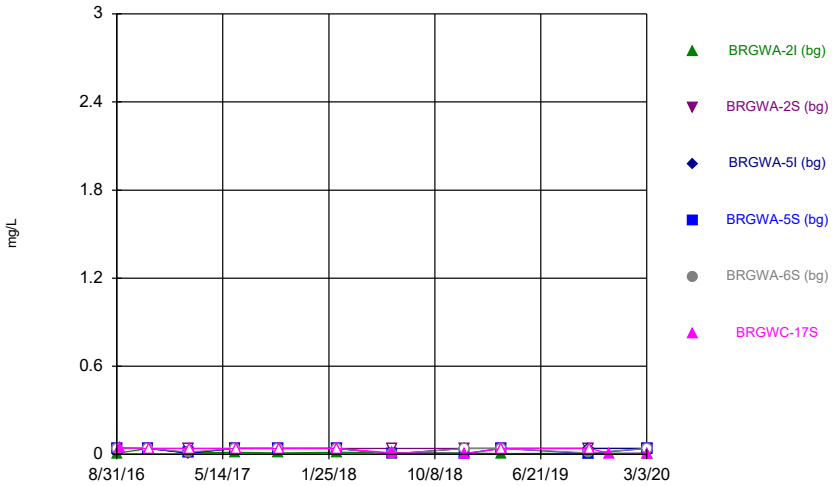
Time Series



Constituent: Beryllium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

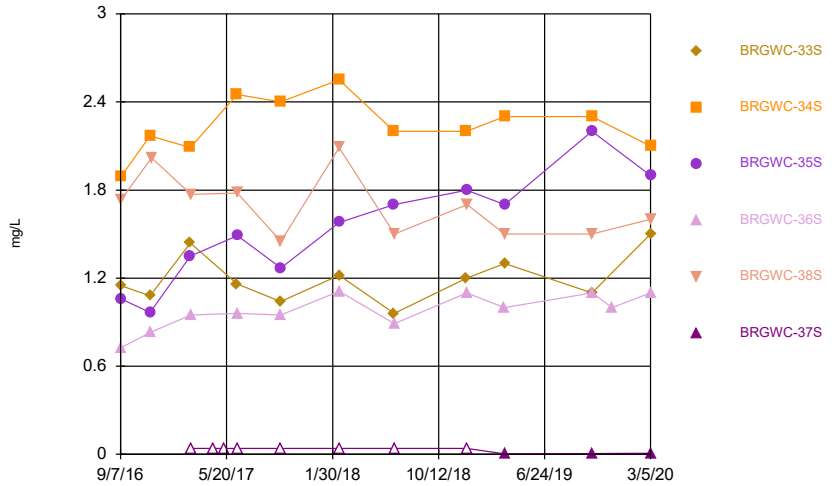
Time Series



Constituent: Boron Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

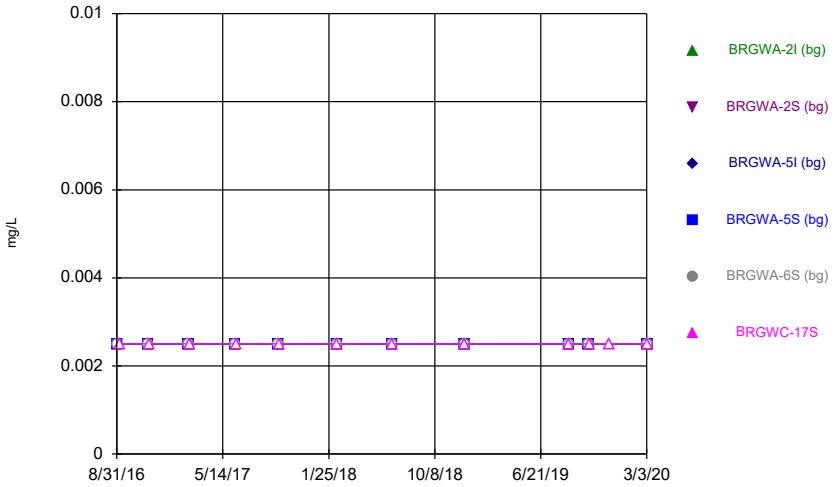
Time Series



Constituent: Boron Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

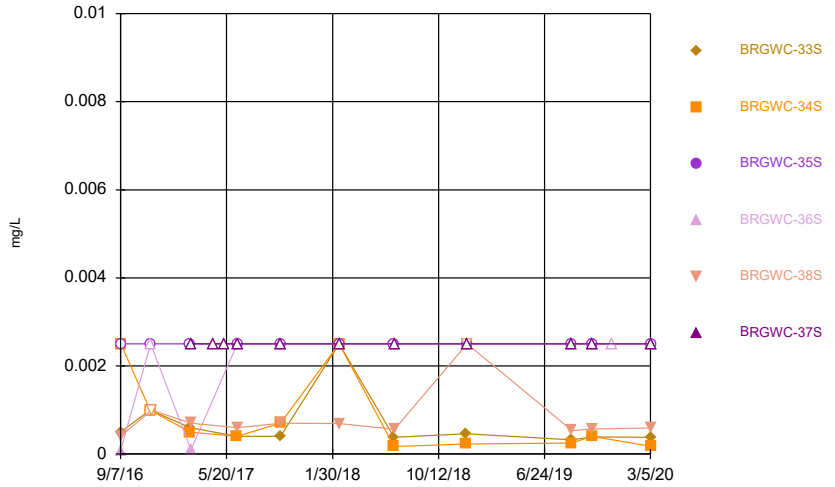
Time Series



Constituent: Cadmium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

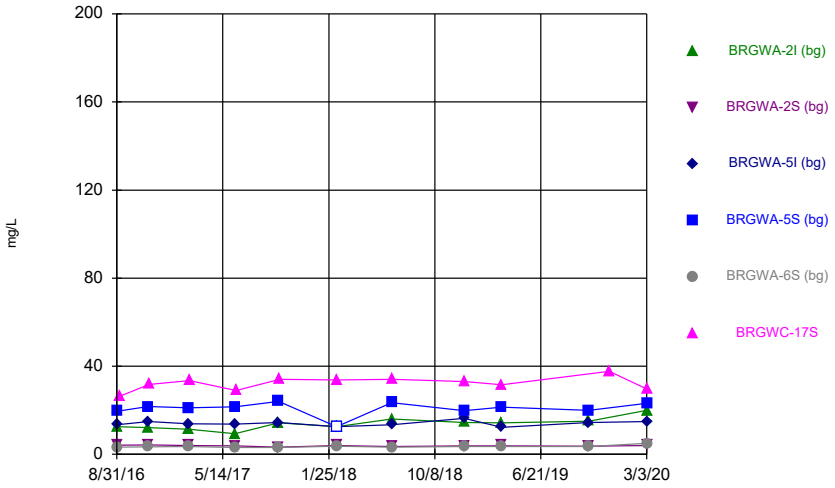
Time Series



Constituent: Cadmium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

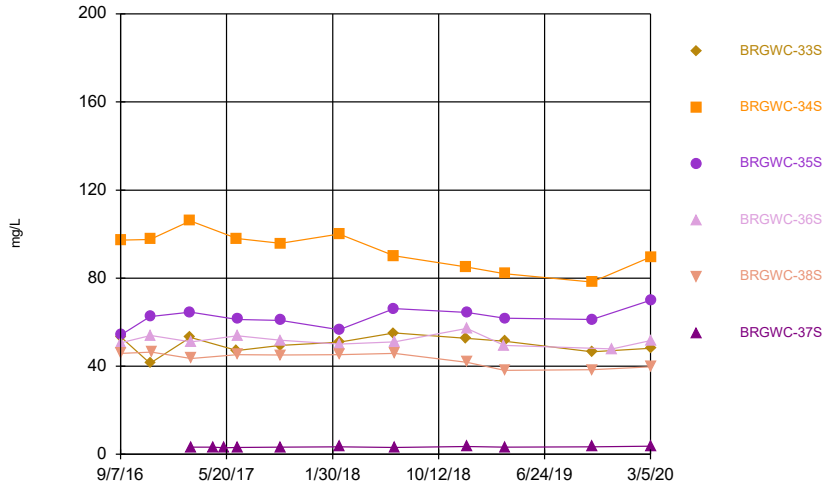
Time Series



Constituent: Calcium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

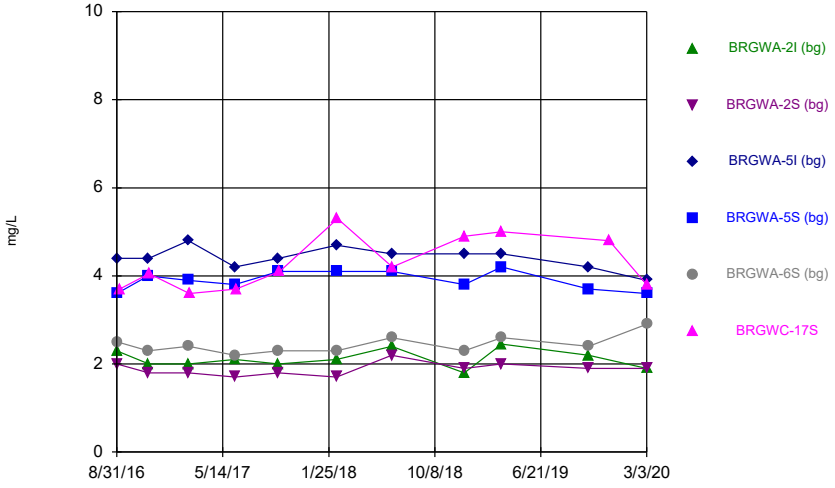
Time Series



Constituent: Calcium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

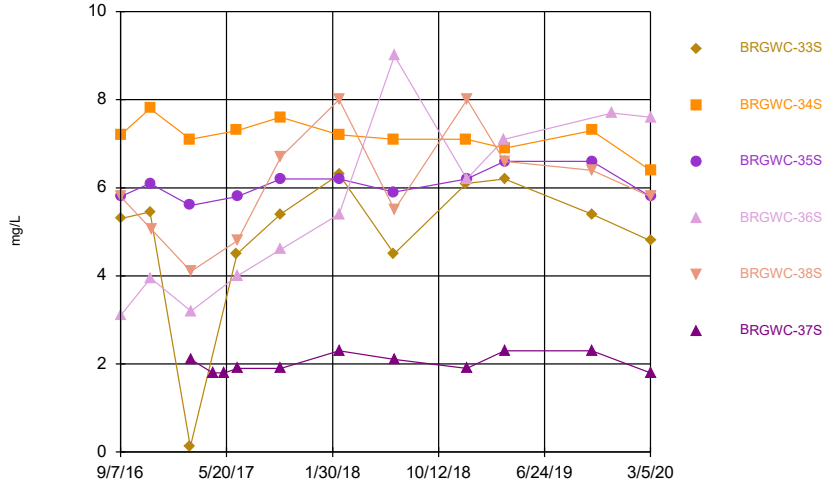
Time Series



Constituent: Chloride, Total Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

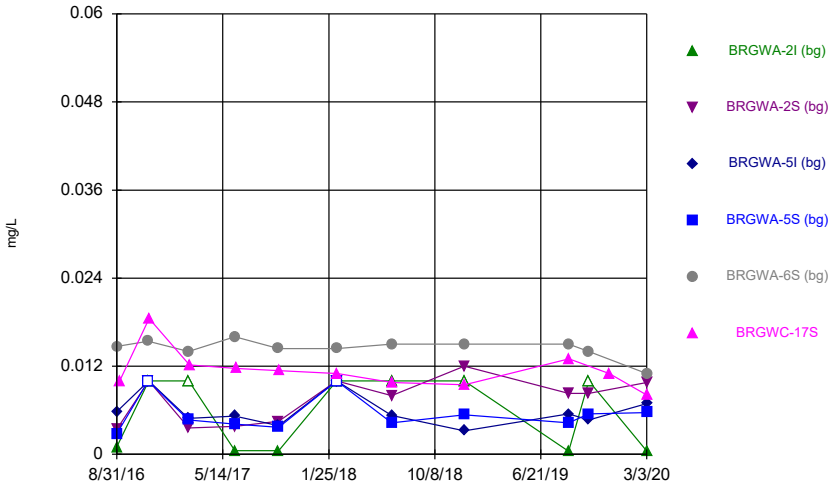
Time Series



Constituent: Chloride, Total Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

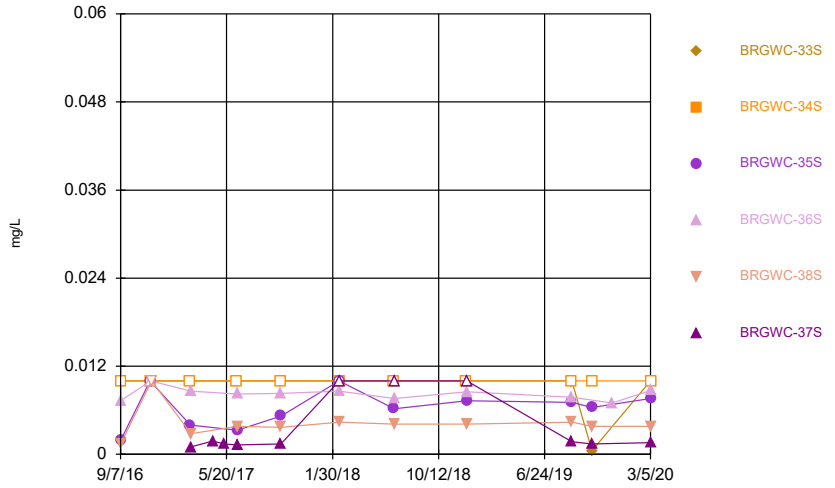
Time Series



Constituent: Chromium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

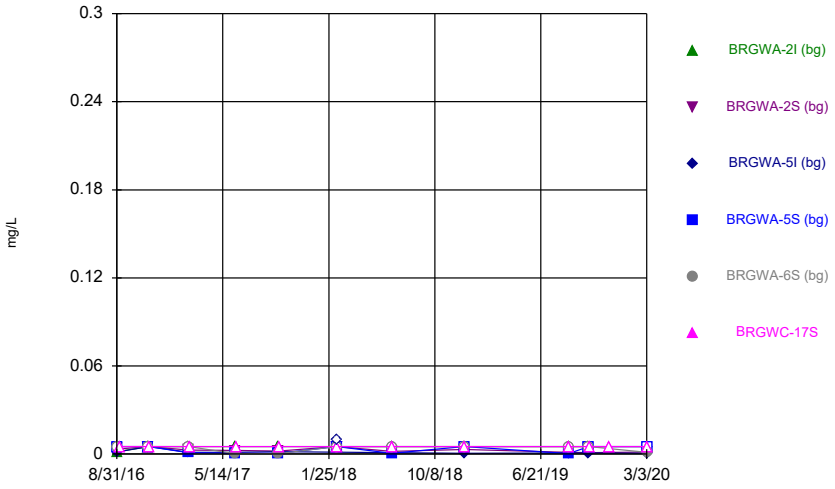
Time Series



Constituent: Chromium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

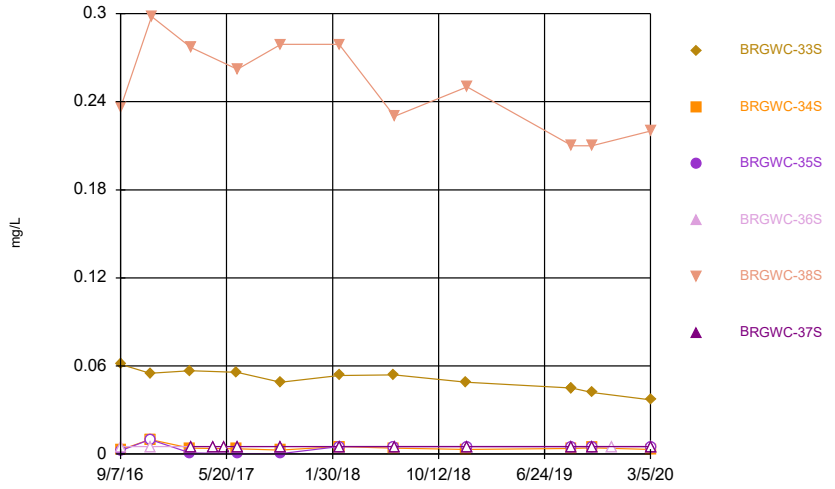
Time Series



Constituent: Cobalt Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

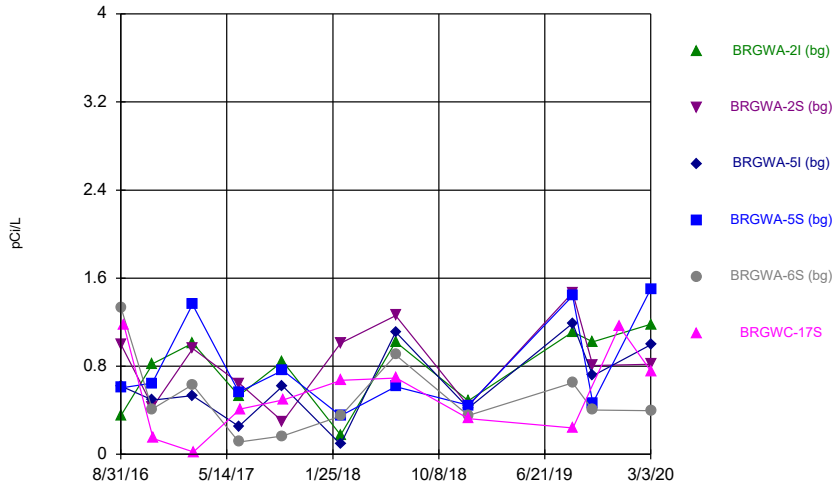
Time Series



Constituent: Cobalt Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

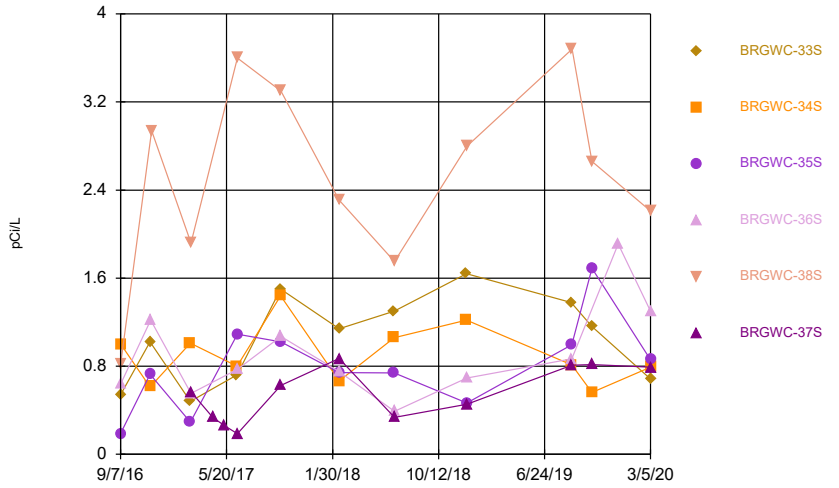
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

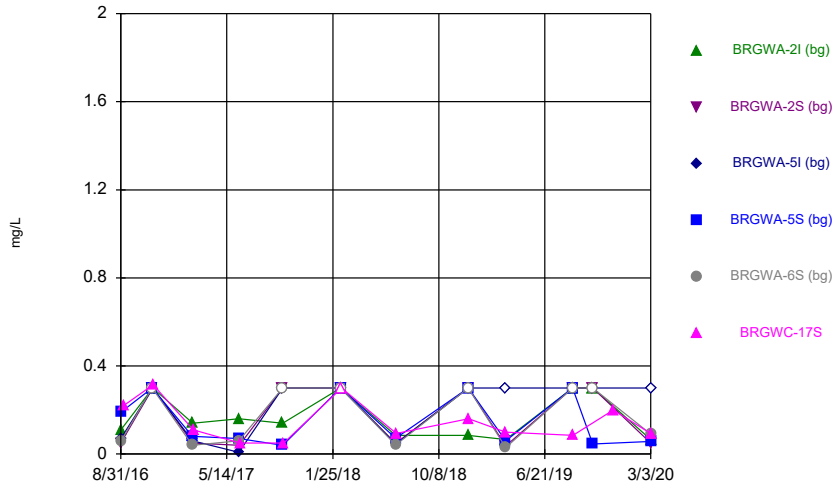
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

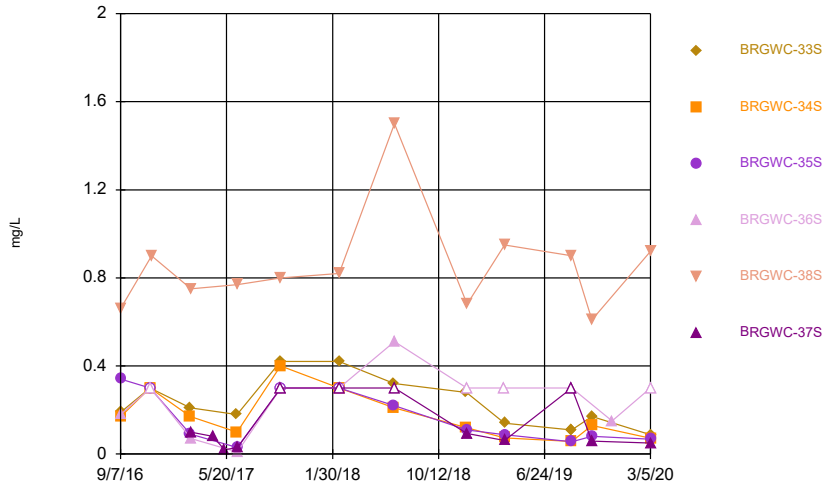
Time Series



Constituent: Fluoride Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

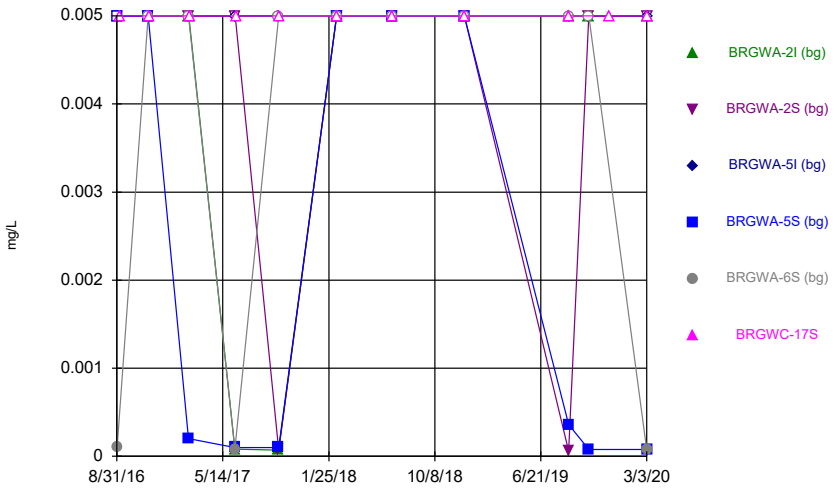
Time Series



Constituent: Fluoride Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

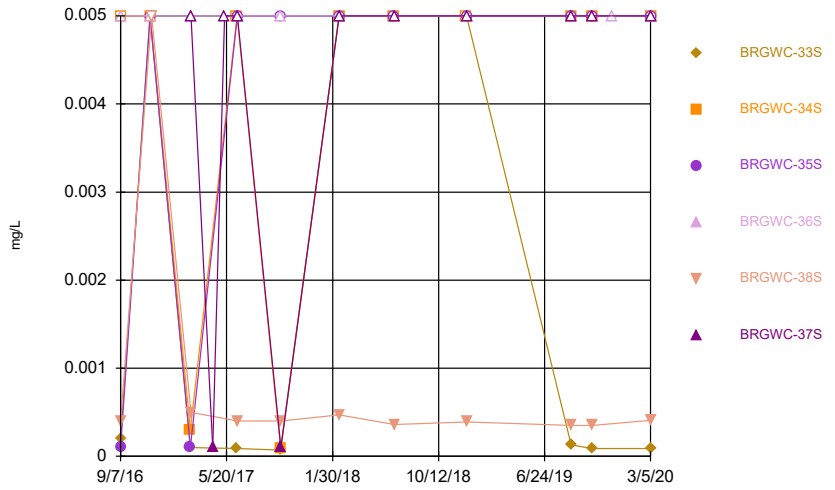
Time Series



Constituent: Lead Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

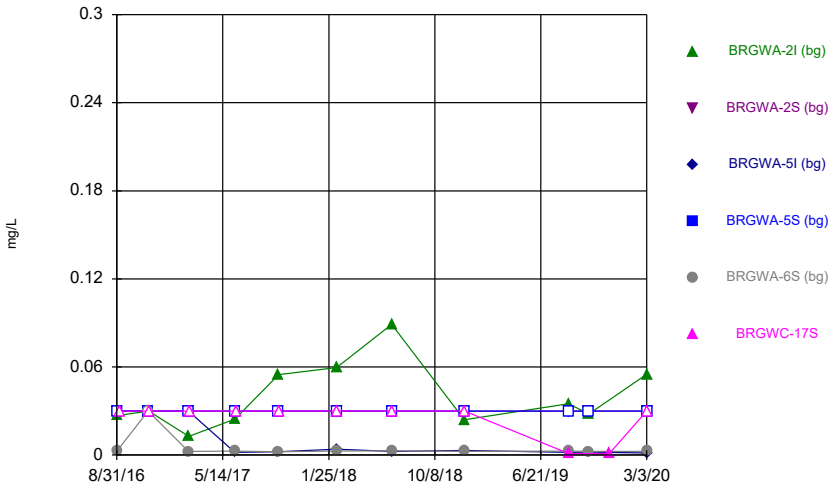
Time Series



Constituent: Lead Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

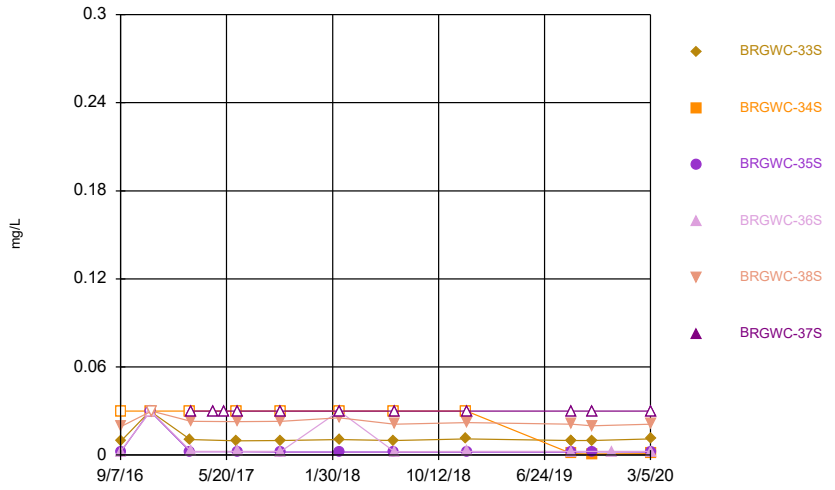
Time Series



Constituent: Lithium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

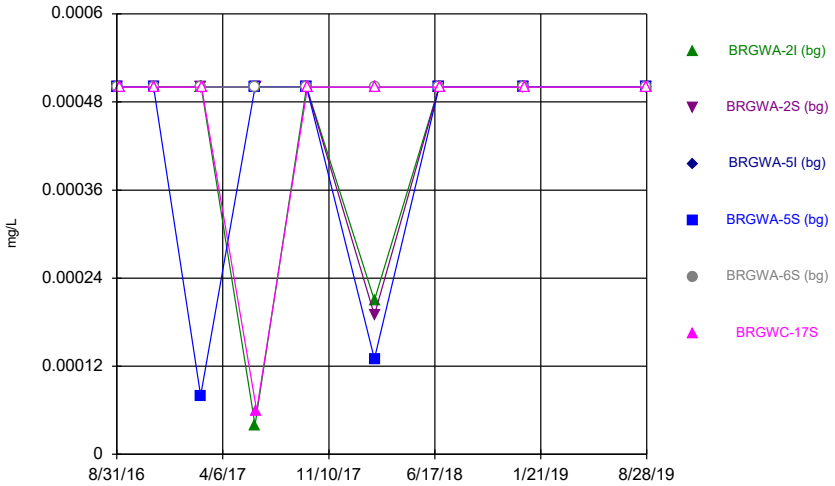
Time Series



Constituent: Lithium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

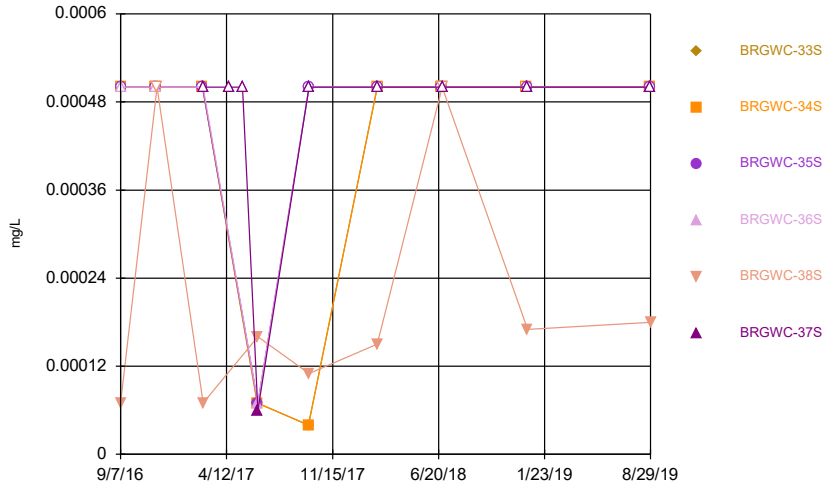
Time Series



Constituent: Mercury Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

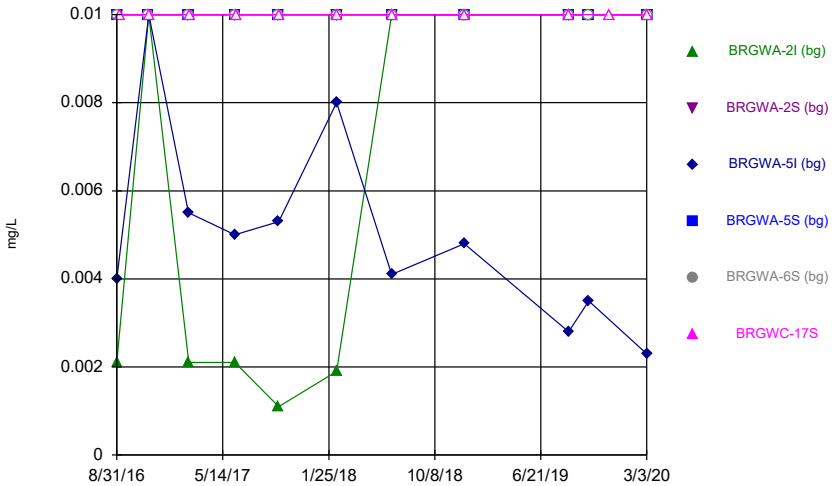
Time Series



Constituent: Mercury Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

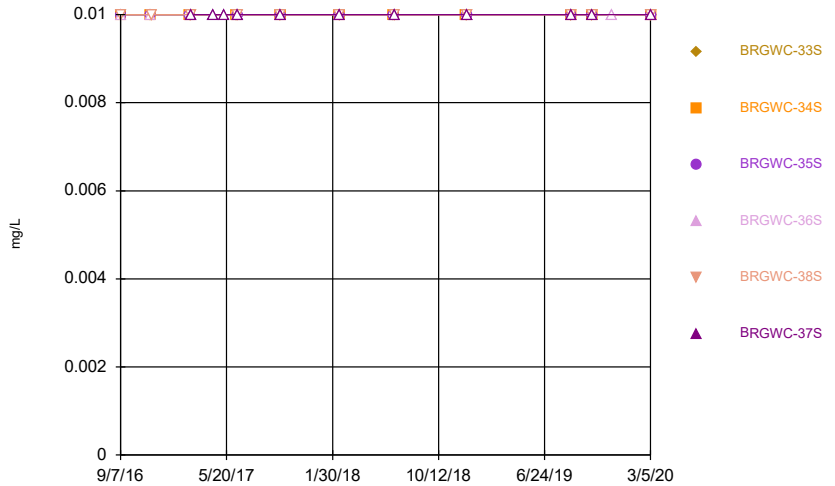
Time Series



Constituent: Molybdenum Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

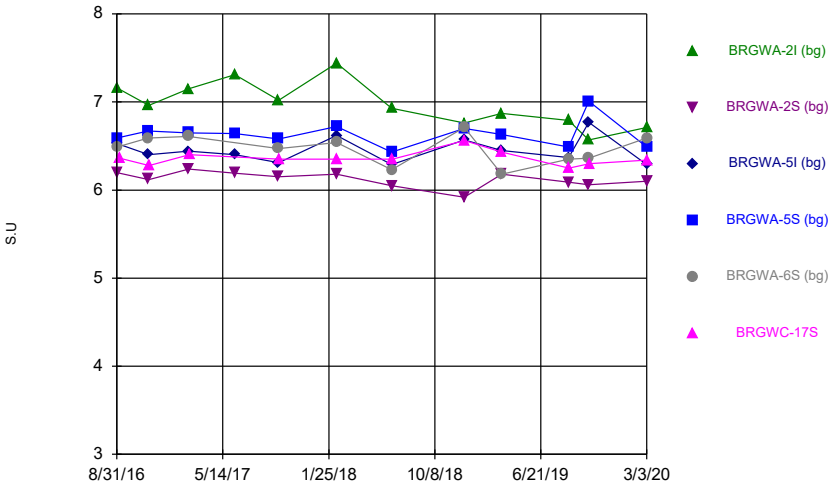
Time Series



Constituent: Molybdenum Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

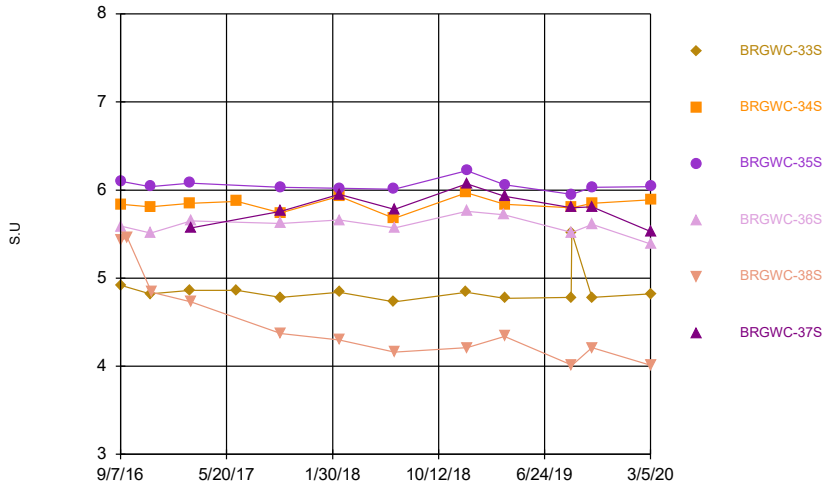
Time Series



Constituent: pH, Field Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

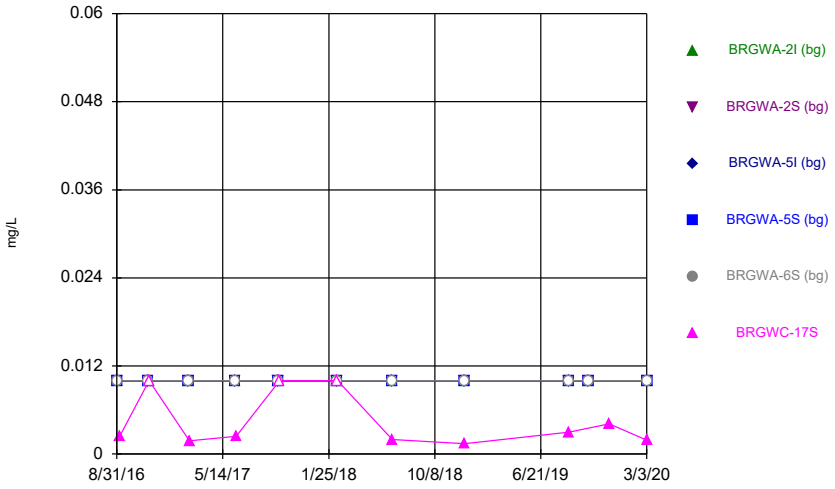
Time Series



Constituent: pH, Field Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

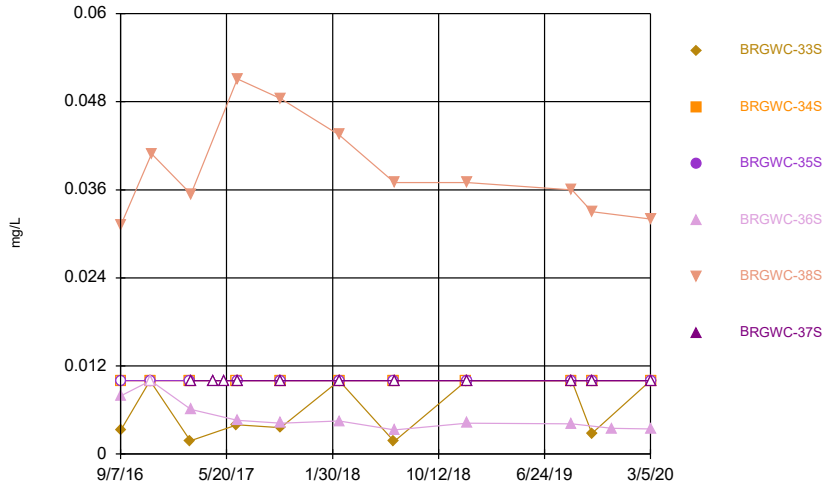
Time Series



Constituent: Selenium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

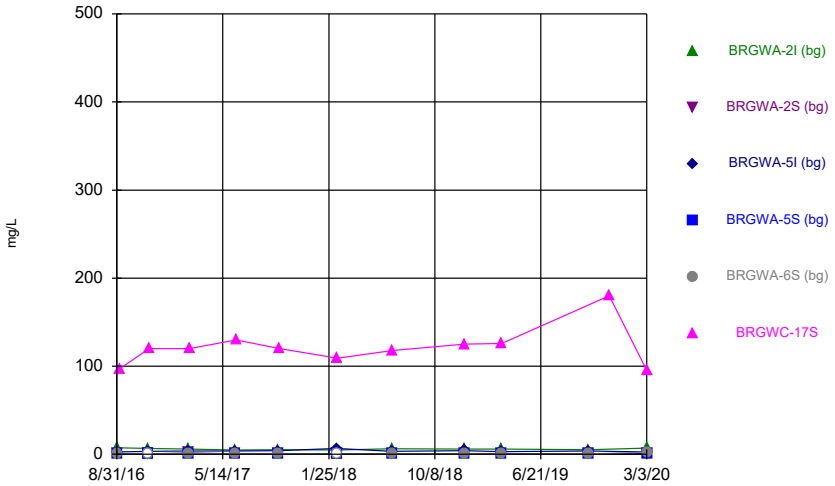
Time Series



Constituent: Selenium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

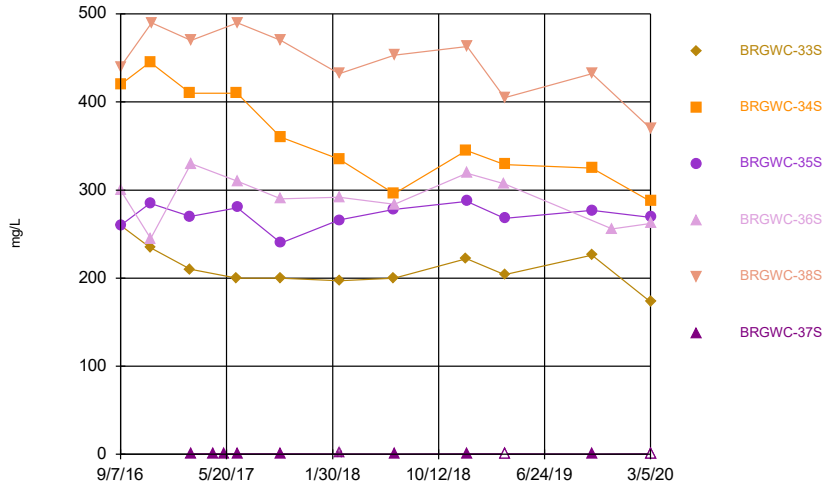
Time Series



Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

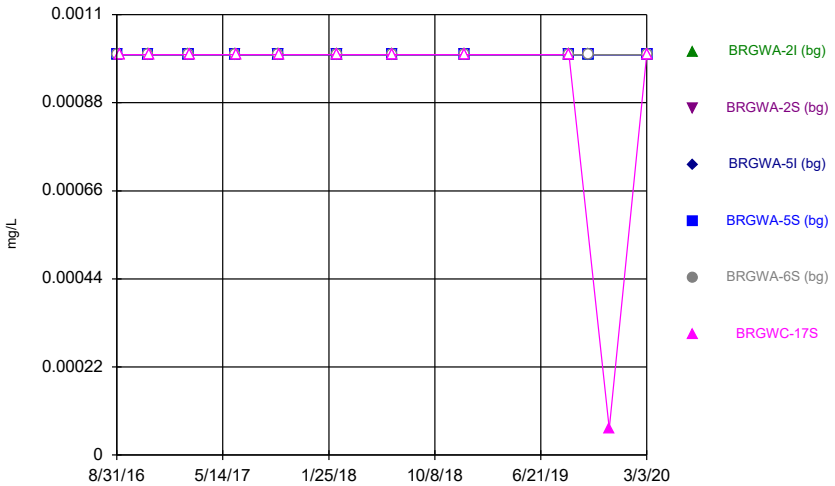
Time Series



Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

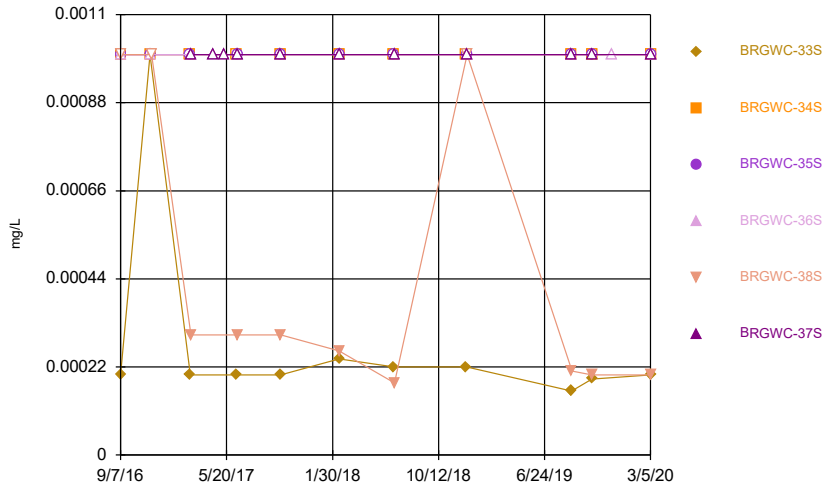
Time Series



Constituent: Thallium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

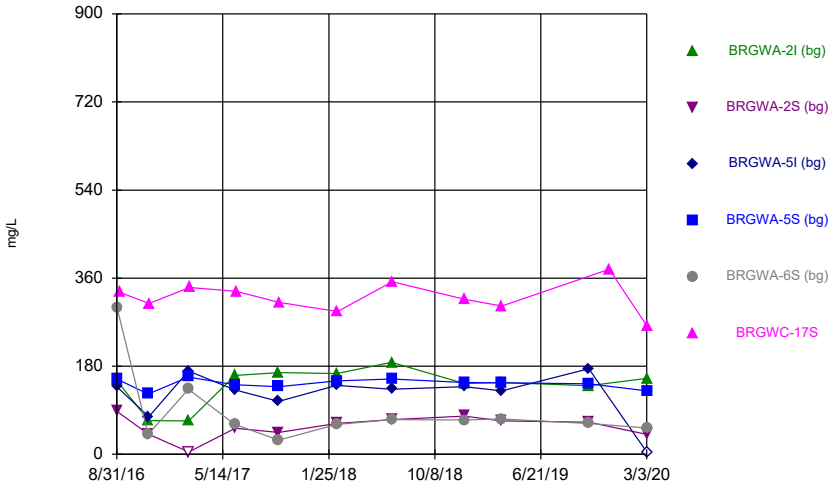
Time Series



Constituent: Thallium Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

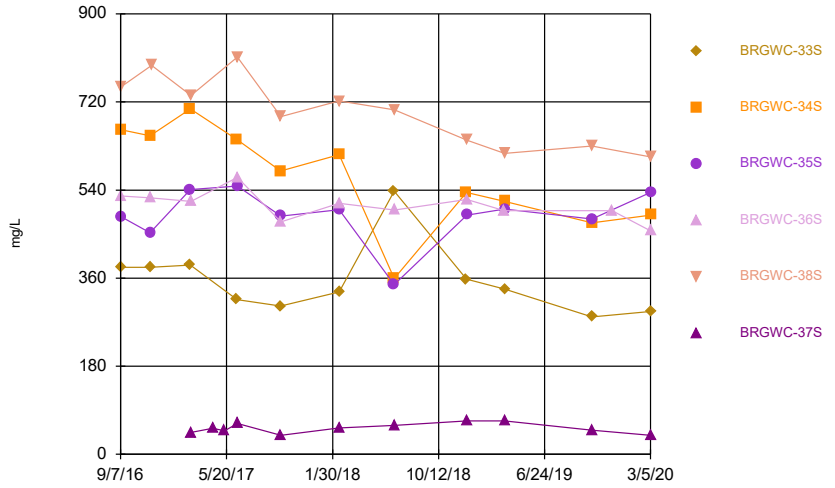
Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Time Series



Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:32 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Time Series

Constituent: Antimony (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	0.0009 (J)	<0.003	<0.003	<0.003		
9/1/2016					<0.003	
9/7/2016						<0.003
11/15/2016				<0.003	<0.003	
11/16/2016	<0.003	<0.003	<0.003			
11/17/2016						<0.003
2/20/2017			<0.003	<0.003	<0.003	
2/21/2017	<0.003	<0.003				
2/22/2017						<0.003
6/12/2017	<0.003		<0.003	<0.003	<0.003	
6/13/2017		0.0011 (J)				
6/15/2017						0.0009 (J)
9/26/2017	<0.003	<0.003	<0.003	<0.003	<0.003	
9/28/2017						<0.003
2/13/2018	<0.003	<0.003	<0.003	<0.003	<0.003	
2/15/2018						<0.003
6/26/2018	<0.003	<0.003	<0.003	<0.003	<0.003	
6/27/2018						<0.003
12/18/2018	<0.003	<0.003	<0.003	0.00087 (J)	<0.003	
12/19/2018						<0.003
8/27/2019	<0.003	<0.003	<0.003	<0.003	<0.003	
8/28/2019						<0.003
10/15/2019	0.00047 (J)	<0.003	<0.003	<0.003	<0.003	
12/3/2019						<0.003
3/3/2020	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003

Time Series

Constituent: Antimony (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	<0.003		<0.003	<0.003	<0.003	
9/8/2016		<0.003				
11/17/2016	<0.003	<0.003	<0.003			
11/18/2016				<0.003 (JB)		
11/21/2016					<0.003 (J)	
2/22/2017	<0.003	<0.003	<0.003			
2/23/2017				<0.003	<0.003	<0.003
4/17/2017						0.0004 (J)
5/15/2017						<0.003
6/14/2017	<0.003	<0.003				
6/15/2017			<0.003	0.0006 (J)	0.0007 (J)	0.0006 (J)
9/27/2017	<0.003	<0.003				
9/28/2017			<0.003	<0.003	<0.003	<0.003
2/15/2018	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
6/27/2018	<0.003	<0.003	<0.003			
6/28/2018				<0.003	<0.003	<0.003
12/18/2018	<0.003	<0.003				
12/19/2018			<0.003	<0.003		<0.003
12/20/2018					<0.003	
8/27/2019	<0.003					
8/28/2019	<0.003	<0.003	<0.003	0.00035 (J)		<0.003
8/29/2019					<0.003	
10/16/2019	<0.003	<0.003	<0.003		<0.003	<0.003
12/3/2019				0.00049 (J)		
3/5/2020	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003

Time Series

Constituent: Arsenic (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	<0.005	<0.005	<0.005	<0.005		
9/1/2016					<0.005	
9/7/2016						<0.005
11/15/2016				<0.005	<0.005	
11/16/2016	<0.005	<0.005	<0.005			
11/17/2016						<0.005
2/20/2017			<0.005	<0.005	<0.005	
2/21/2017	<0.005	<0.005				
2/22/2017						<0.005
6/12/2017	0.0007 (J)		0.0007 (J)	0.0006 (J)	<0.005	
6/13/2017		<0.005				
6/15/2017						0.0006 (J)
9/26/2017	0.001 (J)	<0.005	0.0009 (J)	0.0007 (J)	0.0007 (J)	
9/28/2017						<0.005
2/13/2018	<0.005	<0.005	<0.005	<0.005	<0.005	
2/15/2018						<0.005
6/26/2018	0.00062 (J)	<0.005	<0.005	<0.005	<0.005	
6/27/2018						<0.005
12/18/2018	<0.005	<0.005 (X)	<0.005 (X)	<0.005 (X)	<0.005 (X)	
12/19/2018						<0.005
8/27/2019	<0.005	<0.005	<0.005	<0.005	<0.005	
8/28/2019						0.00073 (J)
10/15/2019	0.0008 (J)	0.00063 (J)	0.00058 (J)	0.00039 (J)	<0.005	
12/3/2019						0.00058 (J)
3/3/2020	0.0027 (J)	0.00098 (J)	0.0024 (J)	0.0027 (J)	0.0018 (J)	0.0033 (J)

Time Series

Constituent: Arsenic (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	<0.005		<0.005	<0.005	0.0026 (J)	
9/8/2016		<0.005				
11/17/2016	<0.005	<0.005	<0.005			
11/18/2016				<0.005		
11/21/2016					<0.005 (J)	
2/22/2017	<0.005	<0.005	<0.005			
2/23/2017				<0.005	0.003 (J)	<0.005
4/17/2017						<0.005
5/15/2017						<0.005
6/14/2017	0.0006 (J)	<0.005				
6/15/2017			0.0006 (J)	0.0007 (J)	0.005 (J)	<0.005
9/27/2017	<0.005	<0.005				
9/28/2017			<0.005	<0.005	0.0046 (J)	<0.005
2/15/2018	<0.005	<0.005	<0.005	<0.005	0.0016 (J)	<0.005
6/27/2018	<0.005	<0.005	<0.005			
6/28/2018				<0.005 (X)	<0.005 (X)	<0.005 (X)
12/18/2018	<0.005 (X)	<0.005				
12/19/2018			<0.005	<0.005		<0.005
12/20/2018					0.00098 (J)	
8/27/2019	<0.005					
8/28/2019	<0.005	<0.005	0.00044 (J)	0.00045 (J)		0.00038 (J)
8/29/2019					0.0013 (J)	
10/16/2019	0.00056 (J)	<0.005	0.0004 (J)		0.0024 (J)	0.00078 (J)
12/3/2019				0.001 (J)		
3/5/2020	<0.005	<0.005	<0.005	<0.005	0.0011 (J)	0.00044 (J)

Time Series

Constituent: Barium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	0.0239	0.0099 (J)	0.0273	0.0495		
9/1/2016					0.0142	
9/7/2016						0.0377
11/15/2016				0.0512	0.0126	
11/16/2016	0.0147	0.0102	0.0365			
11/17/2016						0.0405
2/20/2017			0.0336	0.0586	0.0142	
2/21/2017	0.0109	0.0094 (J)				
2/22/2017						0.0392
6/12/2017	0.0094 (J)		0.0322	0.0567	0.0134	
6/13/2017		0.0094 (J)				
6/15/2017						0.0364
9/26/2017	0.0156	0.0096 (J)	0.0364	0.0586	0.0133	
9/28/2017						0.0408
2/13/2018	0.0134	0.0102	0.054	0.054	0.0145	
2/15/2018						0.0396
6/26/2018	0.014	0.0093 (J)	0.032	0.063	0.014	
6/27/2018						0.041
12/18/2018	0.0076 (J)	0.01	0.038	0.045	0.013	
12/19/2018						0.038
8/27/2019	0.012	0.0095 (J)	0.028	0.056	0.013	
8/28/2019						0.044
10/15/2019	0.013	0.0091 (J)	0.032	0.049	0.013	
12/3/2019						0.043
3/3/2020	0.017	0.011	0.028	0.051	0.019	0.036

Time Series

Constituent: Barium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	0.0214		0.101	0.0674	0.044	
9/8/2016		0.0415				
11/17/2016	0.0211	0.04	0.0808			
11/18/2016				0.0546		
11/21/2016					<0.05 (JB)	
2/22/2017	0.0243	0.0415	0.0701			
2/23/2017				0.0489	0.0338	0.0229
4/17/2017						0.0227
5/15/2017						0.0227
6/14/2017	0.0218	0.0341				
6/15/2017			0.0518	0.0415	0.0239	0.0218
9/27/2017	0.0219	0.0347				
9/28/2017			0.047	0.0397	0.0247	0.0222
2/15/2018	0.0248	0.0346	0.0485	0.038	0.0215	0.0243
6/27/2018	0.023	0.028	0.046			
6/28/2018				0.035	0.018	0.023
12/18/2018	0.023	0.029				
12/19/2018			0.04	0.035		0.024
12/20/2018					0.017	
8/27/2019	0.02					
8/28/2019	0.02	0.026	0.039	0.034		0.027
8/29/2019					0.016	
10/16/2019	0.019	0.022	0.037		0.015	0.024
12/3/2019				0.031		
3/5/2020	0.022	0.025	0.039	0.033	0.016	0.025

Time Series

Constituent: Beryllium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	<0.003	<0.003	<0.003	<0.003		
9/1/2016					<0.003	
9/7/2016						<0.003
11/15/2016				<0.003	<0.003	
11/16/2016	<0.003	<0.003	<0.003			
11/17/2016						<0.003
2/20/2017			<0.003	<0.003	<0.003	
2/21/2017	<0.003	<0.003				
2/22/2017						<0.003
6/12/2017	<0.003		<0.003	<0.003	<0.003	
6/13/2017		<0.003				
6/15/2017						<0.003
9/26/2017	<0.003	<0.003	<0.003	<0.003	<0.003	
9/28/2017						<0.003
2/13/2018	<0.003	<0.003	<0.003	<0.003	<0.003	
2/15/2018						<0.003
6/26/2018	<0.003	<0.003	<0.003	<0.003	<0.003	
6/27/2018						<0.003
12/18/2018	<0.003	<0.003	<0.003	<0.003	<0.003	
12/19/2018						<0.003
8/27/2019	<0.003	<0.003	<0.003	<0.003	<0.003	
8/28/2019						<0.003
10/15/2019	<0.003	<0.003	<0.003	<0.003	<0.003	
10/17/2019						<0.003
12/3/2019						<0.003
3/3/2020	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003

Time Series

Constituent: Beryllium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	0.0019 (J)		9E-05 (J)	<0.003	0.0079	
9/8/2016		0.0001 (J)				
9/23/2016					0.0096 (R)	
11/17/2016	<0.003 (J)	<0.003 (J)	<0.003 (J)			
11/18/2016				<0.003 (J)		
11/21/2016					0.0092	
2/22/2017	0.0022 (J)	0.0002 (J)	0.0001 (J)			
2/23/2017				0.0001 (J)	0.01	<0.003
4/17/2017						<0.003
5/15/2017						<0.003
6/14/2017	0.0019 (J)	<0.003				
6/15/2017			0.0001 (J)	9E-05 (J)	0.0104	<0.003
9/27/2017	0.0017 (J)	0.0001 (J)				
9/28/2017			0.0001 (J)	0.0001 (J)	0.0098	<0.003
2/15/2018	<0.003	<0.003	<0.003	<0.003	0.011 (J)	<0.003
6/27/2018	0.002 (J)	0.00013 (J)	0.00015 (J)			
6/28/2018				8.1E-05 (J)	0.0085	<0.003
12/18/2018	0.0021 (J)	0.00012 (J)				
12/19/2018			<0.003 (X)	<0.003 (X)		<0.003
12/20/2018					0.0092	
8/27/2019	0.0019 (J)					
8/28/2019	0.0019 (J)	0.00014 (J)	0.00016 (J)	0.00011 (J)		<0.003
8/29/2019					0.0088	
10/16/2019	0.0018 (J)	0.00014 (J)	0.00015 (J)		0.0079	<0.003
10/17/2019				<0.003		
12/3/2019				9.7E-05 (J)		
3/5/2020	0.0018 (J)	0.00015 (J)	0.00015 (J)	9.2E-05 (J)	0.0082	<0.003

Time Series

Constituent: Boron (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	0.0072 (J)	<0.04	<0.04	<0.04		
9/1/2016					<0.04	
9/7/2016						0.0449 (J)
11/15/2016				<0.04 (B)	<0.04 (B)	
11/16/2016	<0.04	<0.04	<0.04			
11/17/2016						<0.04
2/20/2017			0.0066 (J)	0.0093 (J)	0.0157 (J)	
2/21/2017	0.0088 (J)	<0.04				
2/22/2017						<0.04
6/12/2017	0.0133 (J)		<0.04	<0.04	<0.04	
6/13/2017		<0.04				
6/15/2017						<0.04
9/26/2017	0.0093 (J)	<0.04	<0.04	<0.04	<0.04	
9/28/2017						<0.04
2/13/2018	0.0141 (J)	<0.04	<0.04	<0.04	<0.04	
2/15/2018						<0.04
6/26/2018	0.012 (J)	<0.04	0.0042 (J)	0.0056 (J)	0.0041 (J)	
6/27/2018						0.0088 (J+X)
12/18/2018	0.0086 (J)	<0.04	<0.04	0.0062 (J)	<0.04	
12/19/2018						0.0045 (J)
3/19/2019	0.00565 (JD)	<0.04	<0.04	<0.04	<0.04	<0.04
10/15/2019	0.0067 (J)	<0.04	<0.04	0.006 (J)	0.01 (J)	
10/17/2019						<0.04
12/3/2019						0.0063 (J)
3/3/2020	0.0082 (J)	<0.04	<0.04	<0.04	<0.04	0.0075 (J)

Time Series

Constituent: Boron (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	1.15		1.06	0.725	1.73	
9/8/2016		1.89				
11/17/2016	1.08	2.17	0.967			
11/18/2016				0.831		
11/21/2016					2.02	
2/22/2017	1.44	2.09	1.35			
2/23/2017				0.949	1.77	<0.04
4/17/2017						<0.04
5/15/2017						<0.04
6/14/2017	1.16	2.45				
6/15/2017			1.49	0.961	1.78	<0.04
9/27/2017	1.04	2.4				
9/28/2017			1.27	0.948	1.45	<0.04
2/15/2018	1.22	2.55	1.58	1.11	2.09	<0.04
6/27/2018	0.96 (J+X)	2.2 (J+X)	1.7 (J+X)			
6/28/2018				0.89	1.5	<0.04 (X)
12/18/2018	1.2	2.2				
12/19/2018			1.8	1.1		<0.04
12/20/2018					1.7	
3/19/2019				1		
3/20/2019	1.3	2.3	1.7		1.5	0.004 (J)
10/16/2019	1.1	2.3	2.2		1.5	0.0055 (J)
10/17/2019				1.1		
12/3/2019				1		
3/5/2020	1.5	2.1	1.9	1.1	1.6	0.0076 (J)

Time Series

Constituent: Cadmium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	<0.0025	<0.0025	<0.0025	<0.0025		
9/1/2016					<0.0025	
9/7/2016						<0.0025
11/15/2016				<0.0025	<0.0025	
11/16/2016	<0.0025	<0.0025	<0.0025			
11/17/2016						<0.0025
2/20/2017			<0.0025	<0.0025	<0.0025	
2/21/2017	<0.0025	<0.0025				
2/22/2017						<0.0025
6/12/2017	<0.0025		<0.0025	<0.0025	<0.0025	
6/13/2017		<0.0025				
6/15/2017						<0.0025
9/26/2017	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	
9/28/2017						<0.0025
2/13/2018	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	
2/15/2018						<0.0025
6/26/2018	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	
6/27/2018						<0.0025
12/18/2018	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	
12/19/2018						<0.0025
8/27/2019	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	
8/28/2019						<0.0025
10/15/2019	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	
10/17/2019						<0.0025
12/3/2019						<0.0025
3/3/2020	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025

Time Series

Constituent: Cadmium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	0.0005 (J)		<0.0025	8E-05 (J)	0.0004 (J)	
9/8/2016		<0.0025				
11/17/2016	<0.001 (J)	<0.001 (J)	<0.0025			
11/18/2016				<0.0025		
11/21/2016					<0.001 (J)	
2/22/2017	0.0006 (J)	0.0005 (J)	<0.0025			
2/23/2017				0.0001 (J)	0.0007 (J)	<0.0025
4/17/2017						<0.0025
5/15/2017						<0.0025
6/14/2017	0.0004 (J)	0.0004 (J)				
6/15/2017			<0.0025	<0.0025	0.0006 (J)	<0.0025
9/27/2017	0.0004 (J)	0.0007 (J)				
9/28/2017			<0.0025	<0.0025	0.0007 (J)	<0.0025
2/15/2018	<0.0025	<0.0025	<0.0025	<0.0025	0.00069 (J)	<0.0025
6/27/2018	0.00038 (J)	0.00017 (J)	<0.0025			
6/28/2018				<0.0025	0.00056 (J)	<0.0025
12/18/2018	0.00046 (J)	0.00023 (J)				
12/19/2018			<0.0025	<0.0025 (X)		<0.0025
12/20/2018					<0.0025 (X)	
8/27/2019	0.00032 (J)					
8/28/2019	0.00032 (J)	0.00025 (J)	<0.0025	<0.0025		<0.0025
8/29/2019					0.00053 (J)	
10/16/2019	0.00039 (J)	0.0004 (J)	<0.0025		0.00057 (J)	<0.0025
10/17/2019				<0.0025		
12/3/2019				<0.0025		
3/5/2020	0.00038 (J)	0.00018 (J)	<0.0025	<0.0025	0.00059 (J)	<0.0025

Time Series

Constituent: Calcium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	12.6	4.09	13.5	19.6		
9/1/2016					3.3	
9/7/2016						26.3
11/15/2016				21.7	3.44	
11/16/2016	12.1	4.25	14.9			
11/17/2016						31.8
2/20/2017			13.9	21.1	3.52	
2/21/2017	11.4	4.02				
2/22/2017						33.5
6/12/2017	9.34		13.7	21.5	3.11	
6/13/2017		3.84				
6/15/2017						29
9/26/2017	14.3	3.31	14.4	24	3.15	
9/28/2017						34.1
2/13/2018	<25	3.94	<25	<25	3.65	
2/15/2018						33.8
6/26/2018	16 (J)	3.6	13.5 (J)	23.5 (J)	3.3	
6/27/2018						34.1
12/18/2018	14.5 (J)	3.8	16.4 (J)	19.8 (J)	3.5	
12/19/2018						33.1
3/19/2019	14.3 (JD)	3.9	12.3 (J)	21.4 (J)	3.6	31.6
10/15/2019	15.1	3.7	14.4	20	3.5	
12/3/2019						37.7
3/3/2020	20	4	14.9	23.2	5	29.7

Time Series

Constituent: Calcium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	53.4		54.1	50.6	45.9	
9/8/2016		97.3				
11/17/2016	41.3	97.6	62.6			
11/18/2016				53.9		
11/21/2016					46.4	
2/22/2017	53.1	106	64.6			
2/23/2017				51	43.5	3.26
4/17/2017						3.23
5/15/2017						2.97 (B-01)
6/14/2017	47.1	98				
6/15/2017			61.3	53.8	45.3	3.15
9/27/2017	49.5	95.8				
9/28/2017			60.8	51.8	45.1	3.26
2/15/2018	50.9	100	56.6	50.1	45.3	3.39
6/27/2018	55.1	90.1	66.2			
6/28/2018				51	45.9	3.1
12/18/2018	52.7	85.1				
12/19/2018			64.4	57.1		3.6
12/20/2018					41.8	
3/19/2019				49.5		
3/20/2019	51.4	82	61.8		38.2	3.3
10/16/2019	46.5	78.2	61.2		38.4	3.4
12/3/2019				47.8		
3/5/2020	48.1	89.6	69.9	51.7	39.8	3.7

Time Series

Constituent: Chloride, Total (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	2.3	2	4.4	3.6		
9/1/2016					2.5	
9/7/2016						3.7
11/15/2016				4	2.3	
11/16/2016	2	1.8	4.4			
11/17/2016						4.05 (D)
2/20/2017			4.8	3.9	2.4	
2/21/2017	2	1.8				
2/22/2017						3.6
6/12/2017	2.1		4.2	3.8	2.2	
6/13/2017		1.7				
6/15/2017						3.7
9/26/2017	2	1.8	4.4	4.1	2.3	
9/28/2017						4.1
2/13/2018	2.1	1.7	4.7	4.1	2.3	
2/15/2018						5.3
6/26/2018	2.4	2.2	4.5	4.1	2.6	
6/27/2018						4.2
12/18/2018	1.8	1.9	4.5	3.8	2.3	
12/19/2018						4.9 (J-X)
3/19/2019	2.45 (D)	2	4.5	4.2	2.6	5
10/15/2019	2.2	1.9	4.2	3.7	2.4	
12/3/2019						4.8
3/3/2020	1.9	1.9	3.9	3.6	2.9	3.8

Time Series

Constituent: Chloride, Total (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	5.3		5.8	3.1	5.8	
9/8/2016		7.2				
11/17/2016	5.45 (D)	7.8 (D)	6.1 (D)			
11/18/2016				3.95 (D)		
11/21/2016					5.05 (D)	
2/22/2017	0.12 (J)	7.1	5.6			
2/23/2017				3.2	4.1	2.1
4/17/2017						1.8
5/15/2017						1.8
6/14/2017	4.5	7.3				
6/15/2017			5.8	4	4.8	1.9
9/27/2017	5.4	7.6				
9/28/2017			6.2	4.6	6.7	1.9
2/15/2018	6.3	7.2	6.2	5.4	8	2.3
6/27/2018	4.5	7.1	5.9			
6/28/2018				9 (J-X)	5.5 (J-X)	2.1 (J-X)
12/18/2018	6.1	7.1				
12/19/2018			6.2 (J-X)	6.2 (J-X)		1.9 (J-X)
12/20/2018					8 (J-X)	
3/19/2019				7.1		
3/20/2019	6.2	6.9	6.6		6.6	2.3
10/16/2019	5.4	7.3	6.6		6.4	2.3
12/3/2019				7.7		
3/5/2020	4.8	6.4	5.8	7.6	5.8	1.8

Time Series

Constituent: Chromium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	0.001 (J)	0.0034 (J)	0.0058 (J)	0.0028 (J)		
9/1/2016					0.0147	
9/7/2016						0.01 (J)
11/15/2016				<0.01 (JB)	0.0154 (B)	
11/16/2016	<0.01	<0.01 (J)	<0.01 (J)			
11/17/2016						0.0185
2/20/2017			0.0049 (J)	0.0047 (J)	0.014	
2/21/2017	<0.01	0.0036 (J)				
2/22/2017						0.0122
6/12/2017	0.0005 (J)		0.0052 (J)	0.0041 (J)	0.016	
6/13/2017		0.0038 (J)				
6/15/2017						0.0117
9/26/2017	0.0005 (J)	0.0045 (J)	0.0039 (J)	0.0037 (J)	0.0144	
9/28/2017						0.0114
2/13/2018	<0.01	<0.01	<0.01	<0.01	0.0144	
2/15/2018						0.011
6/26/2018	<0.01	0.008 (J)	0.0053 (J)	0.0043 (J)	0.015	
6/27/2018						0.0098 (J)
12/18/2018	<0.01	0.012	0.0032 (J)	0.0054 (J)	0.015	
12/19/2018						0.0095 (J)
8/27/2019	0.0004 (J)	0.0083 (J)	0.0055 (J)	0.0043 (J)	0.015	
8/28/2019						0.013
10/15/2019	<0.01	0.0083 (J)	0.0047 (J)	0.0055 (J)	0.014	
12/3/2019						0.011
3/3/2020	0.00047 (J)	0.0098 (J)	0.0069 (J)	0.0057 (J)	0.011	0.0081 (J)

Time Series

Constituent: Chromium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	<0.01		0.0019 (J)	0.0073 (J)	0.0014 (J)	
9/8/2016		<0.01				
11/17/2016	<0.01	<0.01	<0.01 (J)			
11/18/2016				<0.01 (J)		
11/21/2016					<0.01 (J)	
2/22/2017	<0.01	<0.01	0.004 (J)			
2/23/2017				0.0086 (J)	0.0028 (J)	0.001 (J)
4/17/2017						0.0018 (J)
5/15/2017						0.0014 (J)
6/14/2017	<0.01	<0.01				
6/15/2017			0.0033 (J)	0.0082 (J)	0.0038 (J)	0.0013 (J)
9/27/2017	<0.01	<0.01				
9/28/2017			0.0052 (J)	0.0083 (J)	0.0037 (J)	0.0014 (J)
2/15/2018	<0.01	<0.01	<0.01	0.0086 (J)	0.0044 (J)	<0.01
6/27/2018	<0.01	<0.01	0.0062 (J)			
6/28/2018				0.0076 (J)	0.0041 (J)	<0.01
12/18/2018	<0.01	<0.01				
12/19/2018			0.0073 (J)	0.0085 (J)		<0.01
12/20/2018					0.0041 (J)	
8/27/2019	<0.01					
8/28/2019	<0.01	<0.01	0.0071 (J)	0.0078 (J)		0.0017 (J)
8/29/2019					0.0044 (J)	
10/16/2019	0.00049 (J)	<0.01	0.0064 (J)		0.0038 (J)	0.0014 (J)
12/3/2019				0.007 (J)		
3/5/2020	<0.01	<0.01	0.0076 (J)	0.0087 (J)	0.0038 (J)	0.0016 (J)

Time Series

Constituent: Cobalt (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	0.0016 (J)	0.0034 (J)	0.0013 (J)	<0.005		
9/1/2016					<0.005	
9/7/2016						<0.005
11/15/2016				<0.005	<0.005	
11/16/2016	<0.005	<0.005	<0.005			
11/17/2016						<0.005
2/20/2017			0.0012 (J)	0.0009 (J)	<0.005	
2/21/2017	<0.005	0.0028 (J)				
2/22/2017						<0.005
6/12/2017	<0.005		0.0011 (J)	0.0006 (J)	0.0003 (J)	
6/13/2017		0.0025 (J)				
6/15/2017						<0.005
9/26/2017	<0.005	0.002 (J)	0.0016 (J)	0.0005 (J)	0.0003 (J)	
9/28/2017						<0.005
2/13/2018	<0.005	<0.005	<0.01 (o)	<0.005	<0.005	
2/15/2018						<0.005
6/26/2018	<0.005	0.0019 (J)	0.0009 (J)	0.00052 (J)	<0.005	
6/27/2018						<0.005
12/18/2018	<0.005	0.0032 (J)	0.00062 (J)	<0.005	<0.005	
12/19/2018						<0.005
8/27/2019	<0.005	0.0012 (J)	0.00068 (J)	0.00042 (J)	<0.005	
8/28/2019						<0.005
10/15/2019	<0.005	0.00097 (J)	0.00083 (J)	<0.005	<0.005	
10/17/2019						<0.005
12/3/2019						<0.005
3/3/2020	<0.005	0.0015 (J)	0.00043 (J)	<0.005	0.0011 (J)	<0.005

Time Series

Constituent: Cobalt (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	0.0612		0.0023 (J)	<0.005	0.236	
9/8/2016		0.0029 (J)				
11/17/2016	0.0551	<0.01 (J)	<0.01 (J)			
11/18/2016				<0.005		
11/21/2016					0.298	
2/22/2017	0.0567	0.0041 (J)	0.0008 (J)			
2/23/2017				<0.005	0.277	<0.005
4/17/2017						<0.005
5/15/2017						<0.005
6/14/2017	0.0557	0.0036 (J)				
6/15/2017			0.0004 (J)	<0.005	0.262	<0.005
9/27/2017	0.049	0.0028 (J)				
9/28/2017			0.0003 (J)	<0.005	0.279	<0.005
2/15/2018	0.0536	<0.005	<0.005	<0.005	0.279	<0.005
6/27/2018	0.054	0.0041 (J)	<0.005			
6/28/2018				<0.005	0.23	<0.005
12/18/2018	0.049	0.0032 (J)				
12/19/2018			<0.005	<0.005		<0.005
12/20/2018					0.25	
8/27/2019	0.045					
8/28/2019	0.045	0.0037 (J)	<0.005	<0.005		<0.005
8/29/2019					0.21	
10/16/2019	0.042	0.0043 (J)	<0.005		0.21	<0.005
10/17/2019				<0.005		
12/3/2019				<0.005		
3/5/2020	0.037	0.0031 (J)	<0.005	<0.005	0.22	<0.005

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	0.351 (U)	1 (U)	0.62 (U)	0.603 (U)		
9/1/2016					1.33	
9/7/2016						1.18
11/15/2016				0.645 (U)	0.412 (U)	
11/16/2016	0.824 (U)	0.43 (U)	0.493 (U)			
11/17/2016						0.145 (U)
2/20/2017			0.534 (U)	1.36	0.633 (U)	
2/21/2017	1.01 (U)	0.96 (U)				
2/22/2017						0.0213 (U)
6/12/2017	0.532 (U)		0.254 (U)	0.566 (U)	0.112 (U)	
6/13/2017		0.645 (U)				
6/15/2017						0.41 (U)
9/26/2017	0.845 (U)	0.299 (U)	0.62 (U)	0.762 (U)	0.167 (U)	
9/28/2017						0.496 (U)
2/13/2018	0.176 (U)	1.01 (U)	0.0914 (U)	0.349 (U)	0.347 (U)	
2/15/2018						0.672 (U)
6/26/2018	1.02 (U)	1.26 (J+X)	1.11 (U)	0.614 (U)	0.903 (U)	
6/27/2018						0.692 (U)
12/18/2018	0.487 (U)	0.44 (U)	0.42 (U)	0.445 (U)	0.353 (U)	
12/19/2018						0.325 (U)
8/27/2019	1.11	1.47	1.19	1.44	0.65 (U)	
8/28/2019						0.24 (U)
10/15/2019	1.02 (U)	0.807 (U)	0.714 (U)	0.467 (U)	0.402 (U)	
12/18/2019						1.16 (U)
3/3/2020	1.18 (U)	0.818 (U)	0.996 (U)	1.5	0.397 (U)	0.756 (U)

Time Series

Constituent: Combined Radium 226 + 228 (pCi/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	0.541 (U)		0.189 (U)	0.638 (U)	0.816 (U)	
9/8/2016		0.998 (U)				
11/17/2016	1.02 (U)	0.613	0.729 (U)			
11/18/2016				1.22 (U)		
11/21/2016					2.94	
2/22/2017	0.482 (U)	1.01 (U)	0.293 (U)			
2/23/2017				0.554 (U)	1.92	0.567 (U)
4/17/2017						0.335 (U)
5/15/2017						0.261 (U)
6/14/2017	0.723 (U)	0.801 (U)				
6/15/2017			1.09	0.77 (U)	3.6	0.188 (U)
9/27/2017	1.5	1.44				
9/28/2017			1.02 (U)	1.07 (U)	3.3	0.627 (U)
2/15/2018	1.14 (U)	0.668 (U)	0.742 (U)	0.751 (U)	2.31 (J+X)	0.869 (U)
6/27/2018	1.3 (U)	1.06 (U)	0.739 (U)			
6/28/2018				0.392 (U)	1.75 (UX)	0.336 (U)
12/18/2018	1.64 (UX)	1.22				
12/19/2018			0.465 (U)	0.693 (U)		0.454 (U)
12/20/2018					2.8 (J+X)	
8/27/2019	1.38					
8/28/2019		0.811 (U)	0.995 (U)	0.866 (U)		0.809 (U)
8/29/2019					3.68	
10/16/2019	1.16 (U)	0.561 (U)	1.69		2.66	0.815 (U)
12/18/2019				1.91		
3/5/2020	0.683 (U)	0.792 (U)	0.858 (U)	1.3	2.21	0.791 (U)

Time Series

Constituent: Fluoride (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	0.11 (J)	0.05 (J)	0.07 (J)	0.19 (J)		
9/1/2016					0.06 (J)	
9/7/2016						0.22 (J)
11/15/2016				<0.3 (J)	<0.3 (J)	
11/16/2016	<0.3 (J)	<0.3 (J)	<0.3 (J)			
11/17/2016						0.315 (D)
2/20/2017			0.06 (J)	0.08 (J)	0.04 (J)	
2/21/2017	0.14 (J)	0.05 (J)				
2/22/2017						0.11 (J)
6/12/2017	0.16 (J)		0.008 (J)	0.07 (J)	0.06 (J)	
6/13/2017		0.04 (J)				
6/15/2017						0.05 (J)
9/26/2017	0.14 (J)	<0.3	<0.3	0.04 (J)	<0.3	
9/28/2017						0.05 (J)
2/13/2018	<0.3	<0.3	<0.3	<0.3	<0.3	
2/15/2018						<0.3
6/26/2018	0.085 (J)	0.048 (J)	0.045 (J)	0.072 (J)	0.041 (J)	
6/27/2018						0.093 (J)
12/18/2018	0.085 (J)	<0.3	<0.3	<0.3	<0.3	
12/19/2018						0.16 (J)
3/19/2019	0.0655 (JD)	0.037 (J)	<0.3	0.06 (J)	0.03 (J)	0.1 (J)
8/27/2019	<0.3	<0.3	<0.3	<0.3	<0.3	
8/28/2019						0.085 (J)
10/15/2019	<0.3	<0.3	<0.3	0.045 (J)	<0.3	
12/3/2019						0.2 (J)
3/3/2020	0.066 (J)	0.05 (J)	<0.3	0.057 (J)	0.09 (J)	0.093 (J)

Time Series

Constituent: Fluoride (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	0.19 (J)		0.34	0.18 (J)	0.66	
9/8/2016		0.17 (J)				
11/17/2016	<0.3 (D)	<0.3 (D)	<0.3 (D)			
11/18/2016				<0.3 (D)		
11/21/2016					0.9 (D)	
2/22/2017	0.21 (J)	0.17 (J)	0.09 (J)			
2/23/2017				0.07 (J)	0.75	0.1 (J)
4/17/2017						0.08 (J)
5/15/2017						0.02 (J)
6/14/2017	0.18 (J)	0.1 (J)				
6/15/2017			0.03 (J)	0.01 (J)	0.77	0.03 (J)
9/27/2017	0.42	0.4				
9/28/2017			<0.3	<0.3	0.8	<0.3
2/15/2018	0.42	<0.3	<0.3	<0.3	0.82	<0.3
6/27/2018	0.32	0.21 (J)	0.22 (J)			
6/28/2018				0.51 (J+X)	1.5 (J+X)	<0.3
12/18/2018	0.28 (J)	0.12 (J)				
12/19/2018			0.11 (J)	<0.3		0.094 (J)
12/20/2018					0.68	
3/19/2019				<0.3		
3/20/2019	0.14 (J)	0.074 (J)	0.088 (J)		0.95	0.062 (J)
8/27/2019	0.11 (J)					
8/28/2019	0.11 (J)	0.057 (J)	0.056 (J)	<0.3		<0.3
8/29/2019					0.9	
10/16/2019	0.17 (J)	0.13 (J)	0.08 (J)		0.61	0.059 (J)
12/3/2019				0.15 (J)		
3/5/2020	0.088 (J)	0.072 (J)	0.067 (J)	<0.3	0.92	0.05 (J)

Time Series

Constituent: Lead (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	<0.005	<0.005	<0.005	<0.005		
9/1/2016					0.0001 (J)	
9/7/2016						<0.005
11/15/2016				<0.005	<0.005	
11/16/2016	<0.005	<0.005	<0.005			
11/17/2016						<0.005 (J)
2/20/2017			<0.005	0.0002 (J)	<0.005	
2/21/2017	<0.005	<0.005				
2/22/2017						<0.005
6/12/2017	8E-05 (J)		<0.005	0.0001 (J)	8E-05 (J)	
6/13/2017		<0.005				
6/15/2017						<0.005
9/26/2017	7E-05 (J)	7E-05 (J)	<0.005	0.0001 (J)	<0.005	
9/28/2017						<0.005
2/13/2018	<0.005	<0.005	<0.005	<0.005	<0.005	
2/15/2018						<0.005
6/26/2018	<0.005	<0.005	<0.005	<0.005	<0.005	
6/27/2018						<0.005
12/18/2018	<0.005	<0.005	<0.005	<0.005	<0.005	
12/19/2018						<0.005
8/27/2019	<0.005	5.8E-05 (J)	<0.005	0.00036 (J)	<0.005	
8/28/2019						<0.005
10/15/2019	<0.005	<0.005	<0.005	7.9E-05 (J)	<0.005	
12/3/2019						<0.005
3/3/2020	<0.005	<0.005	<0.005	7.9E-05 (J)	7.3E-05 (J)	<0.005

Time Series

Constituent: Lead (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	0.0002 (J)		0.0001 (J)	<0.005	0.0004 (J)	
9/8/2016		<0.005				
11/17/2016	<0.005 (J)	<0.005 (J)	<0.005 (J)			
11/18/2016				<0.005		
11/21/2016					<0.005 (J)	
2/22/2017	0.0001 (J)	0.0003 (J)	0.0001 (J)			
2/23/2017				<0.005	0.0005 (J)	<0.005
4/17/2017						0.0001 (J)
5/15/2017						<0.005
6/14/2017	9E-05 (J)	<0.005				
6/15/2017			<0.005	<0.005	0.0004 (J)	<0.005
9/27/2017	7E-05 (J)	9E-05 (J)				
9/28/2017			<0.005	<0.005	0.0004 (J)	0.0001 (J)
2/15/2018	<0.005	<0.005	<0.005	<0.005	0.00047 (J)	<0.005
6/27/2018	<0.005	<0.005	<0.005			
6/28/2018				<0.005	0.00036 (J)	<0.005
12/18/2018	<0.005	<0.005				
12/19/2018			<0.005	<0.005		<0.005
12/20/2018					0.00039 (J)	
8/27/2019	0.00013 (J)					
8/28/2019	0.00013 (J)	<0.005	<0.005	<0.005		<0.005
8/29/2019					0.00035 (J)	
10/16/2019	8.8E-05 (J)	<0.005	<0.005		0.00035 (J)	<0.005
12/3/2019				<0.005		
3/5/2020	8.7E-05 (J)	<0.005	<0.005	<0.005	0.00041 (J)	<0.005

Time Series

Constituent: Lithium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	0.0268 (J)	<0.03	<0.03	<0.03		
9/1/2016					0.003 (J)	
9/7/2016						<0.03
11/15/2016				<0.03	<0.03	
11/16/2016	<0.03	<0.03	<0.03			
11/17/2016						<0.03
2/20/2017			<0.03	<0.03	0.0025 (J)	
2/21/2017	0.0128 (J)	<0.03				
2/22/2017						<0.03
6/12/2017	0.0245 (J)		0.0019 (J)	<0.03	0.0027 (J)	
6/13/2017		<0.03				
6/15/2017						<0.03
9/26/2017	0.0549	<0.03	0.0022 (J)	<0.03	0.0023 (J)	
9/28/2017						<0.03
2/13/2018	0.0595	<0.03	0.0041 (J)	<0.03	0.0027 (J)	
2/15/2018						<0.03
6/26/2018	0.089	<0.03	0.0025 (J)	<0.03	0.0029 (J)	
6/27/2018						<0.03
12/18/2018	0.024 (J)	<0.03	0.0032 (J)	<0.03	0.0026 (J)	
12/19/2018						<0.03
8/27/2019	0.035	<0.03	0.0019 (J)	<0.03	0.0028 (J)	
8/28/2019						0.00097 (J)
10/15/2019	0.028 (J)	<0.03	0.002 (J)	<0.03	0.0024 (J)	
12/3/2019						0.001 (J)
3/3/2020	0.055	<0.03	0.0013 (J)	<0.03	0.0026 (J)	<0.03

Time Series

Constituent: Lithium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	0.0092 (J)		0.0021 (J)	0.0024 (J)	0.0193 (J)	
9/8/2016		<0.03				
11/17/2016	<0.03	<0.03	<0.03			
11/18/2016				<0.03		
11/21/2016					<0.03	
2/22/2017	0.0106 (J)	<0.03	0.0023 (J)			
2/23/2017				0.0026 (J)	0.0229 (J)	<0.03
4/17/2017						<0.03
5/15/2017						<0.03
6/14/2017	0.0097 (J)	<0.03				
6/15/2017			0.0023 (J)	0.0026 (J)	0.0227 (J)	<0.03
9/27/2017	0.0099 (J)	<0.03				
9/28/2017			0.0021 (J)	0.0025 (J)	0.023 (J)	<0.03
2/15/2018	0.0106 (J)	<0.03	0.0021 (J)	<0.03	0.0254 (J)	<0.03
6/27/2018	0.01 (J)	<0.03	0.0021 (J)			
6/28/2018				0.0022 (J)	0.021 (J)	<0.03
12/18/2018	0.011 (J)	<0.03				
12/19/2018			0.0021 (J)	0.0026 (J)		<0.03
12/20/2018					0.022 (J)	
8/27/2019	0.01 (J)					
8/28/2019	0.01 (J)	0.0009 (J)	0.0021 (J)	0.0025 (J)		<0.03
8/29/2019					0.021 (J)	
10/16/2019	0.0098 (J)	0.00078 (J)	0.0022 (J)		0.02 (J)	<0.03
12/3/2019				0.0024 (J)		
3/5/2020	0.011 (J)	0.00089 (J)	0.0021 (J)	0.0025 (J)	0.021 (J)	<0.03

Time Series

Constituent: Mercury (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	<0.0005	<0.0005	<0.0005	<0.0005		
9/1/2016					<0.0005	
9/7/2016						<0.0005
11/15/2016				<0.0005	<0.0005	
11/16/2016	<0.0005	<0.0005	<0.0005			
11/17/2016						<0.0005
2/20/2017			<0.0005	8E-05 (J)	<0.0005	
2/21/2017	<0.0005	<0.0005				
2/22/2017						<0.0005
6/12/2017	4E-05 (J)		<0.0005	<0.0005	<0.0005	
6/13/2017		<0.0005				
6/15/2017						6E-05 (J)
9/26/2017	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
9/28/2017						<0.0005
2/13/2018	0.00021	0.00019 (J)	<0.0005	0.00013 (J)	<0.0005	
2/15/2018						<0.0005
6/26/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
6/27/2018						<0.0005
12/18/2018	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
12/19/2018						<0.0005
8/27/2019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
8/28/2019						<0.0005

Time Series

Constituent: Mercury (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	<0.0005		<0.0005	<0.0005	7E-05 (J)	
9/8/2016		<0.0005				
11/17/2016	<0.0005	<0.0005	<0.0005			
11/18/2016				<0.0005		
11/21/2016					<0.0005 (J)	
2/22/2017	<0.0005	<0.0005	<0.0005			
2/23/2017				<0.0005	7E-05 (J)	<0.0005
4/17/2017						<0.0005
5/15/2017						<0.0005
6/14/2017	7E-05 (J)	7E-05 (J)				
6/15/2017			7E-05 (J)	7E-05 (J)	0.00016 (J)	6E-05 (J)
9/27/2017	4E-05 (J)	4E-05 (J)				
9/28/2017			<0.0005	<0.0005	0.00011 (J)	<0.0005
2/15/2018	<0.0005	<0.0005	<0.0005	<0.0005	0.00015 (J)	<0.0005
6/27/2018	<0.0005	<0.0005	<0.0005			
6/28/2018				<0.0005	<0.0005 (X)	<0.0005
12/18/2018	<0.0005	<0.0005				
12/19/2018			<0.0005	<0.0005		<0.0005
12/20/2018					0.00017 (J)	
8/27/2019	<0.0005					
8/28/2019	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005
8/29/2019					0.00018 (J)	

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	0.0021 (J)	<0.01	0.004 (J)	<0.01		
9/1/2016					<0.01	
9/7/2016						<0.01
11/15/2016				<0.01	<0.01	
11/16/2016	<0.01	<0.01	<0.01 (J)			
11/17/2016						<0.01
2/20/2017			0.0055 (J)	<0.01	<0.01	
2/21/2017	0.0021 (J)	<0.01				
2/22/2017						<0.01
6/12/2017	0.0021 (J)		0.005 (J)	<0.01	<0.01	
6/13/2017		<0.01				
6/15/2017						<0.01
9/26/2017	0.0011 (J)	<0.01	0.0053 (J)	<0.01	<0.01	
9/28/2017						<0.01
2/13/2018	0.0019 (J)	<0.01	0.008 (J)	<0.01	<0.01	
2/15/2018						<0.01
6/26/2018	<0.01	<0.01	0.0041 (J)	<0.01	<0.01	
6/27/2018						<0.01
12/18/2018	<0.01	<0.01	0.0048 (J)	<0.01	<0.01	
12/19/2018						<0.01
8/27/2019	<0.01	<0.01	0.0028 (J)	<0.01	<0.01	
8/28/2019						<0.01
10/15/2019	<0.01	<0.01	0.0035 (J)	<0.01	<0.01	
12/3/2019						<0.01
3/3/2020	<0.01	<0.01	0.0023 (J)	<0.01	<0.01	<0.01

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	<0.01		<0.01	<0.01	<0.01	
9/8/2016		<0.01				
11/17/2016	<0.01	<0.01	<0.01			
11/18/2016				<0.01		
11/21/2016					<0.01	
2/22/2017	<0.01	<0.01	<0.01			
2/23/2017				<0.01	<0.01	<0.01
4/17/2017						<0.01
5/15/2017						<0.01
6/14/2017	<0.01	<0.01				
6/15/2017			<0.01	<0.01	<0.01	<0.01
9/27/2017	<0.01	<0.01				
9/28/2017			<0.01	<0.01	<0.01	<0.01
2/15/2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
6/27/2018	<0.01	<0.01	<0.01			
6/28/2018				<0.01	<0.01	<0.01
12/18/2018	<0.01	<0.01				
12/19/2018			<0.01	<0.01		<0.01
12/20/2018					<0.01	
8/27/2019	<0.01					
8/28/2019	<0.01	<0.01	<0.01	<0.01		<0.01
8/29/2019					<0.01	
10/16/2019	<0.01	<0.01	<0.01		<0.01	<0.01
12/3/2019				<0.01		
3/5/2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Time Series

Constituent: pH, Field (S.U) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	7.16	6.2	6.53	6.59		
9/1/2016					6.49	
9/7/2016						6.36
11/15/2016				6.67	6.59	
11/16/2016	6.96	6.12	6.4			
11/17/2016						6.28
2/20/2017			6.44	6.65	6.61	
2/21/2017	7.15	6.24				
2/22/2017						6.4
6/12/2017	7.31		6.4	6.64		
6/13/2017		6.19				
9/26/2017	7.02	6.15	6.31	6.58	6.47	
9/28/2017						6.35
2/13/2018	7.44	6.18	6.62	6.72	6.54	
2/15/2018						6.35
6/26/2018	6.93	6.05	6.29	6.43	6.23	
6/27/2018						6.35
12/18/2018	6.76	5.92	6.57	6.7	6.71	
12/19/2018						6.56
3/19/2019	6.87	6.18	6.45	6.63	6.18	6.43
8/27/2019	6.79	6.09	6.37	6.49	6.35	
8/28/2019						6.25
10/15/2019	6.57	6.06	6.77	7.01	6.36	
10/17/2019						6.3
3/3/2020	6.71	6.1	6.29	6.49	6.59	6.34

Time Series

Constituent: pH, Field (S.U) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	4.92		6.1	5.59	5.43	
9/8/2016		5.84				
9/23/2016					5.46	
11/17/2016	4.82	5.81	6.04			
11/18/2016				5.51		
11/21/2016					4.84	
2/22/2017	4.86	5.85	6.08			
2/23/2017				5.65	4.73	5.57
6/14/2017	4.86	5.87				
9/27/2017	4.78	5.74				
9/28/2017			6.03	5.62	4.37	5.76
2/15/2018	4.84	5.93	6.02	5.66	4.3	5.95
6/27/2018	4.73	5.68	6.01			
6/28/2018				5.57	4.16	5.78
12/18/2018	4.84	5.97				
12/19/2018			6.22	5.76		6.07
12/20/2018					4.21	
3/19/2019				5.72		
3/20/2019	4.77	5.84	6.06		4.34	5.93
8/27/2019	4.78					
8/28/2019	5.52	5.8	5.95	5.52		5.8
8/29/2019					4.01	
10/16/2019	4.78	5.85	6.03		4.21	5.81
10/17/2019				5.61		
3/5/2020	4.82	5.89	6.04	5.39	4.01	5.53

Time Series

Constituent: Selenium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	<0.01	<0.01	<0.01	<0.01		
9/1/2016					<0.01	
9/7/2016						0.0024 (J)
11/15/2016				<0.01	<0.01	
11/16/2016	<0.01	<0.01	<0.01			
11/17/2016						<0.01 (J)
2/20/2017			<0.01	<0.01	<0.01	
2/21/2017	<0.01	<0.01				
2/22/2017						0.0018 (J)
6/12/2017	<0.01		<0.01	<0.01	<0.01	
6/13/2017		<0.01				
6/15/2017						0.0024 (J)
9/26/2017	<0.01	<0.01	<0.01	<0.01	<0.01	
9/28/2017						<0.01
2/13/2018	<0.01	<0.01	<0.01	<0.01	<0.01	
2/15/2018						<0.01
6/26/2018	<0.01	<0.01	<0.01	<0.01	<0.01	
6/27/2018						0.002 (J)
12/18/2018	<0.01	<0.01	<0.01	<0.01	<0.01	
12/19/2018						0.0014 (J)
8/27/2019	<0.01	<0.01	<0.01	<0.01	<0.01	
8/28/2019						0.003 (J)
10/15/2019	<0.01	<0.01	<0.01	<0.01	<0.01	
12/3/2019						0.0041 (J)
3/3/2020	<0.01	<0.01	<0.01	<0.01	<0.01	0.0019 (J)

Time Series

Constituent: Selenium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	0.0032 (J)		<0.01	0.0079 (J)	0.0311	
9/8/2016		<0.01				
11/17/2016	<0.01 (J)	<0.01	<0.01			
11/18/2016				<0.01 (J)		
11/21/2016					0.0409	
2/22/2017	0.0018 (J)	<0.01	<0.01			
2/23/2017				0.0061 (J)	0.0354	<0.01
4/17/2017						<0.01
5/15/2017						<0.01
6/14/2017	0.004 (J)	<0.01				
6/15/2017			<0.01	0.0046 (J)	0.0511	<0.01
9/27/2017	0.0036 (J)	<0.01				
9/28/2017			<0.01	0.0042 (J)	0.0484	<0.01
2/15/2018	<0.01	<0.01	<0.01	0.0045 (J)	0.0435	<0.01
6/27/2018	0.0017 (J)	<0.01	<0.01			
6/28/2018				0.0033 (J)	0.037	<0.01
12/18/2018	<0.01	<0.01				
12/19/2018			<0.01	0.0042 (J)		<0.01
12/20/2018					0.037	
8/27/2019	<0.01					
8/28/2019	<0.01	<0.01	<0.01	0.0041 (J)		<0.01
8/29/2019					0.036	
10/16/2019	0.0028 (J)	<0.01	<0.01		0.033	<0.01
12/3/2019				0.0035 (J)		
3/5/2020	<0.01	<0.01	<0.01	0.0034 (J)	0.032	<0.01

Time Series

Constituent: Sulfate as SO4 (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	7.5	0.38 (J)	2.7	0.81 (J)		
9/1/2016					0.6 (J)	
9/7/2016						97
11/15/2016				<1 (J)	<1 (J)	
11/16/2016	6.6	<1 (J)	3.4			
11/17/2016						120 (D)
2/20/2017			3.9 (B-01)	1 (B-01)	0.98 (J)	
2/21/2017	6.1	1.5				
2/22/2017						120
6/12/2017	5		3.7	0.94 (J)	0.54 (J)	
6/13/2017		0.67 (J)				
6/15/2017						130
9/26/2017	5.4	0.62 (J)	4.1	0.92 (J)	0.53 (J)	
9/28/2017						120
2/13/2018	4.7 (J)	<1	6.6	<1	<1	
2/15/2018						109
6/26/2018	6.2	0.69 (J)	3.5	0.91 (J)	0.54 (J)	
6/27/2018						118
12/18/2018	5.9	0.72 (J)	4.3	0.68 (J)	0.39 (J)	
12/19/2018						125
3/19/2019	6 (D)	0.78 (J)	3	0.74 (J)	0.68 (J)	126
10/15/2019	5.2	0.47 (J)	3.8	0.68 (J)	0.48 (J)	
12/3/2019						180
3/3/2020	7.1	0.93 (J)	2.8	0.71 (J)	2.5	95.4

Time Series

Constituent: Sulfate as SO4 (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	260		260	300	440	
9/8/2016		420				
11/17/2016	235 (D)	445 (D)	285 (D)			
11/18/2016				245 (D)		
11/21/2016					490 (D)	
2/22/2017	210	410	270			
2/23/2017				330	470	0.55 (J)
4/17/2017						0.44 (J)
5/15/2017						0.45 (J)
6/14/2017	200	410				
6/15/2017			280	310	490	0.46 (J)
9/27/2017	200	360				
9/28/2017			240	290	470	0.49 (J)
2/15/2018	197	335	266	292	432	1.9 (J,o)
6/27/2018	200	296	278			
6/28/2018				284	453	0.24 (J)
12/18/2018	222	345				
12/19/2018			287	319		0.4 (J)
12/20/2018					463	
3/19/2019				307		
3/20/2019	204	329	268		405	<1 (X)
10/16/2019	226	325	277		432	0.29 (J)
12/3/2019				256		
3/5/2020	173	287	269	262	370	<1

Time Series

Constituent: Thallium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	<0.001	<0.001	<0.001	<0.001		
9/1/2016					<0.001	
9/7/2016						<0.001
11/15/2016				<0.001	<0.001	
11/16/2016	<0.001	<0.001	<0.001			
11/17/2016						<0.001
2/20/2017			<0.001	<0.001	<0.001	
2/21/2017	<0.001	<0.001				
2/22/2017						<0.001
6/12/2017	<0.001		<0.001	<0.001	<0.001	
6/13/2017		<0.001				
6/15/2017						<0.001
9/26/2017	<0.001	<0.001	<0.001	<0.001	<0.001	
9/28/2017						<0.001
2/13/2018	<0.001	<0.001	<0.001	<0.001	<0.001	
2/15/2018						<0.001
6/26/2018	<0.001	<0.001	<0.001	<0.001	<0.001	
6/27/2018						<0.001
12/18/2018	<0.001	<0.001	<0.001	<0.001	<0.001	
12/19/2018						<0.001
8/27/2019	<0.001	<0.001	<0.001	<0.001	<0.001	
8/28/2019						<0.001
10/15/2019	<0.001	<0.001	<0.001	<0.001	<0.001	
12/3/2019						6.6E-05 (J)
3/3/2020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Time Series

Constituent: Thallium (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	0.0002 (J)		<0.001	<0.001	<0.001	
9/8/2016		<0.001				
11/17/2016	<0.001 (J)	<0.001	<0.001			
11/18/2016				<0.001		
11/21/2016					<0.001 (J)	
2/22/2017	0.0002 (J)	<0.001	<0.001			
2/23/2017				<0.001	0.0003 (J)	<0.001
4/17/2017						<0.001
5/15/2017						<0.001
6/14/2017	0.0002 (J)	<0.001				
6/15/2017			<0.001	<0.001	0.0003 (J)	<0.001
9/27/2017	0.0002 (J)	<0.001				
9/28/2017			<0.001	<0.001	0.0003 (J)	<0.001
2/15/2018	0.00024 (J)	<0.001	<0.001	<0.001	0.00026 (J)	<0.001
6/27/2018	0.00022 (J)	<0.001	<0.001			
6/28/2018				<0.001	0.00018 (J)	<0.001
12/18/2018	0.00022 (J)	<0.001				
12/19/2018			<0.001	<0.001		<0.001
12/20/2018					<0.001 (X)	
8/27/2019	0.00016 (J)					
8/28/2019	0.00016 (J)	<0.001	<0.001	<0.001		<0.001
8/29/2019					0.00021 (J)	
10/16/2019	0.00019 (J)	<0.001	<0.001		0.0002 (J)	<0.001
12/3/2019				<0.001		
3/5/2020	0.0002 (J)	<0.001	<0.001	<0.001	0.0002 (J)	<0.001

Time Series

Constituent: Total Dissolved Solids [TDS] (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-2S (bg)	BRGWA-5I (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-17S
8/31/2016	151	88	138	154		
9/1/2016					299	
9/7/2016						331
11/15/2016				123	41	
11/16/2016	69	41	77			
11/17/2016						308
2/20/2017			170	158	133	
2/21/2017	68	<10				
2/22/2017						341
6/12/2017	161		132	142	61	
6/13/2017		53				
6/15/2017						333
9/26/2017	167	45	108	138	29	
9/28/2017						310
2/13/2018	165	63	141	150	61	
2/15/2018						292
6/26/2018	188	71	133	154	71	
6/27/2018						353 (X)
12/18/2018	145 (X)	78 (X)	138 (X)	147	70 (X)	
12/19/2018						317
3/19/2019	146.5 (D)	68	130	146	72	303
10/15/2019	140	66	175	144	63	
12/3/2019						378
3/3/2020	155	41	<10	130	54	263

Time Series

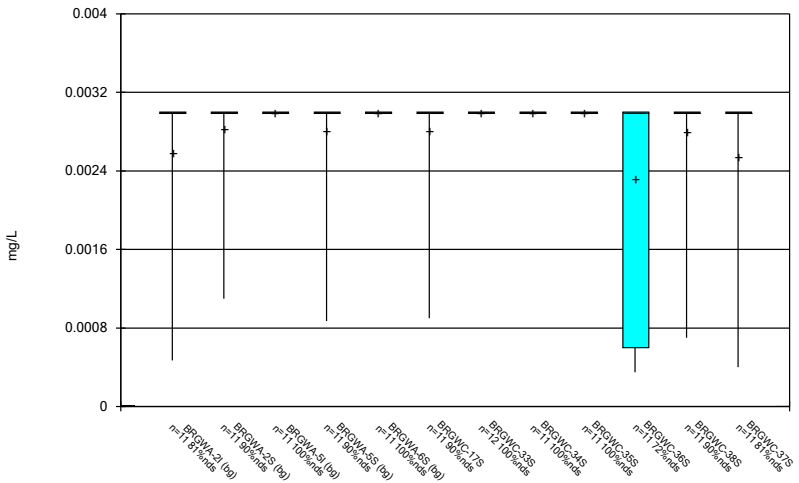
Constituent: Total Dissolved Solids [TDS] (mg/L) Analysis Run 4/22/2020 4:33 PM View: Pond E App III & IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-35S	BRGWC-36S	BRGWC-38S	BRGWC-37S
9/7/2016	382		486	528	750	
9/8/2016		663				
11/17/2016	382	651	453			
11/18/2016				524		
11/21/2016					795	
2/22/2017	387	706	541			
2/23/2017				517	733	45
4/17/2017						53
5/15/2017						48
6/14/2017	316	643				
6/15/2017			548	566	812	63
9/27/2017	303	579				
9/28/2017			487	475	690	39
2/15/2018	332	612	500	513	722	54
6/27/2018	538 (X)	359 (X)	347 (X)			
6/28/2018				499	704	59 (X)
12/18/2018	358	535				
12/19/2018			489	521		68
12/20/2018					642	
3/19/2019				498		
3/20/2019	338	517	501		615	68 (X)
10/16/2019	281	473	481		630	49
12/3/2019				498		
3/5/2020	292	489	535	457	608	39

FIGURE B.

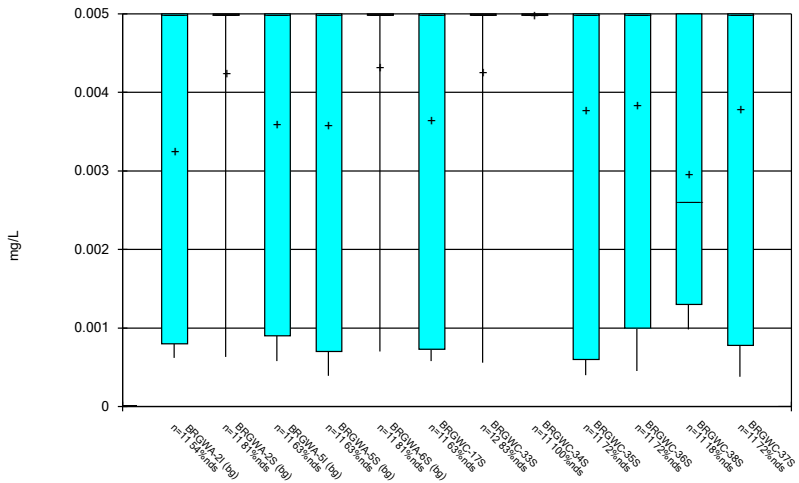
Box & Whiskers Plot



Constituent: Antimony Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

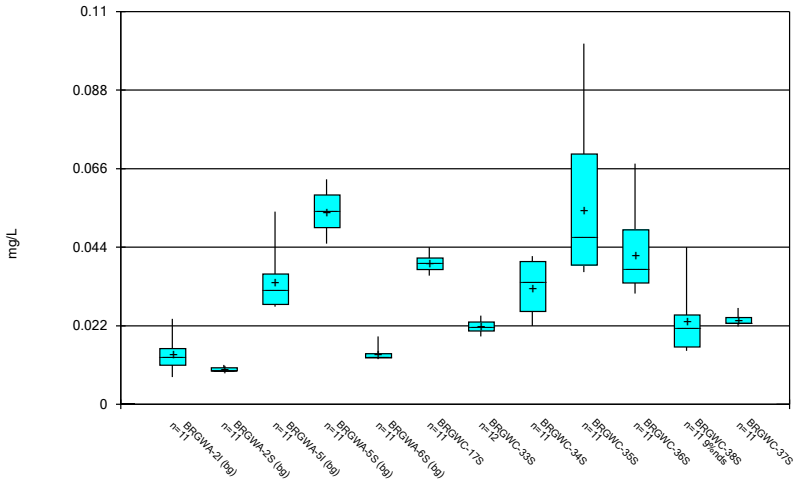
Box & Whiskers Plot



Constituent: Arsenic Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

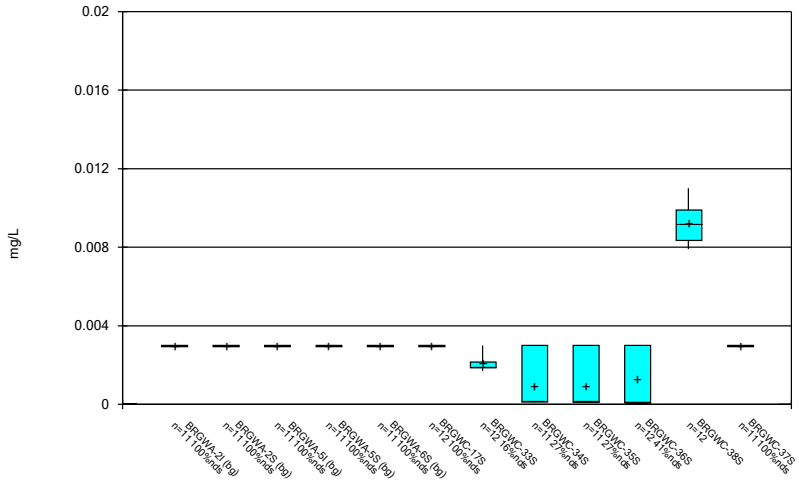
Box & Whiskers Plot



Constituent: Barium Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

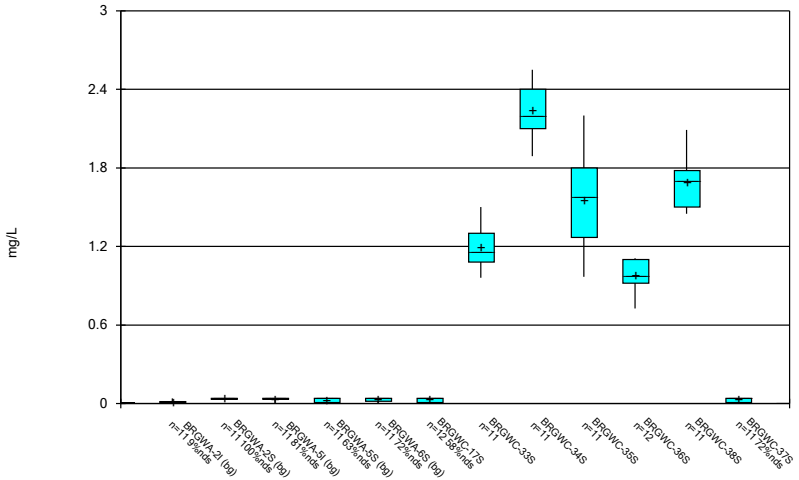
Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Beryllium Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

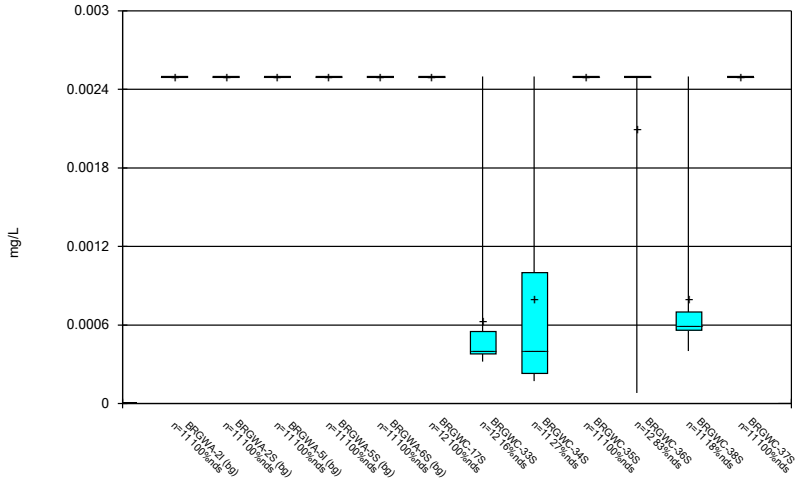
Box & Whiskers Plot



Constituent: Boron Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

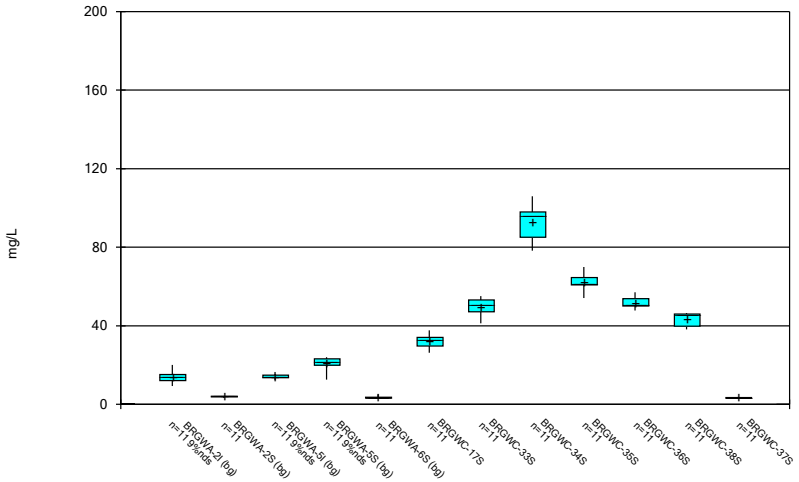
Box & Whiskers Plot



Constituent: Cadmium Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

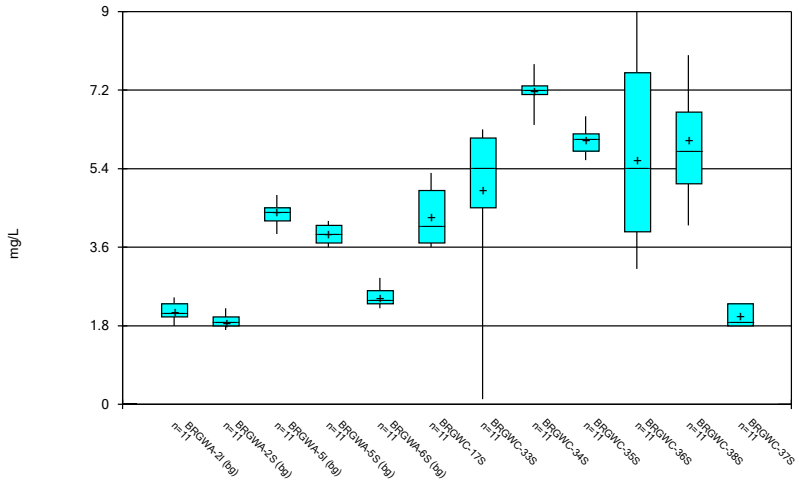
Box & Whiskers Plot



Constituent: Calcium Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

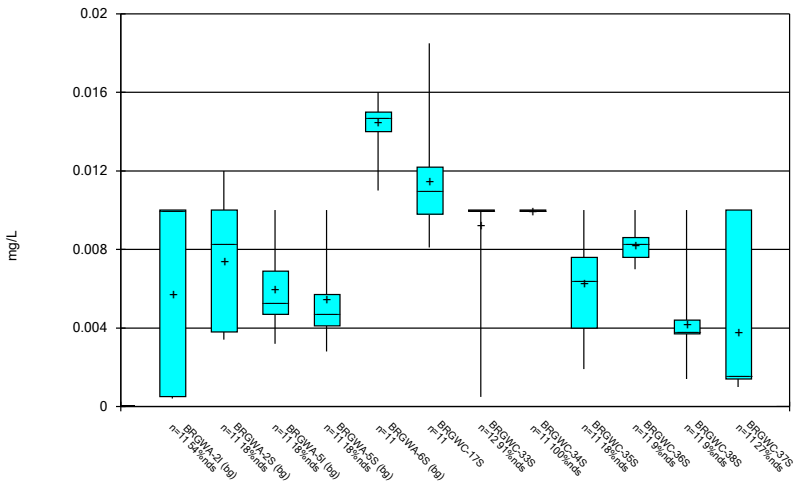
Box & Whiskers Plot



Constituent: Chloride, Total Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

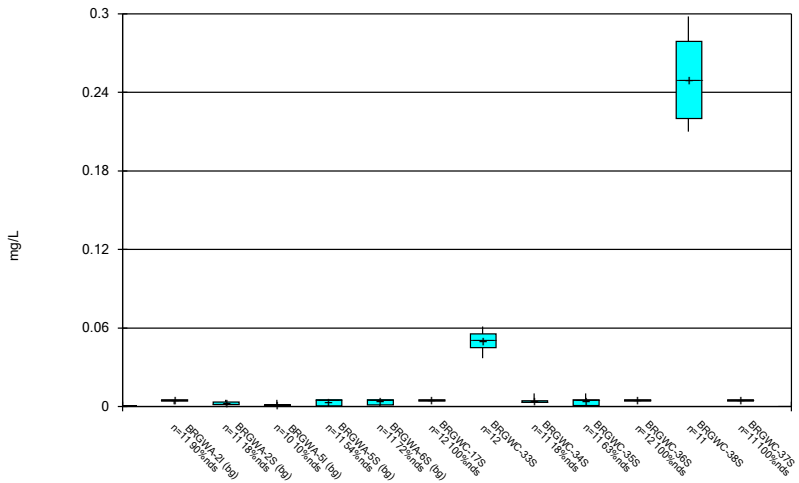
Box & Whiskers Plot



Constituent: Chromium Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

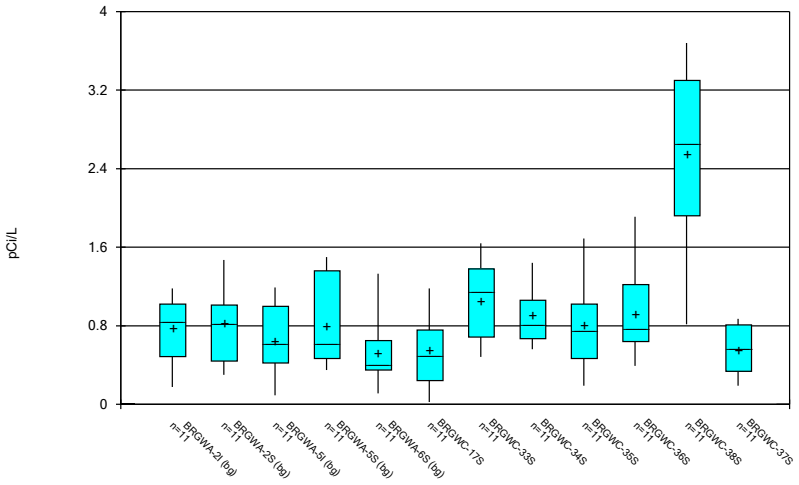
Box & Whiskers Plot



Constituent: Cobalt Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

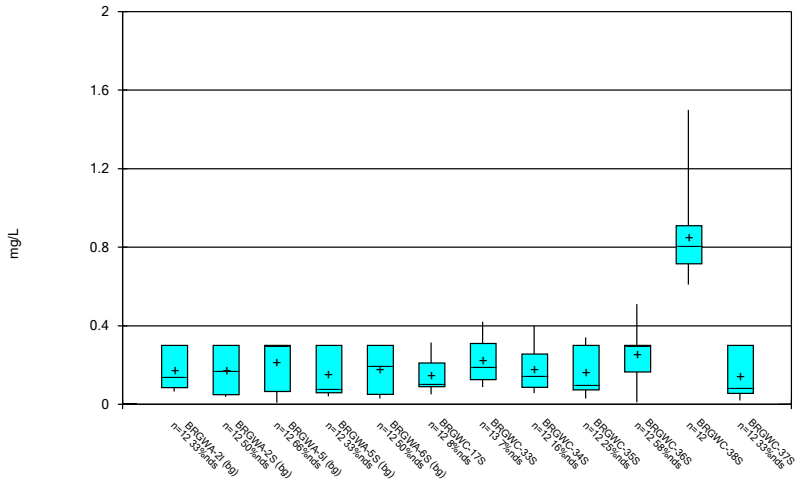
Box & Whiskers Plot



Constituent: Combined Radium 226 + 228 Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

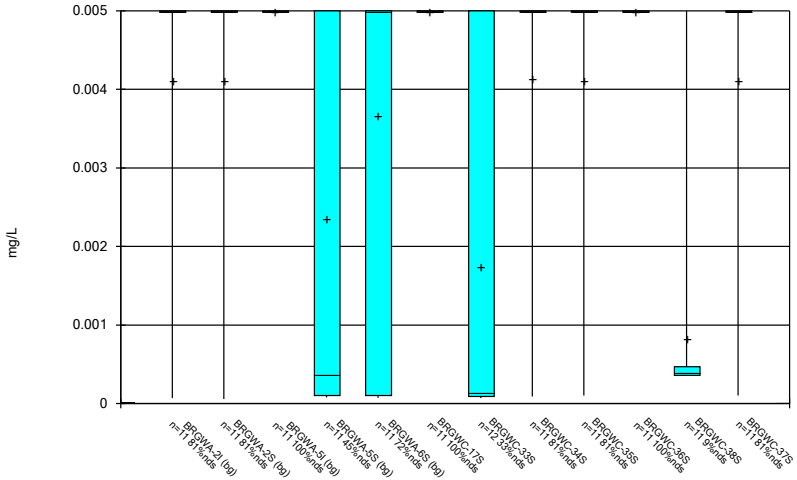
Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Fluoride Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

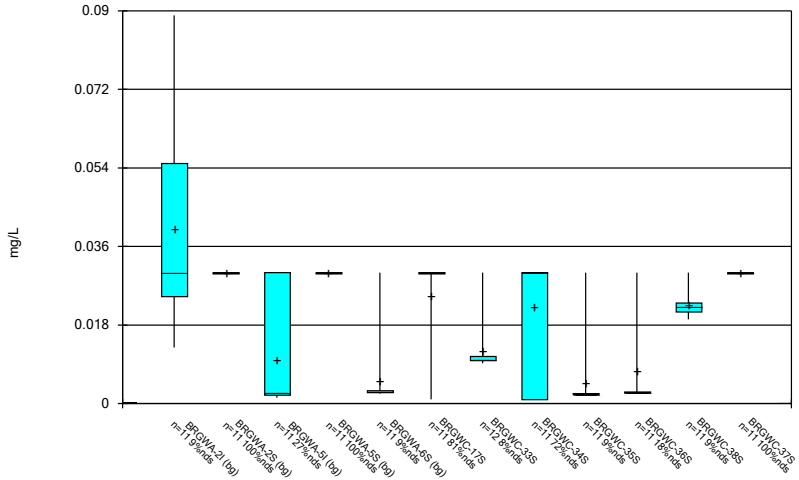
Box & Whiskers Plot



Constituent: Lead Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

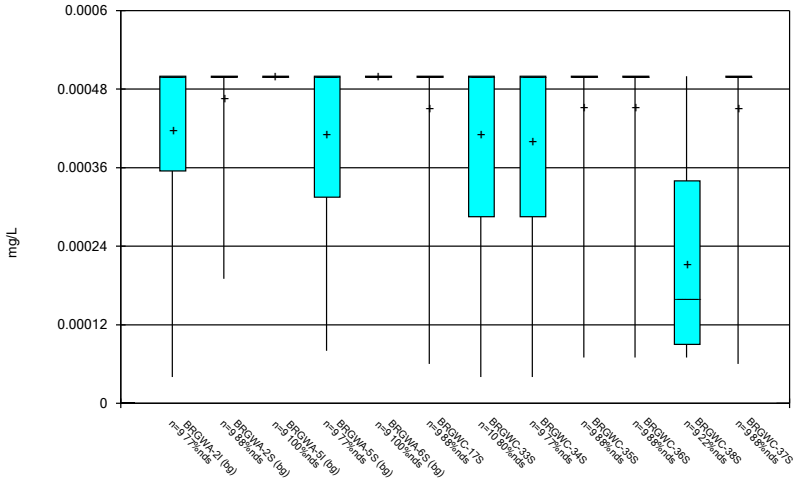
Box & Whiskers Plot



Constituent: Lithium Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

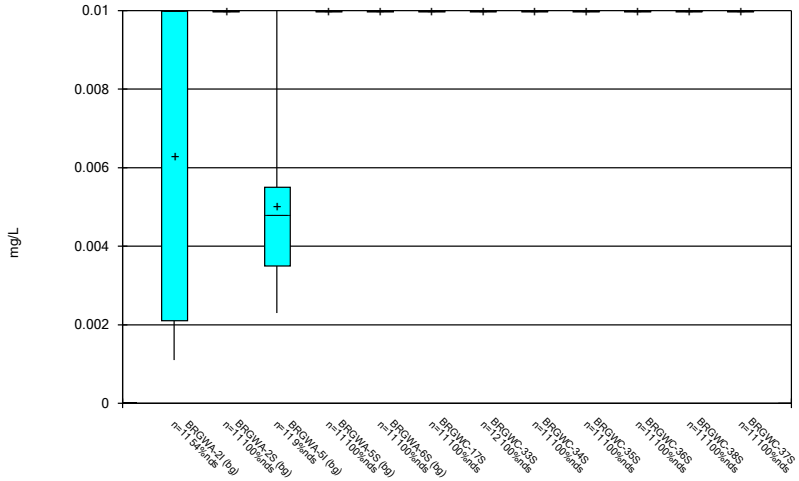
Box & Whiskers Plot



Constituent: Mercury Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

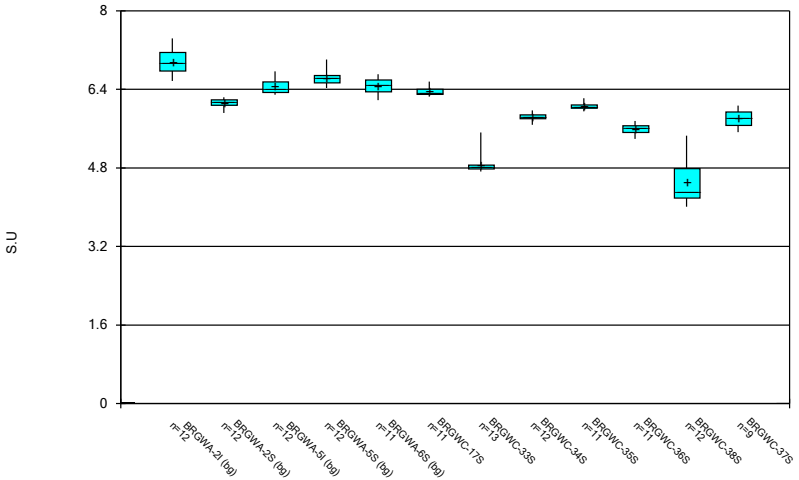
Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Molybdenum Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

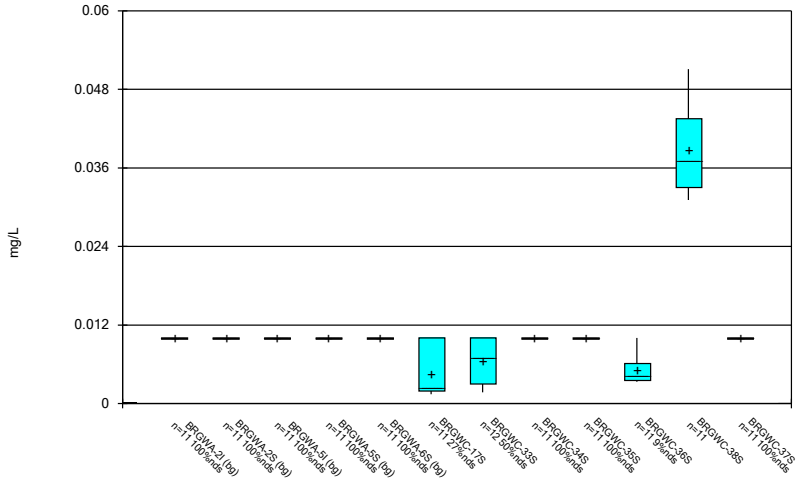
Box & Whiskers Plot



Constituent: pH, Field Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

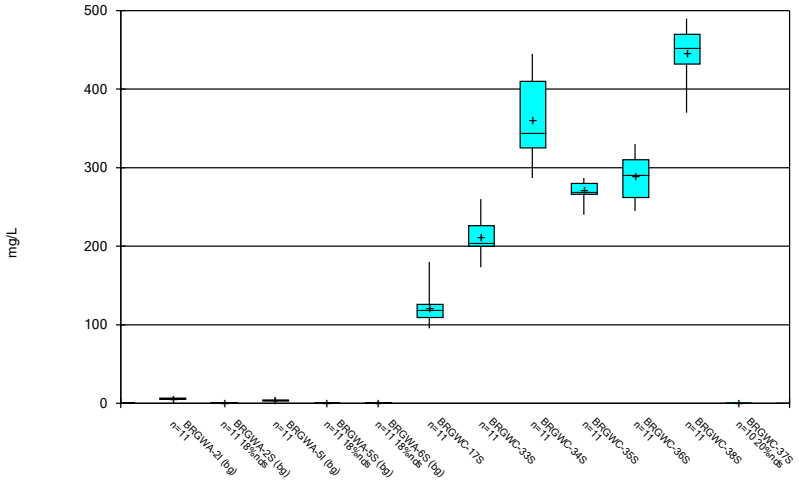
Box & Whiskers Plot



Constituent: Selenium Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

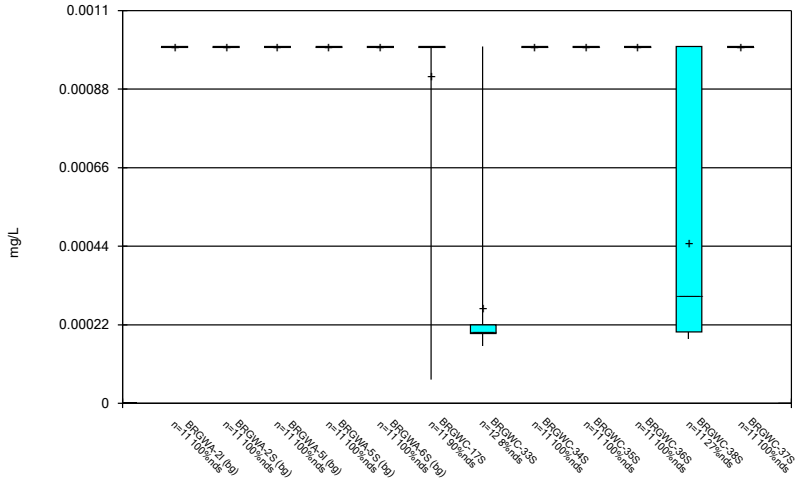
Box & Whiskers Plot



Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

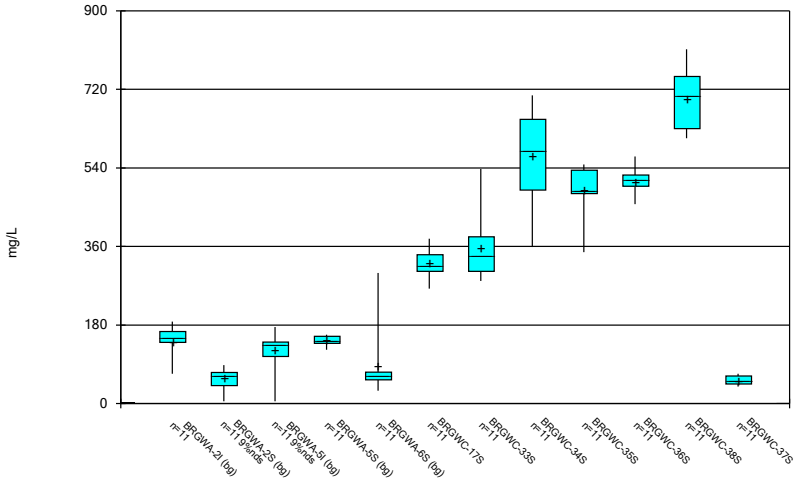
Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Box & Whiskers Plot



Constituent: Thallium Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Box & Whiskers Plot



Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:34 PM View: Pond E App III & IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

FIGURE C.

Outlier Summary

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:31 PM

	BRGWA-5I Cobalt (mg/L)	BRGWC-37S Sulfate as SO4 (mg/L)
2/13/2018	<0.01 (o)	
2/15/2018		1.9 (J,o)

FIGURE D.

Interwell Prediction Limits Summary Table - Significant Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Alpha	Method
Boron (mg/L)	BRGWC-33S	0.04	n/a	3/5/2020	1.5	Yes	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Boron (mg/L)	BRGWC-34S	0.04	n/a	3/5/2020	2.1	Yes	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Boron (mg/L)	BRGWC-35S	0.04	n/a	3/5/2020	1.9	Yes	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Boron (mg/L)	BRGWC-36S	0.04	n/a	3/5/2020	1.1	Yes	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Boron (mg/L)	BRGWC-38S	0.04	n/a	3/5/2020	1.6	Yes	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Calcium (mg/L)	BRGWC-17S	24	n/a	3/3/2020	29.7	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Calcium (mg/L)	BRGWC-33S	24	n/a	3/5/2020	48.1	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Calcium (mg/L)	BRGWC-34S	24	n/a	3/5/2020	89.6	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Calcium (mg/L)	BRGWC-35S	24	n/a	3/5/2020	69.9	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Calcium (mg/L)	BRGWC-36S	24	n/a	3/5/2020	51.7	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Calcium (mg/L)	BRGWC-38S	24	n/a	3/5/2020	39.8	Yes	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-34S	4.8	n/a	3/5/2020	6.4	Yes	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-35S	4.8	n/a	3/5/2020	5.8	Yes	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-36S	4.8	n/a	3/5/2020	7.6	Yes	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-38S	4.8	n/a	3/5/2020	5.8	Yes	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-38S	0.3	n/a	3/5/2020	0.92	Yes	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
pH, Field (S.U)	BRGWC-33S	7.156	5.905	3/5/2020	4.82	Yes	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	BRGWC-34S	7.156	5.905	3/5/2020	5.89	Yes	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	BRGWC-36S	7.156	5.905	3/5/2020	5.39	Yes	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	BRGWC-38S	7.156	5.905	3/5/2020	4.01	Yes	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	BRGWC-37S	7.156	5.905	3/5/2020	5.53	Yes	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-17S	7.5	n/a	3/3/2020	95.4	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-33S	7.5	n/a	3/5/2020	173	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-34S	7.5	n/a	3/5/2020	287	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-35S	7.5	n/a	3/5/2020	269	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-36S	7.5	n/a	3/5/2020	262	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Sulfate as SO4 (mg/L)	BRGWC-38S	7.5	n/a	3/5/2020	370	Yes	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-34S	299	n/a	3/5/2020	489	Yes	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-35S	299	n/a	3/5/2020	535	Yes	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-36S	299	n/a	3/5/2020	457	Yes	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-38S	299	n/a	3/5/2020	608	Yes	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2

Interwell Prediction Limits Summary Table - All Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:37 PM

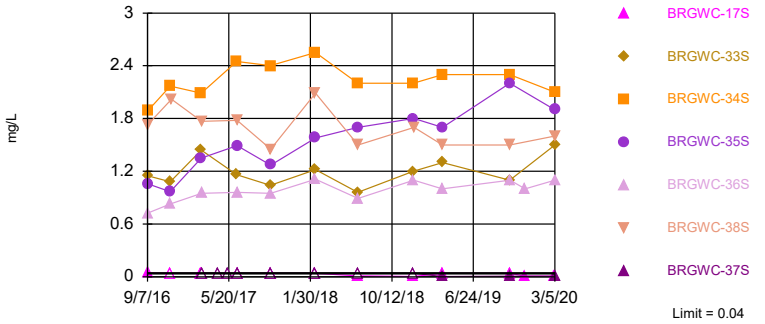
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Alpha	Method
Boron (mg/L)	BRGWC-17S	0.04	n/a	3/3/2020	0.0075	No	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Boron (mg/L)	**BRGWC-33S**	**0.04**	**n/a**	**3/5/2020**	**1.5**	**Yes**	**55**	**n/a**	**n/a**	**65.45**	**n/a**	**0.0006289**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**BRGWC-34S**	**0.04**	**n/a**	**3/5/2020**	**2.1**	**Yes**	**55**	**n/a**	**n/a**	**65.45**	**n/a**	**0.0006289**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**BRGWC-35S**	**0.04**	**n/a**	**3/5/2020**	**1.9**	**Yes**	**55**	**n/a**	**n/a**	**65.45**	**n/a**	**0.0006289**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**BRGWC-36S**	**0.04**	**n/a**	**3/5/2020**	**1.1**	**Yes**	**55**	**n/a**	**n/a**	**65.45**	**n/a**	**0.0006289**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	**BRGWC-38S**	**0.04**	**n/a**	**3/5/2020**	**1.6**	**Yes**	**55**	**n/a**	**n/a**	**65.45**	**n/a**	**0.0006289**	**NP Inter (NDs) 1 of 2**
Boron (mg/L)	BRGWC-37S	0.04	n/a	3/5/2020	0.0076	No	55	n/a	n/a	65.45	n/a	0.0006289	NP Inter (NDs) 1 of 2
Calcium (mg/L)	**BRGWC-17S**	**24**	**n/a**	**3/3/2020**	**29.7**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**BRGWC-33S**	**24**	**n/a**	**3/5/2020**	**48.1**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**BRGWC-34S**	**24**	**n/a**	**3/5/2020**	**89.6**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**BRGWC-35S**	**24**	**n/a**	**3/5/2020**	**69.9**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**BRGWC-36S**	**24**	**n/a**	**3/5/2020**	**51.7**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	**BRGWC-38S**	**24**	**n/a**	**3/5/2020**	**39.8**	**Yes**	**55**	**n/a**	**n/a**	**5.455**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Calcium (mg/L)	BRGWC-37S	24	n/a	3/5/2020	3.7	No	55	n/a	n/a	5.455	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-17S	4.8	n/a	3/3/2020	3.8	No	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	BRGWC-33S	4.8	n/a	3/5/2020	4.8	No	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Chloride, Total (mg/L)	**BRGWC-34S**	**4.8**	**n/a**	**3/5/2020**	**6.4**	**Yes**	**55**	**n/a**	**n/a**	**0**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Chloride, Total (mg/L)	**BRGWC-35S**	**4.8**	**n/a**	**3/5/2020**	**5.8**	**Yes**	**55**	**n/a**	**n/a**	**0**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Chloride, Total (mg/L)	**BRGWC-36S**	**4.8**	**n/a**	**3/5/2020**	**7.6**	**Yes**	**55**	**n/a**	**n/a**	**0**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Chloride, Total (mg/L)	**BRGWC-38S**	**4.8**	**n/a**	**3/5/2020**	**5.8**	**Yes**	**55**	**n/a**	**n/a**	**0**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Chloride, Total (mg/L)	BRGWC-37S	4.8	n/a	3/5/2020	1.8	No	55	n/a	n/a	0	n/a	0.0006289	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-17S	0.3	n/a	3/3/2020	0.093	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-33S	0.3	n/a	3/5/2020	0.088	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-34S	0.3	n/a	3/5/2020	0.072	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-35S	0.3	n/a	3/5/2020	0.067	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
Fluoride (mg/L)	BRGWC-36S	0.3	n/a	3/5/2020	0.3ND	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
Fluoride (mg/L)	**BRGWC-38S**	**0.3**	**n/a**	**3/5/2020**	**0.92**	**Yes**	**60**	**n/a**	**n/a**	**46.67**	**n/a**	**0.0005205**	**NP Inter (normality) 1 of 2**
Fluoride (mg/L)	BRGWC-37S	0.3	n/a	3/5/2020	0.05	No	60	n/a	n/a	46.67	n/a	0.0005205	NP Inter (normality) 1 of 2
pH, Field (S.U)	BRGWC-17S	7.156	5.905	3/3/2020	6.34	No	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	**BRGWC-33S**	**7.156**	**5.905**	**3/5/2020**	**4.82**	**Yes**	**59**	**6.531**	**0.3254**	**0**	**None**	**0.0005373**	**Param Inter 1 of 2**
pH, Field (S.U)	**BRGWC-34S**	**7.156**	**5.905**	**3/5/2020**	**5.89**	**Yes**	**59**	**6.531**	**0.3254**	**0**	**None**	**0.0005373**	**Param Inter 1 of 2**
pH, Field (S.U)	BRGWC-35S	7.156	5.905	3/5/2020	6.04	No	59	6.531	0.3254	0	None	0.0005373	Param Inter 1 of 2
pH, Field (S.U)	**BRGWC-36S**	**7.156**	**5.905**	**3/5/2020**	**5.39**	**Yes**	**59**	**6.531**	**0.3254**	**0**	**None**	**0.0005373**	**Param Inter 1 of 2**
pH, Field (S.U)	**BRGWC-38S**	**7.156**	**5.905**	**3/5/2020**	**4.01**	**Yes**	**59**	**6.531**	**0.3254**	**0**	**None**	**0.0005373**	**Param Inter 1 of 2**
pH, Field (S.U)	**BRGWC-37S**	**7.156**	**5.905**	**3/5/2020**	**5.53**	**Yes**	**59**	**6.531**	**0.3254**	**0**	**None**	**0.0005373**	**Param Inter 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-17S**	**7.5**	**n/a**	**3/3/2020**	**95.4**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-33S**	**7.5**	**n/a**	**3/5/2020**	**173**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-34S**	**7.5**	**n/a**	**3/5/2020**	**287**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-35S**	**7.5**	**n/a**	**3/5/2020**	**269**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-36S**	**7.5**	**n/a**	**3/5/2020**	**262**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	**BRGWC-38S**	**7.5**	**n/a**	**3/5/2020**	**370**	**Yes**	**55**	**n/a**	**n/a**	**10.91**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Sulfate as SO4 (mg/L)	BRGWC-37S	7.5	n/a	3/5/2020	0.5ND	No	55	n/a	n/a	10.91	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-17S	299	n/a	3/3/2020	263	No	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	BRGWC-33S	299	n/a	3/5/2020	292	No	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-34S**	**299**	**n/a**	**3/5/2020**	**489**	**Yes**	**55**	**n/a**	**n/a**	**3.636**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-35S**	**299**	**n/a**	**3/5/2020**	**535**	**Yes**	**55**	**n/a**	**n/a**	**3.636**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-36S**	**299**	**n/a**	**3/5/2020**	**457**	**Yes**	**55**	**n/a**	**n/a**	**3.636**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-38S**	**299**	**n/a**	**3/5/2020**	**608**	**Yes**	**55**	**n/a**	**n/a**	**3.636**	**n/a**	**0.0006289**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids [TDS] (mg/L)	BRGWC-37S	299	n/a	3/5/2020	39	No	55	n/a	n/a	3.636	n/a	0.0006289	NP Inter (normality) 1 of 2

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Exceeds Limit: BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 55 background values. 65.45% NDs. Annual per-constituent alpha = 0.008769. Individual comparison alpha = 0.0006289 (1 of 2). Comparing 7 points to limit.

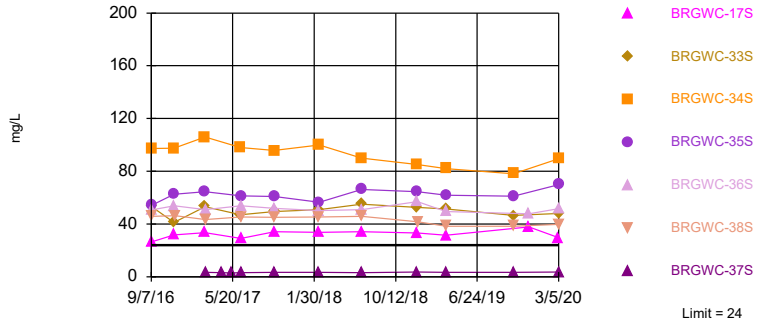
Constituent: Boron Analysis Run 4/22/2020 4:36 PM View: Pond E App III
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Exceeds Limit: BRGWC-17S, BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 55 background values. 5.455% NDs. Annual per-constituent alpha = 0.008769. Individual comparison alpha = 0.0006289 (1 of 2). Comparing 7 points to limit.

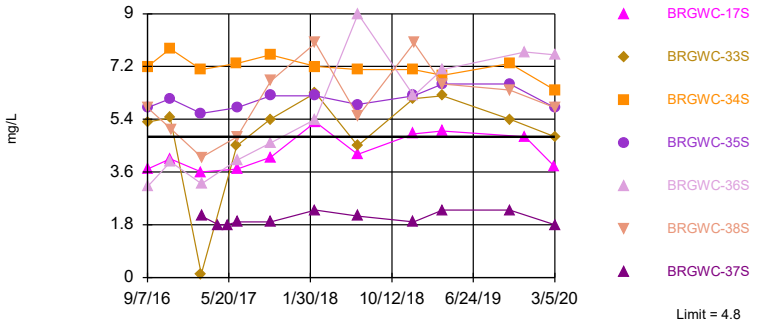
Constituent: Calcium Analysis Run 4/22/2020 4:36 PM View: Pond E App III
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Exceeds Limit: BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 55 background values. Annual per-constituent alpha = 0.008769. Individual comparison alpha = 0.0006289 (1 of 2). Comparing 7 points to limit.

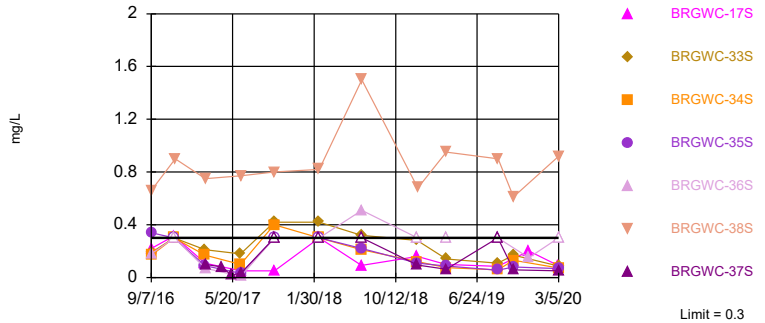
Constituent: Chloride, Total Analysis Run 4/22/2020 4:36 PM View: Pond E App III
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Exceeds Limit: BRGWC-38S

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 60 background values. 46.67% NDs. Annual per-constituent alpha = 0.007263. Individual comparison alpha = 0.0005205 (1 of 2). Comparing 7 points to limit.

Constituent: Fluoride Analysis Run 4/22/2020 4:36 PM View: Pond E App III
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-5S (bg)	BRGWA-5I (bg)	BRGWA-2S (bg)	BRGWA-6S (bg)	BRGWC-33S	BRGWC-17S	BRGWC-35S	BRGWC-36S
8/31/2016	0.0072 (J)	<0.04	<0.04	<0.04					
9/1/2016					<0.04				
9/7/2016						1.15	0.0449 (J)	1.06	0.725
9/8/2016									
11/15/2016		<0.04 (B)			<0.04 (B)				
11/16/2016	<0.04		<0.04	<0.04					
11/17/2016						1.08	<0.04	0.967	
11/18/2016									0.831
11/21/2016									
2/20/2017		0.0093 (J)	0.0066 (J)		0.0157 (J)				
2/21/2017	0.0088 (J)			<0.04					
2/22/2017						1.44	<0.04	1.35	
2/23/2017									0.949
4/17/2017									
5/15/2017									
6/12/2017	0.0133 (J)	<0.04	<0.04		<0.04				
6/13/2017				<0.04					
6/14/2017						1.16			
6/15/2017							<0.04	1.49	0.961
9/26/2017	0.0093 (J)	<0.04	<0.04	<0.04	<0.04				
9/27/2017						1.04			
9/28/2017							<0.04	1.27	0.948
2/13/2018	0.0141 (J)	<0.04	<0.04	<0.04	<0.04				
2/15/2018						1.22	<0.04	1.58	1.11
6/26/2018	0.012 (J)	0.0056 (J)	0.0042 (J)	<0.04	0.0041 (J)				
6/27/2018						0.96 (J+X)	0.0088 (J+X)	1.7 (J+X)	
6/28/2018									0.89
12/18/2018	0.0086 (J)	0.0062 (J)	<0.04	<0.04	<0.04	1.2			
12/19/2018							0.0045 (J)	1.8	1.1
12/20/2018									
3/19/2019	0.00565 (JD)	<0.04	<0.04	<0.04	<0.04		<0.04		1
3/20/2019						1.3		1.7	
10/15/2019	0.0067 (J)	0.006 (J)	<0.04	<0.04	0.01 (J)				
10/16/2019						1.1		2.2	
10/17/2019							<0.04		1.1
12/3/2019							0.0063 (J)		1
3/3/2020	0.0082 (J)	<0.04	<0.04	<0.04	<0.04		0.0075 (J)		
3/5/2020						1.5		1.9	1.1

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-38S	BRGWC-34S	BRGWC-37S
8/31/2016			
9/1/2016			
9/7/2016	1.73		
9/8/2016		1.89	
11/15/2016			
11/16/2016			
11/17/2016		2.17	
11/18/2016			
11/21/2016	2.02		
2/20/2017			
2/21/2017			
2/22/2017		2.09	
2/23/2017	1.77		<0.04
4/17/2017			<0.04
5/15/2017			<0.04
6/12/2017			
6/13/2017			
6/14/2017		2.45	
6/15/2017	1.78		<0.04
9/26/2017			
9/27/2017		2.4	
9/28/2017	1.45		<0.04
2/13/2018			
2/15/2018	2.09	2.55	<0.04
6/26/2018			
6/27/2018		2.2 (J+X)	
6/28/2018	1.5		<0.04 (X)
12/18/2018		2.2	
12/19/2018			<0.04
12/20/2018	1.7		
3/19/2019			
3/20/2019	1.5	2.3	0.004 (J)
10/15/2019			
10/16/2019	1.5	2.3	0.0055 (J)
10/17/2019			
12/3/2019			
3/3/2020			
3/5/2020	1.6	2.1	0.0076 (J)

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-5S (bg)	BRGWA-5I (bg)	BRGWA-2S (bg)	BRGWA-6S (bg)	BRGWC-35S	BRGWC-38S	BRGWC-17S	BRGWC-36S
8/31/2016	12.6	19.6	13.5	4.09					
9/1/2016					3.3				
9/7/2016						54.1	45.9	26.3	50.6
9/8/2016									
11/15/2016		21.7			3.44				
11/16/2016	12.1		14.9	4.25					
11/17/2016						62.6		31.8	
11/18/2016									53.9
11/21/2016							46.4		
2/20/2017		21.1	13.9		3.52				
2/21/2017	11.4			4.02					
2/22/2017						64.6		33.5	
2/23/2017							43.5		51
4/17/2017									
5/15/2017									
6/12/2017	9.34	21.5	13.7		3.11				
6/13/2017				3.84					
6/14/2017									
6/15/2017						61.3	45.3	29	53.8
9/26/2017	14.3	24	14.4	3.31	3.15				
9/27/2017									
9/28/2017						60.8	45.1	34.1	51.8
2/13/2018	<25	<25	<25	3.94	3.65				
2/15/2018						56.6	45.3	33.8	50.1
6/26/2018	16 (J)	23.5 (J)	13.5 (J)	3.6	3.3				
6/27/2018						66.2		34.1	
6/28/2018							45.9		51
12/18/2018	14.5 (J)	19.8 (J)	16.4 (J)	3.8	3.5				
12/19/2018						64.4		33.1	57.1
12/20/2018							41.8		
3/19/2019	14.3 (JD)	21.4 (J)	12.3 (J)	3.9	3.6			31.6	49.5
3/20/2019						61.8	38.2		
10/15/2019	15.1	20	14.4	3.7	3.5				
10/16/2019						61.2	38.4		
12/3/2019								37.7	47.8
3/3/2020	20	23.2	14.9	4	5			29.7	
3/5/2020						69.9	39.8		51.7

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-37S
8/31/2016			
9/1/2016			
9/7/2016	53.4		
9/8/2016		97.3	
11/15/2016			
11/16/2016			
11/17/2016	41.3	97.6	
11/18/2016			
11/21/2016			
2/20/2017			
2/21/2017			
2/22/2017	53.1	106	
2/23/2017			3.26
4/17/2017			3.23
5/15/2017			2.97 (B-01)
6/12/2017			
6/13/2017			
6/14/2017	47.1	98	
6/15/2017			3.15
9/26/2017			
9/27/2017	49.5	95.8	
9/28/2017			3.26
2/13/2018			
2/15/2018	50.9	100	3.39
6/26/2018			
6/27/2018	55.1	90.1	
6/28/2018			3.1
12/18/2018	52.7	85.1	
12/19/2018			3.6
12/20/2018			
3/19/2019			
3/20/2019	51.4	82	3.3
10/15/2019			
10/16/2019	46.5	78.2	3.4
12/3/2019			
3/3/2020			
3/5/2020	48.1	89.6	3.7

Prediction Limit

Constituent: Chloride, Total (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-5S (bg)	BRGWA-5I (bg)	BRGWA-2S (bg)	BRGWA-6S (bg)	BRGWC-35S	BRGWC-38S	BRGWC-17S	BRGWC-36S
8/31/2016	2.3	3.6	4.4	2					
9/1/2016					2.5				
9/7/2016						5.8	5.8	3.7	3.1
9/8/2016									
11/15/2016		4			2.3				
11/16/2016	2		4.4	1.8					
11/17/2016						6.1 (D)		4.05 (D)	
11/18/2016									3.95 (D)
11/21/2016							5.05 (D)		
2/20/2017		3.9	4.8		2.4				
2/21/2017	2			1.8					
2/22/2017						5.6		3.6	
2/23/2017							4.1		3.2
4/17/2017									
5/15/2017									
6/12/2017	2.1	3.8	4.2		2.2				
6/13/2017				1.7					
6/14/2017									
6/15/2017						5.8	4.8	3.7	4
9/26/2017	2	4.1	4.4	1.8	2.3				
9/27/2017									
9/28/2017						6.2	6.7	4.1	4.6
2/13/2018	2.1	4.1	4.7	1.7	2.3				
2/15/2018						6.2	8	5.3	5.4
6/26/2018	2.4	4.1	4.5	2.2	2.6				
6/27/2018						5.9		4.2	
6/28/2018							5.5 (J-X)		9 (J-X)
12/18/2018	1.8	3.8	4.5	1.9	2.3				
12/19/2018						6.2 (J-X)		4.9 (J-X)	6.2 (J-X)
12/20/2018							8 (J-X)		
3/19/2019	2.45 (D)	4.2	4.5	2	2.6			5	7.1
3/20/2019						6.6	6.6		
10/15/2019	2.2	3.7	4.2	1.9	2.4				
10/16/2019						6.6	6.4		
12/3/2019								4.8	7.7
3/3/2020	1.9	3.6	3.9	1.9	2.9			3.8	
3/5/2020						5.8	5.8		7.6

Prediction Limit

Constituent: Chloride, Total (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-37S
8/31/2016			
9/1/2016			
9/7/2016	5.3		
9/8/2016		7.2	
11/15/2016			
11/16/2016			
11/17/2016	5.45 (D)	7.8 (D)	
11/18/2016			
11/21/2016			
2/20/2017			
2/21/2017			
2/22/2017	0.12 (J)	7.1	
2/23/2017			2.1
4/17/2017			1.8
5/15/2017			1.8
6/12/2017			
6/13/2017			
6/14/2017	4.5	7.3	
6/15/2017			1.9
9/26/2017			
9/27/2017	5.4	7.6	
9/28/2017			1.9
2/13/2018			
2/15/2018	6.3	7.2	2.3
6/26/2018			
6/27/2018	4.5	7.1	
6/28/2018			2.1 (J-X)
12/18/2018	6.1	7.1	
12/19/2018			1.9 (J-X)
12/20/2018			
3/19/2019			
3/20/2019	6.2	6.9	2.3
10/15/2019			
10/16/2019	5.4	7.3	2.3
12/3/2019			
3/3/2020			
3/5/2020	4.8	6.4	1.8

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-5S (bg)	BRGWA-5I (bg)	BRGWA-2S (bg)	BRGWA-6S (bg)	BRGWC-38S	BRGWC-36S	BRGWC-35S	BRGWC-17S
8/31/2016	0.11 (J)	0.19 (J)	0.07 (J)	0.05 (J)					
9/1/2016					0.06 (J)				
9/7/2016						0.66	0.18 (J)	0.34	0.22 (J)
9/8/2016									
11/15/2016		<0.3 (J)			<0.3 (J)				
11/16/2016	<0.3 (J)		<0.3 (J)	<0.3 (J)					
11/17/2016								<0.3 (D)	0.315 (D)
11/18/2016							<0.3 (D)		
11/21/2016						0.9 (D)			
2/20/2017		0.08 (J)	0.06 (J)		0.04 (J)				
2/21/2017	0.14 (J)			0.05 (J)					
2/22/2017								0.09 (J)	0.11 (J)
2/23/2017						0.75	0.07 (J)		
4/17/2017									
5/15/2017									
6/12/2017	0.16 (J)	0.07 (J)	0.008 (J)		0.06 (J)				
6/13/2017				0.04 (J)					
6/14/2017									
6/15/2017						0.77	0.01 (J)	0.03 (J)	0.05 (J)
9/26/2017	0.14 (J)	0.04 (J)	<0.3	<0.3	<0.3				
9/27/2017									
9/28/2017						0.8	<0.3	<0.3	0.05 (J)
2/13/2018	<0.3	<0.3	<0.3	<0.3	<0.3				
2/15/2018						0.82	<0.3	<0.3	<0.3
6/26/2018	0.085 (J)	0.072 (J)	0.045 (J)	0.048 (J)	0.041 (J)				
6/27/2018								0.22 (J)	0.093 (J)
6/28/2018						1.5 (J+X)	0.51 (J+X)		
12/18/2018	0.085 (J)	<0.3	<0.3	<0.3	<0.3				
12/19/2018							<0.3	0.11 (J)	0.16 (J)
12/20/2018						0.68			
3/19/2019	0.0655 (JD)	0.06 (J)	<0.3	0.037 (J)	0.03 (J)		<0.3		0.1 (J)
3/20/2019						0.95		0.088 (J)	
8/27/2019	<0.3	<0.3	<0.3	<0.3	<0.3				
8/28/2019							<0.3	0.056 (J)	0.085 (J)
8/29/2019						0.9			
10/15/2019	<0.3	0.045 (J)	<0.3	<0.3	<0.3				
10/16/2019						0.61		0.08 (J)	
12/3/2019							0.15 (J)		0.2 (J)
3/3/2020	0.066 (J)	0.057 (J)	<0.3	0.05 (J)	0.09 (J)				0.093 (J)
3/5/2020						0.92	<0.3	0.067 (J)	

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

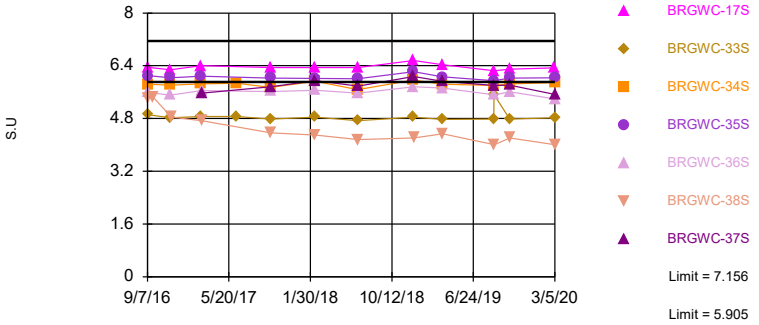
	BRGWC-33S	BRGWC-34S	BRGWC-37S
8/31/2016			
9/1/2016			
9/7/2016	0.19 (J)		
9/8/2016		0.17 (J)	
11/15/2016			
11/16/2016			
11/17/2016	<0.3 (D)	<0.3 (D)	
11/18/2016			
11/21/2016			
2/20/2017			
2/21/2017			
2/22/2017	0.21 (J)	0.17 (J)	
2/23/2017			0.1 (J)
4/17/2017			0.08 (J)
5/15/2017			0.02 (J)
6/12/2017			
6/13/2017			
6/14/2017	0.18 (J)	0.1 (J)	
6/15/2017			0.03 (J)
9/26/2017			
9/27/2017	0.42	0.4	
9/28/2017			<0.3
2/13/2018			
2/15/2018	0.42	<0.3	<0.3
6/26/2018			
6/27/2018	0.32	0.21 (J)	
6/28/2018			<0.3
12/18/2018	0.28 (J)	0.12 (J)	
12/19/2018			0.094 (J)
12/20/2018			
3/19/2019			
3/20/2019	0.14 (J)	0.074 (J)	0.062 (J)
8/27/2019	0.11 (J)		
8/28/2019	0.11 (J)	0.057 (J)	<0.3
8/29/2019			
10/15/2019			
10/16/2019	0.17 (J)	0.13 (J)	0.059 (J)
12/3/2019			
3/3/2020			
3/5/2020	0.088 (J)	0.072 (J)	0.05 (J)

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Exceeds Limits: BRGWC-33S, BRGWC-34S, BRGWC-36S, BRGWC-38S, BRGWC-37S

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=6.531, Std. Dev.=0.3254, n=59. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9704, critical = 0.945. Kappa = 1.922 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0005373. Comparing 7 points to limit.

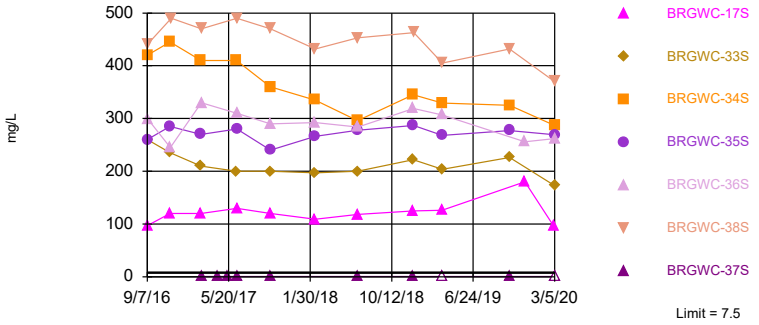
Constituent: pH, Field Analysis Run 4/22/2020 4:36 PM View: Pond E App III
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Exceeds Limit: BRGWC-17S, BRGWC-33S, BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 55 background values. 10.91% NDs. Annual per-constituent alpha = 0.008769. Individual comparison alpha = 0.0006289 (1 of 2). Comparing 7 points to limit.

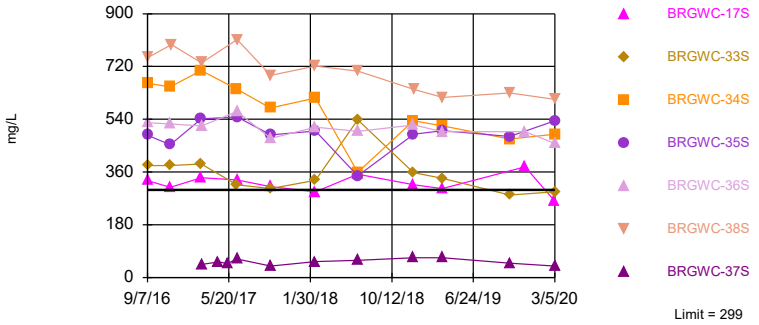
Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:36 PM View: Pond E App III
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Exceeds Limit: BRGWC-34S, BRGWC-35S, BRGWC-36S, BRGWC-38S

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 55 background values. 3.636% NDs. Annual per-constituent alpha = 0.008769. Individual comparison alpha = 0.0006289 (1 of 2). Comparing 7 points to limit.

Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:36 PM View: Pond E App III
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Prediction Limit

Constituent: pH, Field (S.U) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-5I (bg)	BRGWA-2S (bg)	BRGWA-5S (bg)	BRGWA-6S (bg)	BRGWC-38S	BRGWC-36S	BRGWC-35S	BRGWC-17S
8/31/2016	7.16	6.53	6.2	6.59					
9/1/2016					6.49				
9/7/2016						5.43	5.59	6.1	6.36
9/8/2016									
9/23/2016						5.46			
11/15/2016				6.67	6.59				
11/16/2016	6.96	6.4	6.12						
11/17/2016								6.04	6.28
11/18/2016							5.51		
11/21/2016						4.84			
2/20/2017		6.44		6.65	6.61				
2/21/2017	7.15		6.24						
2/22/2017								6.08	6.4
2/23/2017						4.73	5.65		
6/12/2017	7.31	6.4		6.64					
6/13/2017			6.19						
6/14/2017									
9/26/2017	7.02	6.31	6.15	6.58	6.47				
9/27/2017									
9/28/2017						4.37	5.62	6.03	6.35
2/13/2018	7.44	6.62	6.18	6.72	6.54				
2/15/2018						4.3	5.66	6.02	6.35
6/26/2018	6.93	6.29	6.05	6.43	6.23				
6/27/2018								6.01	6.35
6/28/2018						4.16	5.57		
12/18/2018	6.76	6.57	5.92	6.7	6.71				
12/19/2018							5.76	6.22	6.56
12/20/2018						4.21			
3/19/2019	6.87	6.45	6.18	6.63	6.18		5.72		6.43
3/20/2019						4.34		6.06	
8/27/2019	6.79	6.37	6.09	6.49	6.35				
8/28/2019							5.52	5.95	6.25
8/29/2019						4.01			
10/15/2019	6.57	6.77	6.06	7.01	6.36				
10/16/2019						4.21		6.03	
10/17/2019							5.61		6.3
3/3/2020	6.71	6.29	6.1	6.49	6.59				6.34
3/5/2020						4.01	5.39	6.04	

Prediction Limit

Constituent: pH, Field (S.U) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-37S
8/31/2016			
9/1/2016			
9/7/2016	4.92		
9/8/2016		5.84	
9/23/2016			
11/15/2016			
11/16/2016			
11/17/2016	4.82	5.81	
11/18/2016			
11/21/2016			
2/20/2017			
2/21/2017			
2/22/2017	4.86	5.85	
2/23/2017			5.57
6/12/2017			
6/13/2017			
6/14/2017	4.86	5.87	
9/26/2017			
9/27/2017	4.78	5.74	
9/28/2017			5.76
2/13/2018			
2/15/2018	4.84	5.93	5.95
6/26/2018			
6/27/2018	4.73	5.68	
6/28/2018			5.78
12/18/2018	4.84	5.97	
12/19/2018			6.07
12/20/2018			
3/19/2019			
3/20/2019	4.77	5.84	5.93
8/27/2019	4.78		
8/28/2019	5.52	5.8	5.8
8/29/2019			
10/15/2019			
10/16/2019	4.78	5.85	5.81
10/17/2019			
3/3/2020			
3/5/2020	4.82	5.89	5.53

Prediction Limit

Constituent: Sulfate as SO4 (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-5S (bg)	BRGWA-5I (bg)	BRGWA-2S (bg)	BRGWA-6S (bg)	BRGWC-35S	BRGWC-38S	BRGWC-17S	BRGWC-36S
8/31/2016	7.5	0.81 (J)	2.7	0.38 (J)					
9/1/2016					0.6 (J)				
9/7/2016						260	440	97	300
9/8/2016									
11/15/2016		<1 (J)			<1 (J)				
11/16/2016	6.6		3.4	<1 (J)					
11/17/2016						285 (D)		120 (D)	
11/18/2016									245 (D)
11/21/2016							490 (D)		
2/20/2017		1 (B-01)	3.9 (B-01)		0.98 (J)				
2/21/2017	6.1			1.5					
2/22/2017						270		120	
2/23/2017							470		330
4/17/2017									
5/15/2017									
6/12/2017	5	0.94 (J)	3.7		0.54 (J)				
6/13/2017				0.67 (J)					
6/14/2017									
6/15/2017						280	490	130	310
9/26/2017	5.4	0.92 (J)	4.1	0.62 (J)	0.53 (J)				
9/27/2017									
9/28/2017						240	470	120	290
2/13/2018	4.7 (J)	<1	6.6	<1	<1				
2/15/2018						266	432	109	292
6/26/2018	6.2	0.91 (J)	3.5	0.69 (J)	0.54 (J)				
6/27/2018						278		118	
6/28/2018							453		284
12/18/2018	5.9	0.68 (J)	4.3	0.72 (J)	0.39 (J)				
12/19/2018						287		125	319
12/20/2018							463		
3/19/2019	6 (D)	0.74 (J)	3	0.78 (J)	0.68 (J)			126	307
3/20/2019						268	405		
10/15/2019	5.2	0.68 (J)	3.8	0.47 (J)	0.48 (J)				
10/16/2019						277	432		
12/3/2019								180	256
3/3/2020	7.1	0.71 (J)	2.8	0.93 (J)	2.5			95.4	
3/5/2020						269	370		262

Prediction Limit

Constituent: Sulfate as SO4 (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-37S
8/31/2016			
9/1/2016			
9/7/2016	260		
9/8/2016		420	
11/15/2016			
11/16/2016			
11/17/2016	235 (D)	445 (D)	
11/18/2016			
11/21/2016			
2/20/2017			
2/21/2017			
2/22/2017	210	410	
2/23/2017			0.55 (J)
4/17/2017			0.44 (J)
5/15/2017			0.45 (J)
6/12/2017			
6/13/2017			
6/14/2017	200	410	
6/15/2017			0.46 (J)
9/26/2017			
9/27/2017	200	360	
9/28/2017			0.49 (J)
2/13/2018			
2/15/2018	197	335	1.9 (J,o)
6/26/2018			
6/27/2018	200	296	
6/28/2018			0.24 (J)
12/18/2018	222	345	
12/19/2018			0.4 (J)
12/20/2018			
3/19/2019			
3/20/2019	204	329	<1 (X)
10/15/2019			
10/16/2019	226	325	0.29 (J)
12/3/2019			
3/3/2020			
3/5/2020	173	287	<1

Prediction Limit

Constituent: Total Dissolved Solids [TDS] (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWA-2I (bg)	BRGWA-5S (bg)	BRGWA-5I (bg)	BRGWA-2S (bg)	BRGWA-6S (bg)	BRGWC-35S	BRGWC-38S	BRGWC-17S	BRGWC-36S
8/31/2016	151	154	138	88					
9/1/2016					299				
9/7/2016						486	750	331	528
9/8/2016									
11/15/2016		123			41				
11/16/2016	69		77	41					
11/17/2016						453		308	
11/18/2016									524
11/21/2016							795		
2/20/2017		158	170		133				
2/21/2017	68			<10					
2/22/2017						541		341	
2/23/2017							733		517
4/17/2017									
5/15/2017									
6/12/2017	161	142	132		61				
6/13/2017				53					
6/14/2017									
6/15/2017						548	812	333	566
9/26/2017	167	138	108	45	29				
9/27/2017									
9/28/2017						487	690	310	475
2/13/2018	165	150	141	63	61				
2/15/2018						500	722	292	513
6/26/2018	188	154	133	71	71				
6/27/2018						347 (X)		353 (X)	
6/28/2018							704		499
12/18/2018	145 (X)	147	138 (X)	78 (X)	70 (X)				
12/19/2018						489		317	521
12/20/2018							642		
3/19/2019	146.5 (D)	146	130	68	72			303	498
3/20/2019						501	615		
10/15/2019	140	144	175	66	63				
10/16/2019						481	630		
12/3/2019								378	498
3/3/2020	155	130	<10	41	54			263	
3/5/2020						535	608		457

Prediction Limit

Constituent: Total Dissolved Solids [TDS] (mg/L) Analysis Run 4/22/2020 4:37 PM View: Pond E App III

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

	BRGWC-33S	BRGWC-34S	BRGWC-37S
8/31/2016			
9/1/2016			
9/7/2016	382		
9/8/2016		663	
11/15/2016			
11/16/2016			
11/17/2016	382	651	
11/18/2016			
11/21/2016			
2/20/2017			
2/21/2017			
2/22/2017	387	706	
2/23/2017			45
4/17/2017			53
5/15/2017			48
6/12/2017			
6/13/2017			
6/14/2017	316	643	
6/15/2017			63
9/26/2017			
9/27/2017	303	579	
9/28/2017			39
2/13/2018			
2/15/2018	332	612	54
6/26/2018			
6/27/2018	538 (X)	359 (X)	
6/28/2018			59 (X)
12/18/2018	358	535	
12/19/2018			68
12/20/2018			
3/19/2019			
3/20/2019	338	517	68 (X)
10/15/2019			
10/16/2019	281	473	49
12/3/2019			
3/3/2020			
3/5/2020	292	489	39

FIGURE E.

Trend Tests Summary Table - PL Exceedances - Significant Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:43 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**BRGWC-35S**	**0.2828**	**44**	**34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, Total (mg/L)	**BRGWC-36S**	**1.42**	**43**	**34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, Field (S.U)	**BRGWA-2I (bg)**	**-0.1345**	**-40**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, Field (S.U)	**BRGWC-38S**	**-0.2947**	**-50**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate as SO4 (mg/L)	**BRGWC-34S**	**-41.2**	**-44**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-34S**	**-61.12**	**-39**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-38S**	**-55.23**	**-41**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Trend Tests Summary Table - PL Exceedances - All Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:43 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	BRGWA-2I (bg)	-0.001267	-19	-34	No	11	9.091	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWA-2S (bg)	0	0	34	No	11	100	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWA-5I (bg)	0	3	34	No	11	81.82	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWA-5S (bg)	0	-10	-34	No	11	63.64	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWA-6S (bg)	0	-5	-34	No	11	72.73	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWC-33S	0.02924	11	34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWC-34S	0.04464	9	34	No	11	0	n/a	n/a	0.01	NP
Boron (mg/L)	**BRGWC-35S**	**0.2828**	**44**	**34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	BRGWC-36S	0.07328	34	38	No	12	0	n/a	n/a	0.01	NP
Boron (mg/L)	BRGWC-38S	-0.07403	-16	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWA-2I (bg)	1.558	30	34	No	11	9.091	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWA-2S (bg)	-0.08179	-17	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWA-5I (bg)	0.1887	4	34	No	11	9.091	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWA-5S (bg)	0.1446	5	34	No	11	9.091	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWA-6S (bg)	0.1665	23	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-17S	0.9749	12	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-33S	-0.3071	-5	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-34S	-6.153	-31	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-35S	1.748	13	34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-36S	-0.6675	-12	-34	No	11	0	n/a	n/a	0.01	NP
Calcium (mg/L)	BRGWC-38S	-1.949	-29	-34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWA-2I (bg)	0	1	34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWA-2S (bg)	0.03034	9	34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWA-5I (bg)	-0.06867	-10	-34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWA-5S (bg)	0	0	34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWA-6S (bg)	0.05993	17	34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWC-34S	-0.1931	-24	-34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	BRGWC-35S	0.1753	22	34	No	11	0	n/a	n/a	0.01	NP
Chloride, Total (mg/L)	**BRGWC-36S**	**1.42**	**43**	**34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Chloride, Total (mg/L)	BRGWC-38S	0.3672	13	34	No	11	0	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWA-2I (bg)	-0.01107	-10	-38	No	12	33.33	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWA-2S (bg)	0	2	38	No	12	50	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWA-5I (bg)	0	18	38	No	12	66.67	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWA-5S (bg)	-0.008236	-16	-38	No	12	33.33	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWA-6S (bg)	0	6	38	No	12	50	n/a	n/a	0.01	NP
Fluoride (mg/L)	BRGWC-38S	0.05214	15	38	No	12	0	n/a	n/a	0.01	NP
pH, Field (S.U)	**BRGWA-2I (bg)**	**-0.1345**	**-40**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, Field (S.U)	BRGWA-2S (bg)	-0.03789	-29	-38	No	12	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWA-5I (bg)	-0.01219	-6	-38	No	12	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWA-5S (bg)	-0.01337	-7	-38	No	12	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWA-6S (bg)	-0.04166	-8	-34	No	11	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWC-33S	-0.01407	-18	-43	No	13	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWC-34S	0.01346	10	38	No	12	0	n/a	n/a	0.01	NP
pH, Field (S.U)	BRGWC-36S	-0.01108	-3	-34	No	11	0	n/a	n/a	0.01	NP
pH, Field (S.U)	**BRGWC-38S**	**-0.2947**	**-50**	**-38**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH, Field (S.U)	BRGWC-37S	0.01901	2	25	No	9	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWA-2I (bg)	-0.2487	-9	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWA-2S (bg)	0.09547	18	34	No	11	18.18	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWA-5I (bg)	0.04269	3	34	No	11	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWA-5S (bg)	-0.04162	-13	-34	No	11	18.18	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWA-6S (bg)	-0.006861	-3	-34	No	11	18.18	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWC-17S	2.901	10	34	No	11	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWC-33S	-10.94	-18	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	**BRGWC-34S**	**-41.2**	**-44**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate as SO4 (mg/L)	BRGWC-35S	1.04	3	34	No	11	0	n/a	n/a	0.01	NP

Trend Tests Summary Table - PL Exceedances - All Results

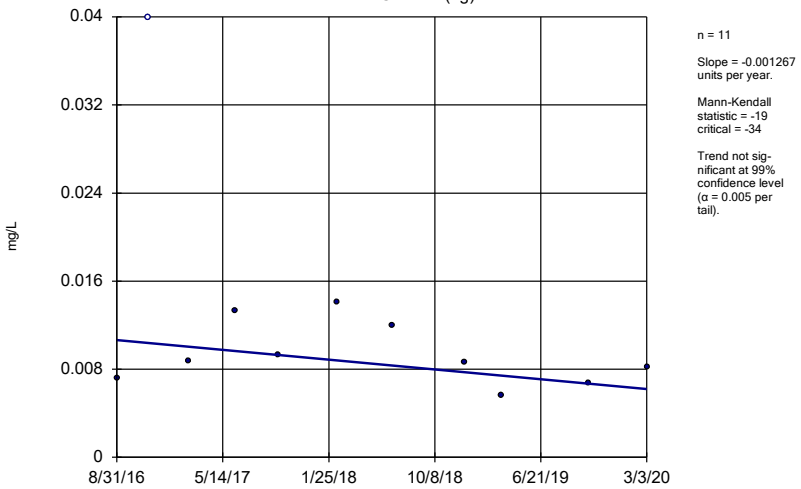
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/22/2020, 4:43 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Sulfate as SO4 (mg/L)	BRGWC-36S	-9.456	-11	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate as SO4 (mg/L)	BRGWC-38S	-22.73	-30	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWA-2I (bg)	6.016	5	34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWA-2S (bg)	4.65	6	34	No	11	9.091	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWA-5I (bg)	-1.132	-2	-34	No	11	9.091	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWA-5S (bg)	-3.285	-12	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWA-6S (bg)	-3.411	-6	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-34S**	**-61.12**	**-39**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Total Dissolved Solids [TDS] (mg/L)	BRGWC-35S	1.315	5	34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	BRGWC-36S	-13.41	-32	-34	No	11	0	n/a	n/a	0.01	NP
Total Dissolved Solids [TDS] (mg/L)	**BRGWC-38S**	**-55.23**	**-41**	**-34**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.01**	**NP**

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-2I (bg)



n = 11

Slope = -0.001267 units per year.

Mann-Kendall statistic = -19
critical = -34

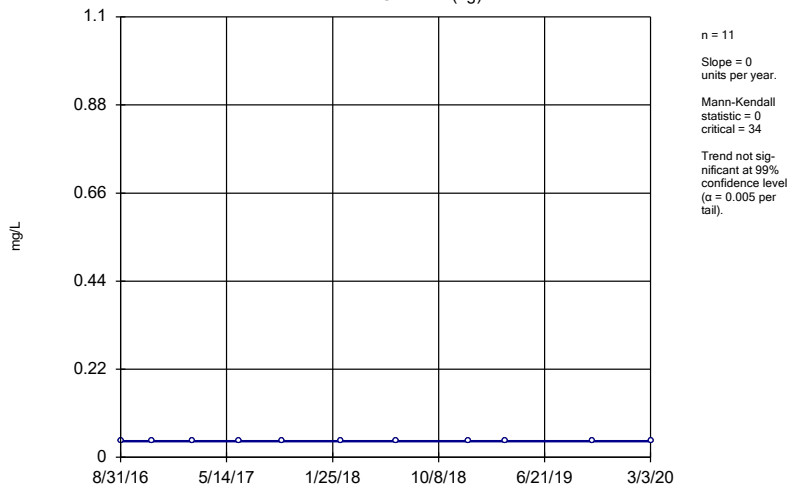
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-2S (bg)



n = 11

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 34

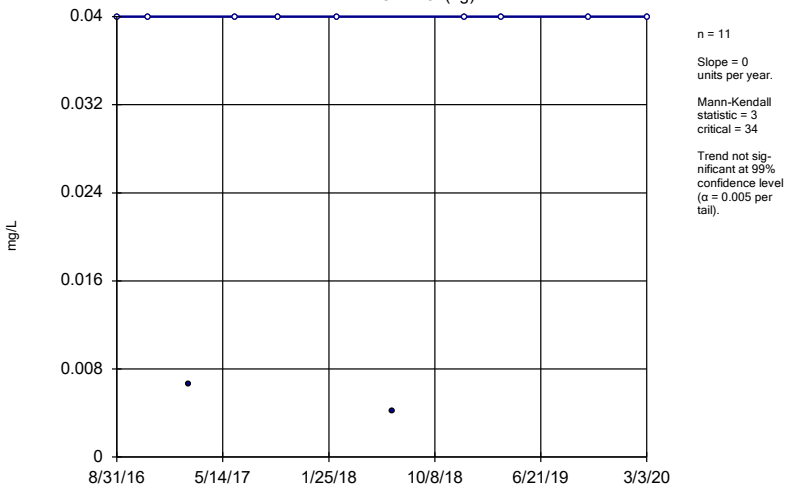
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-5I (bg)



n = 11

Slope = 0 units per year.

Mann-Kendall statistic = 3
critical = 34

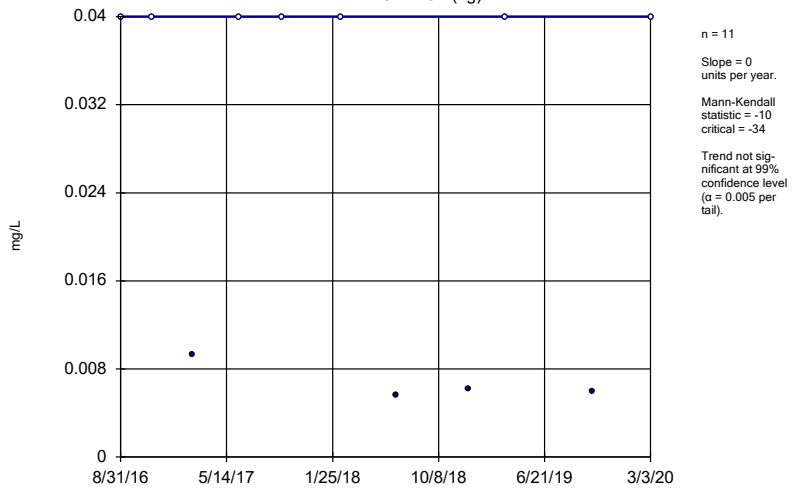
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-5S (bg)



n = 11

Slope = 0 units per year.

Mann-Kendall statistic = -10
critical = -34

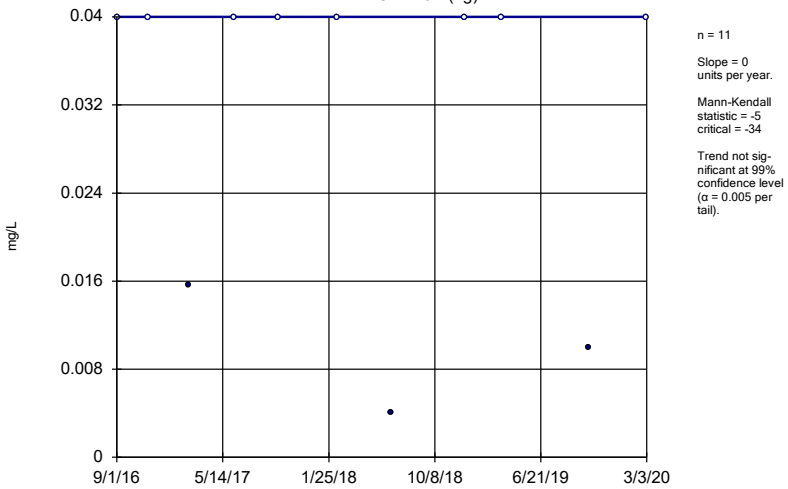
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-6S (bg)



n = 11

Slope = 0 units per year.

Mann-Kendall statistic = -5 critical = -34

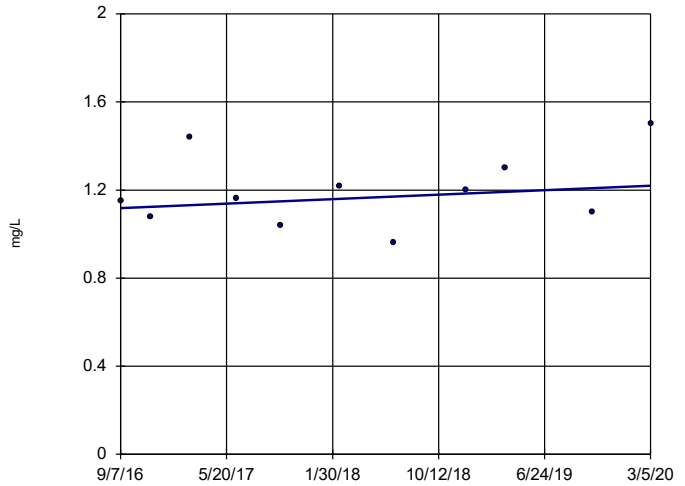
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-33S



n = 11

Slope = 0.02924 units per year.

Mann-Kendall statistic = 11 critical = 34

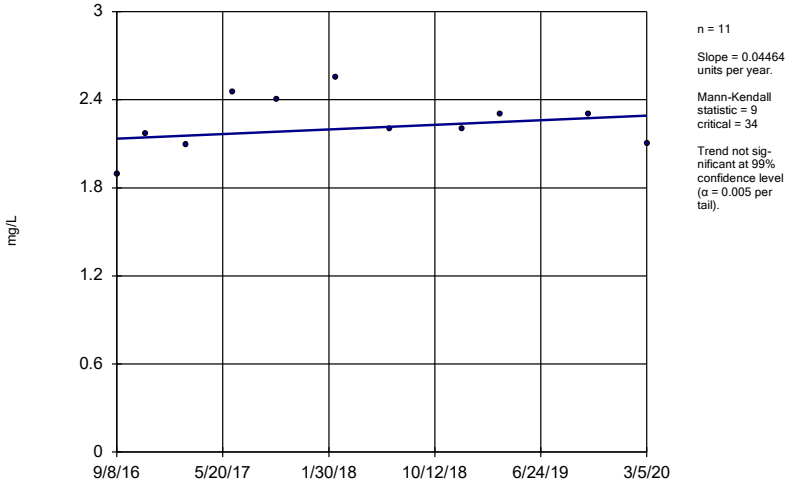
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-34S



n = 11

Slope = 0.04464 units per year.

Mann-Kendall statistic = 9 critical = 34

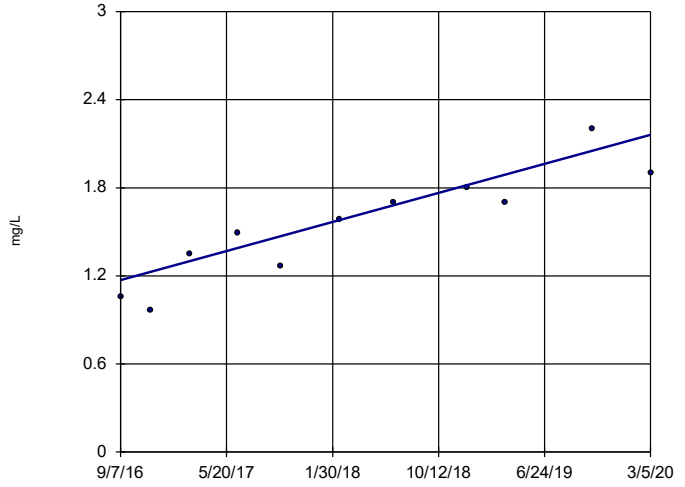
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-35S



n = 11

Slope = 0.2828 units per year.

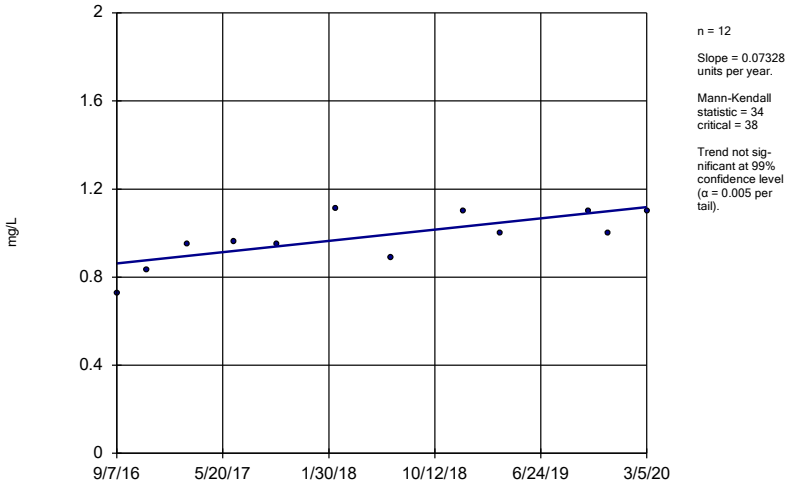
Mann-Kendall statistic = 44 critical = 34

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWC-36S



n = 12

Slope = 0.07328 units per year.

Mann-Kendall statistic = 34
critical = 38

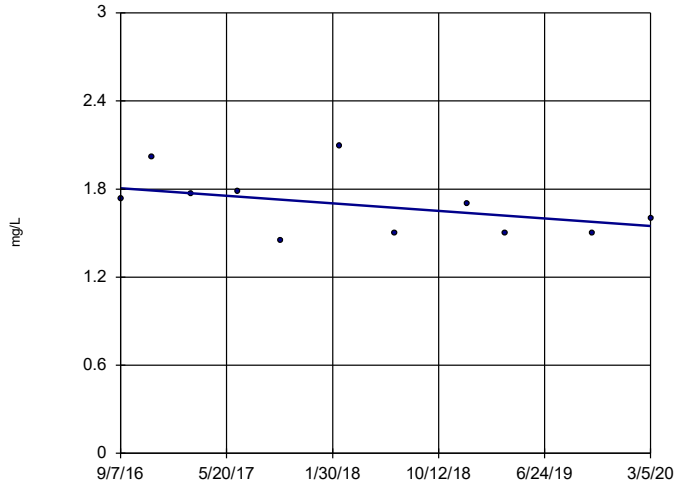
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-38S



n = 11

Slope = -0.07403 units per year.

Mann-Kendall statistic = -16
critical = -34

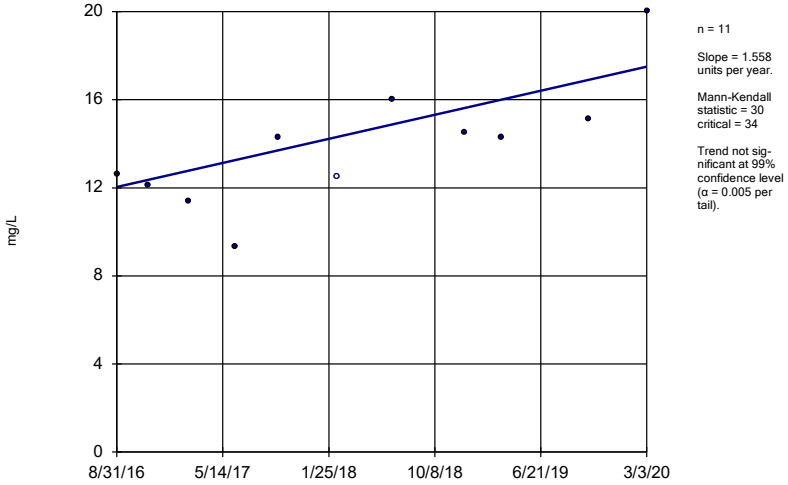
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-2I (bg)



n = 11

Slope = 1.558 units per year.

Mann-Kendall statistic = 30
critical = 34

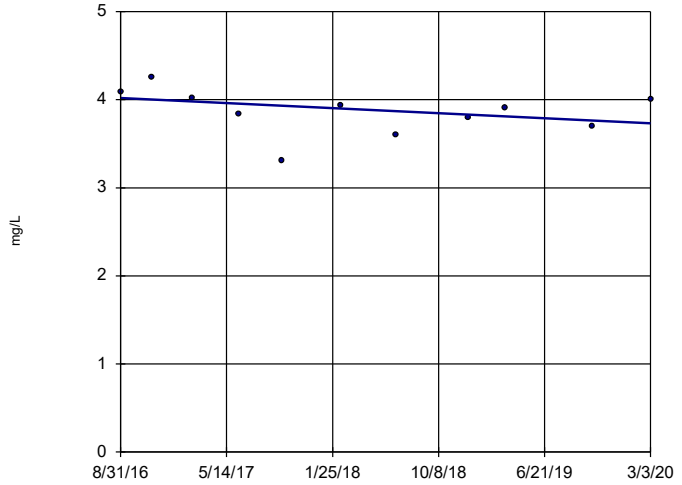
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-2S (bg)



n = 11

Slope = -0.08179 units per year.

Mann-Kendall statistic = -17
critical = -34

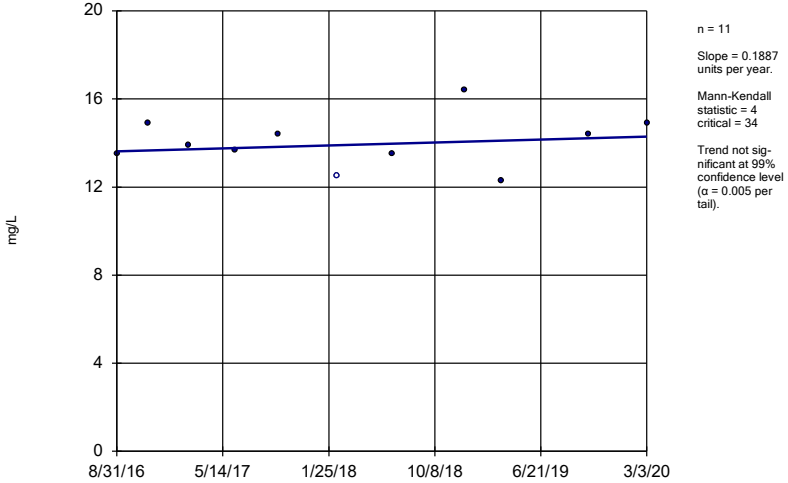
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-5I (bg)



n = 11

Slope = 0.1887 units per year.

Mann-Kendall statistic = 4 critical = 34

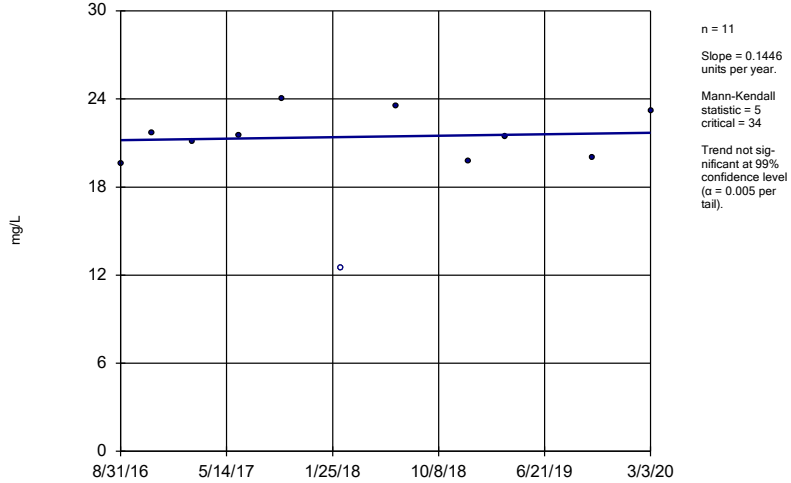
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-5S (bg)



n = 11

Slope = 0.1446 units per year.

Mann-Kendall statistic = 5 critical = 34

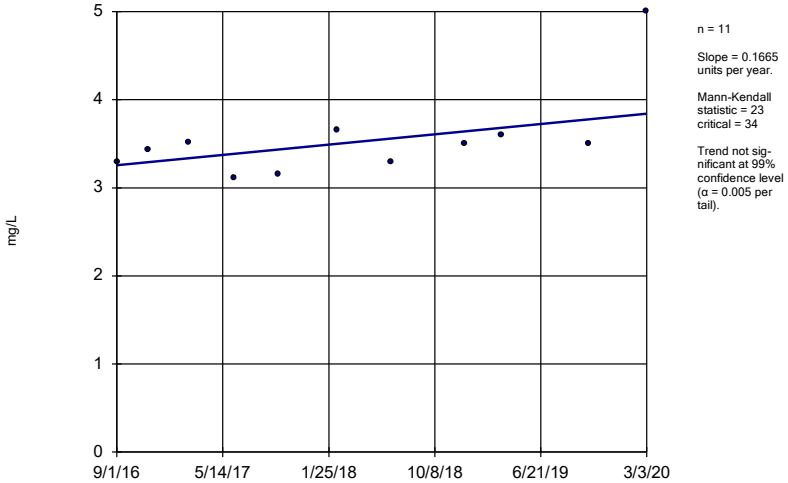
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-6S (bg)



n = 11

Slope = 0.1665 units per year.

Mann-Kendall statistic = 23 critical = 34

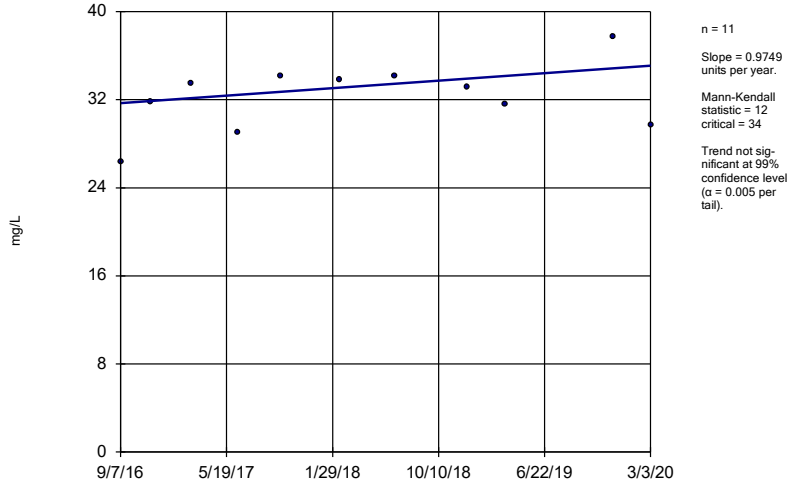
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-17S



n = 11

Slope = 0.9749 units per year.

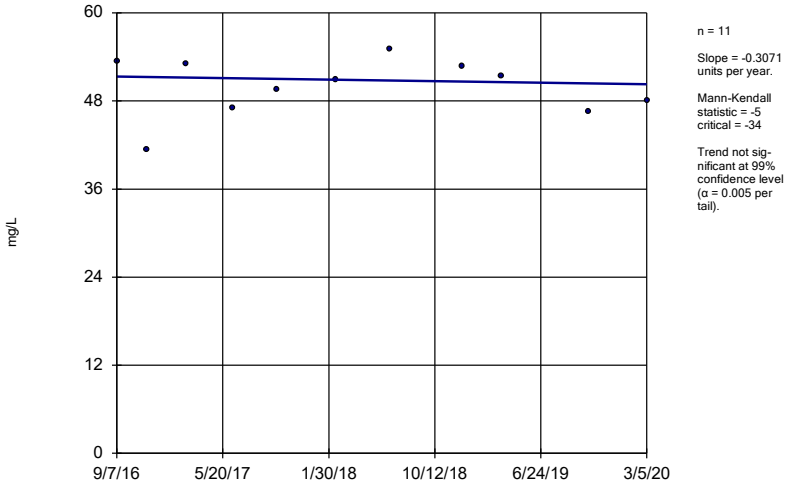
Mann-Kendall statistic = 12 critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWC-33S



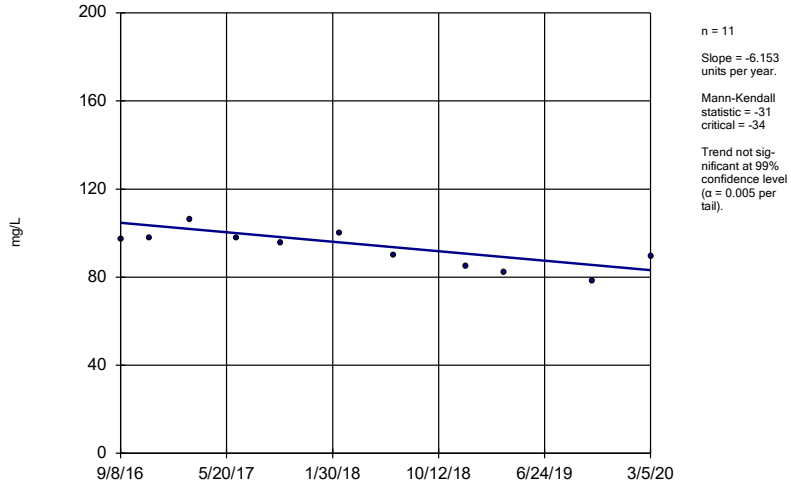
Constituent: Calcium Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-34S



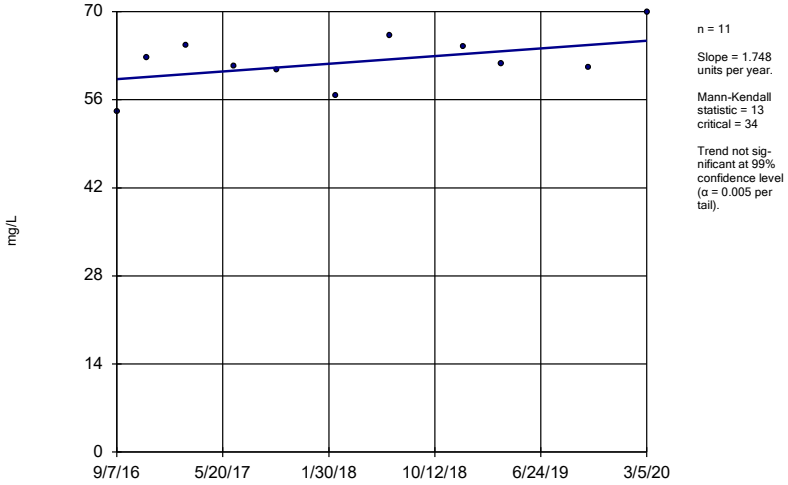
Constituent: Calcium Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-35S



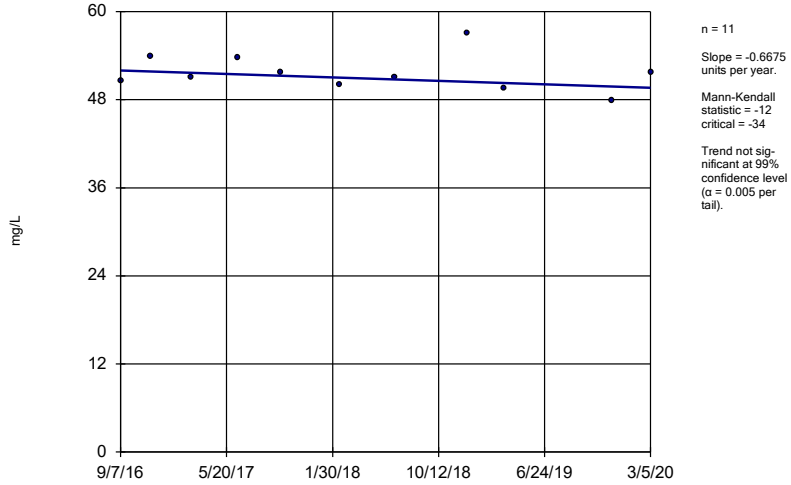
Constituent: Calcium Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-36S

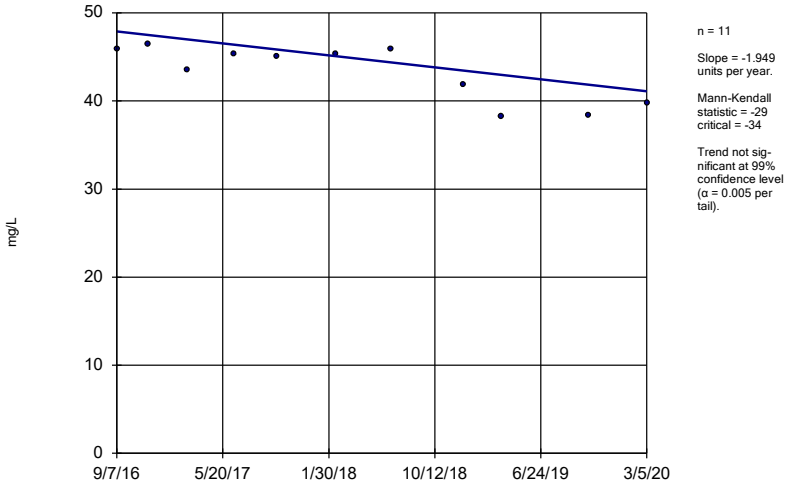


Constituent: Calcium Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWC-38S



n = 11

Slope = -1.949 units per year.

Mann-Kendall statistic = -29 critical = -34

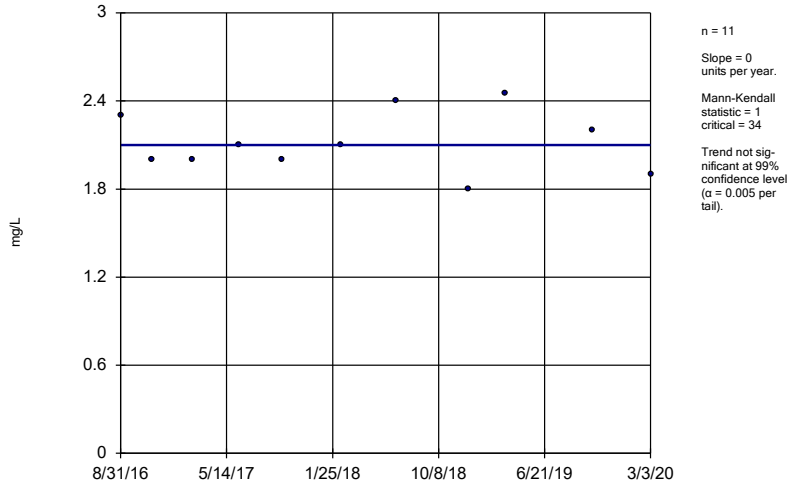
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-2I (bg)



n = 11

Slope = 0 units per year.

Mann-Kendall statistic = 1 critical = 34

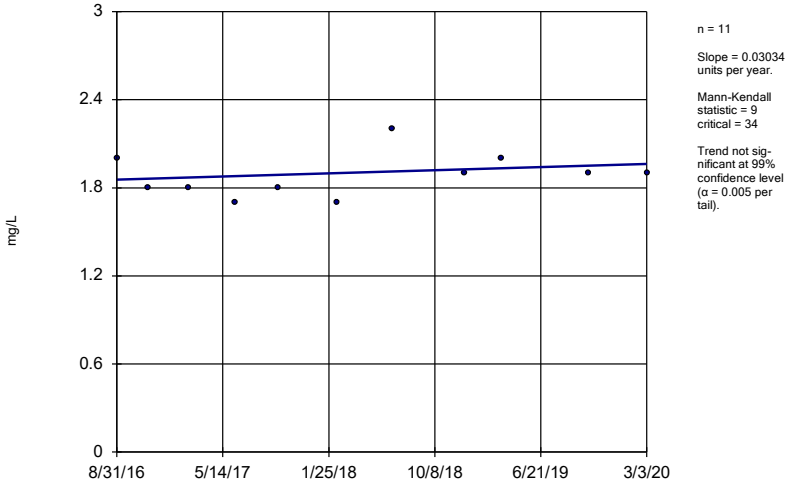
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, Total Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-2S (bg)



n = 11

Slope = 0.03034 units per year.

Mann-Kendall statistic = 9 critical = 34

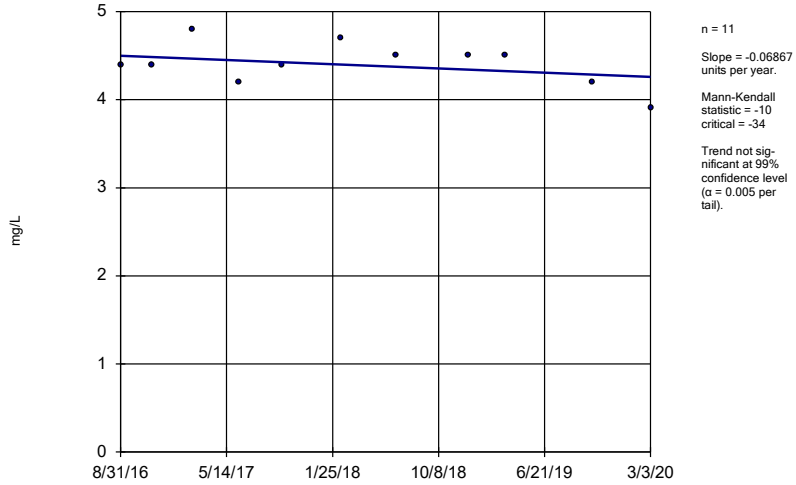
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, Total Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-5I (bg)



n = 11

Slope = -0.06867 units per year.

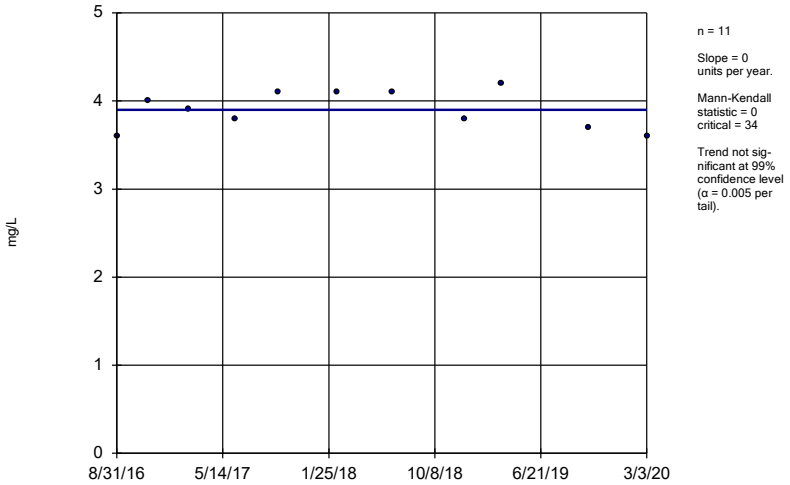
Mann-Kendall statistic = -10 critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, Total Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWA-5S (bg)



n = 11

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 34

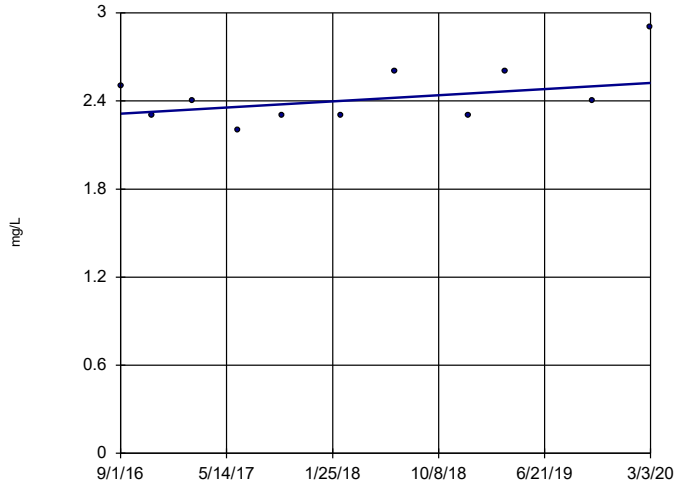
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, Total Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-6S (bg)



n = 11

Slope = 0.05993 units per year.

Mann-Kendall statistic = 17 critical = 34

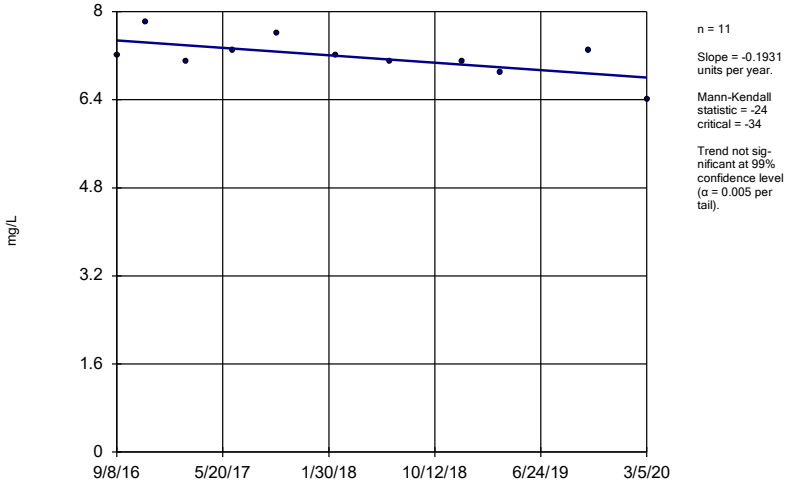
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, Total Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-34S



n = 11

Slope = -0.1931 units per year.

Mann-Kendall statistic = -24 critical = -34

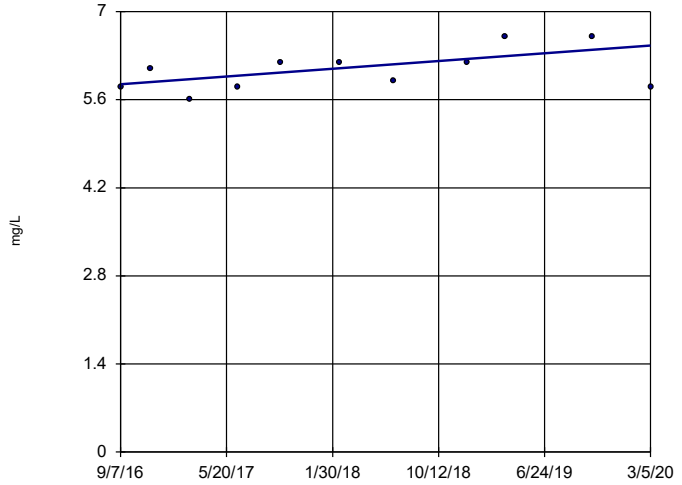
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, Total Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-35S



n = 11

Slope = 0.1753 units per year.

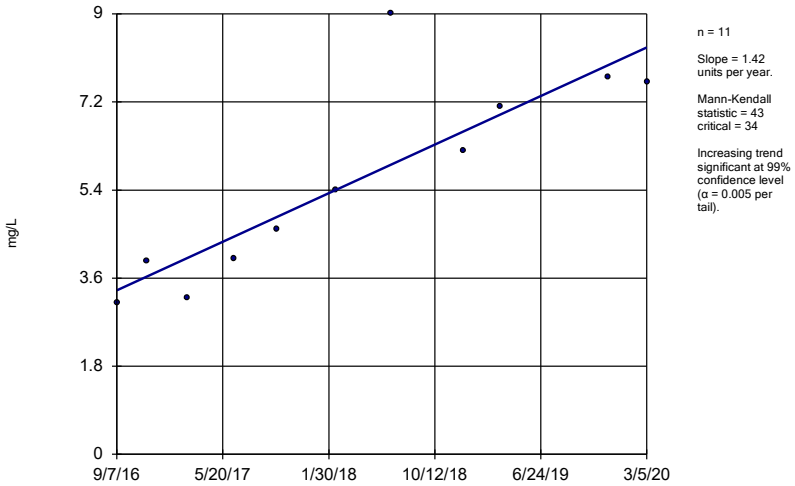
Mann-Kendall statistic = 22 critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, Total Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWC-36S



n = 11

Slope = 1.42 units per year.

Mann-Kendall statistic = 43 critical = 34

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

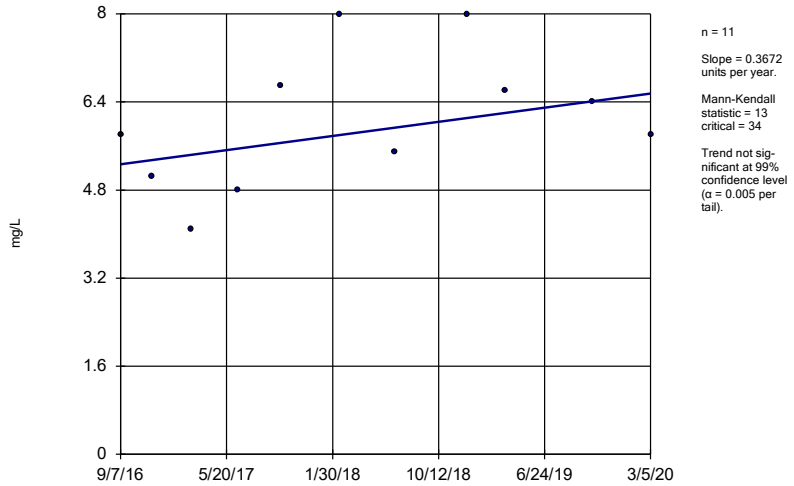
Constituent: Chloride, Total Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-38S



n = 11

Slope = 0.3672 units per year.

Mann-Kendall statistic = 13 critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride, Total Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

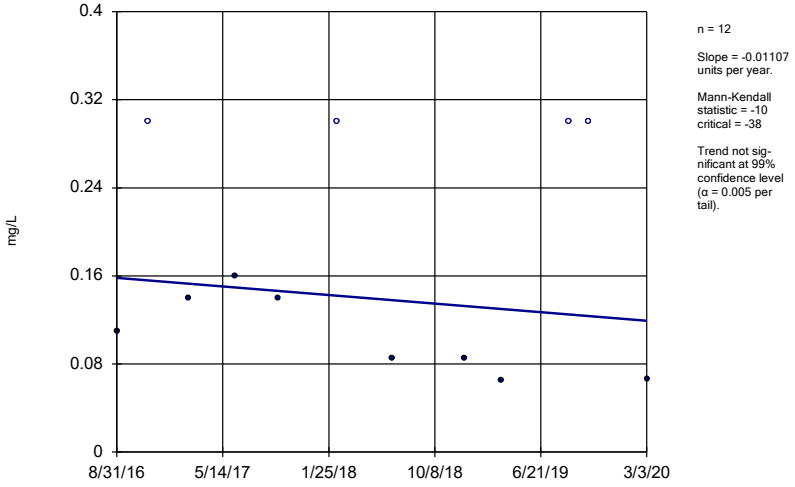
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-2I (bg)



n = 12

Slope = -0.01107 units per year.

Mann-Kendall statistic = -10 critical = -38

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

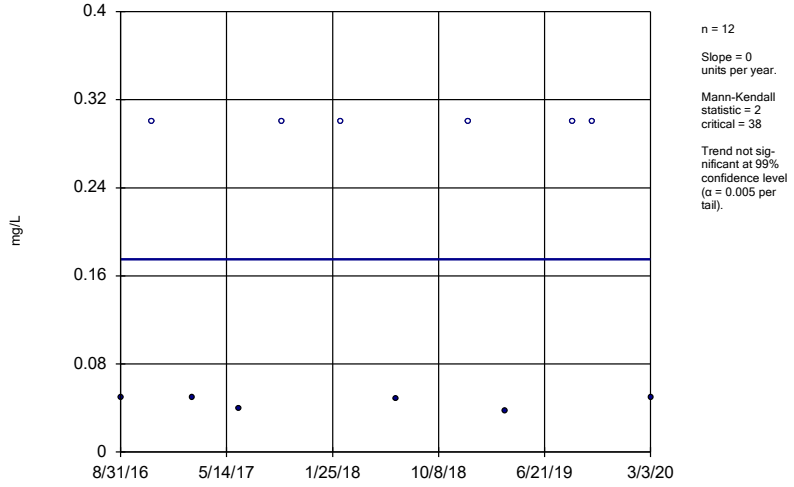
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-2S (bg)



n = 12

Slope = 0 units per year.

Mann-Kendall statistic = 2 critical = 38

Trend not significant at 99% confidence level (α = 0.005 per tail).

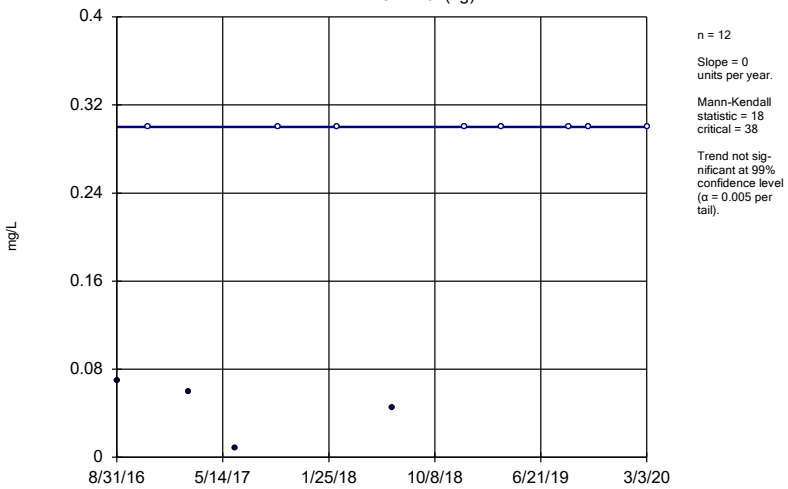
Constituent: Fluoride Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-5I (bg)



n = 12

Slope = 0 units per year.

Mann-Kendall statistic = 18 critical = 38

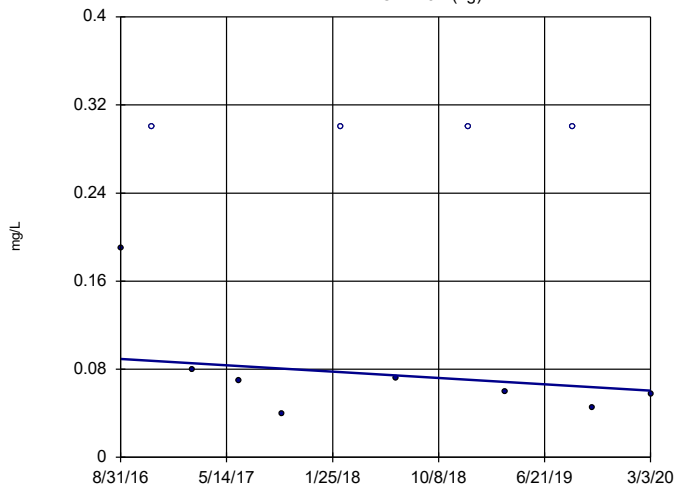
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-5S (bg)



n = 12

Slope = -0.008236 units per year.

Mann-Kendall statistic = -16 critical = -38

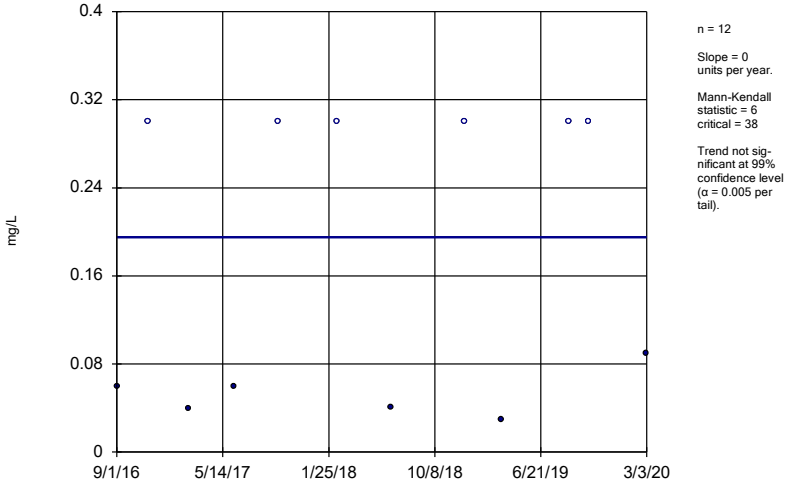
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-6S (bg)



n = 12

Slope = 0 units per year.

Mann-Kendall statistic = 6 critical = 38

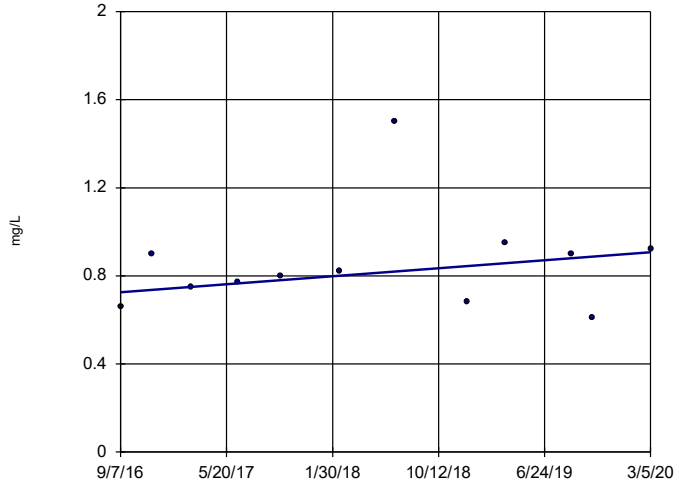
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-38S



n = 12

Slope = 0.05214 units per year.

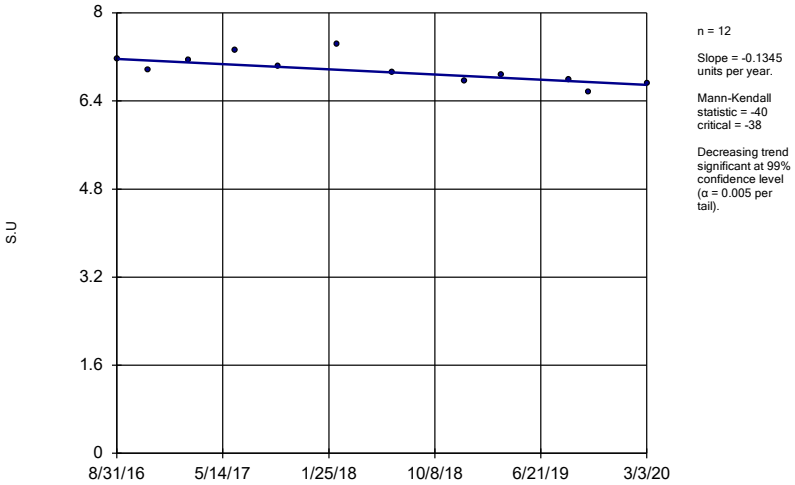
Mann-Kendall statistic = 15 critical = 38

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWA-2I (bg)



n = 12

Slope = -0.1345 units per year.

Mann-Kendall statistic = -40
critical = -38

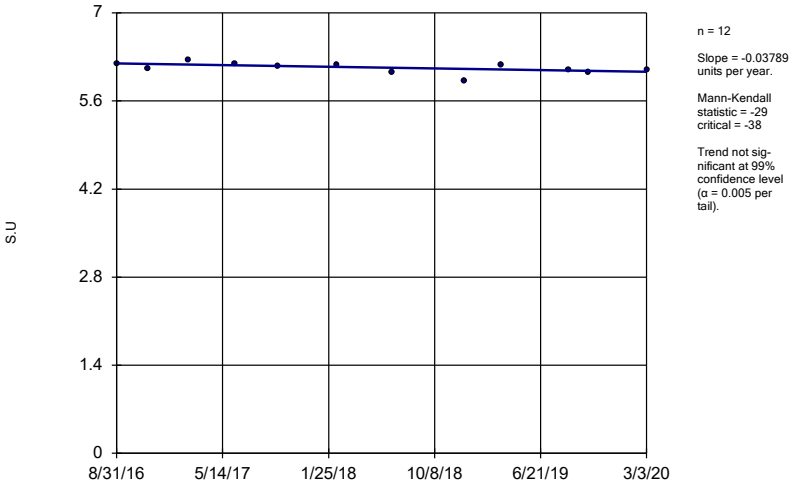
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, Field Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-2S (bg)



n = 12

Slope = -0.03789 units per year.

Mann-Kendall statistic = -29
critical = -38

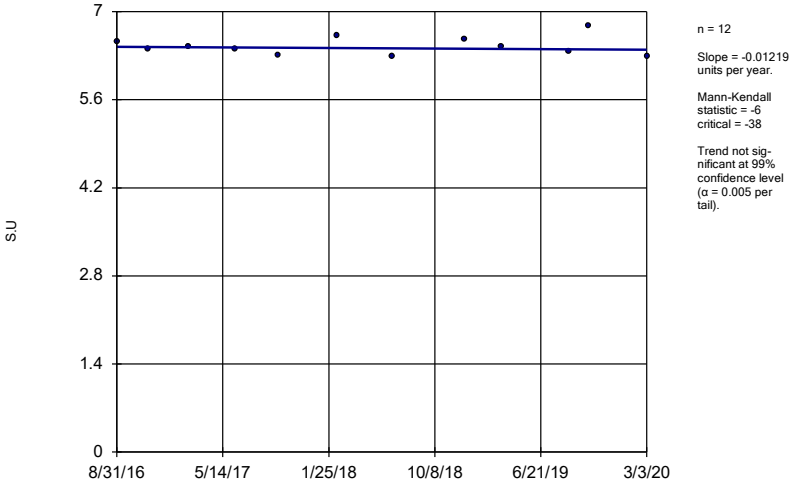
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, Field Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-5I (bg)



n = 12

Slope = -0.01219 units per year.

Mann-Kendall statistic = -6
critical = -38

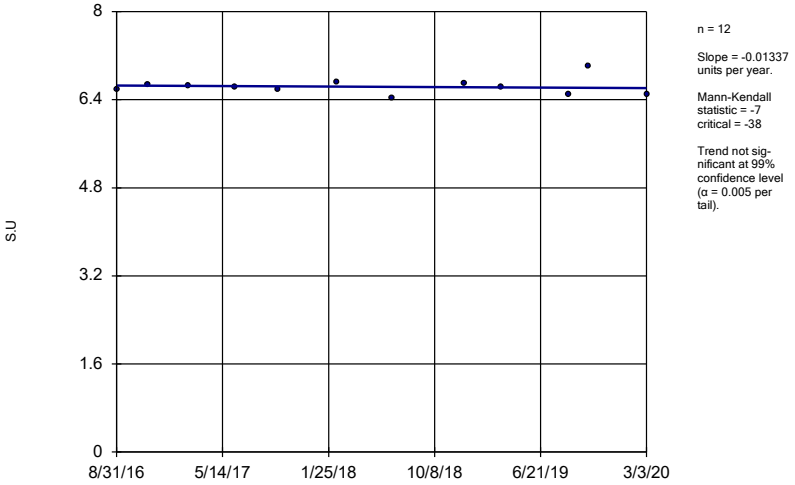
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, Field Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-5S (bg)



n = 12

Slope = -0.01337 units per year.

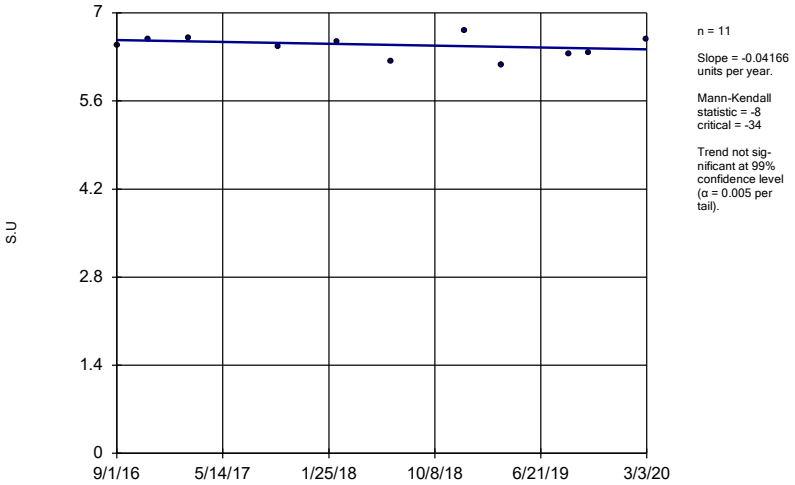
Mann-Kendall statistic = -7
critical = -38

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, Field Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWA-6S (bg)



n = 11

Slope = -0.04166 units per year.

Mann-Kendall statistic = -8 critical = -34

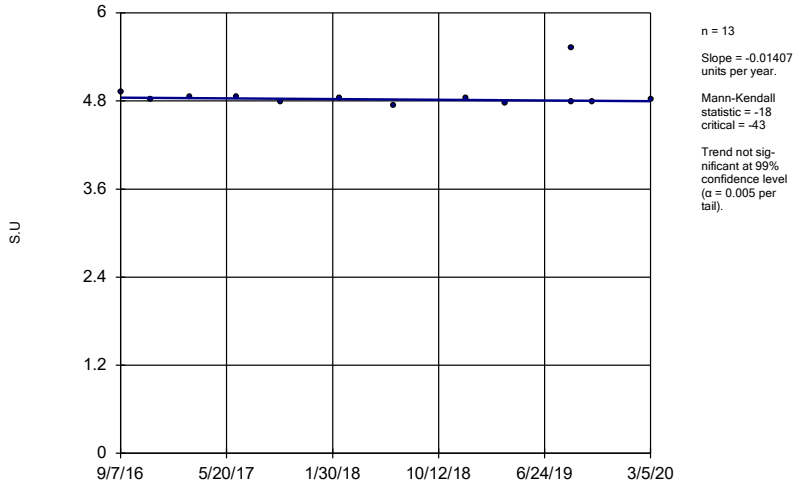
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, Field Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-33S



n = 13

Slope = -0.01407 units per year.

Mann-Kendall statistic = -18 critical = -43

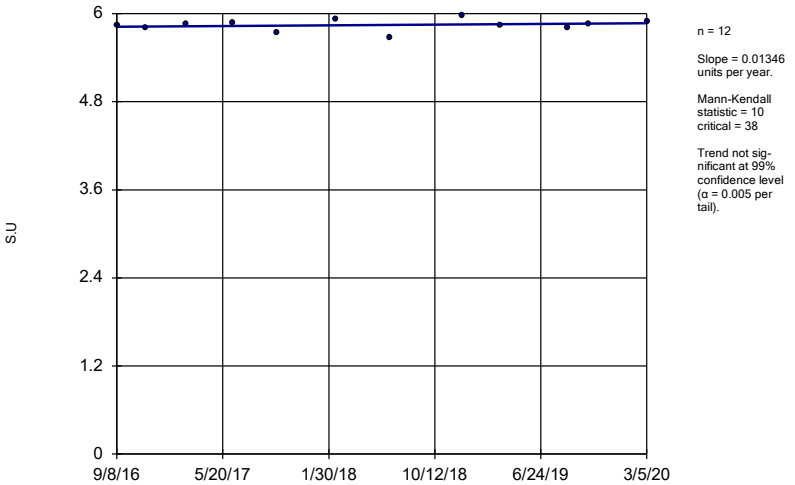
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, Field Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-34S



n = 12

Slope = 0.01346 units per year.

Mann-Kendall statistic = 10 critical = 38

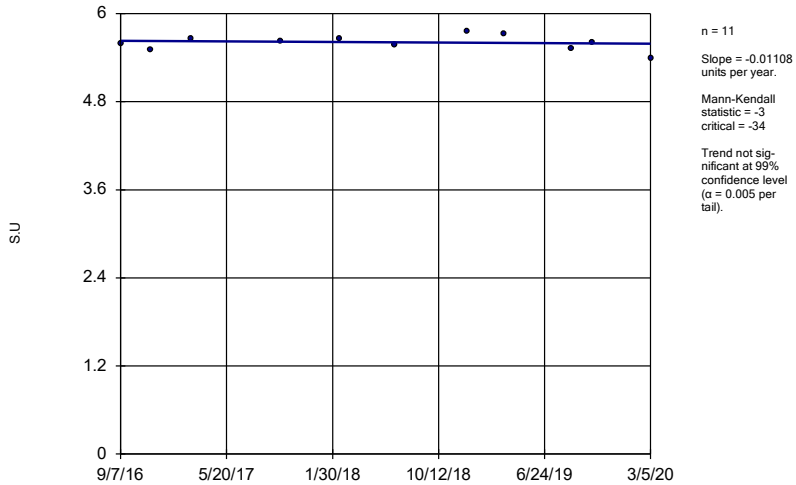
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, Field Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-36S



n = 11

Slope = -0.01108 units per year.

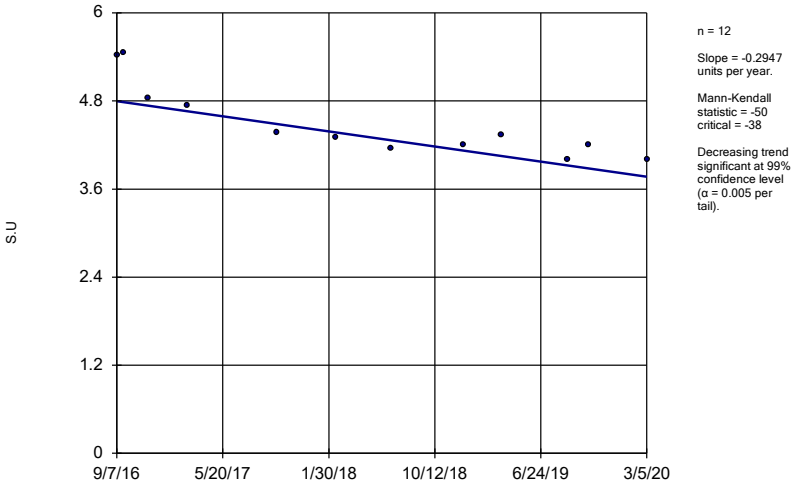
Mann-Kendall statistic = -3 critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, Field Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWC-38S



n = 12

Slope = -0.2947 units per year.

Mann-Kendall statistic = -50 critical = -38

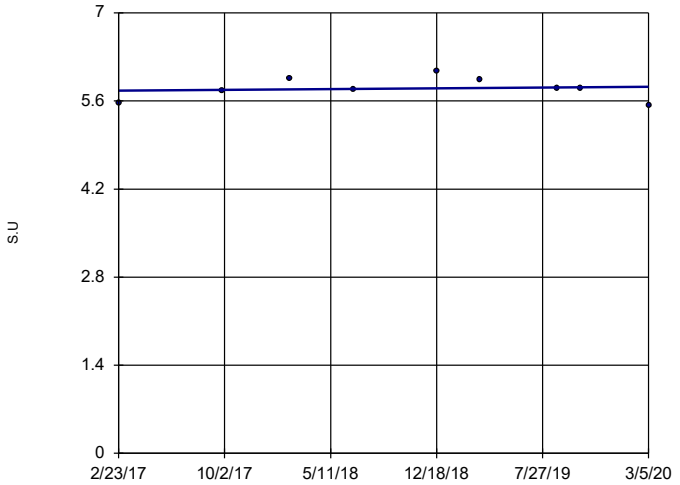
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, Field Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-37S



n = 9

Slope = 0.01901 units per year.

Mann-Kendall statistic = 2 critical = 25

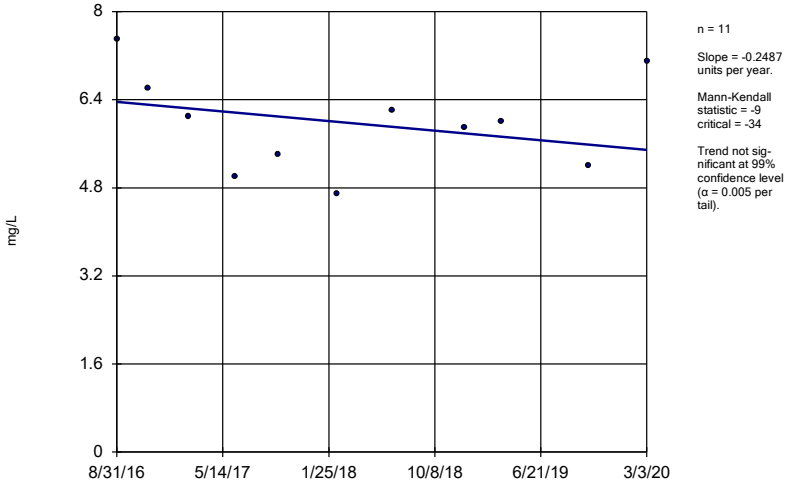
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH, Field Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-2I (bg)



n = 11

Slope = -0.2487 units per year.

Mann-Kendall statistic = -9 critical = -34

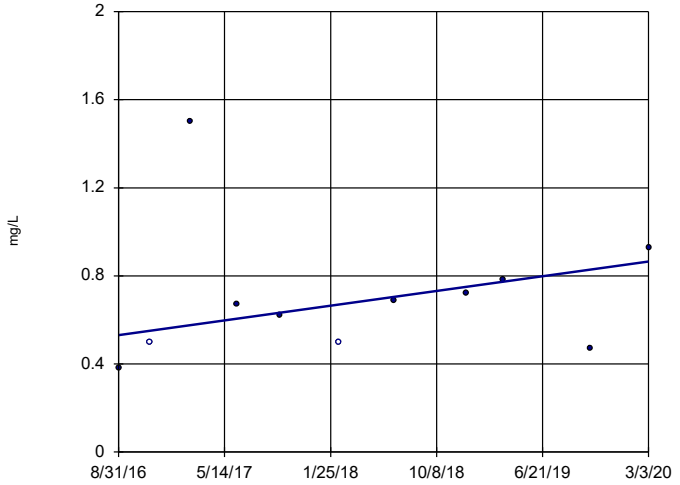
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-2S (bg)



n = 11

Slope = 0.09547 units per year.

Mann-Kendall statistic = 18 critical = 34

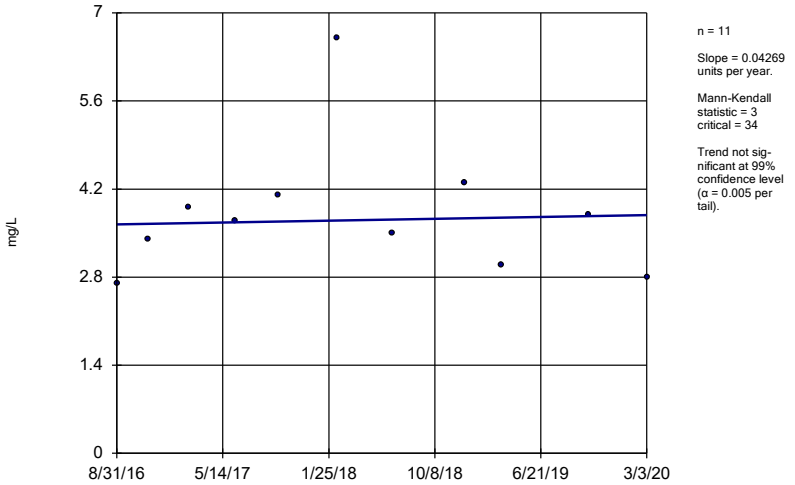
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-5I (bg)



n = 11

Slope = 0.04269 units per year.

Mann-Kendall statistic = 3 critical = 34

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

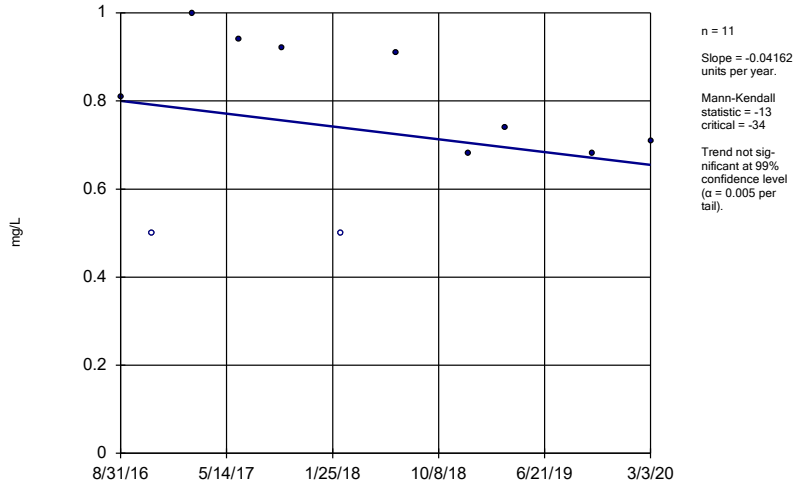
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-5S (bg)



n = 11

Slope = -0.04162 units per year.

Mann-Kendall statistic = -13 critical = -34

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

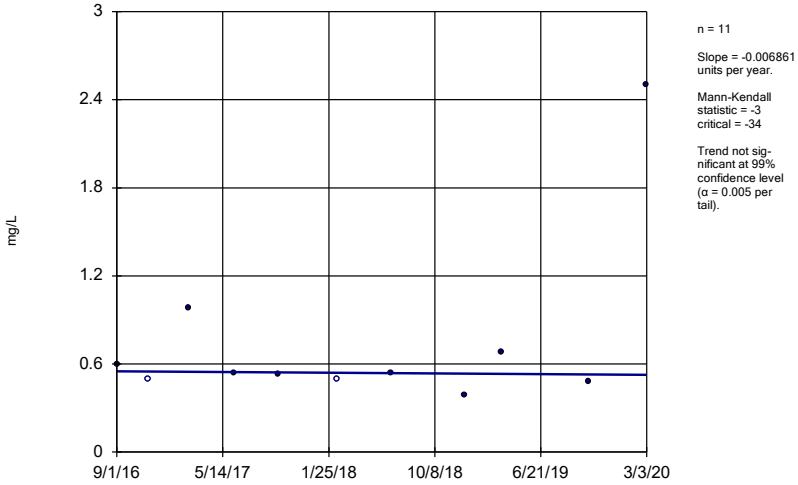
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-6S (bg)



n = 11

Slope = -0.006861 units per year.

Mann-Kendall statistic = -3 critical = -34

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

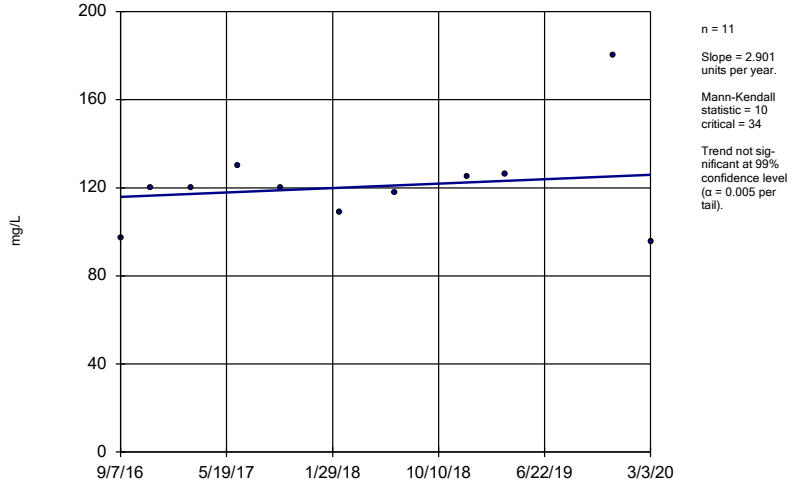
Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-17S



n = 11

Slope = 2.901 units per year.

Mann-Kendall statistic = 10 critical = 34

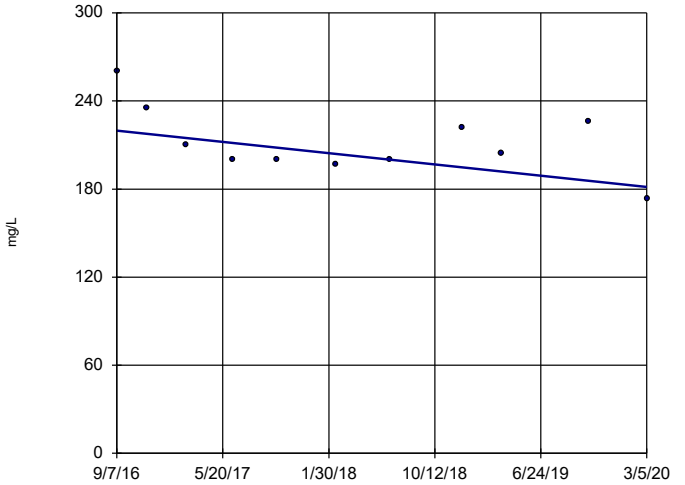
Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWC-33S



n = 11

Slope = -10.94 units per year.

Mann-Kendall statistic = -18 critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

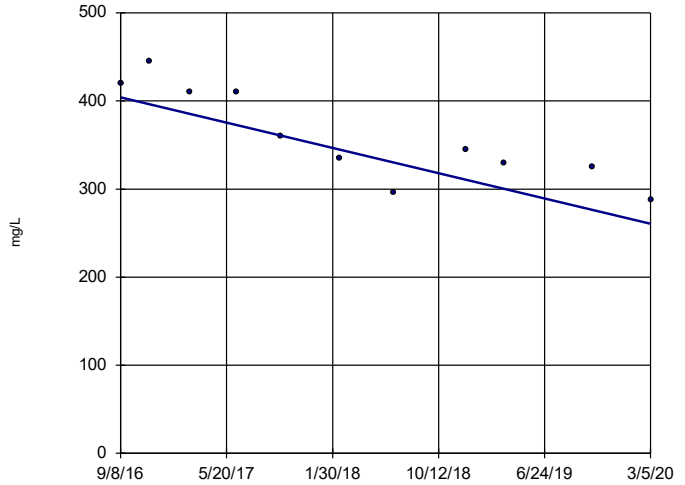
Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-34S



n = 11

Slope = -41.2 units per year.

Mann-Kendall statistic = -44 critical = -34

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

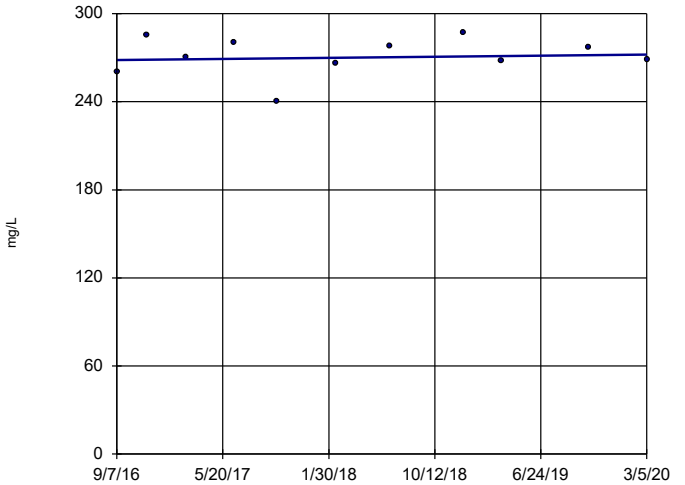
Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-35S



n = 11

Slope = 1.04 units per year.

Mann-Kendall statistic = 3 critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

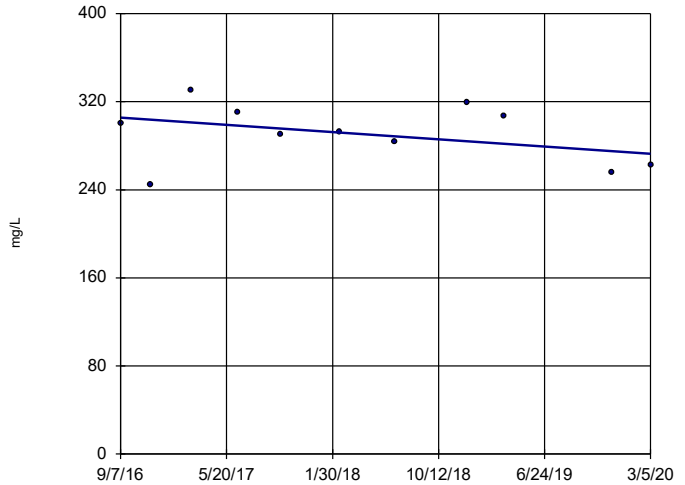
Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-36S



n = 11

Slope = -9.456 units per year.

Mann-Kendall statistic = -11 critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

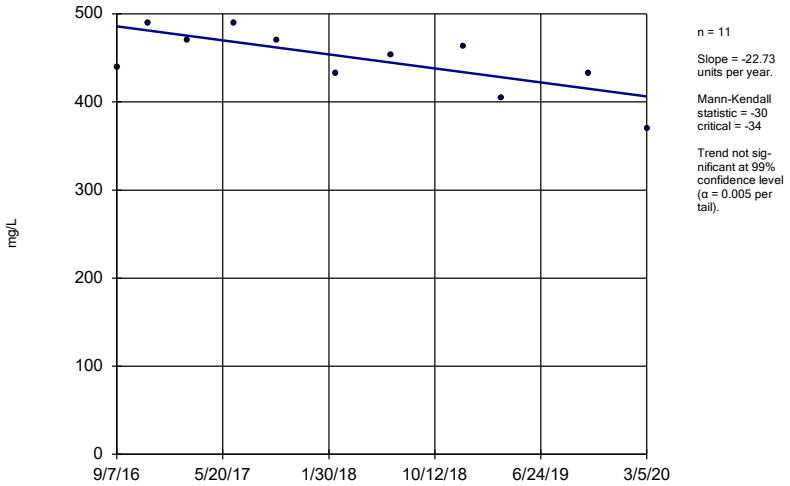
Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-38S



n = 11

Slope = -22.73 units per year.

Mann-Kendall statistic = -30
critical = -34

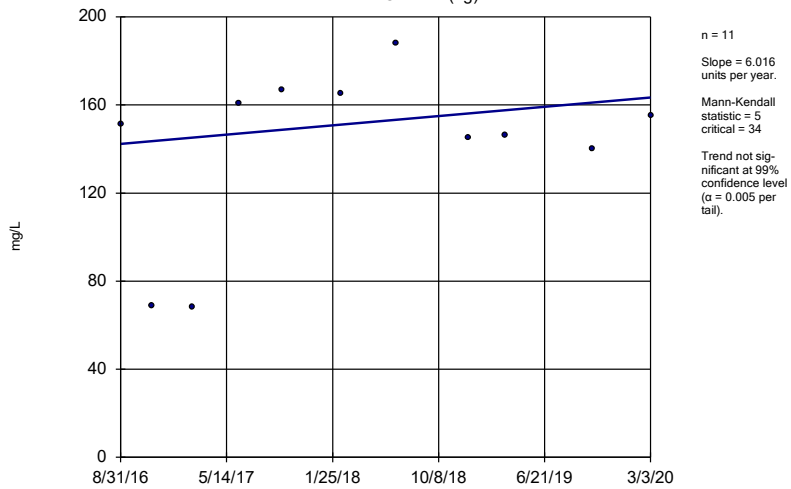
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate as SO4 Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Tests
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-2I (bg)



n = 11

Slope = 6.016 units per year.

Mann-Kendall statistic = 5
critical = 34

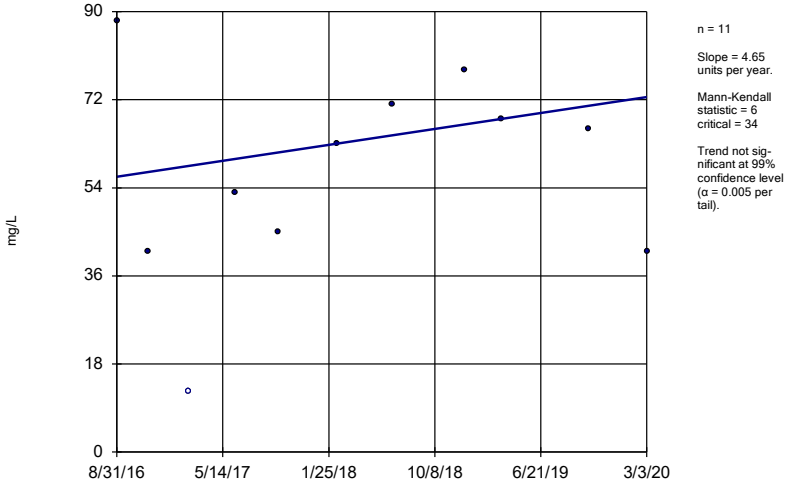
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Te
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-2S (bg)



n = 11

Slope = 4.65 units per year.

Mann-Kendall statistic = 6
critical = 34

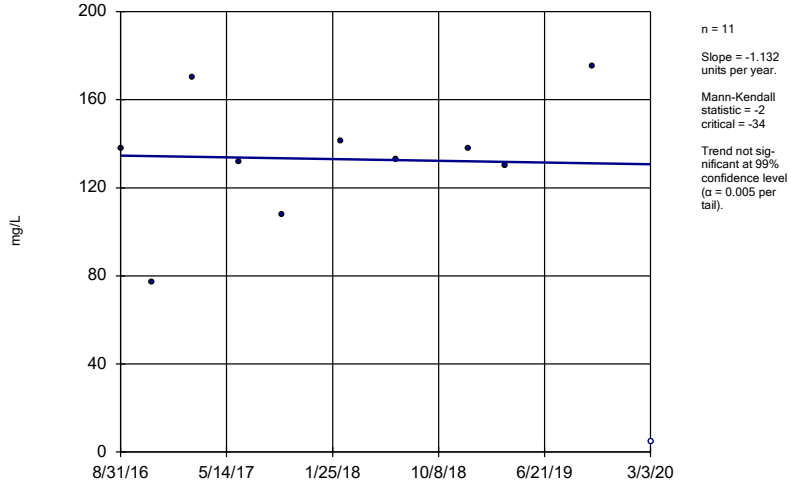
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Te
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

BRGWA-5I (bg)



n = 11

Slope = -1.132 units per year.

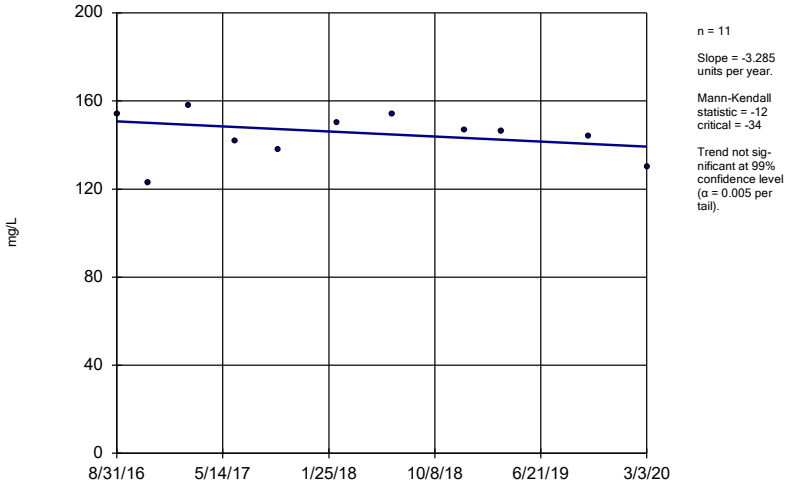
Mann-Kendall statistic = -2
critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Te
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWA-5S (bg)



n = 11

Slope = -3.285 units per year.

Mann-Kendall statistic = -12
critical = -34

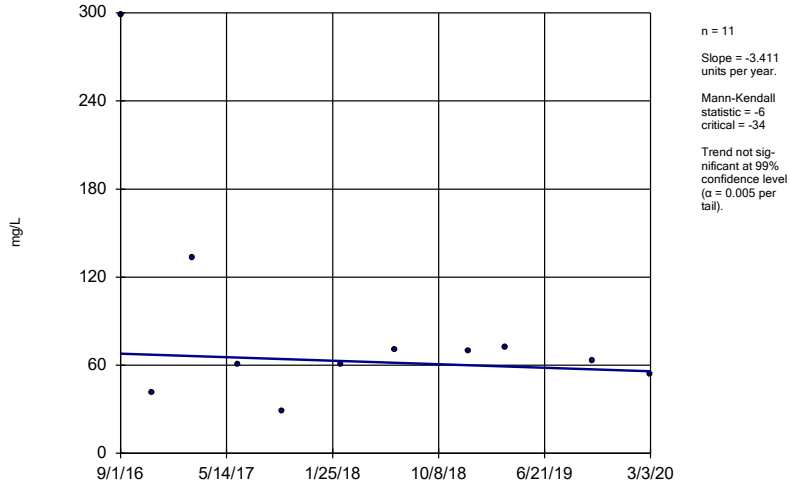
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Te
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWA-6S (bg)



n = 11

Slope = -3.411 units per year.

Mann-Kendall statistic = -6
critical = -34

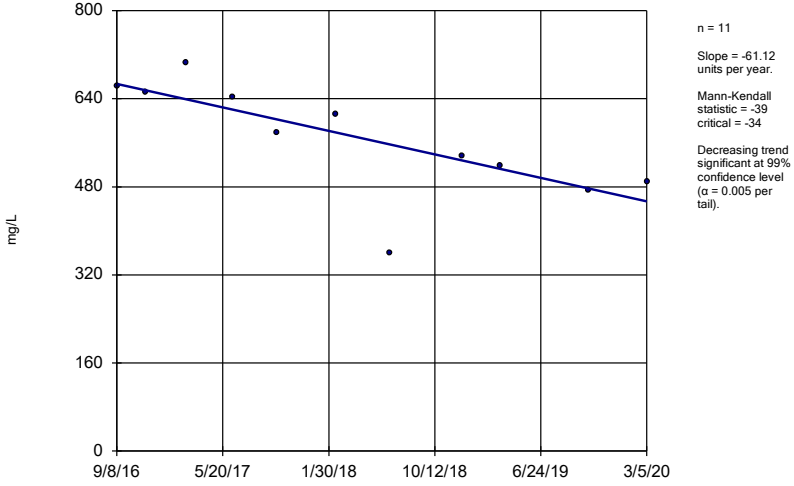
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Te
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-34S



n = 11

Slope = -61.12 units per year.

Mann-Kendall statistic = -39
critical = -34

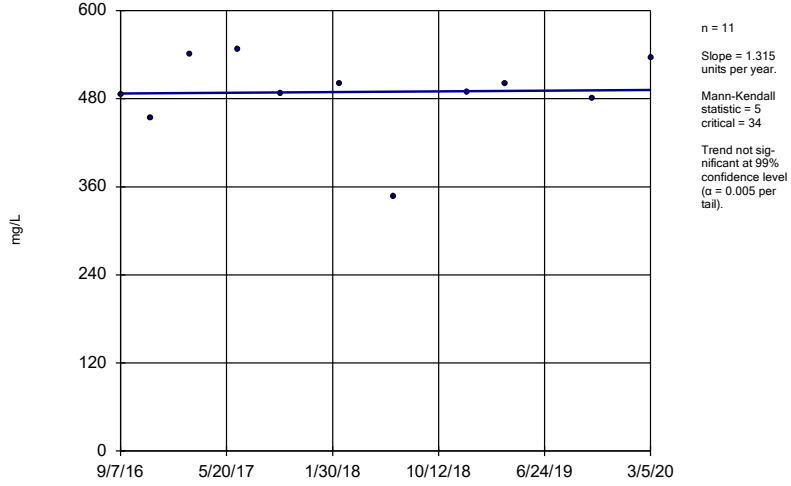
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Te
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-35S



n = 11

Slope = 1.315 units per year.

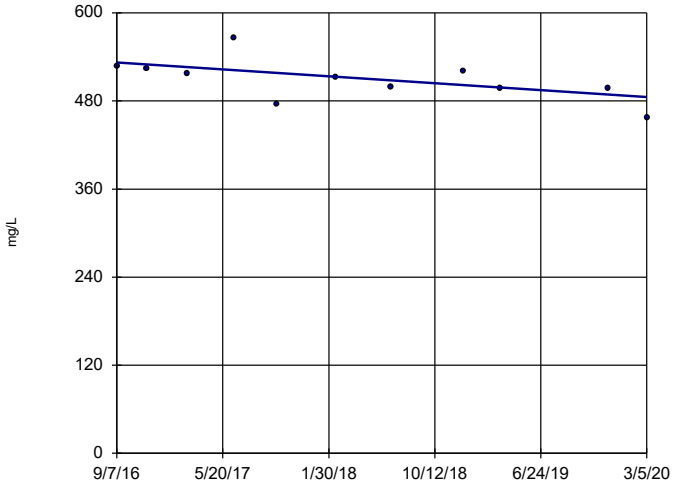
Mann-Kendall statistic = 5
critical = 34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Te
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sen's Slope Estimator

BRGWC-36S



n = 11

Slope = -13.41 units per year.

Mann-Kendall statistic = -32
critical = -34

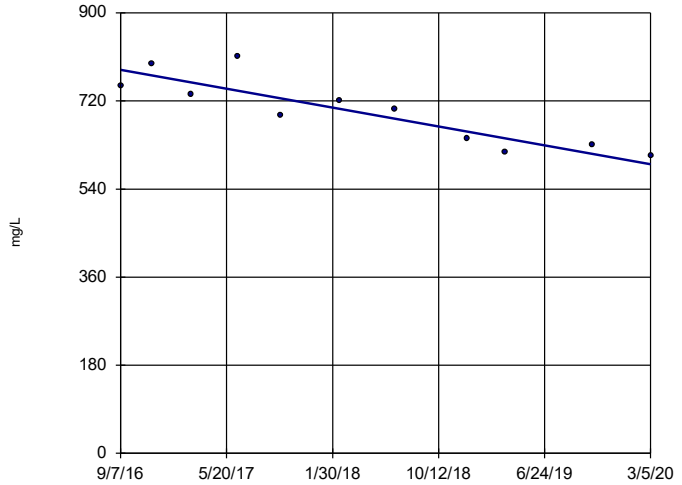
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Te
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Sen's Slope Estimator

BRGWC-38S



n = 11

Slope = -55.23 units per year.

Mann-Kendall statistic = -41
critical = -34

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Dissolved Solids [TDS] Analysis Run 4/22/2020 4:41 PM View: Pond E App III Trend Te
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

FIGURE F.

Tolerance Limit Summary Table

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/23/2020, 9:29 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	n/a	0.003	n/a	n/a	n/a	n/a	55	n/a	n/a	92.73	n/a	n/a	0.05954	NP Inter(NDs)
Arsenic (mg/L)	n/a	0.005	n/a	n/a	n/a	n/a	55	n/a	n/a	69.09	n/a	n/a	0.05954	NP Inter(NDs)
Barium (mg/L)	n/a	0.063	n/a	n/a	n/a	n/a	55	n/a	n/a	0	n/a	n/a	0.05954	NP Inter(normality)
Beryllium (mg/L)	n/a	0.003	n/a	n/a	n/a	n/a	55	n/a	n/a	100	n/a	n/a	0.05954	NP Inter(NDs)
Cadmium (mg/L)	n/a	0.0025	n/a	n/a	n/a	n/a	55	n/a	n/a	100	n/a	n/a	0.05954	NP Inter(NDs)
Chromium (mg/L)	n/a	0.01416	n/a	n/a	n/a	n/a	55	0.005614	0.004197	21.82	Kaplan-Meier	No	0.05	Inter
Cobalt (mg/L)	n/a	0.005	n/a	n/a	n/a	n/a	54	n/a	n/a	50	n/a	n/a	0.06267	NP Inter(normality)
Combined Radium 226 + 228 (pCi/L)	n/a	1.467	n/a	n/a	n/a	n/a	55	0.7126	0.3703	0	None	No	0.05	Inter
Fluoride (mg/L)	n/a	0.3	n/a	n/a	n/a	n/a	60	n/a	n/a	46.67	n/a	n/a	0.04607	NP Inter(normality)
Lead (mg/L)	n/a	0.005	n/a	n/a	n/a	n/a	55	n/a	n/a	76.36	n/a	n/a	0.05954	NP Inter(NDs)
Lithium (mg/L)	n/a	0.089	n/a	n/a	n/a	n/a	55	n/a	n/a	49.09	n/a	n/a	0.05954	NP Inter(normality)
Mercury (mg/L)	n/a	0.0005	n/a	n/a	n/a	n/a	45	n/a	n/a	88.89	n/a	n/a	0.09944	NP Inter(NDs)
Molybdenum (mg/L)	n/a	0.01	n/a	n/a	n/a	n/a	55	n/a	n/a	72.73	n/a	n/a	0.05954	NP Inter(NDs)
Selenium (mg/L)	n/a	0.01	n/a	n/a	n/a	n/a	55	n/a	n/a	100	n/a	n/a	0.05954	NP Inter(NDs)
Thallium (mg/L)	n/a	0.001	n/a	n/a	n/a	n/a	55	n/a	n/a	100	n/a	n/a	0.05954	NP Inter(NDs)

FIGURE G.

PLANT BRANCH POND E GWPS			
Constituent Name	**MCL**	**Background Limit**	**GWPS**
Antimony, Total (mg/L)	0.006	0.003	0.006
Arsenic, Total (mg/L)	0.01	0.005	0.01
Barium, Total (mg/L)	2	0.063	2
Beryllium, Total (mg/L)	0.004	0.003	0.004
Cadmium, Total (mg/L)	0.005	0.0025	0.005
Chromium, Total (mg/L)	0.1	0.01416	0.1
Cobalt, Total (mg/L)		0.005	0.005
Combined Radium, Total (pCi/L)	5	1.467	5
Fluoride, Total (mg/L)	4	0.3	4
Lead, Total (mg/L)		0.005	0.005
Lithium, Total (mg/L)		0.089	0.089
Mercury, Total (mg/L)	0.002	0.0005	0.002
Molybdenum, Total (mg/L)		0.01	0.01
Selenium, Total (mg/L)	0.05	0.01	0.05
Thallium, Total (mg/L)	0.002	0.001	0.002

**Highlighted cells indicated Background is higher than MCLs.*

**MCL = Maximum Contaminant Level*

**GWPS = Groundwater Protection Standard*

FIGURE H.

Confidence Intervals - Significant Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/23/2020, 1:14 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Cadmium (mg/L)	**BRGWC-50**	**0.05875**	**0.01327**	**0.005**	**Yes**	**11**	**0.03601**	**0.02729**	**0**	**None**	**No**	**0.01**	**Param.**
Cobalt (mg/L)	**BRGWC-50**	**1.5**	**1.3**	**0.0135**	**Yes**	**11**	**1.391**	**0.07006**	**0**	**None**	**No**	**0.006**	**NP (normality)**
Lithium (mg/L)	**BRGWC-47**	**0.04447**	**0.04009**	**0.03**	**Yes**	**12**	**0.04228**	**0.002791**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium (mg/L)	**BRGWC-50**	**0.04217**	**0.03747**	**0.03**	**Yes**	**11**	**0.03982**	**0.002822**	**0**	**None**	**No**	**0.01**	**Param.**

Confidence Intervals - All Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/23/2020, 1:14 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Antimony (mg/L)	BRGWC-29I	0.003	0.003	0.012	No	11	0.002791	0.0006935	90.91	None	No	0.006	NP (NDs)
Antimony (mg/L)	BRGWC-32S	0.003	0.003	0.012	No	11	0.002855	0.0004824	90.91	None	No	0.006	NP (NDs)
Antimony (mg/L)	BRGWC-45	0.003	0.00088	0.012	No	12	0.002445	0.0009327	66.67	None	No	0.01	NP (NDs)
Antimony (mg/L)	BRGWC-52I	0.003	0.00085	0.012	No	11	0.002571	0.0009593	81.82	None	No	0.006	NP (NDs)
Antimony (mg/L)	BRGWC-50	0.003	0.003	0.012	No	11	0.002775	0.0007477	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-25I	0.005	0.0006	0.01	No	11	0.003432	0.002178	63.64	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-27I	0.005	0.0009	0.01	No	11	0.003555	0.002012	63.64	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-29I	0.005	0.00051	0.01	No	11	0.0032	0.002117	54.55	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-30I	0.005	0.005	0.01	No	11	0.004596	0.001339	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-32S	0.005	0.005	0.01	No	11	0.004594	0.001348	90.91	None	No	0.006	NP (NDs)
Arsenic (mg/L)	BRGWC-45	0.005	0.0007	0.01	No	12	0.003341	0.002084	58.33	None	No	0.01	NP (NDs)
Arsenic (mg/L)	BRGWC-47	0.001962	0.0008551	0.01	No	12	0.002695	0.001798	33.33	Kaplan-Meier	sqrt(x)	0.01	Param.
Arsenic (mg/L)	BRGWC-52I	0.003528	0.001325	0.01	No	11	0.003279	0.001587	27.27	Kaplan-Meier	No	0.01	Param.
Arsenic (mg/L)	BRGWC-50	0.005	0.00074	0.01	No	11	0.003873	0.001943	72.73	Kaplan-Meier	No	0.006	NP (NDs)
Barium (mg/L)	BRGWC-25I	0.03965	0.02842	2	No	11	0.03404	0.006738	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-27I	0.01753	0.01494	2	No	11	0.01624	0.001552	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-29I	0.02046	0.01629	2	No	11	0.01839	0.002615	9.091	None	sqrt(x)	0.01	Param.
Barium (mg/L)	BRGWC-30I	0.02578	0.02096	2	No	11	0.02337	0.002891	9.091	None	No	0.01	Param.
Barium (mg/L)	BRGWC-32S	0.04928	0.03203	2	No	11	0.04065	0.01035	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-45	0.1014	0.08129	2	No	12	0.09133	0.0128	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-47	0.04704	0.03578	2	No	12	0.04141	0.007178	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-52I	0.0291	0.01617	2	No	11	0.02264	0.007762	0	None	No	0.01	Param.
Barium (mg/L)	BRGWC-50	0.02142	0.0184	2	No	11	0.01991	0.001814	0	None	No	0.01	Param.
Beryllium (mg/L)	BRGWC-27I	0.003	0.0001	0.004	No	12	0.0011	0.001404	33.33	None	No	0.01	NP (normality)
Beryllium (mg/L)	BRGWC-29I	0.003	0.00072	0.004	No	11	0.001315	0.0008624	18.18	None	No	0.006	NP (normality)
Beryllium (mg/L)	BRGWC-45	0.003	0.000079	0.004	No	13	0.002775	0.0008101	92.31	None	No	0.01	NP (NDs)
Beryllium (mg/L)	BRGWC-47	0.003	0.000056	0.004	No	12	0.002509	0.001146	83.33	None	No	0.01	NP (NDs)
Beryllium (mg/L)	BRGWC-50	0.00405	0.002619	0.004	No	11	0.003409	0.0008443	18.18	Kaplan-Meier	No	0.01	Param.
Cadmium (mg/L)	BRGWC-27I	0.0025	0.001	0.005	No	12	0.002172	0.0007902	91.67	None	No	0.01	NP (NDs)
Cadmium (mg/L)	BRGWC-32S	0.0025	0.00011	0.005	No	12	0.001976	0.0009735	83.33	None	No	0.01	NP (NDs)
Cadmium (mg/L)	BRGWC-45	0.0025	0.00011	0.005	No	13	0.002131	0.0008998	84.62	None	No	0.01	NP (NDs)
Cadmium (mg/L)	BRGWC-47	0.0025	0.00014	0.005	No	12	0.0007567	0.001052	25	None	No	0.01	NP (normality)
Cadmium (mg/L)	**BRGWC-50**	**0.05875**	**0.01327**	**0.005**	**Yes**	**11**	**0.03601**	**0.02729**	**0**	**None**	**No**	**0.01**	**Param.**
Chromium (mg/L)	BRGWC-25I	0.01	0.0016	0.1	No	11	0.008416	0.003526	81.82	None	No	0.006	NP (NDs)
Chromium (mg/L)	BRGWC-27I	0.01	0.003	0.1	No	11	0.008545	0.003267	81.82	None	No	0.006	NP (NDs)
Chromium (mg/L)	BRGWC-29I	0.01	0.01	0.1	No	11	0.01091	0.003015	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	BRGWC-30I	0.01	0.01	0.1	No	11	0.009555	0.001477	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	BRGWC-32S	0.01	0.0011	0.1	No	11	0.005264	0.004541	45.45	None	No	0.006	NP (normality)
Chromium (mg/L)	BRGWC-45	0.01	0.00053	0.1	No	12	0.009211	0.002734	91.67	None	No	0.01	NP (NDs)
Chromium (mg/L)	BRGWC-47	0.01	0.00092	0.1	No	12	0.007792	0.004002	75	None	No	0.01	NP (NDs)
Chromium (mg/L)	BRGWC-52I	0.01	0.01	0.1	No	11	0.009245	0.002503	90.91	None	No	0.006	NP (NDs)
Chromium (mg/L)	BRGWC-50	0.01	0.00071	0.1	No	11	0.007101	0.004154	63.64	None	No	0.006	NP (NDs)
Cobalt (mg/L)	BRGWC-25I	0.007708	0.004759	0.0135	No	11	0.006464	0.002081	18.18	Kaplan-Meier	No	0.01	Param.
Cobalt (mg/L)	BRGWC-27I	0.0149	0.0081	0.0135	No	12	0.01267	0.008844	8.333	None	No	0.01	NP (normality)
Cobalt (mg/L)	BRGWC-29I	0.01131	0.006181	0.0135	No	11	0.008745	0.003078	9.091	None	No	0.01	Param.
Cobalt (mg/L)	BRGWC-30I	0.005	0.0007	0.0135	No	12	0.002082	0.001786	25	None	No	0.01	NP (normality)
Cobalt (mg/L)	BRGWC-32S	0.01	0.0025	0.0135	No	12	0.005208	0.001671	91.67	None	No	0.01	NP (NDs)
Cobalt (mg/L)	BRGWC-45	0.04	0.0071	0.0135	No	13	0.01684	0.01795	7.692	None	No	0.01	NP (normality)
Cobalt (mg/L)	BRGWC-47	0.005189	0.0007867	0.0135	No	12	0.003224	0.003618	8.333	None	sqrt(x)	0.01	Param.
Cobalt (mg/L)	BRGWC-52I	0.005	0.0012	0.0135	No	11	0.003457	0.001752	45.45	None	No	0.006	NP (normality)
Cobalt (mg/L)	**BRGWC-50**	**1.5**	**1.3**	**0.0135**	**Yes**	**11**	**1.391**	**0.07006**	**0**	**None**	**No**	**0.006**	**NP (normality)**
Combined Radium 226 + 228 (pCi/L)	BRGWC-25I	1.265	0.828	5	No	11	1.046	0.2622	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-27I	1.308	0.6207	5	No	11	0.9643	0.4124	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-29I	1.769	1.207	5	No	11	1.488	0.3375	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-30I	1.281	0.6362	5	No	11	0.9584	0.3866	0	None	No	0.01	Param.

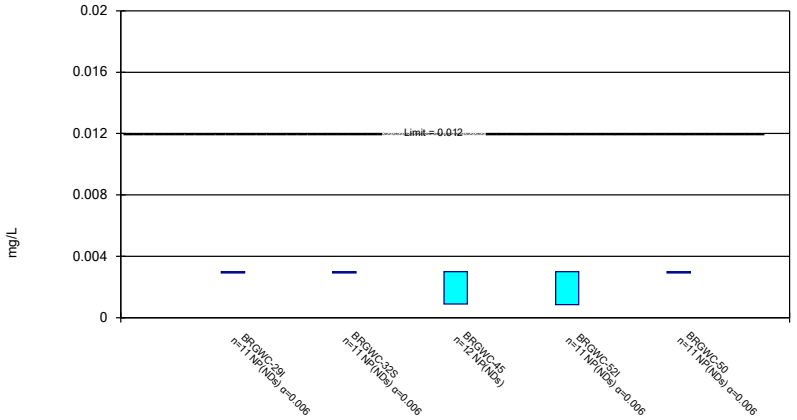
Confidence Intervals - All Results

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond Printed 4/23/2020, 1:14 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Combined Radium 226 + 228 (pCi/L)	BRGWC-32S	1.281	0.5121	5	No	11	0.8965	0.4614	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-45	0.9417	0.4005	5	No	12	0.6711	0.3449	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-47	1.572	0.9088	5	No	12	1.24	0.4223	0	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-52I	1.976	1.085	5	No	11	1.53	0.5345	9.091	None	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	BRGWC-50	1.977	1.218	5	No	11	1.597	0.455	0	None	No	0.01	Param.
Fluoride (mg/L)	BRGWC-25I	0.3211	0.1107	4	No	12	0.2517	0.1579	16.67	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	BRGWC-27I	0.2949	0.148	4	No	12	0.2603	0.08764	25	Kaplan-Meier	No	0.01	Param.
Fluoride (mg/L)	BRGWC-29I	0.2941	0.09779	4	No	12	0.2434	0.1298	16.67	Kaplan-Meier	No	0.01	Param.
Fluoride (mg/L)	BRGWC-30I	0.4938	0.1251	4	No	12	0.3334	0.2333	16.67	Kaplan-Meier	No	0.01	Param.
Fluoride (mg/L)	BRGWC-32S	0.3	0.09	4	No	12	0.23	0.094	58.33	Kaplan-Meier	No	0.01	NP (NDs)
Fluoride (mg/L)	BRGWC-45	0.69	0.12	4	No	13	0.3389	0.2312	61.54	Kaplan-Meier	No	0.01	NP (NDs)
Fluoride (mg/L)	BRGWC-47	0.4595	0.1295	4	No	13	0.3507	0.2584	30.77	Kaplan-Meier	sqrt(x)	0.01	Param.
Fluoride (mg/L)	BRGWC-52I	0.2768	0.1399	4	No	11	0.2084	0.08217	9.091	None	No	0.01	Param.
Fluoride (mg/L)	BRGWC-50	1.109	0.2724	4	No	12	0.6908	0.5332	0	None	No	0.01	Param.
Lead (mg/L)	BRGWC-25I	0.005	0.005	0.005	No	11	0.004555	0.001474	90.91	None	No	0.006	NP (NDs)
Lead (mg/L)	BRGWC-27I	0.005	0.005	0.005	No	11	0.004551	0.001489	90.91	None	No	0.006	NP (NDs)
Lead (mg/L)	BRGWC-29I	0.0006	0.00027	0.005	No	10	0.000844	0.001464	10	None	No	0.011	NP (normality)
Lead (mg/L)	BRGWC-45	0.005	0.00026	0.005	No	12	0.004605	0.001368	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	BRGWC-47	0.005	0.00012	0.005	No	12	0.004593	0.001409	91.67	None	No	0.01	NP (NDs)
Lead (mg/L)	BRGWC-50	0.005	0.000085	0.005	No	11	0.002825	0.002502	54.55	None	No	0.006	NP (NDs)
Lithium (mg/L)	BRGWC-27I	0.025	0.0014	0.03	No	11	0.005882	0.009454	18.18	None	No	0.006	NP (normality)
Lithium (mg/L)	BRGWC-29I	0.0043	0.0029	0.03	No	11	0.005436	0.006503	9.091	None	No	0.006	NP (normality)
Lithium (mg/L)	BRGWC-30I	0.01659	0.01079	0.03	No	11	0.01384	0.004206	9.091	None	ln(x)	0.01	Param.
Lithium (mg/L)	BRGWC-32S	0.025	0.0021	0.03	No	11	0.006327	0.009233	18.18	None	No	0.006	NP (normality)
Lithium (mg/L)	BRGWC-45	0.003463	0.002991	0.03	No	11	0.003227	0.0002832	0	None	No	0.01	Param.
Lithium (mg/L)	**BRGWC-47**	**0.04447**	**0.04009**	**0.03**	**Yes**	**12**	**0.04228**	**0.002791**	**0**	**None**	**No**	**0.01**	**Param.**
Lithium (mg/L)	BRGWC-52I	0.009418	0.002994	0.03	No	11	0.006836	0.006404	9.091	None	ln(x)	0.01	Param.
Lithium (mg/L)	**BRGWC-50**	**0.04217**	**0.03747**	**0.03**	**Yes**	**11**	**0.03982**	**0.002822**	**0**	**None**	**No**	**0.01**	**Param.**
Mercury (mg/L)	BRGWC-25I	0.0005	0.00004	0.002	No	9	0.0004489	0.0001533	88.89	None	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-27I	0.0005	0.000047	0.002	No	9	0.0003997	0.0001991	77.78	None	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-29I	0.0005	0.00004	0.002	No	9	0.0004011	0.0001964	77.78	None	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-30I	0.0005	0.00004	0.002	No	9	0.0004011	0.0001964	77.78	None	No	0.002	NP (NDs)
Mercury (mg/L)	BRGWC-32S	0.0005	0.00009	0.002	No	9	0.00041	0.0001786	77.78	None	No	0.002	NP (NDs)
Molybdenum (mg/L)	BRGWC-52I	0.01	0.0032	0.01	No	10	0.00735	0.003014	50	None	No	0.011	NP (normality)
Molybdenum (mg/L)	BRGWC-50	0.01	0.0033	0.01	No	10	0.00855	0.003068	80	None	No	0.011	NP (NDs)
Selenium (mg/L)	BRGWC-27I	0.003534	0.001816	0.05	No	11	0.004845	0.003436	27.27	Kaplan-Meier	sqrt(x)	0.01	Param.
Selenium (mg/L)	BRGWC-29I	0.01	0.0039	0.05	No	11	0.007718	0.002986	54.55	Kaplan-Meier	No	0.006	NP (NDs)
Selenium (mg/L)	BRGWC-30I	0.01	0.0034	0.05	No	11	0.007591	0.003401	63.64	Kaplan-Meier	No	0.006	NP (NDs)
Selenium (mg/L)	BRGWC-32S	0.01532	0.001391	0.05	No	11	0.02802	0.0388	36.36	Kaplan-Meier	ln(x)	0.01	Param.
Selenium (mg/L)	BRGWC-45	0.01	0.0029	0.05	No	12	0.009408	0.00205	91.67	Kaplan-Meier	No	0.01	NP (NDs)
Selenium (mg/L)	BRGWC-47	0.01	0.0017	0.05	No	12	0.007933	0.00374	75	Kaplan-Meier	No	0.01	NP (NDs)
Selenium (mg/L)	BRGWC-50	0.01	0.002	0.05	No	11	0.006491	0.004047	54.55	Kaplan-Meier	No	0.006	NP (NDs)
Thallium (mg/L)	BRGWC-29I	0.0002	0.00017	0.002	No	10	0.000212	0.0001023	10	None	No	0.011	NP (normality)

Non-Parametric Confidence Interval

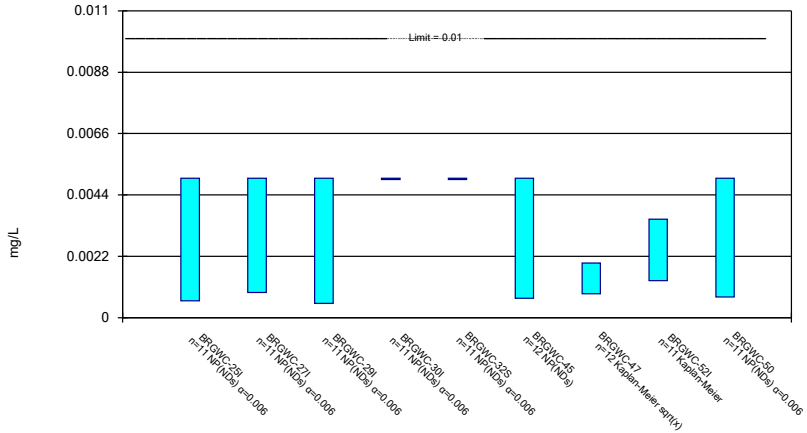
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



Constituent: Antimony Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

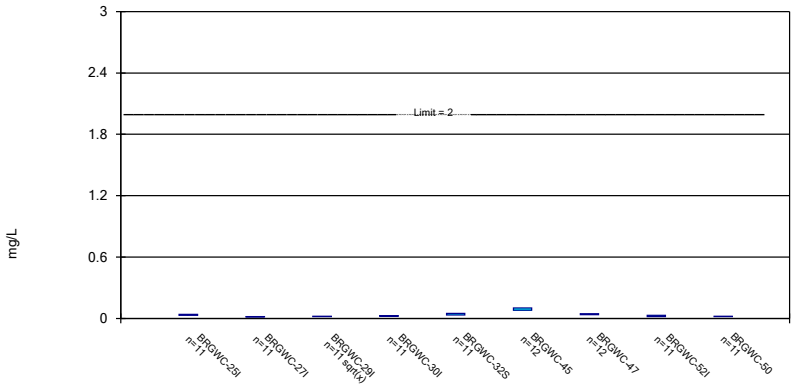
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Parametric Confidence Interval

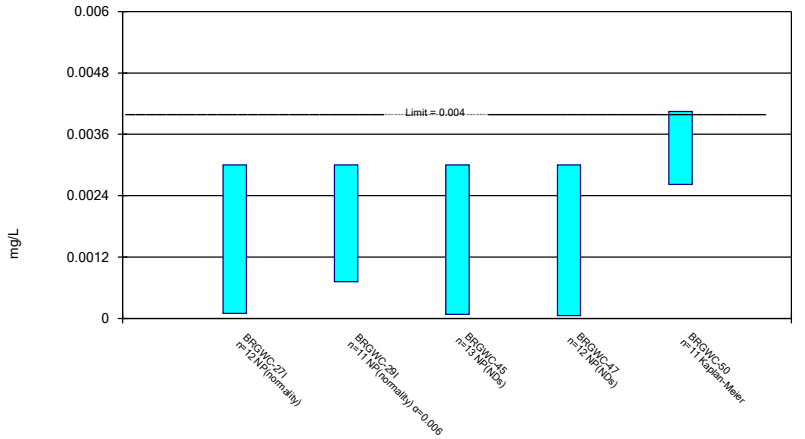
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

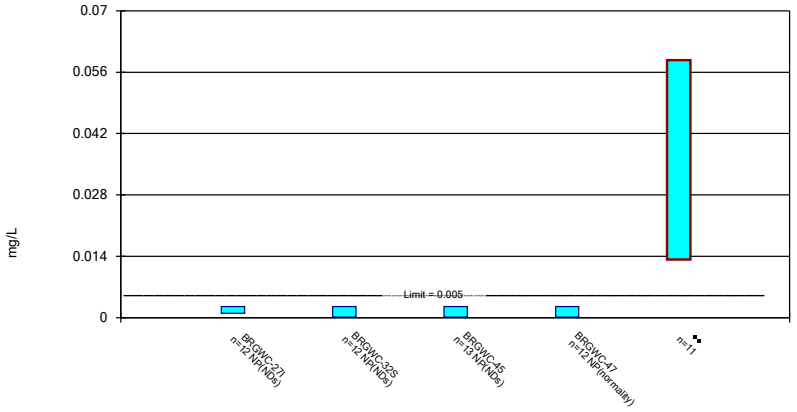


Constituent: Beryllium Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



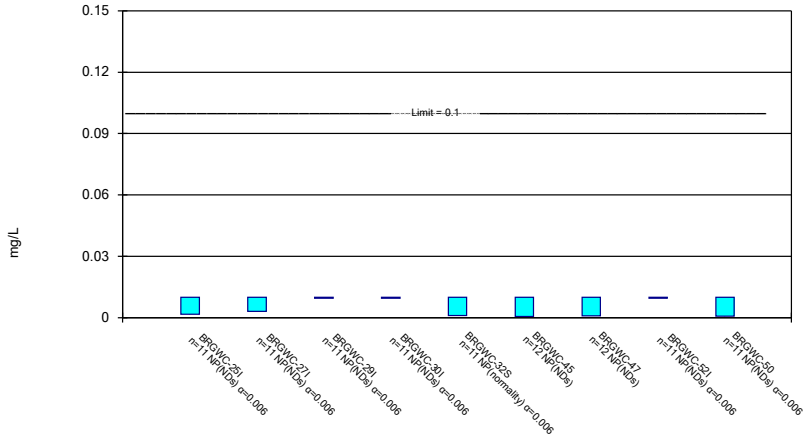
Constituent: Cadmium Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.



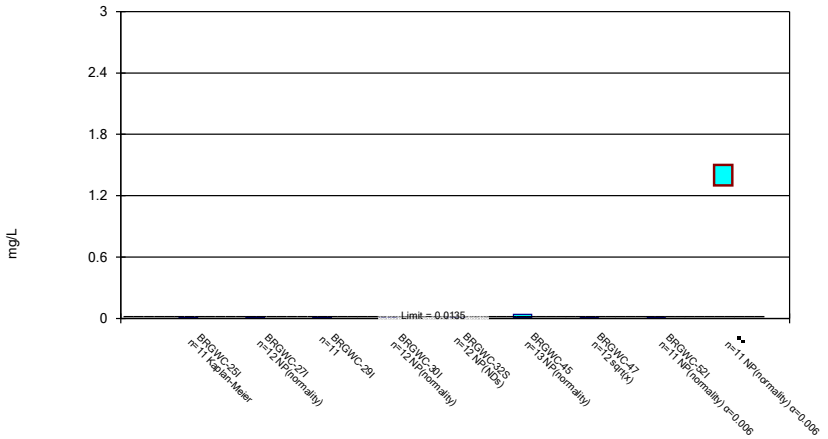
Constituent: Chromium Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



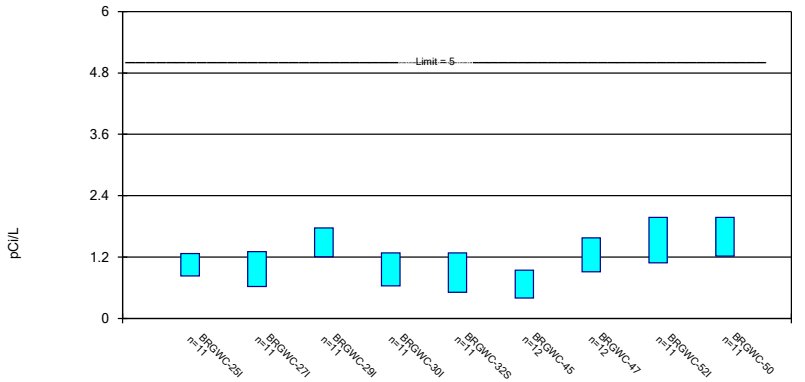
Constituent: Cobalt Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

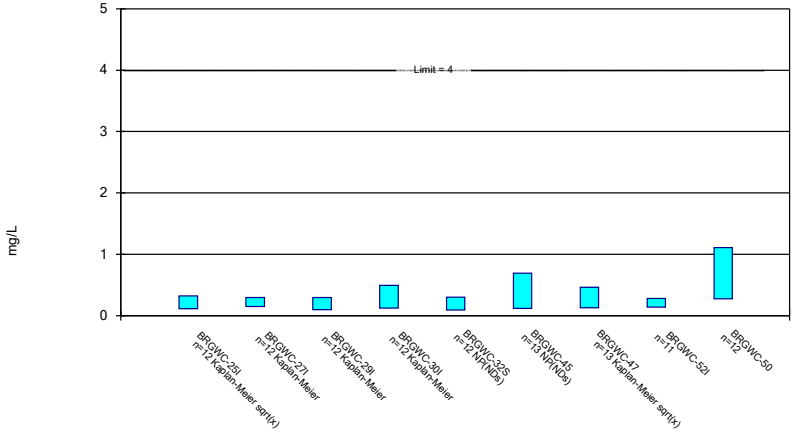


Constituent: Combined Radium 226 + 228 Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV

Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

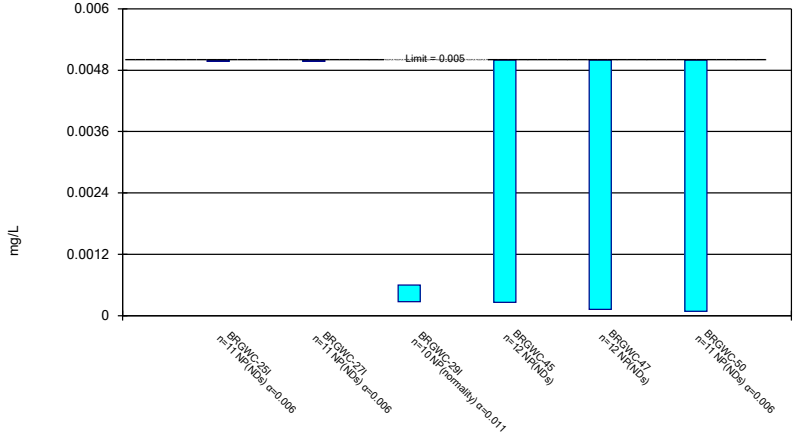


Constituent: Fluoride Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.

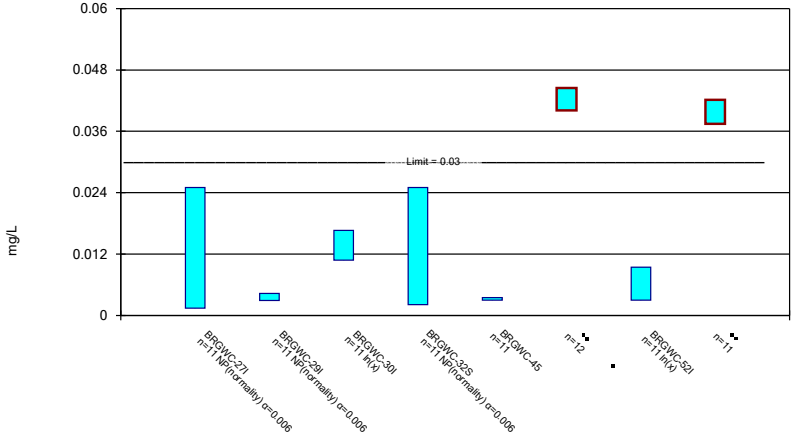


Constituent: Lead Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

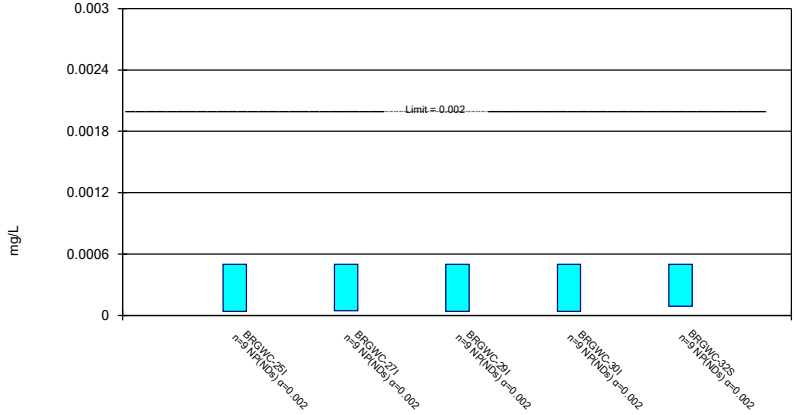


Constituent: Lithium Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Sanitas™ v.9.6.25 Groundwater Stats Consulting. UG

Non-Parametric Confidence Interval

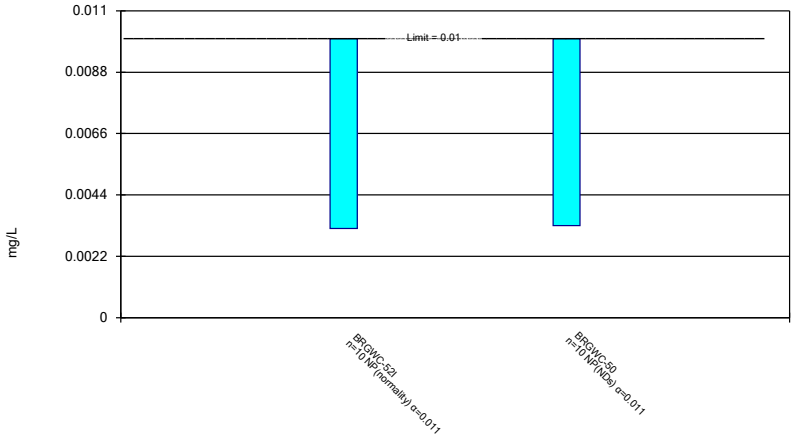
Compliance Limit is not exceeded.



Constituent: Mercury Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Non-Parametric Confidence Interval

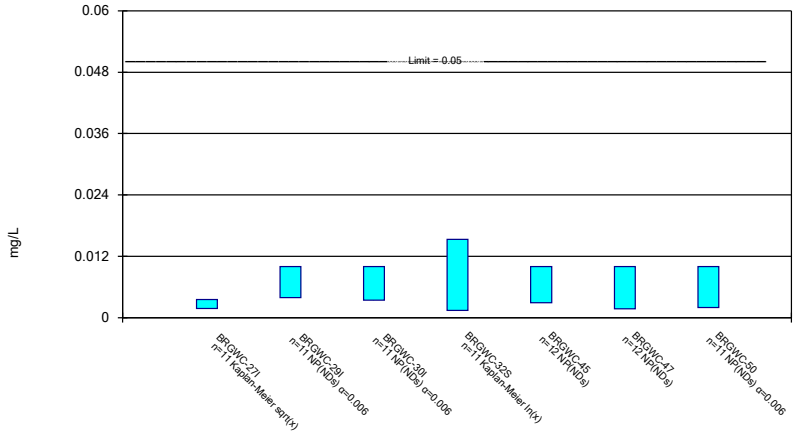
Compliance Limit is not exceeded.



Constituent: Molybdenum Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Parametric and Non-Parametric (NP) Confidence Interval

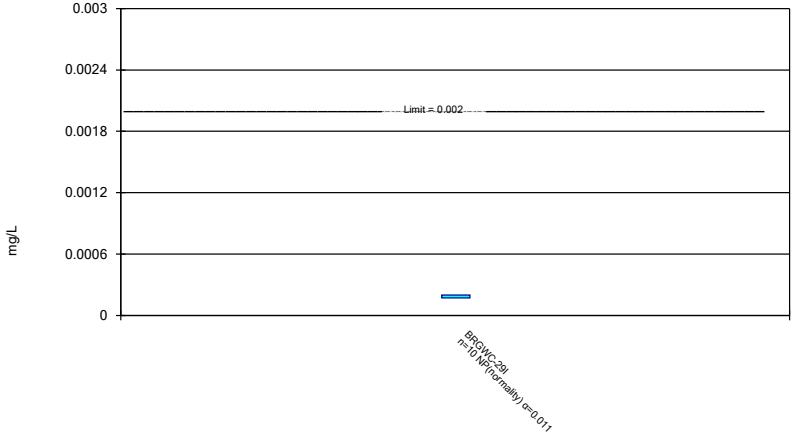
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 4/23/2020 1:13 PM View: Ponds B,C,D App IV
Plant Branch Client: Southern Company Data: Plant Branch Ash Pond

APPENDIX D

AP-E ALTERNATE SOURCE DEMONSTRATION

REPORT

Alternate Source Demonstration

Georgia Power Company Plant Branch AP-E

Submitted to:

Georgia Power

241 Ralph McGill Boulevard, NE
Atlanta, Georgia 30308

Submitted by:

Golder Associates Inc.
5170 Peachtree Road Building 100 Suite 300, Atlanta, Georgia, USA 30341
+1 770 496-1893

166849618-100-024

July 28, 2020

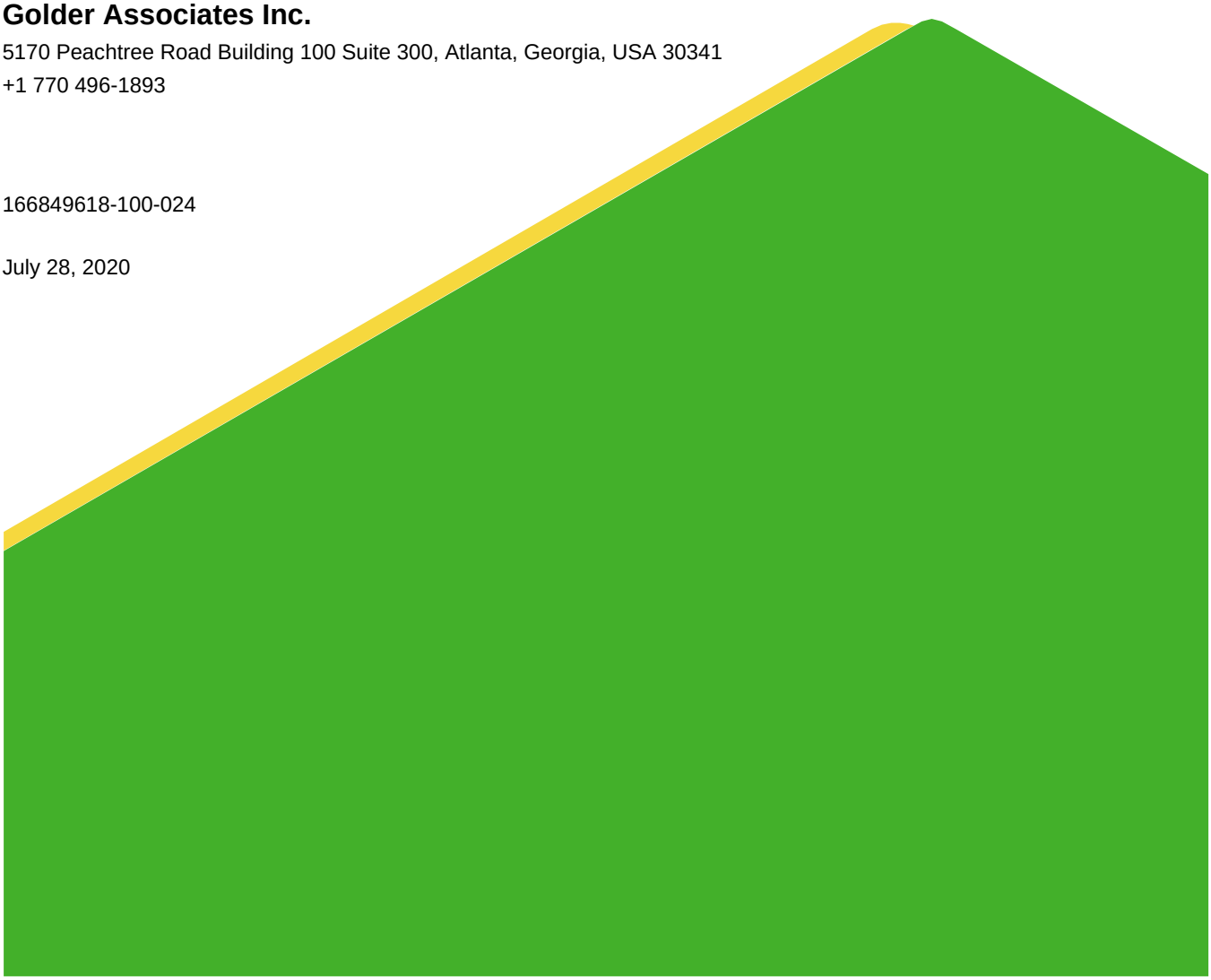


Table of Contents

TABLE OF CONTENTS-continued

Tables and Figures

Appendices

Certification

This *Alternate Source Demonstration, Georgia Power Company Plant Branch AP-E*, Milledgeville, Putnam County, Georgia, has been prepared in compliance with the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10(6)(a-c) by a qualified groundwater scientist with Golder Associates Inc.

Golder Associates Inc.

PJ Nolan, PhD
Project Geochemist

Dawn L Prell
Senior Consultant

Brian A. Steele, PG
Georgia Registered Professional Geologist No. 002171

7/28/2020
Date

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D; published in 80 FR 21302-21501, April 17, 2015) (CCR Rule or The Rule), this Alternate Source Demonstration (ASD), Plant Branch Ash Pond E (AP-E), has been prepared to document an alternate source for Statistically Significant Levels (SSLs) of beryllium and cobalt identified at Georgia Power Company's Plant Branch AP-E during assessment monitoring. This document satisfies the requirements of §257.95(g)(3)(ii) and 391-3-4-.10(6), which allows the owner or operator to demonstrate that a source other than the CCR Unit has caused an SSL and that the SSL was the result of an alternate source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

Following the October 2019 sampling event, Plant Branch issued a notification of SSL exceedance. Review of the statistical analysis results indicates that using the GWPS established according to both 40 CFR §257.95(h) and 391-3-4-.10(6)(a), the following SSLs were identified:

Summary of GWPS Exceedances	
AP-E Monitoring Well	**Appendix IV Parameter**
BRGWC-33S	Beryllium, Cobalt
BRGWC-38S	Cobalt

As documented in this report, the SSLs for beryllium and cobalt at AP-E are attributed to naturally occurring sources in subsurface aquifer materials and are not caused by a release from the CCR unit.

2.0 SITE DESCRIPTION AND BACKGROUND

Plant Branch is located in Putnam County, GA, approximately 8 miles north of Milledgeville. The property occupies approximately 3,200 acres and is bounded on the south and east by Lake Sinclair, which is an approximately 15,330-acre hydroelectric reservoir that was created in 1953 by the impoundment of the Oconee River. A site location map and a detailed site map is included as Figure 1.

Plant Branch operated as a coal-fired power plant from the 1960s until its retirement in 2015. Plant Branch has been decommissioned, with only the ash ponds remaining. During its operation, five ash ponds were used for management of the CCR on the plant property. These CCR facilities are identified as Ash Ponds (AP) A, B, C, D, and E. AP-A, the first ash pond constructed at the Site, was taken out of service in the late 1960s and was closed in April 2016 by the removal and relocation of its stored CCR to AP-E. Ponds B, C, D, and E are currently inactive.

Plant Branch ceased producing electricity prior to April 2015. Therefore, AP-E is not subject to the Federal CCR Rule. A CCR Unit Solid Waste Handling Permit application for AP-E was submitted to the Georgia Environmental Protection Department (GA EPD) in November 2018 and is currently under review.

2.1 Ash Pond AP-E

The groundwater monitoring network for the AP-E monitoring system consists of fourteen (14) monitoring wells. The network contains ten (10) wells screened in the uppermost aquifer and four (4) wells screened in the bedrock aquifer. Five (5) wells are situated upgradient of the site and are used as background monitoring for AP-E. Figure

2, Site Plan and Well Location Map, identifies the location of AP-E at Plant Branch and shows the monitoring well networks as well as additional on-site piezometers.

2.2 Geologic Setting

Plant Branch is located on the Lake Sinclair West, GA USGS 7.5-minute topographic quadrangle. The Piedmont/Blue Ridge geologic province contains some of the oldest rocks in the Southeastern United States. Since their origin, approximately 276 to 1100 million years ago (Ma), these late Precambrian (Neoproterozoic) to late Paleozoic (Permian) rocks have undergone repeated cycles of igneous intrusions and extrusions, metamorphism, folding, faulting, shearing, and silicification. The latest regional metamorphism and associated deformation has been attributed to the collision of the North America plate with the Eurasian plate approximately 200 to 230 Ma. More recent deformation and emplacement of mafic dikes is associated with the rifting of the North American craton during the Mesozoic and Cenozoic Eras (Golder 2020).

Bedrock underlying the site primarily consists of a fine- to medium-grained, poorly jointed biotite-quartz-feldspar gneiss interlayered with granitic gneiss and amphibolite that has been deeply and uniformly weathered (Golder 2020). Weathering of this unit has resulted in the development of a relatively thick, clay-rich, vermiculite soil. The gneiss is locally interlayered with a zone of hornblende gneiss/amphibolite that trends northeast across the southern portion of AP-E.

Three small mafic intrusive masses were observed around AP-E as well: two occur southeast of the pond and the third is located northwest of the pond. These discontinuous masses are resistant to weathering, standing out in relief relative to the surrounding differentially weathered biotite gneiss. The intrusives consist of spheroidally-weathered, medium-grained, diabase. Weathering of the diabase yields a massive, fat clay with relict feldspar phenocrysts.

The southern end of the site is underlain by migmatitic gneiss with large amphibole crystals and discontinuous pods of amphibolite as observed along with entrance road on the southern end of the property. Due to the lack of exposure, the contact relationship between the migmatitic gneiss and biotite gneiss has not been determined.

The regional rock formations are a source of trace elements to regional hydrologic systems. For example, beryllium in the region is known to be associated with granites, gneisses and schists containing beryl-bearing pegmatites (e.g., Cocker 1996, 1998). Weathering of these rock formations is known to cause enrichment of beryllium, cobalt, and other trace elements associated with these formations in the Chattahoochee and Oconee River basin stream sediments (Cocker 1996, 1998). Cobalt is commonly associated with ultramafic rocks, shale, and amphibolite in the Oconee River Basin, and enriched concentration of cobalt are commonly associated with biotite gneiss, mafic rocks, and ultramafic rocks (Cocker, 1996, 1998), similar in nature to the bedrock at the Site. Beryllium concentrations in stream sediments correlate with regional biotite gneiss and granite. Regional geochemical mapping of stream sediments shows enriched concentrations of cobalt [40 to 110 milligrams per kilogram (mg/kg)] extending through Putnam and Morgan Counties correlating to mafic and ultramafic rocks (Cocker, 1996).

The regional geologic setting provides a source for numerous trace elements that are naturally released to the regional aquifers through chemical weathering. Data collected from the site confirm the occurrence of rock types enriched in trace metals that are the likely source for elements such as beryllium and cobalt in groundwater at the Site, as described in the following sections.

2.3 Hydrogeological Setting

Groundwater at the Site within the overburden (comprised of both residual soils and transitionally weathered rock) is generally unconfined, the surface of which is generally a subdued reflection of topography. It is recharged by precipitation stored in residual soils and typically discharges into major streams and rivers. In areas where bedrock is relatively shallow and when water levels are seasonally depressed, the regional groundwater table also occurs within the upper zones of weathered bedrock.

Bedrock aquifer systems are recharged by groundwater that is stored in the overburden. This groundwater slowly infiltrates underlying bedrock aquifer systems by moving through preferentially-weathered discontinuities in the bedrock mass, such as foliation/compositional layering, joints, and faults. Groundwater can move readily, both vertically and horizontally, through these areas of enhanced porosity and permeability and, depending upon the size, concentration, and interconnection of these secondary openings, the upper bedrock wells can either be dry or yield water. In contrast, the overburden material is rich in clay that results in slower infiltration to the transitionally weathered material. Thus, the groundwater in the uppermost aquifer represents a composite signature of recharge through the overburden and the chemical weathering of underlying rock formations.

3.0 TEST METHODS FOR SOIL AND ROCK

3.1 Mineralogical Analysis

The mineralogical composition of five soil and rock samples was assessed using X-ray diffraction (XRD) (see Appendix A),from the five cores associated with boreholes completed adjacent to wells and piezometers BRGWA-2S, BRGWA-5S, BRWA-6S, PZ-52D and PZ-53D. The purpose of the mineralogical analysis was to identify and quantify the crystalline mineral phases in each sample. This information is required to evaluate the mineral phase(s) present in the aquifer that may act as a natural source for metals or that may affect the geochemistry of the aquifer and allow for quantitative evaluation of rock types present. The mineralogical testing laboratory (SGS Minerals Services) performed the mineralogical analysis using quantitative (Rietveld) XRD (ME-LR-MIN-MET-MN-DO5) and a Bruker AXS D8 Advance Diffractometer.

3.2 Chemical Analysis and Sequential Extraction

Chemical analysis of soils/rock for total metals and sequential extraction analysis was conducted on 10 solid samples (six from three upgradient boreholes and four samples from two downgradient boreholes) surrounding AP-E (Appendix B). The sequential extraction procedure (SEP) consists of a seven-step metals extraction from solids to determine their potential environmental stability. The seven-step SEP is defined by specific extraction steps as follows (based on a modified Tessier et al. 1979 method):

SEQUENTIAL EXTRACTION PROCEDURE				
ENVIRONMENTALLY AVAILABLE (Increasing Availability)	Step 1	Increasing Extraction Strength	Exchangeable Fraction:	This extraction includes trace elements that are electrostatically adsorbed to overburden minerals
	Step 2		Carbonate Fraction:	This extraction targets trace elements that are adsorbed or otherwise bound to carbonate minerals
	Step 3		Non-Crystalline Materials Fraction:	This extraction targets trace elements that are complexed by amorphous minerals
	Step 4		Metal Hydroxide Fraction:	This extraction targets trace elements bound to hydroxides of iron, manganese, and/or aluminum
	Step 5		Organic Fraction:	This extraction targets trace elements strongly bound via chemisorption to organic material
NON-ENVIRONMENTALLY AVAILABLE	Step 6		Acid/Sulfide Fraction:	The extraction is used to identify trace elements precipitated as sulfide minerals
	Step 7		Residual Fraction:	Trace elements remaining in the overburden after the previous extractions will be distributed between silicates, phosphates, and refractory oxide

Steps 1 through 7 represent an increasing amounts of target metals that can be removed into solution from the solid phase. For instance, metals bound in the carbonate fraction, or that are exchangeable, are much more likely to become mobile due to changes in groundwater chemistry than metals bound within a sulfide or residual fraction. The total concentration of a metal measured from all seven steps can be compared to the concentration determined from the total metal analysis for compositional accountability. Metals extracted in Steps 1 through 5 are considered environmentally available, whereas metals extracted in Steps 6 and 7 are present in non-environmentally available fractions and are not expected to be released under conditions typically encountered in aquifers, except in the case of acidification or other excursions from typical groundwater conditions (Tessier et al. 1979).

3.3 Geochemical Modeling

Groundwater and porewater data from on-site sources were used to develop geochemical models to determine the speciation of metals of interest and evaluate the potential for mineral precipitation, adsorption, or dissolution in the aquifer. Concentrations of metals can be altered by changes in pH, temperature, or pressure as well as precipitation, absorption and dissolution of solid phase minerals. Groundwater and porewater data used for geochemical modeling are included in Appendix C.

The geochemical computer code developed by the United States Geological Survey (USGS), PHREEQC, was used for these simulations (Parkhurst and Appelo 2013). PHREEQC version 3.4 is a general-purpose geochemical modeling code used to simulate reactions in water and between water and solid mineral phases (e.g., rocks and sediments). Reactions include aqueous equilibria, mineral dissolution and precipitation, ion exchange, surface complexation, solid solutions, gas-water equilibrium, and kinetic biogeochemical reactions. The widely accepted thermodynamic database Minteq.v4, 2017 edition, was used as a basis for the thermodynamic constants required for modeling.

The potential for mineral precipitation was assessed in PHREEQC using a saturation index (SI) calculated according to the following equation:

$$SI = \log (IAP/Ksp)$$

The saturation index is the ratio of the ion activity product (IAP) of a mineral to the solubility product (Ksp). An SI value greater than zero indicates that the solution is supersaturated with respect to a particular mineral phase and, therefore, precipitation of the mineral may occur. An evaluation of precipitation kinetics is then required to determine whether the supersaturated mineral will indeed form. An SI value less than zero indicates the solution is undersaturated with respect to a particular mineral phase and this mineral may dissolve. An SI value close to zero indicates equilibrium conditions exist between the mineral and the solution.

4.0 ALTERNATE SOURCE DEMONSTRATION

The SSLs of beryllium and cobalt in groundwater at the monitoring wells network of AP-E are not caused by a release from AP-E but are instead derived from an alternate, natural source. The following lines of evidence demonstrate a natural source for beryllium and cobalt in the aquifer and describe the geochemical conditions and processes involved in the release of beryllium and cobalt into groundwater.

- ***Beryllium and cobalt are not detected above naturally occurring background concentrations and have limited to no mobility in porewater from AP-E.***

Beryllium was not detected in porewater. Trace concentrations of cobalt were detected in porewater samples but were well below the background level of 0.005 mg/L established in background groundwater at the Site. The average measured pH in porewater was 6.2. At this circumneutral pH, beryllium and cobalt have limited mobility in porewater based on fundamental geochemical processes (Smith and Huyck 1999).

- ***The presence of lithium in porewater, the trace concentrations of lithium in groundwater, and the elemental ratios of lithium to boron in downgradient wells indicate groundwater quality is not impacted by porewater.***

To further evaluate the source of beryllium and cobalt in groundwater, we compared ratios of geochemically similar non-reactive parameters, including lithium and boron, for porewater and groundwater. The ratio of boron to lithium should remain constant if downgradient wells are impacted by porewater, even as dilution occurs (EPRI 2012). The ratio of boron to lithium should remain constant as porewater in downgradient wells if impacted by porewater, even as dilution occurs (EPRI 2012). The ratio of boron to lithium in porewater in AP-E is approximately 2:1, which does not correspond to the ratios in downgradient wells BRGWC-33S and BRGWC-38S. Ratios for upgradient wells were not included as lithium results were non-detect. The ratios of boron to lithium at BRGWC-33S and BRGWC-38S are more reflective of upgradient groundwater conditions thus providing strong evidence that AP-E has not impacted these wells.

Location		Boron to Lithium Ratios
Porewater	IW-E-1	2:1
Downgradient Wells	BRGWC-33S	136:1
	BRGWC-38S	905:1

A statistical correlation analysis of groundwater samples indicated that groundwater concentrations of beryllium and cobalt do not show a statistically significant ($p<0.05$) relationship with boron, chloride, lithium, or sulfate concentrations, considered to originate from the ash ponds (non-shaded boxes on Figure 3a). Instead, beryllium

and cobalt concentrations show a statistically significant inverse relationship with pH (red boxes on Figure 3a). This relationship indicates that where pH decreases in groundwater, concentrations of beryllium and cobalt increase. The lack of a statistically significant relationship between boron and lithium in groundwater is also notable because both constituents are present in porewater. At wells where beryllium and cobalt exceed the GWPS, lithium is not present.

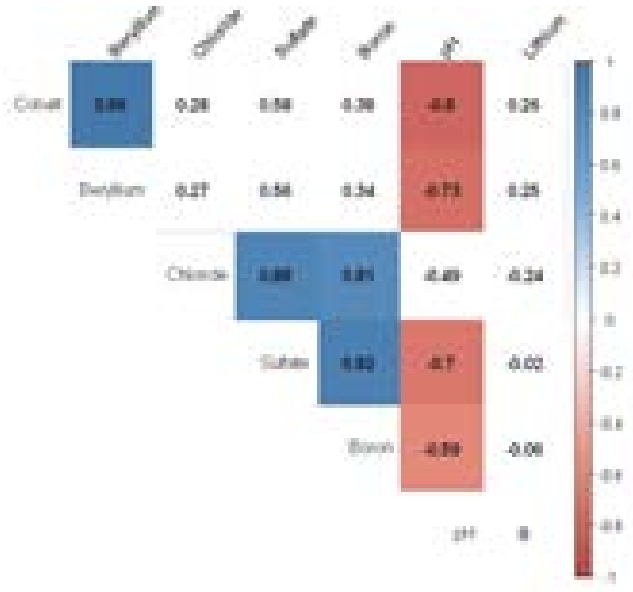


Figure 3a: Correlation matrix of groundwater parameters where positive correlations are shown in blue and inverse correlations are shown in red. (Note only those values highlighted in blue or red are statistically significant at a p<0.05 level)

The relationships between beryllium and cobalt compared to boron, chloride, lithium, and sulfate at individual wells are presented graphically in Appendix D. Based on these trends, while some overlaps exist, it is demonstrated that boron, chloride, and sulfate have no statistical relationship with the exceedances of beryllium and cobalt. Further, the lack of a correlation of beryllium and cobalt (which are not present in porewater) with lithium (which is present in porewater), indicates beryllium and cobalt do not originate from AP-E.

These statistical relationships are further demonstrated using a ternary diagram of the relative abundance of boron, chloride, and lithium in upgradient and downgradient wells as compared to AP-E porewater (Figure 3b). Based on this diagram, it is evident that while substantial variability exists in boron, chloride, and lithium concentrations, groundwater chemistry at each downgradient location is more similar to upgradient groundwater than to AP-E porewater (sample IW-E-1). Sulfate was not used in ternary plots as it is not a reliable indicator parameter due to the naturally occurring presence of gypsum, a calcium sulfate mineral found in soils/rock at the site, which can form or dissolve (particularly at low pH). Because sulfate is redox sensitive, present in the form of gypsum in soils/rock, and participates in chemical reactions along the groundwater flow path, other parameters, namely boron and lithium, were used to evaluate the geochemical signatures for porewater, and upgradient and downgradient groundwater (Figure 3b).

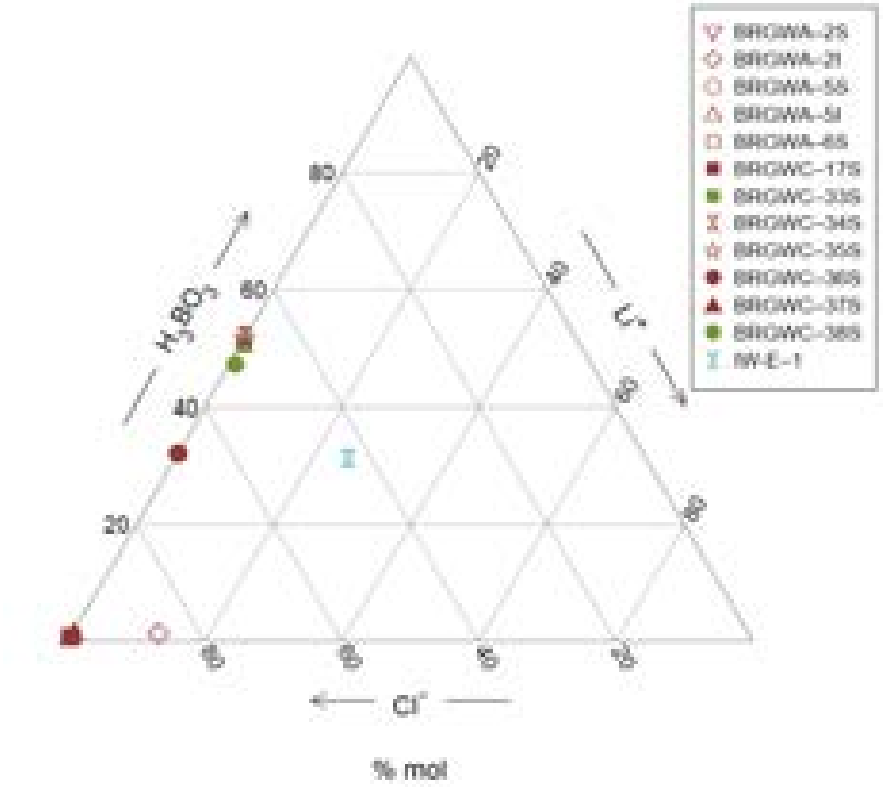


Figure 3b: Ternary plot of the relative abundance of boron, chloride, and lithium in groundwater and porewater

- ***Beryllium and cobalt are naturally occurring in the soils and bedrock at Plant Branch as identified by chemical analysis and sequential extraction of soil and rock samples.***

Chemical analysis and selective sequential extraction were conducted on 10 solid samples (four downgradient and six upgradient) collected from soils and bedrock from boreholes surrounding AP-E. The chemical and SEP results are presented in Appendix B and demonstrate that beryllium and cobalt are naturally occurring in the soil and rock.

The SEP results show that approximately 42% to 80% of the total beryllium concentrations are available for leaching to groundwater from extraction phases 1 through 5, representing carbonate, oxy-hydroxide, and organic-bound fractions. Both upgradient wells and assessment wells and piezometers also contained beryllium in the environmentally available fraction (Steps 1-5), which would be easily mobilized in response to decreases in groundwater pH (Smith 1999). As demonstrated by the SEP, between 20% and 58% of beryllium is sequestered in the non-environmentally available (or refractory) portion of the soil and rock material, indicating natural occurrence and a source of beryllium. Occurrence of an equal amount of beryllium in the environmentally available fraction show that beryllium is also available for release to groundwater, particularly from the carbonate and oxy-hydroxide phases in the aquifer solids. Concentrations of naturally occurring beryllium in Steps 6 and 7 are noted in rocks characterized by a higher percentage of quartz-kaolinite-plagioclase-biotite minerals (Appendix A), which reflects a deeply weathered biotite gneiss.

Per the chemical analysis, total beryllium concentrations range from 0.31 mg/kg to 3.9 mg/kg. These values are within the range of documented Chattahoochee and Oconee River Basin stream sediments, with values ranging between 0.25 mg/kg to 4.0 mg/kg (Cocker 1996), and are also similar to the average Eastern US and crustal soil values of 0.55 mg/kg and 3 mg/kg, respectively presented by Smith and Huyck (1999).

Cobalt in the aquifer solids was present in the environmentally available fraction, ranging from 18 to 78% of total cobalt found in soils/rock. Cobalt in this fraction can be easily mobilized into groundwater due to decreases in groundwater pH or as other geochemical conditions change (Smith 1999). Unlike beryllium, higher concentrations of naturally occurring cobalt in Steps 6 and 7 are noted in rocks characterized by low quartz and higher hornblende-kaolinite mineral assemblage (Appendix A), which reflects the moderately weathered hornblende-gneiss or amphibolite-gneiss.

Per the chemical analysis, total cobalt concentrations range from 9.6 to 60 mg/kg. Four samples from upgradient (background) boreholes BRGWA-2S and BRGWA-6S contain the highest cobalt concentrations of any soil sample at Plant Branch (54 to 60 mg/kg). At these wells, the groundwater pH has consistently remained higher than 6.0 since 2016, limiting potential mobilization of cobalt from soils/rock. The concentrations of cobalt in groundwater samples from upgradient wells are consistent with the regional values for stream sediments from the Oconee River Basin, with values ranging between 2.5 mg/kg to 113 mg/kg (Cocker 1996); they are also enriched compared to the Eastern US average soil and crustal values of 5.9 mg/kg and 25 mg/kg, respectively (Smith and Huyck 1999). Regional geochemical mapping of stream sediments shows enriched concentrations of cobalt 40 to 110 mg/kg extending through Putnam and Morgan Counties correlating to mafic and ultramafic rocks (Cocker 1996).

- ***Soil/bedrock mineralogical results support the presence of naturally occurring beryllium and cobalt at Plant Branch.***

The mineralogical results for five rock samples obtained from five boreholes collected both upgradient and downgradient of AP-E are presented in Appendix A. Soil samples taken above bedrock resemble saprolitic soils due to the high percentage of the clay mineral kaolinite present. Bedrock samples from BRGWA-5S contain a considerable amount of albite, a sodium rich plagioclase feldspar mineral that is commonly present in felsic rocks, such as granite and components of gneiss (Deer et al. 1977). Lizardite, a serpentine mineral, was also identified in three of four samples and is associated with hydrothermal alteration of ultramafic rocks to serpentinite while hornblende, an amphibole, is a common component of mafic rocks such as amphibolite (Deer et al. 1977).

The mineralogical data reflect the rocks underlying the site. The upgradient rocks contain amphibole (hornblende) and clay (kaolinite) minerals, and lesser amounts of quartz. Rock samples from the downgradient assessment wells contain predominantly quartz, plagioclase, and clay minerals. As such, the mineralogical composition of the samples reflects compositional variability, including due to chemical weathering of underlying gneiss, schist and pegmatitic granite. The occurrence of beryllium and cobalt is likely associated with the on-site rocks and pegmatitic granite, which is consistent with regional data reported by Cocker (1996). The mineralogical analysis confirms the presence of soil and rock types in the aquifer at the Site known to host beryllium and cobalt.

- ***Beryllium and cobalt GWPS exceedances only occur where low pH groundwater is present, which is unrelated to the CCR porewater (circumneutral pH) and suggests aquifer materials are the source for elevated beryllium and cobalt.***

Beryllium and cobalt GWPS exceedances occur in wells where the pH is low [i.e., <5.0 standard units (S.U.)]. As indicated by the SEP results for beryllium, cobalt, aluminum, iron and manganese, beryllium and cobalt are adsorbed to a variety of sorbents, in particular iron and manganese hydroxides, under circumneutral conditions. As lower pH conditions develop, beryllium and cobalt may be released through desorption and/or the direct dissolution of those metal hydroxides (Smith 1999). As a result, dissolved beryllium and cobalt concentrations generally increase with decreasing groundwater pH, regardless of well location or proximity to AP-E, as illustrated in Figures 4 and 5 (GWPS exceedances shown in orange). Groundwater pH at downgradient wells is highly variable, and shows no relationship with AP-E, as wells with low pH (<5.0 S.U.) are localized and vary in proximity to AP-E.

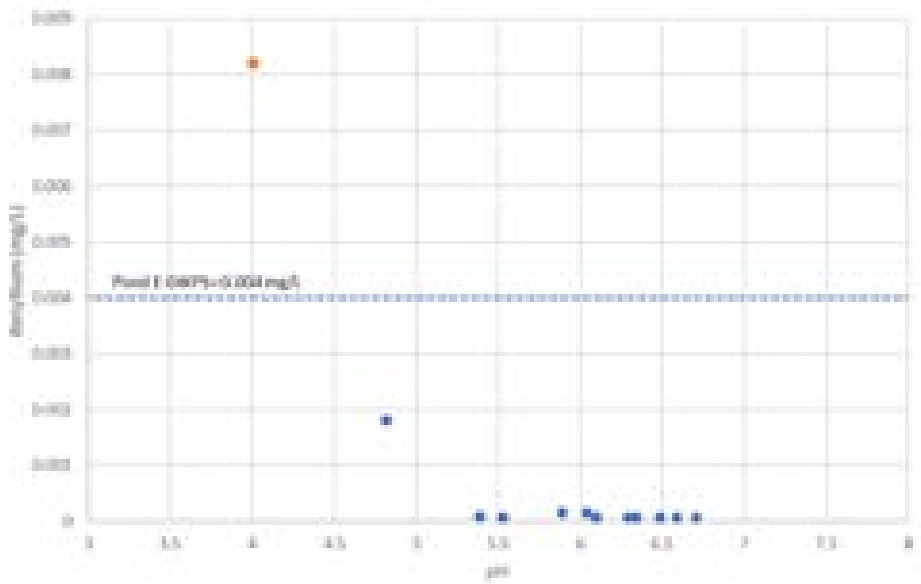


Figure 4: Beryllium concentrations versus pH in groundwater at Plant Branch

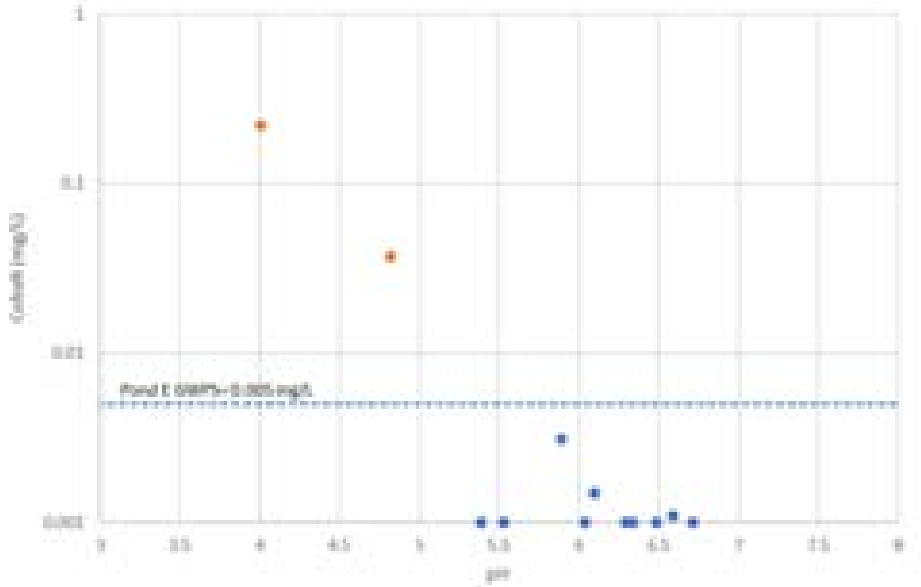


Figure 5: Cobalt concentrations versus pH in groundwater at Plant Branch

The dissolution of metal hydroxides acting as a sorbent can be further illustrated using a combination of site-specific data and geochemical modeling. Ferrihydrite, a ubiquitous iron mineral commonly controlling the mobility of trace metals such as beryllium and cobalt, becomes less stable with declining pH, releasing sorbed species into solution. Groundwater samples at AP-E demonstrate a clear relationship between pH and the modeled saturation index of ferrihydrite (Figure 6), with ferrihydrite becoming more prone to dissolution as the pH declines. Below a pH of approximately 6.0, ferrihydrite is no longer stable (SI < 0). Ferrihydrite, while not directly identified in the mineralogical results (likely due to its amorphous structure (Cornell and Schwertmann 2003; Zhao et al. 1994), is ubiquitous in the environment (Smith 1999). Ferrihydrite modeling results concur with the SEP results, where the iron content of the soil and rock samples for extraction Steps 3 and 4 (amorphous metals/metal hydroxides) ranges from approximately 0.2 to 2 weight percent. Results that ferrihydrite may be present at concentrations up to approximately 4 weight percent and the dissolution of ferrihydrite can potentially release up to 1.95 mg/kg of beryllium or 30.9 mg/kg cobalt from soils into groundwater (Appendix B).

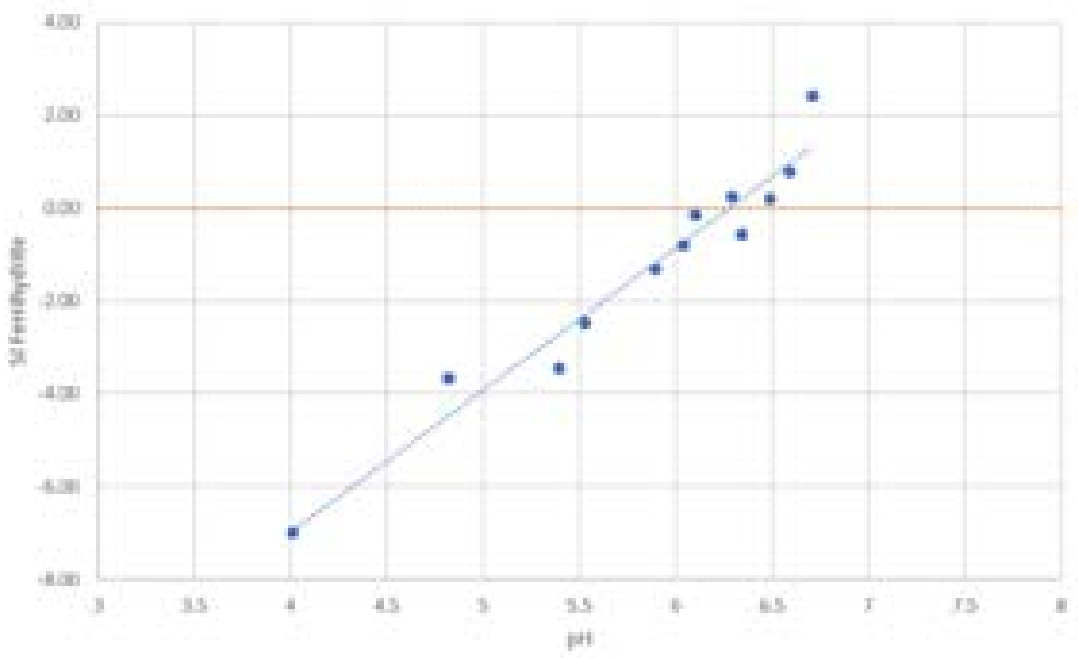


Figure 6: Modeled ferrihydrite saturation index versus pH at Plant Branch

Localized groundwater acidification likely provides the driving mechanism for the release of cobalt and beryllium to onsite groundwater. Sulfide minerals are present in native soils and rock at Plant Branch as identified by the SEP iron results; Appendix B). SEP results show that iron associated with the sulfide fraction (Step 6) ranges from 9,100 to 27,000 mg/kg, likely indicating an abundance of sulfide minerals at the Site. The oxidation of sulfide minerals can cause development of localized acidic conditions in groundwater where oxidizing conditions exist. Groundwater oxidation can be due to changes to groundwater flow, increased atmospheric interactions, or greater infiltration of precipitation (DeSimone et al. 2015). Dissolved oxygen (DO) in groundwater can range from 0 to 8 mg/L in the detection wells. The variable DO concentrations reflect groundwater flow conditions and provide a source for sulfide oxidation in the regolith-fractured bedrock aquifer at the Site. Porewater in AP-E is circumneutral and cannot cause the low pH conditions observed at downgradient wells.

Alternate Source Demonstration Summary

The evaluation presented in this document demonstrates that statistically significant levels of beryllium and cobalt identified in groundwater are due to the presence of naturally occurring beryllium and cobalt present in aquifer solids, and not caused by a release from AP-E.

The occurrence of low-pH groundwater is due to natural groundwater recharge and flow conditions, which facilitates the release and mobilization of beryllium and cobalt from natural sources in the underlying rock formations to groundwater. The following lines of evidence demonstrate the natural occurrence of beryllium and cobalt in site groundwater.

- Beryllium and cobalt are not detected above naturally occurring background concentrations observed in background groundwater monitoring wells and have limited to no mobility in porewater from AP-E.
- The presence of lithium in porewater along with the absence of lithium in groundwater and the elemental ratios of lithium and boron in downgradient wells suggest groundwater quality reflective of upgradient groundwater conditions at the Site rather than porewater.
- Beryllium and cobalt are naturally occurring and environmentally available in the soils and bedrock at the Site as identified by chemical analysis and sequential extraction of soil and rock samples.
- Soil/bedrock mineralogical results support the presence of naturally occurring beryllium and cobalt at Plant Branch.
- Beryllium and cobalt GWPS exceedances only occur where low pH groundwater is present, which is unrelated to the CCR porewater (circumneutral pH) and suggests aquifer materials are the source for elevated beryllium and cobalt concentrations.

5.0 CONCLUSION

This ASD has been prepared in accordance with §257.95(g)(3) and 391-3-4-.10(6) in response to SSLs of beryllium and cobalt in groundwater monitoring wells at AP-E. Review of analytical results indicate that the exceedances of beryllium and cobalt identified at AP-E are attributed to the presence of naturally occurring beryllium and cobalt in subsurface aquifer materials and are not the result of a release. Therefore, no further action (i.e., Assessment of Corrective Measures) is warranted.

6.0 REFERENCES

Cocker, M, 1996. Distribution of Selected Elements in Stream Sediments, Stream Hydrogeochemistry, and Geology of the Oconee River Basin, Georgia. Georgia Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey.

Cocker, M, 1998. Distribution of Selected Elements in Stream Sediments, Stream Hydrogeochemistry, Lithogeochemistry, and Geology of the Chattahoochee River Basin, Georgia, and Alabama. Georgia Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey.

Cornell, R. and Schwertmann, U., 2003. The iron oxides: structure, properties, reactions, occurrences and uses. John Wiley & Sons.

Deer, W.A., Howie, R.A. and Zussman, J., 1977. An Introduction to the Rock-Forming Minerals. Longman.

DeSimone, L.A., McMahon, P.B., and Rosen, M.R., 2014, The quality of our Nation's waters—Water quality in Principal Aquifers of the United States, 1991–2010: U.S. Geological Survey Circular 1360.

EPRI, 2012. Groundwater quality signatures for assessing potential impacts from coal combustion product leachate.

Golder 2017. Conceptual Site Model and Groundwater Monitoring Plan Recommendations, Georgia Power – Plant Branch, Putnam County, Georgia

Golder 2020. Geologic and Hydrogeologic Report, Georgia Power – Plant Branch, Putnam County, Georgia

Parkhurst, D. and Appelo, C., 2013. Description of input and examples for PHREEQC version 3: a computer program for speciation, batch-reaction, one-dimensional transport, and inverse geochemical calculations (No. 6-A43). US Geological Survey.

Smith, K. 1999. Metal sorption on mineral surfaces: an overview with examples relating to mineral deposits. The environmental geochemistry of mineral deposits, 6B, pp.161-182.

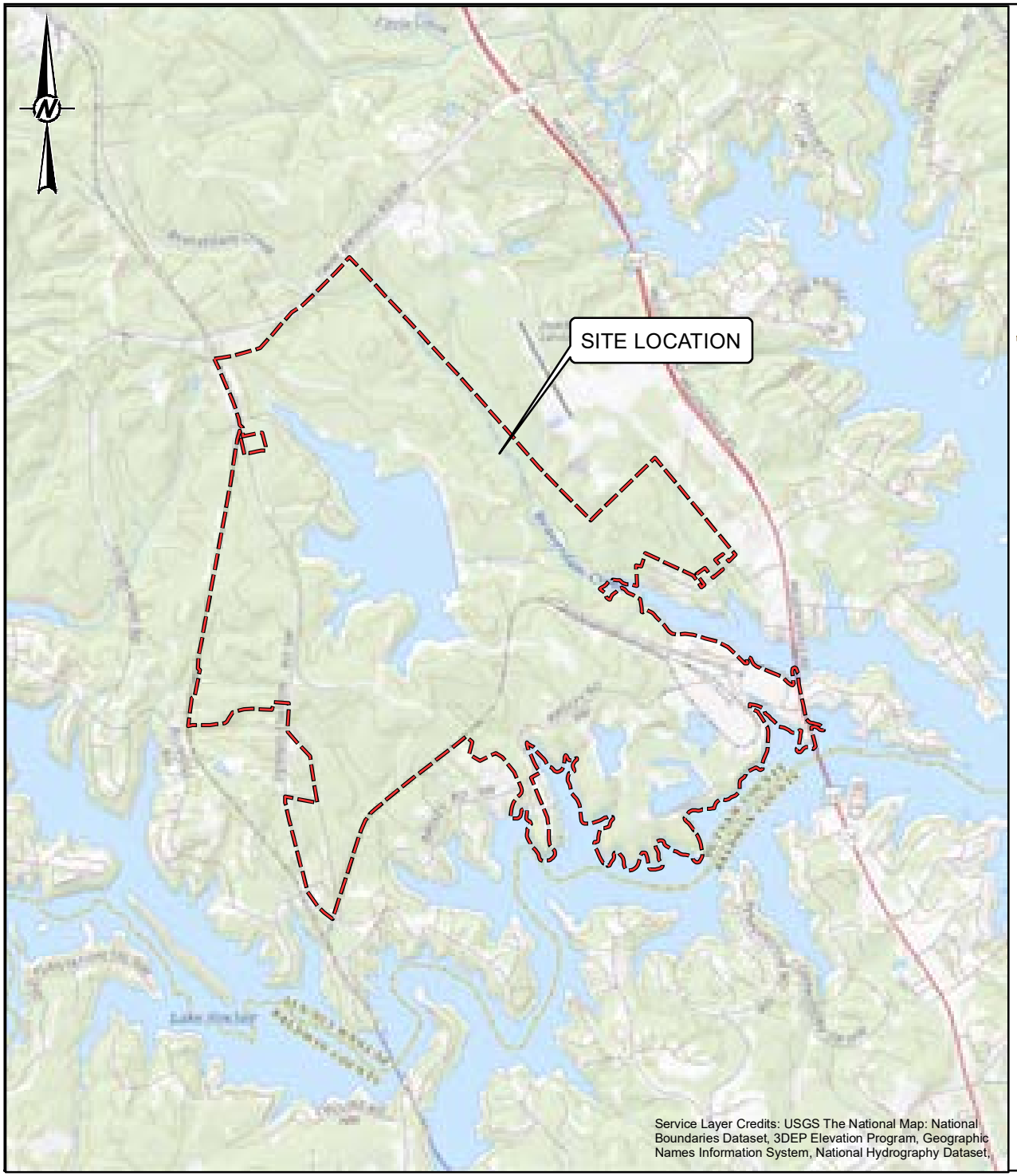
Smith, K. and Huyck, H., 1999. An overview of the abundance, relative mobility, bioavailability, and human toxicity of metals. The environmental geochemistry of mineral deposits, 6A, pp.29-70.

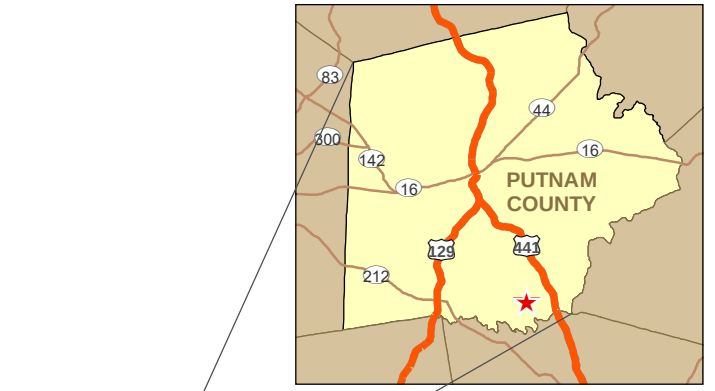
Tessier, A., Campbell, P.G. and Bisson, M., 1979. Sequential extraction procedure for the speciation of particulate trace metals. Analytical chemistry, 51(7), pp.844-851.

USEPA. Federal Register. Volume 80. No. 74. Friday April 17, Part II. Environmental Protection Agency. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule/ [EPA-HQ-RCRA-2009-0640; FRL-9919-44-OSWER] (2017).

Zhao, J., Huggins, F., Feng, Z. and Huffman, G., 1994. Ferrihydrite: Surface structure and its effects on phase transformation. Clays and Clay Minerals, 42(6), pp.737-746.

Path: H:\16x-Projects\1666254-SCS- Plant Branch\figures\A-\1666254A000-GIS.mxd





0 2000 4000
Feet

CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

PROJECT
GROUNDWATER MONITORING

TITLE
SITE LOCATION MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-03-15
PREPARED	DJC
DESIGN	DLP
REVIEW	
APPROVED	

PROJECT No.	CONTROL	Rev.	FIGURE
1666254	1666254A000-GIS.mxd	0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM: ANSI A

PZ-1S
PZ-1I
PZ-1D
BRGWA-6S
BRGWA-5S
BRGWA-5I
PZ-7S
PZ-14S
PZ-14I
PZ-52D
PZ-13S
BRGWC-33S
PZ-8S
PZ-15S
PZ-15I
BRGWC-34S
BRGWA-2S
BRGWA-2I
PZ-16S
PZ-16I
BRGWC-35S
POND E
BRGWC-17S
PZ-17I
BRGWC-36S
PZ-3S
PZ-3I
PZ-3D
BRGWC-37S
PZ-54
PB-1S
PB-2D
PZ-53D
PB-4S
BRGWA-12S
BRGWA-12I
BRGWC-38S
PB-4D
PZ-12D
PZ-10S
PB-7S
PZ-39
PB-10S
PB-10D
PZ-4S
PZ-4I
PZ-55
PZ-56
PB-8S
PB-8D
PZ-23I
BRGWA-23S
PZ-48
BRGWC-47
PZ-9S
PZ-11S
DBW-02
PB-13S
PB-13D
400
340
320

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LEGEND

- MONITORING WELL
- PIEZOMETER
- PROPERTY BOUNDARY
- APPROXIMATE ASH POND BOUNDARY
- APPROXIMATE SURFACE WATER LIMITS

REFERENCE

1. SERVICE LAYER CREDITS: ESRI, HERE, GARMIN, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

2. COORDINATE SYSTEM: NAD 1983 STATE PLAN GEORGIA WEST (U.S. FEET).

3. BORING/PIEZOMETER LOCATIONS AND PROPERTY LINE PROVIDED BY SOUTHERN COMPANY SERVICES AND METRO ENGINEERING

4. TOPOGRAPHIC CONTOURS PROVIDED BY GEORGIA POWER COMPANY (MARCH 2018).

KEY MAP

1500 750 0 1500
Feet

CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
SITE PLAN AND DETECTION MONITORING WELL LOCATION MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2020-05-21
PREPARED	BAS
DESIGN	BAS
REVIEW	
APPROVED	

PROJECT No. 166625418 | CONTROL 1666254V001-GIS.mxd | Rev. 0 | FIGURE **2**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET HAS BEEN MODIFIED FROM: ANSI B

1 in 0

Path: C:\Users\bstelele\Desktop\Branch Iso Maps\OtherGIS\Figure 1 - Site Plan and Well Location Map.mxd

APPENDIX A

X-ray Diffraction (XRD) Results

Summary of Rietveld Quantitative Analysis X-Ray Diffraction Results

Mineral/Compound	BRGWA - 2S (2) 40-43 Ft bgs JUN4501-01 (wt %)	BRGWA - 5S (2) 34-37 Ft bgs JUN4501-02 (wt %)	BRGWA - 6S (2) 44-48 Ft bgs JUN4501-03 (wt %)	PZ-52D 19-24 Ft bgs JUN4501-06 (wt %)	PZ-53D 32-35 Ft bgs JUN4501-07 (wt %)
Quartz	15.1	9.9	9.9	34.9	30.8
Hornblende	39.3	33.3	24.7	2.2	-
Andesine	4.8	-	-	-	-
Kaolinite	29.0	19.7	51.9	37.7	25.3
Gypsum	1.4	0.7	-	-	-
Lizardite	0.4	0.3	0.2	0.0	0.4
Microcline	3.6	2.0	5.6	10.8	17.1
Ilmenite	3.8	1.3	0.6	-	-
Montmorillonite	2.6	3.2	6.8	-	-
Stilpnomelane	-	11.1	-	-	-
Albite	-	18.2	-	4.0	5.7
Magnetite	-	0.3	0.3	0.5	0.1
Muscovite	-	-	-	3.8	3.5
Biotite	-	-	-	6.1	5.8
Illite-Montmorillonite	-	-	-	-	11.3
Chlorite	-	-	-	-	-
TOTAL	100	100	100	100	100

Zero values indicate that the mineral was included in the refinement, but the calculated concentration is below a measurable value.

Dashes indicate that the mineral was not identified by the analyst and not included in the refinement calculation for the sample.

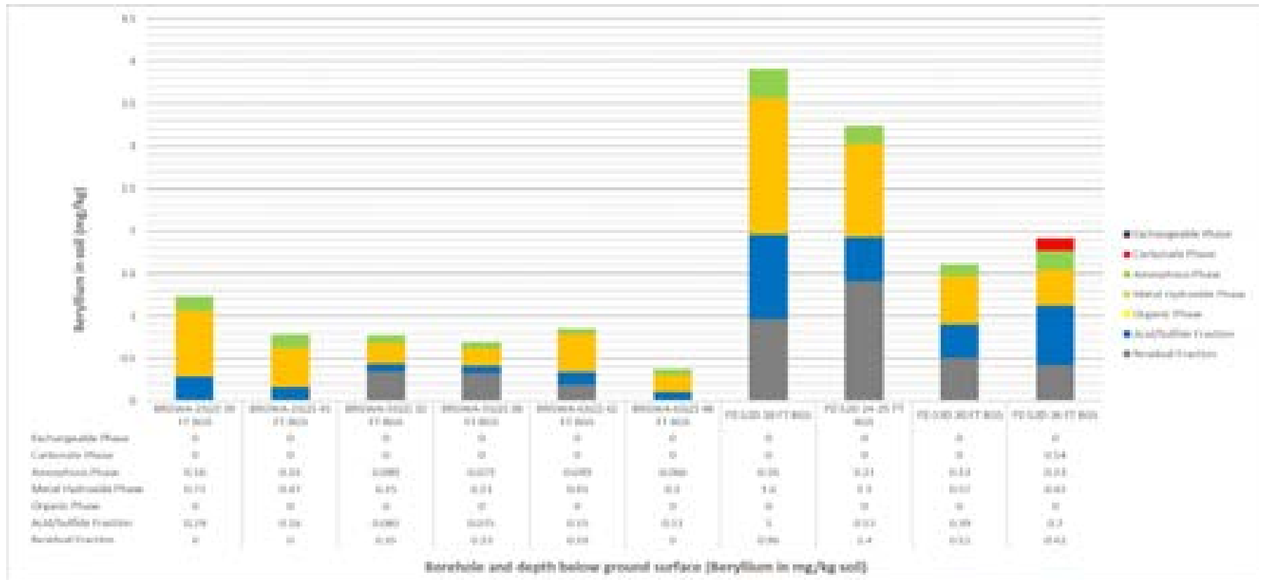
The weight percent quantities indicated have been normalized to a sum of 100%. The quantity of amorphous material has not been determined.

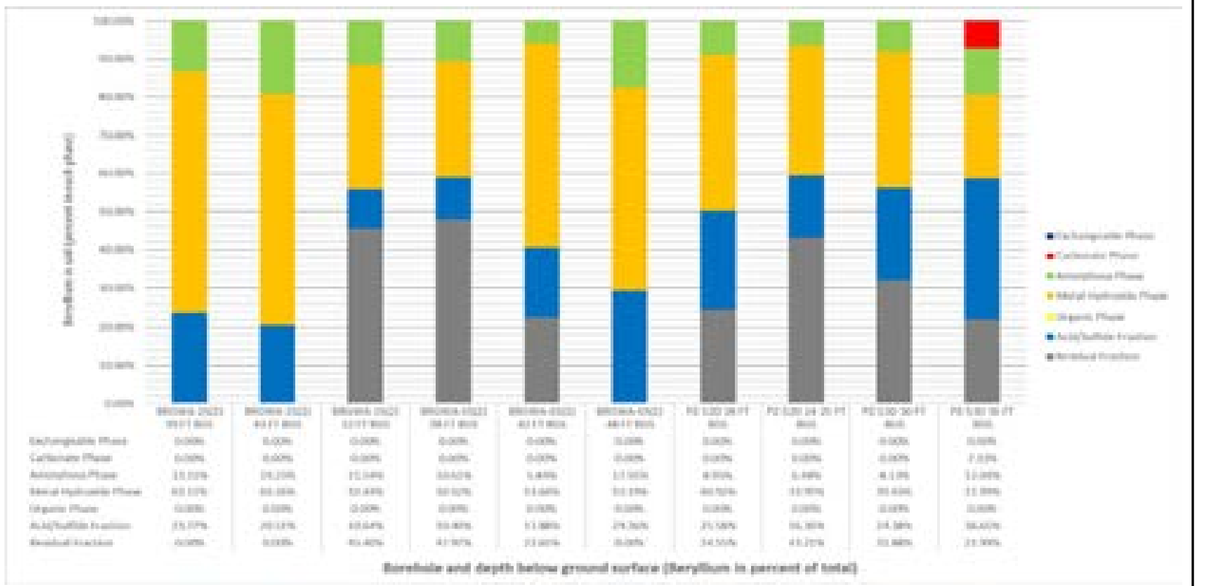
Mineral/Compound	Formula
Quartz	SiO_2
Hornblende	$(Ca,Na)_{2-3}(Mg,Fe,Al)_5Si_6(Si,Al)_2O_{22}(OH)_2$
Andesine	$Na_{0.6}Ca_{0.4}Al_{1.4}Si_{2.6}O_8$
Kaolinite	$Al_2Si_2O_5(OH)_4$
Gypsum	$CaSO_4 \cdot 2H_2O$
Lizardite	$Mg_3Si_2O_5(OH)_4$
Microcline	$KAlSi_3O_8$
Ilmenite	$FeTiO_3$
Montmorillonite	$(Na,Ca)_{0.3}(Al,Mg)_2Si_2O_{10}(OH)_2 \cdot 10H_2O$
Stilpnomelane	$K(Fe^{2+},Mg,Fe^{3+})_8(Si,Al)_{12}(O,OH)_{27} \cdot n(H_2O)$
Albite	$NaAlSi_3O_8$
Magnetite	Fe_3O_4
Muscovite	$KAl_2(AlSi_3O_{10})(OH)_2$
Biotite	$K(Mg,Fe)_3(AlSi_3O_{10})(OH)_2$
Illite-Montmorillonite	$KAl_4(Si,Al)_8O_{10}(OH)_4 \cdot 4H_2O$
Chlorite	$(Fe,(Mg,Mn)_5,Al)(Si_3Al)O_{10}(OH)_8$

APPENDIX B

Sequential Extraction Results

PATH: C:\Users\pjnolan\Documents\Project.docs\Branch\ASD | FILE NAME: 2020 REVISED Data Analysis.xlsx





CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

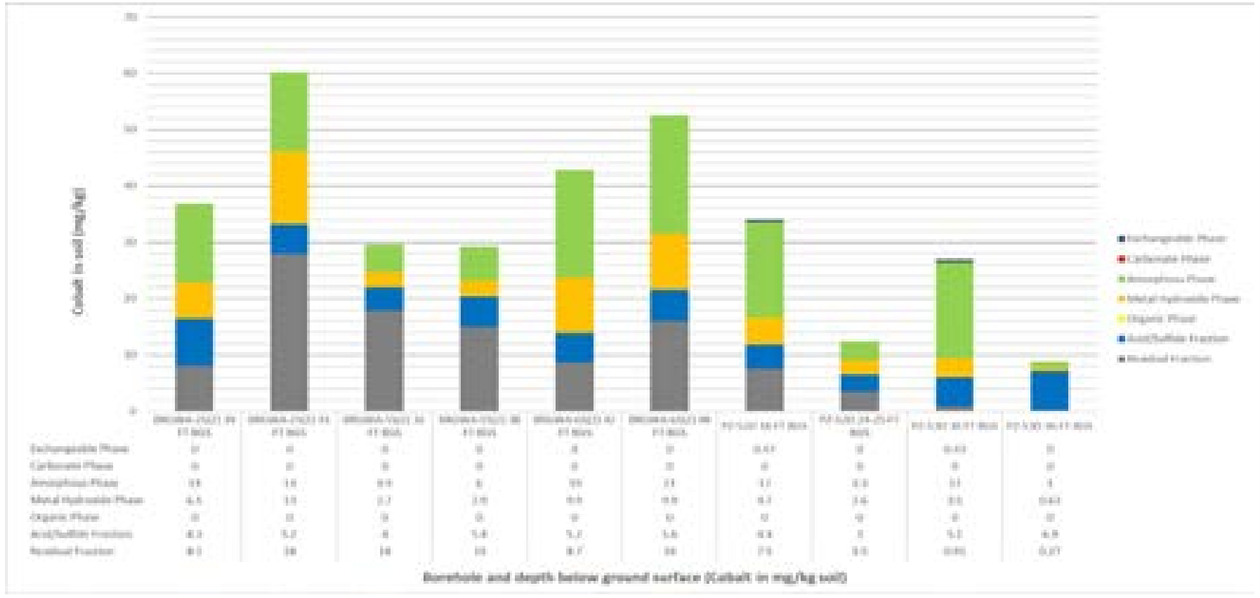
CONSULTANT
GOLDER

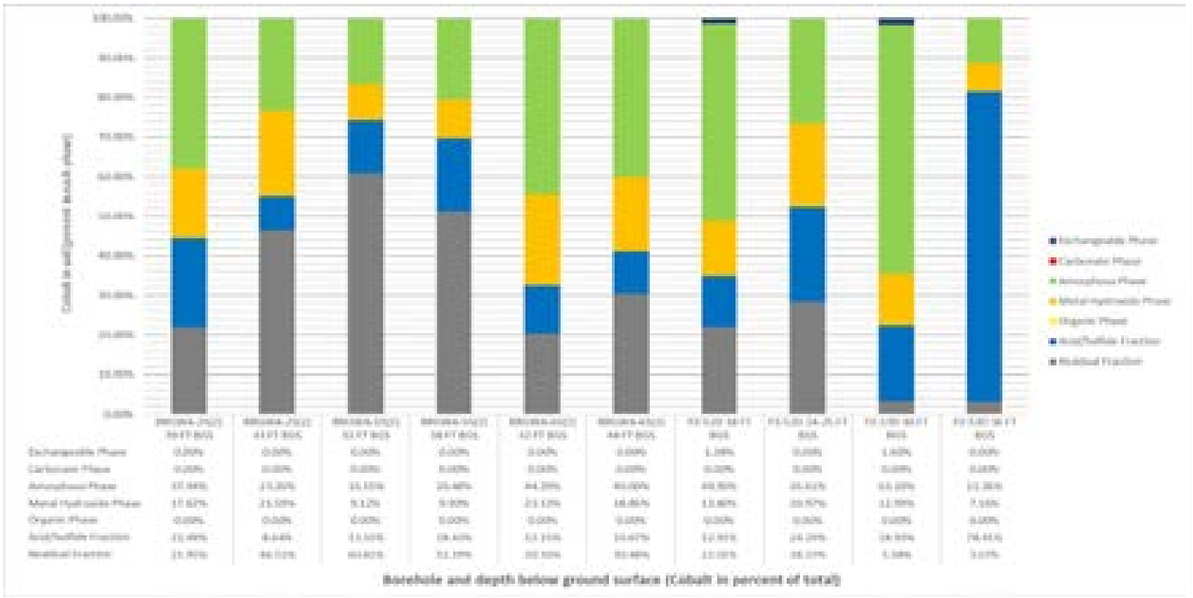
PROJECT
AP-E ALTERNATE SOURCE DEMONSTRATION

TITLE
Beryllium Sequential Extraction Results

PROJECT NO.	PHASE	REV.	FIGURE
16625418	100		

PATH: C:\Users\pjnolan\Documents\Project.docs\Branch\ASD | FILE NAME: 2020 REVISED Data Analysis.xlsx





CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

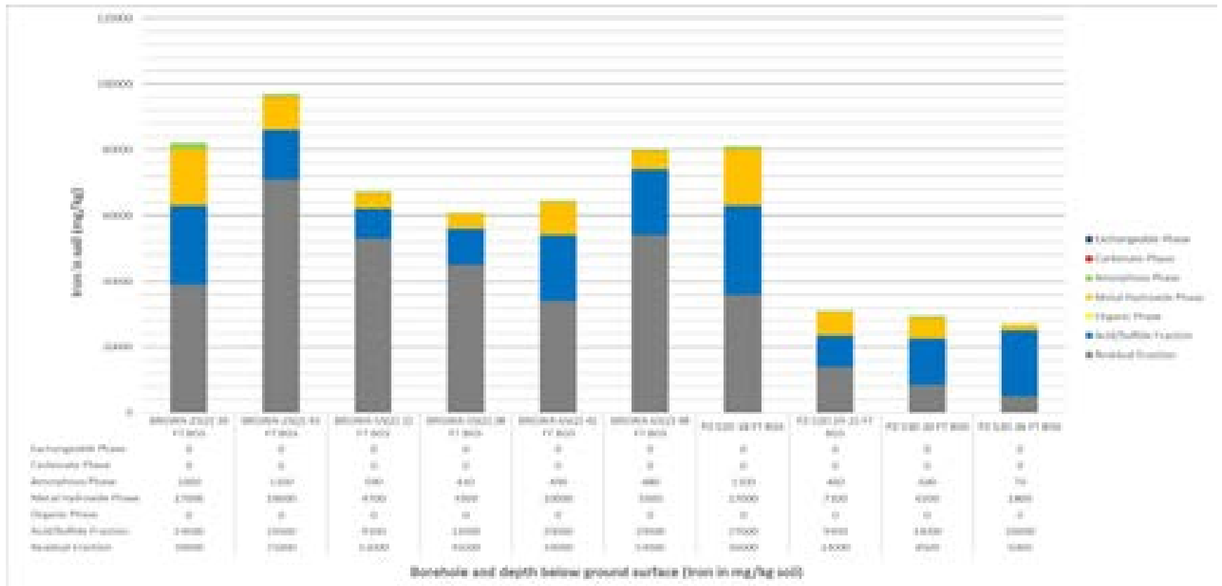
CONSULTANT
GOLDER

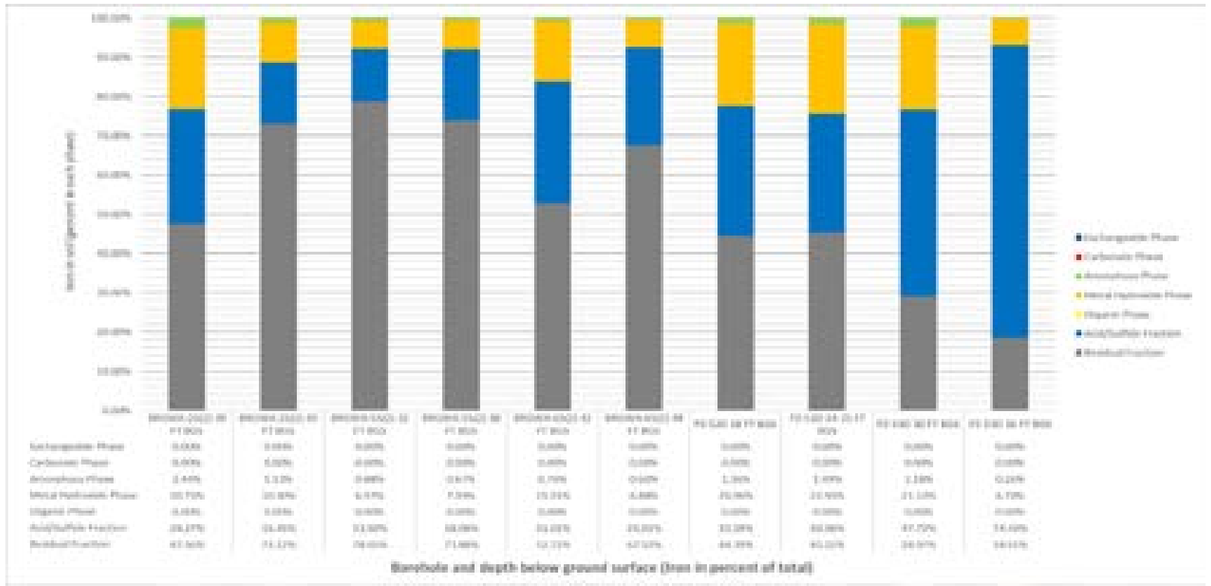
PROJECT
AP-E ALTERNATE SOURCE DEMONSTRATION

TITLE
Cobalt Sequential Extraction Results

PROJECT NO.	PHASE	REV.	FIGURE
16625418	100		

PATH: C:\Users\pjnolan\Documents\Project.docs\Branch\ASD | FILE NAME: 2020 REVISED Data Analysis.xlsx





CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

CONSULTANT
GOLDER

PROJECT
AP-E ALTERNATE SOURCE DEMONSTRATION

TITLE
Iron Sequential Extraction Results

PROJECT NO.	PHASE	REV.	FIGURE
16625418	100		

APPENDIX C

Groundwater and Porewater Results

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: Plant Branch E
Pace Project No.: 2624389

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch E
Pace Project No.: 2624389

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch E
Pace Project No.: 2624389

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624389001	**BRGWA-6S**	Water	10/15/19 08:45	10/16/19 12:30
2624389002	**BRGWA-5S**	Water	10/15/19 09:00	10/16/19 12:30
2624389003	**BRGWA-5I**	Water	10/15/19 10:20	10/16/19 12:30
2624389004	**BRGWA-2S**	Water	10/15/19 09:55	10/16/19 12:30
2624389005	**BRGWA-2I**	Water	10/15/19 11:17	10/16/19 12:30

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch E
Pace Project No.: 2624389

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624389001	**BRGWA-6S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624389002	**BRGWA-5S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624389003	**BRGWA-5I**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624389004	**BRGWA-2S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624389005	**BRGWA-2I**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch E
Pace Project No.: 2624389

Sample: BRGWA-6S **Lab ID: 2624389001** Collected: 10/15/19 08:45 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 19:43	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 19:43	7440-38-2	
Barium	**0.013**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 19:43	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 19:43	7440-41-7	
Boron	**0.010J**	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 19:43	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 19:43	7440-43-9	
Calcium	**3.5**	mg/L	0.10	0.011	1	10/20/19 16:44	10/22/19 19:43	7440-70-2	
Chromium	**0.014**	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 19:43	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 19:43	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 19:43	7439-92-1	
Lithium	**0.0024J**	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 19:43	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 19:43	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 19:43	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 19:43	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**63.0**	mg/L	10.0	10.0	1		10/18/19 10:45		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.4**	mg/L	1.0	0.024	1		10/21/19 19:30	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/21/19 19:30	16984-48-8	
Sulfate	**0.48J**	mg/L	1.0	0.017	1		10/21/19 19:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch E
Pace Project No.: 2624389

Sample: BRGWA-5S **Lab ID: 2624389002** Collected: 10/15/19 09:00 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 19:55	7440-36-0	
Arsenic	**0.00039J**	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 19:55	7440-38-2	B
Barium	**0.049**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 19:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 19:55	7440-41-7	
Boron	**0.0060J**	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 19:55	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 19:55	7440-43-9	
Calcium	**20.0**	mg/L	5.0	0.55	50	10/20/19 16:44	10/22/19 20:00	7440-70-2	
Chromium	**0.0055J**	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 19:55	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 19:55	7440-48-4	
Lead	**0.000079J**	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 19:55	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 19:55	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 19:55	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 19:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 19:55	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**144**	mg/L	10.0	10.0	1		10/18/19 10:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**3.7**	mg/L	1.0	0.024	1		10/21/19 19:52	16887-00-6	
Fluoride	**0.045J**	mg/L	0.30	0.029	1		10/21/19 19:52	16984-48-8	
Sulfate	**0.68J**	mg/L	1.0	0.017	1		10/21/19 19:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch E
Pace Project No.: 2624389

Sample: BRGWA-5I **Lab ID: 2624389003** Collected: 10/15/19 10:20 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 20:06	7440-36-0	
Arsenic	**0.00058J**	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 20:06	7440-38-2	B
Barium	**0.032**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 20:06	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 20:06	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 20:06	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 20:06	7440-43-9	
Calcium	**14.4**	mg/L	5.0	0.55	50	10/20/19 16:44	10/22/19 20:12	7440-70-2	
Chromium	**0.0047J**	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 20:06	7440-47-3	
Cobalt	**0.00083J**	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 20:06	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 20:06	7439-92-1	
Lithium	**0.0020J**	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 20:06	7439-93-2	
Molybdenum	**0.0035J**	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 20:06	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 20:06	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 20:06	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**175**	mg/L	10.0	10.0	1		10/18/19 10:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.2**	mg/L	1.0	0.024	1		10/21/19 20:14	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/21/19 20:14	16984-48-8	
Sulfate	**3.8**	mg/L	1.0	0.017	1		10/21/19 20:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch E
Pace Project No.: 2624389

Sample: BRGWA-2S **Lab ID: 2624389004** Collected: 10/15/19 09:55 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 20:18	7440-36-0	
Arsenic	**0.00063J**	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 20:18	7440-38-2	B
Barium	**0.0091J**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 20:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 20:18	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 20:18	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 20:18	7440-43-9	
Calcium	**3.7**	mg/L	0.10	0.011	1	10/20/19 16:44	10/22/19 20:18	7440-70-2	
Chromium	**0.0083J**	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 20:18	7440-47-3	
Cobalt	**0.00097J**	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 20:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 20:18	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 20:18	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 20:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 20:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 20:18	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**66.0**	mg/L	10.0	10.0	1		10/18/19 10:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**1.9**	mg/L	1.0	0.024	1		10/21/19 21:42	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/21/19 21:42	16984-48-8	
Sulfate	**0.47J**	mg/L	1.0	0.017	1		10/21/19 21:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch E
Pace Project No.: 2624389

Sample: BRGWA-2I **Lab ID: 2624389005** Collected: 10/15/19 11:17 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	**0.00047J**	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 21:09	7440-36-0	
Arsenic	**0.00080J**	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 21:09	7440-38-2	B
Barium	**0.013**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 21:09	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 21:09	7440-41-7	
Boron	**0.0067J**	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 21:09	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 21:09	7440-43-9	
Calcium	**15.1**	mg/L	5.0	0.55	50	10/20/19 16:44	10/22/19 21:15	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 21:09	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 21:09	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 21:09	7439-92-1	
Lithium	**0.028J**	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 21:09	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 21:09	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 21:09	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 21:09	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**140**	mg/L	10.0	10.0	1		10/18/19 10:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.2**	mg/L	1.0	0.024	1		10/21/19 22:04	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/21/19 22:04	16984-48-8	
Sulfate	**5.2**	mg/L	1.0	0.017	1		10/21/19 22:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch E
Pace Project No.: 2624389

QC Batch: 37136 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624389001, 2624389002, 2624389003, 2624389004, 2624389005

METHOD BLANK: 167849 Matrix: Water
Associated Lab Samples: 2624389001, 2624389002, 2624389003, 2624389004, 2624389005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/22/19 18:23	
Arsenic	mg/L	0.00059J	0.0050	0.00035	10/22/19 18:23	
Barium	mg/L	ND	0.010	0.00049	10/22/19 18:23	
Beryllium	mg/L	ND	0.0030	0.000074	10/22/19 18:23	
Boron	mg/L	ND	0.040	0.0049	10/22/19 18:23	
Cadmium	mg/L	ND	0.0025	0.00011	10/22/19 18:23	
Calcium	mg/L	ND	0.10	0.011	10/22/19 18:23	
Chromium	mg/L	ND	0.010	0.00039	10/22/19 18:23	
Cobalt	mg/L	ND	0.0050	0.00030	10/22/19 18:23	
Lead	mg/L	ND	0.0050	0.000046	10/22/19 18:23	
Lithium	mg/L	ND	0.030	0.00078	10/22/19 18:23	
Molybdenum	mg/L	ND	0.010	0.00095	10/22/19 18:23	
Selenium	mg/L	ND	0.010	0.0013	10/22/19 18:23	
Thallium	mg/L	ND	0.0010	0.000052	10/22/19 18:23	

LABORATORY CONTROL SAMPLE: 167850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.098	98	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	0.099	99	80-120	
Boron	mg/L	1	0.96	96	80-120	
Cadmium	mg/L	0.1	0.097	97	80-120	
Calcium	mg/L	1	0.96	96	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.095	95	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	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168476 168477

Parameter	Units	2624389004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.098	0.097	97	97	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch E
Pace Project No.: 2624389

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168476 168477

Parameter	Units	2624389004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.00063J	0.1	0.1	0.095	0.098	95	97	75-125	3	20	
Barium	mg/L	0.0091J	0.1	0.1	0.11	0.11	100	103	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.092	0.094	92	94	75-125	2	20	
Boron	mg/L	ND	1	1	0.89	0.94	88	93	75-125	6	20	
Cadmium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	0	20	
Calcium	mg/L	3.7	1	1	4.5	4.5	88	82	75-125	1	20	
Chromium	mg/L	0.0083J	0.1	0.1	0.11	0.11	97	100	75-125	2	20	
Cobalt	mg/L	0.00097J	0.1	0.1	0.096	0.096	95	95	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.095	0.098	95	98	75-125	3	20	
Lithium	mg/L	ND	0.1	0.1	0.092	0.094	91	93	75-125	3	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.093	0.10	93	100	75-125	7	20	
Thallium	mg/L	ND	0.1	0.1	0.095	0.098	95	98	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch E
Pace Project No.: 2624389

QC Batch: 37181 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624389001, 2624389002, 2624389003, 2624389004, 2624389005

LABORATORY CONTROL SAMPLE: 168196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	412	103	84-108	

SAMPLE DUPLICATE: 168197

Parameter	Units	2624388001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1520	1570	3	10	

SAMPLE DUPLICATE: 168198

Parameter	Units	2624392001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	89.0	86.0	3	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch E
Pace Project No.: 2624389

QC Batch: 37138 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624389001, 2624389002, 2624389003, 2624389004, 2624389005

METHOD BLANK: 167857 Matrix: Water
Associated Lab Samples: 2624389001, 2624389002, 2624389003, 2624389004, 2624389005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.024	10/21/19 16:11	
Fluoride	mg/L	ND	0.30	0.029	10/21/19 16:11	
Sulfate	mg/L	ND	1.0	0.017	10/21/19 16:11	

LABORATORY CONTROL SAMPLE: 167858

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.9	99	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	9.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 167859 167860

Parameter	Units	2624388001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	20.9	10	10	28.1	28.1	72	72	90-110	0	15	M1
Fluoride	mg/L	ND	10	10	10.0	10.1	100	101	90-110	1	15	

MATRIX SPIKE SAMPLE: 167861

Parameter	Units	2624389005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.2	10	12.2	100	90-110	
Fluoride	mg/L	ND	10	10.3	103	90-110	
Sulfate	mg/L	5.2	10	14.8	96	90-110	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch E
Pace Project No.: 2624389

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch E
Pace Project No.: 2624389

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624389001	**BRGWA-6S**	EPA 3005A	37136	EPA 6020B	37255
2624389002	**BRGWA-5S**	EPA 3005A	37136	EPA 6020B	37255
2624389003	**BRGWA-5I**	EPA 3005A	37136	EPA 6020B	37255
2624389004	**BRGWA-2S**	EPA 3005A	37136	EPA 6020B	37255
2624389005	**BRGWA-2I**	EPA 3005A	37136	EPA 6020B	37255
2624389001	**BRGWA-6S**	SM 2540C	37181		
2624389002	**BRGWA-5S**	SM 2540C	37181		
2624389003	**BRGWA-5I**	SM 2540C	37181		
2624389004	**BRGWA-2S**	SM 2540C	37181		
2624389005	**BRGWA-2I**	SM 2540C	37181		
2624389001	**BRGWA-6S**	EPA 300.0	37138		
2624389002	**BRGWA-5S**	EPA 300.0	37138		
2624389003	**BRGWA-5I**	EPA 300.0	37138		
2624389004	**BRGWA-2S**	EPA 300.0	37138		
2624389005	**BRGWA-2I**	EPA 300.0	37138		

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

WO#: 2624389

2624389

ALL USE ONLY

Customer Sample ID	Matrix *	Comp / Grab	Collected or Composite Start		Ship Date	Analysis Test	Lab Sample ID
			Date	Time			
BRGWA-01	GW	G	10/13/2015	0845			
BRGWA-02	GW	G	10/13/2015	0900			
BRGWA-03	GW	G	10/13/2015	1020			
BRGWA-04	GW	G	10/13/2015	0955			
BRGWA-05	GW	G	10/13/2015	1127			

Matrix Codes: GW = Groundwater, WW = Wastewater, DW = Drinking Water, SL = Sludge, OL = Oil, WP = Wipe, AR = Air, TS = Tissue, SW = Surface Water, SO = Soil, Other

Comp / Grab: G = Grab, C = Composite

Relinquished by / Company: Brent Golden — Date/Time: 10-13-2015

Received by / Company: Pace — Date/Time: 10/13/15

Relinquished by / Company: — Date/Time:

Received by / Company: — Date/Time:

Relinquished by / Company: — Date/Time:

Received by / Company Signature: — Date/Time:

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

November 14, 2019

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

RE: Project: Plant Branch E
Pace Project No.: 2624391

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 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: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch E
Pace Project No.: 2624391

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch E
Pace Project No.: 2624391

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624391001	**BRGWA-6S**	Water	10/15/19 08:45	10/16/19 12:30
2624391002	**BRGWA-5S**	Water	10/15/19 09:00	10/16/19 12:30
2624391003	**BRGWA-5I**	Water	10/15/19 10:20	10/16/19 12:30
2624391004	**BRGWA-2S**	Water	10/15/19 09:55	10/16/19 12:30
2624391005	**BRGWA-2I**	Water	10/15/19 11:17	10/16/19 12:30

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch E
Pace Project No.: 2624391

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624391001	**BRGWA-6S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624391002	**BRGWA-5S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624391003	**BRGWA-5I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624391004	**BRGWA-2S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624391005	**BRGWA-2I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

Sample: BRGWA-6S **Lab ID: 2624391001** Collected: 10/15/19 08:45 Received: 10/16/19 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.402 ± 0.284 (0.490) C:95% T:NA**	pCi/L	11/07/19 07:47	13982-63-3	
Radium-228	EPA 9320	**-0.226 ± 0.787 (1.88) C:63% T:84%**	pCi/L	11/07/19 20:09	15262-20-1	
Total Radium	Total Radium Calculation	**0.402 ± 1.07 (2.37)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

Sample: BRGWA-5S **Lab ID: 2624391002** Collected: 10/15/19 09:00 Received: 10/16/19 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.467 ± 0.301 (0.486) C:92% T:NA**	pCi/L	11/07/19 07:47	13982-63-3	
Radium-228	EPA 9320	**-0.362 ± 0.637 (1.56) C:68% T:90%**	pCi/L	11/07/19 20:09	15262-20-1	
Total Radium	Total Radium Calculation	**0.467 ± 0.938 (2.05)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

Sample: BRGWA-5I **Lab ID: 2624391003** Collected: 10/15/19 10:20 Received: 10/16/19 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.651 ± 0.319 (0.390) C:93% T:NA**	pCi/L	11/07/19 07:47	13982-63-3	
Radium-228	EPA 9320	**0.0627 ± 1.06 (2.41) C:62% T:81%**	pCi/L	11/07/19 20:09	15262-20-1	
Total Radium	Total Radium Calculation	**0.714 ± 1.38 (2.80)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

Sample: BRGWA-2S **Lab ID: 2624391004** Collected: 10/15/19 09:55 Received: 10/16/19 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.212 ± 0.208 (0.385) C:90% T:NA**	pCi/L	11/07/19 07:47	13982-63-3	
Radium-228	EPA 9320	**0.595 ± 0.995 (2.17) C:64% T:69%**	pCi/L	11/07/19 20:09	15262-20-1	
Total Radium	Total Radium Calculation	**0.807 ± 1.20 (2.56)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

Sample: BRGWA-2I **Lab ID: 2624391005** Collected: 10/15/19 11:17 Received: 10/16/19 12:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.184 ± 0.199 (0.381) C:94% T:NA**	pCi/L	11/07/19 07:16	13982-63-3	
Radium-228	EPA 9320	**0.831 ± 0.868 (1.80) C:64% T:76%**	pCi/L	11/07/19 20:10	15262-20-1	
Total Radium	Total Radium Calculation	**1.02 ± 1.07 (2.18)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

QC Batch: 368367 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2624391001, 2624391002, 2624391003, 2624391004, 2624391005

METHOD BLANK: 1787254 Matrix: Water
Associated Lab Samples: 2624391001, 2624391002, 2624391003, 2624391004, 2624391005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.416 ± 0.262 (0.396) C:98% T:NA	pCi/L	11/07/19 07:47	

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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch E
Pace Project No.: 2624391

QC Batch: 368368 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2624391001, 2624391002, 2624391003, 2624391004, 2624391005

METHOD BLANK: 1787255 Matrix: Water
Associated Lab Samples: 2624391001, 2624391002, 2624391003, 2624391004, 2624391005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.536 ± 0.405 (0.790) C:74% T:76%	pCi/L	11/07/19 14:59	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch E
Pace Project No.: 2624391

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch E
Pace Project No.: 2624391

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624391001	**BRGWA-6S**	EPA 9315	368367		
2624391002	**BRGWA-5S**	EPA 9315	368367		
2624391003	**BRGWA-5I**	EPA 9315	368367		
2624391004	**BRGWA-2S**	EPA 9315	368367		
2624391005	**BRGWA-2I**	EPA 9315	368367		
2624391001	**BRGWA-6S**	EPA 9320	368368		
2624391002	**BRGWA-5S**	EPA 9320	368368		
2624391003	**BRGWA-5I**	EPA 9320	368368		
2624391004	**BRGWA-2S**	EPA 9320	368368		
2624391005	**BRGWA-2I**	EPA 9320	368368		
2624391001	**BRGWA-6S**	Total Radium Calculation	370511		
2624391002	**BRGWA-5S**	Total Radium Calculation	370511		
2624391003	**BRGWA-5I**	Total Radium Calculation	370511		
2624391004	**BRGWA-2S**	Total Radium Calculation	370512		
2624391005	**BRGWA-2I**	Total Radium Calculation	370512		

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

WO#: 2624391

RUSH-CHRT

Sample ID	Matrix	Sample Code	Collected (or Composite Start) Date	Time	Composite End Date	Time	Residual Chlorine (Y/N)	Cresolate Hydrolase, Sulfide, H2S	Hydrogen Sulfide 2746 276					
BAGWA-01	GW	G	10/15/2025	1545				L	2					
BAGWA-02	GW	G	10/15/2025	1400				L	2					
BAGWA-03	GW	G	10/15/2025	1240				L	2					
BAGWA-04	GW	G	10/15/2025	1355				L	2					
BAGWA-05	GW	G	10/15/2025	1117				L	2					

Relinquished by Company Signature: [signature] Date/Time: 10-16-25 1615

Received by Company Signature: [signature] Date/Time: 10/16/25 1615

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2624395

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2624395

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2624395

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624395001	**BRGWA-6S**	Water	10/15/19 08:45	10/16/19 12:30
2624395002	**BRGWA-5S**	Water	10/15/19 09:00	10/16/19 12:30
2624395003	**BRGWA-5I**	Water	10/15/19 10:20	10/16/19 12:30
2624395004	**BRGWA-2S**	Water	10/15/19 09:55	10/16/19 12:30
2624395005	**BRGWA-2I**	Water	10/15/19 11:17	10/16/19 12:30
2624395006	**BRGWA-12S**	Water	10/15/19 12:30	10/16/19 12:30
2624395007	**BRGWA-12I**	Water	10/15/19 15:45	10/16/19 12:30
2624395008	**BRGWA-23S**	Water	10/15/19 13:42	10/16/19 12:30
2624395009	**FB-1**	Water	10/15/19 14:10	10/16/19 12:30
2624395010	**BRGWC-25I**	Water	10/15/19 15:08	10/16/19 12:30

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624395

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624395001	**BRGWA-6S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395002	**BRGWA-5S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395003	**BRGWA-5I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395004	**BRGWA-2S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395005	**BRGWA-2I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395006	**BRGWA-12S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395007	**BRGWA-12I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395008	**BRGWA-23S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624395

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624395009	**FB-1**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		EPA 300.0	MWB	1
2624395010	**BRGWC-25I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	7
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-6S **Lab ID: 2624395001** Collected: 10/15/19 08:45 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.052J**	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 01:25	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 01:25	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 01:25	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 01:25	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 01:25	7440-48-4	
Iron	**0.045**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 01:25	7439-89-6	
Magnesium	**3.6**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 01:25	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 01:25	7439-96-5	
Potassium	**0.67**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 01:25	7440-09-7	
Sodium	**2.2**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 01:25	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:06	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:06	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:06	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:06	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:06	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:06	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:06	7439-96-5	
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.13**	mg/L	0.020	0.020	1		10/24/19 16:44		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.62**	mg/L	0.050	0.0050	1		10/18/19 21:52	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-5S **Lab ID: 2624395002** Collected: 10/15/19 09:00 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 01:44	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 01:44	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 01:44	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 01:44	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 01:44	7440-48-4	
Iron	**0.016J**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 01:44	7439-89-6	
Magnesium	**9.6**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 01:44	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 01:44	7439-96-5	
Potassium	**1.3**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 01:44	7440-09-7	
Sodium	**4.6**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 01:44	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:25	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:25	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:25	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:25	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:25	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:25	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:25	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**92.0**	mg/L	20.0	20.0	1		10/21/19 18:34		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:34		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.13**	mg/L	0.020	0.020	1		10/24/19 16:45		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.18**	mg/L	0.050	0.0050	1		10/18/19 22:55	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-5I **Lab ID: 2624395003** Collected: 10/15/19 10:20 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 01:49	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 01:49	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 01:49	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 01:49	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 01:49	7440-48-4	
Iron	**0.024J**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 01:49	7439-89-6	
Magnesium	**9.8**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 01:49	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 01:49	7439-96-5	
Potassium	**1.4**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 01:49	7440-09-7	
Sodium	**4.7**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 01:49	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:30	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:30	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:30	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:30	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:30	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:30	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:30	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**74.0**	mg/L	20.0	20.0	1		10/21/19 18:38		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:38		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.062**	mg/L	0.020	0.020	1		10/24/19 16:46		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.22**	mg/L	0.050	0.0050	1		10/18/19 23:15	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-2S **Lab ID: 2624395004** Collected: 10/15/19 09:55 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:03	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:03	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:03	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:03	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:03	7440-48-4	
Iron	**0.055**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:03	7439-89-6	
Magnesium	**3.9**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:03	7439-95-4	
Manganese	**0.086**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:03	7439-96-5	
Potassium	**0.41**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:03	7440-09-7	
Sodium	**2.9**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:03	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:35	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:35	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:35	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:35	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:35	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:35	7439-89-6	
Manganese, Dissolved	**0.074**	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:35	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**26.0**	mg/L	20.0	20.0	1		10/21/19 18:42		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:42		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/24/19 16:47		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.23**	mg/L	0.050	0.0050	1		10/18/19 23:36	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-2I **Lab ID: 2624395005** Collected: 10/15/19 11:17 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:08	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:08	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:08	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:08	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:08	7440-48-4	
Iron	**0.65**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:08	7439-89-6	
Magnesium	**6.4**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:08	7439-95-4	
Manganese	**0.090**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:08	7439-96-5	
Potassium	**7.0**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:08	7440-09-7	
Sodium	**7.6**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:08	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:40	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:40	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:40	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:40	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:40	7440-48-4	
Iron, Dissolved	**0.028J**	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:40	7439-89-6	
Manganese, Dissolved	**0.073**	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:40	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**88.0**	mg/L	20.0	20.0	1		10/21/19 18:46		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:46		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/24/19 16:47		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.12**	mg/L	0.050	0.0050	1		10/18/19 23:57	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-12S **Lab ID: 2624395006** Collected: 10/15/19 12:30 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:13	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:13	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:13	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:13	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:13	7440-48-4	
Iron	**0.019J**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:13	7439-89-6	
Magnesium	**3.5**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:13	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:13	7439-96-5	
Potassium	**2.7**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:13	7440-09-7	
Sodium	**5.6**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:13	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 03:45	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 03:45	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 03:45	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 03:45	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 03:45	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 03:45	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 03:45	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**35.0**	mg/L	20.0	20.0	1		10/21/19 18:50		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:50		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/24/19 16:48		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**1.4**	mg/L	0.050	0.0050	1		10/19/19 00:17	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-12I **Lab ID: 2624395007** Collected: 10/15/19 15:45 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:18	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:18	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:18	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:18	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:18	7440-48-4	
Iron	**0.029J**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:18	7439-89-6	
Magnesium	**4.1**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:18	7439-95-4	
Manganese	**0.017J**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:18	7439-96-5	
Potassium	**3.2**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:18	7440-09-7	
Sodium	**10.3**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:18	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 21:45	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 21:45	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 21:45	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 21:45	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 21:45	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 21:45	7439-89-6	
Manganese, Dissolved	**0.016J**	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 21:45	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**84.0**	mg/L	20.0	20.0	1		10/22/19 15:53		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/22/19 15:53		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.078**	mg/L	0.020	0.020	1		10/24/19 16:49		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.47**	mg/L	0.050	0.0050	1		10/19/19 00:38	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWA-23S **Lab ID: 2624395008** Collected: 10/15/19 13:42 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:23	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:23	7440-41-7	
Boron	**0.023J**	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:23	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:23	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:23	7440-48-4	
Iron	**0.079**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:23	7439-89-6	
Magnesium	**4.9**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:23	7439-95-4	
Manganese	**0.068**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:23	7439-96-5	
Potassium	**3.6**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:23	7440-09-7	
Sodium	**7.7**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:23	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 21:50	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 21:50	7440-41-7	
Boron, Dissolved	**0.032J**	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 21:50	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 21:50	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 21:50	7440-48-4	
Iron, Dissolved	**0.030J**	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 21:50	7439-89-6	
Manganese, Dissolved	**0.31**	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 21:50	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**29.0**	mg/L	20.0	20.0	1		10/21/19 18:54		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 18:54		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/24/19 16:50		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.12**	mg/L	0.050	0.0050	1		10/19/19 00:59	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: FB-1 **Lab ID: 2624395009** Collected: 10/15/19 14:10 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.057J**	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:27	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:27	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:27	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:27	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:27	7440-48-4	
Iron	**0.47**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:27	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:27	7439-95-4	
Manganese	**0.018J**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:27	7439-96-5	
Potassium	ND	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:27	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:27	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 22:04	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 22:04	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	10/22/19 12:45	10/24/19 22:04	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 22:04	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 22:04	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 22:04	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 22:04	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/22/19 16:00		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/22/19 16:00		
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.011J**	mg/L	0.050	0.0050	1		10/19/19 02:22	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624395

Sample: BRGWC-25I **Lab ID: 2624395010** Collected: 10/15/19 15:08 Received: 10/16/19 12:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.033J**	mg/L	0.10	0.032	1	10/21/19 13:13	10/24/19 02:32	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/21/19 13:13	10/24/19 02:32	7440-41-7	
Boron	**1.4**	mg/L	0.040	0.017	1	10/21/19 13:13	10/24/19 02:32	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/21/19 13:13	10/24/19 02:32	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/21/19 13:13	10/24/19 02:32	7440-48-4	
Iron	**0.43**	mg/L	0.040	0.015	1	10/21/19 13:13	10/24/19 02:32	7439-89-6	
Magnesium	**21.9**	mg/L	0.050	0.011	1	10/21/19 13:13	10/24/19 02:32	7439-95-4	
Manganese	**1.9**	mg/L	0.040	0.0061	1	10/21/19 13:13	10/24/19 02:32	7439-96-5	
Potassium	**5.2**	mg/L	0.20	0.026	1	10/21/19 13:13	10/24/19 02:32	7440-09-7	
Sodium	**20.7**	mg/L	1.0	0.19	1	10/21/19 13:13	10/24/19 02:32	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	10/22/19 12:45	10/24/19 22:09	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	10/22/19 12:45	10/24/19 22:09	7440-41-7	
Boron, Dissolved	**1.2**	mg/L	0.040	0.017	1	10/22/19 12:45	10/25/19 18:22	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	10/22/19 12:45	10/24/19 22:09	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	10/22/19 12:45	10/24/19 22:09	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	10/22/19 12:45	10/24/19 22:09	7439-89-6	
Manganese, Dissolved	**1.9**	mg/L	0.040	0.0061	1	10/22/19 12:45	10/24/19 22:09	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**52.0**	mg/L	20.0	20.0	1		10/21/19 19:02		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/21/19 19:02		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/24/19 16:51		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.016J**	mg/L	0.050	0.0050	1		10/30/19 02:12	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

QC Batch: 37228 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009, 2624395010

METHOD BLANK: 168486 Matrix: Water
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009, 2624395010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	mg/L	ND	0.10	0.032	10/24/19 01:15	
Beryllium	mg/L	ND	0.010	0.0026	10/24/19 01:15	
Boron	mg/L	ND	0.040	0.017	10/24/19 01:15	
Cadmium	mg/L	ND	0.010	0.00090	10/24/19 01:15	
Cobalt	mg/L	ND	0.040	0.0052	10/24/19 01:15	
Iron	mg/L	ND	0.040	0.015	10/24/19 01:15	
Magnesium	mg/L	ND	0.050	0.011	10/24/19 01:15	
Manganese	mg/L	ND	0.040	0.0061	10/24/19 01:15	
Potassium	mg/L	ND	0.20	0.026	10/24/19 01:15	
Sodium	mg/L	ND	1.0	0.19	10/24/19 01:15	

LABORATORY CONTROL SAMPLE: 168487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/L	1	1.0	104	80-120	
Beryllium	mg/L	1	1.0	104	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	1	1.0	104	80-120	
Cobalt	mg/L	1	1.0	103	80-120	
Iron	mg/L	1	1.1	105	80-120	
Magnesium	mg/L	1	1.0	104	80-120	
Manganese	mg/L	1	1.0	104	80-120	
Potassium	mg/L	1	1.0	104	80-120	
Sodium	mg/L	1	1.0	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168488 168489

Parameter	Units	2624395001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/L	ND	1	1	1.1	1.1	107	106	75-125	1	20	
Beryllium	mg/L	ND	1	1	1.1	1.1	106	106	75-125	0	20	
Boron	mg/L	ND	1	1	1.1	1.1	105	107	75-125	1	20	
Cadmium	mg/L	ND	1	1	1.0	1.1	105	105	75-125	1	20	
Cobalt	mg/L	ND	1	1	1.0	1.1	105	105	75-125	0	20	
Iron	mg/L	ND	1	1	1.1	1.1	106	106	75-125	0	20	
Magnesium	mg/L	3.6	1	1	4.6	4.7	101	108	75-125	1	20	
Manganese	mg/L	ND	1	1	1.1	1.1	106	105	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168488 168489

Parameter	Units	2624395001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Potassium	mg/L	0.67	1	1	1.7	1.7	101	102	75-125	1	20	
Sodium	mg/L	2.2	1	1	3.2	3.2	98	102	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

QC Batch: 37281 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009, 2624395010

METHOD BLANK: 168657 Matrix: Water
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009, 2624395010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	mg/L	ND	0.10	0.032	10/24/19 02:47	
Beryllium, Dissolved	mg/L	ND	0.010	0.0026	10/24/19 02:47	
Boron, Dissolved	mg/L	ND	0.040	0.017	10/24/19 02:47	
Cadmium, Dissolved	mg/L	ND	0.010	0.00090	10/24/19 02:47	
Cobalt, Dissolved	mg/L	ND	0.040	0.0052	10/24/19 02:47	
Iron, Dissolved	mg/L	ND	0.040	0.015	10/24/19 02:47	
Manganese, Dissolved	mg/L	ND	0.040	0.0061	10/24/19 02:47	

LABORATORY CONTROL SAMPLE: 168658

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	mg/L	1	0.98	98	80-120	
Beryllium, Dissolved	mg/L	1	0.99	99	80-120	
Boron, Dissolved	mg/L	1	0.98	98	80-120	
Cadmium, Dissolved	mg/L	1	0.98	98	80-120	
Cobalt, Dissolved	mg/L	1	0.98	98	80-120	
Iron, Dissolved	mg/L	1	0.99	99	80-120	
Manganese, Dissolved	mg/L	1	0.99	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168659 168660

Parameter	Units	2624395001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	mg/L	ND	1	1	1.0	0.97	101	97	75-125	4	20	
Beryllium, Dissolved	mg/L	ND	1	1	1.0	0.99	102	99	75-125	3	20	
Boron, Dissolved	mg/L	ND	1	1	1.0	1.0	102	99	75-125	3	20	
Cadmium, Dissolved	mg/L	ND	1	1	1.0	0.97	101	97	75-125	4	20	
Cobalt, Dissolved	mg/L	ND	1	1	1.0	0.97	101	97	75-125	3	20	
Iron, Dissolved	mg/L	ND	1	1	1.0	0.98	100	97	75-125	3	20	
Manganese, Dissolved	mg/L	ND	1	1	1.0	0.99	102	99	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

QC Batch: 37498 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395010

METHOD BLANK: 169830 Matrix: Water
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	10/24/19 16:43	

LABORATORY CONTROL SAMPLE: 169831

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.56	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169832 169833

Parameter	Units	2624576006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.57	0.56	113	112	80-120	1	10	H1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

QC Batch: 37219 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009

METHOD BLANK: 168456 Matrix: Water
Associated Lab Samples: 2624395001, 2624395002, 2624395003, 2624395004, 2624395005, 2624395006, 2624395007, 2624395008, 2624395009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/18/19 21:11	

LABORATORY CONTROL SAMPLE: 168457

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168458 168459

Parameter	Units	2624395001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.62	10	10	10.9	11.0	103	104	90-110	1	15	H1

MATRIX SPIKE SAMPLE: 168460

Parameter	Units	2624395002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	0.18	10	10.7	105	90-110	H1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624395

QC Batch: 37579 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624395010

METHOD BLANK: 170492 Matrix: Water
Associated Lab Samples: 2624395010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/30/19 01:30	

LABORATORY CONTROL SAMPLE: 170493

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170494 170495

Parameter	Units	2624395010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.016J	10	10	9.9	9.7	98	97	90-110	2	15	H1

MATRIX SPIKE SAMPLE: 170496

Parameter	Units	2624492001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	ND	10	9.9	99	90-110	H1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2624395

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

H1 Analysis conducted outside the EPA method holding time.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624395

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624395001	**BRGWA-6S**	EPA 3010A	37228	EPA 6010D	37288
2624395002	**BRGWA-5S**	EPA 3010A	37228	EPA 6010D	37288
2624395003	**BRGWA-5I**	EPA 3010A	37228	EPA 6010D	37288
2624395004	**BRGWA-2S**	EPA 3010A	37228	EPA 6010D	37288
2624395005	**BRGWA-2I**	EPA 3010A	37228	EPA 6010D	37288
2624395006	**BRGWA-12S**	EPA 3010A	37228	EPA 6010D	37288
2624395007	**BRGWA-12I**	EPA 3010A	37228	EPA 6010D	37288
2624395008	**BRGWA-23S**	EPA 3010A	37228	EPA 6010D	37288
2624395009	**FB-1**	EPA 3010A	37228	EPA 6010D	37288
2624395010	**BRGWC-25I**	EPA 3010A	37228	EPA 6010D	37288
2624395001	**BRGWA-6S**	EPA 3010A	37281	EPA 6010D	37384
2624395002	**BRGWA-5S**	EPA 3010A	37281	EPA 6010D	37384
2624395003	**BRGWA-5I**	EPA 3010A	37281	EPA 6010D	37384
2624395004	**BRGWA-2S**	EPA 3010A	37281	EPA 6010D	37384
2624395005	**BRGWA-2I**	EPA 3010A	37281	EPA 6010D	37384
2624395006	**BRGWA-12S**	EPA 3010A	37281	EPA 6010D	37384
2624395007	**BRGWA-12I**	EPA 3010A	37281	EPA 6010D	37384
2624395008	**BRGWA-23S**	EPA 3010A	37281	EPA 6010D	37384
2624395009	**FB-1**	EPA 3010A	37281	EPA 6010D	37384
2624395010	**BRGWC-25I**	EPA 3010A	37281	EPA 6010D	37384
2624395002	**BRGWA-5S**	SM 2320B	37276		
2624395003	**BRGWA-5I**	SM 2320B	37276		
2624395004	**BRGWA-2S**	SM 2320B	37276		
2624395005	**BRGWA-2I**	SM 2320B	37276		
2624395006	**BRGWA-12S**	SM 2320B	37276		
2624395007	**BRGWA-12I**	SM 2320B	37343		
2624395008	**BRGWA-23S**	SM 2320B	37276		
2624395009	**FB-1**	SM 2320B	37343		
2624395010	**BRGWC-25I**	SM 2320B	37276		
2624395001	**BRGWA-6S**	SM 4500-P	37498		
2624395002	**BRGWA-5S**	SM 4500-P	37498		
2624395003	**BRGWA-5I**	SM 4500-P	37498		
2624395004	**BRGWA-2S**	SM 4500-P	37498		
2624395005	**BRGWA-2I**	SM 4500-P	37498		
2624395006	**BRGWA-12S**	SM 4500-P	37498		
2624395007	**BRGWA-12I**	SM 4500-P	37498		
2624395008	**BRGWA-23S**	SM 4500-P	37498		
2624395010	**BRGWC-25I**	SM 4500-P	37498		
2624395001	**BRGWA-6S**	EPA 300.0	37219		
2624395002	**BRGWA-5S**	EPA 300.0	37219		
2624395003	**BRGWA-5I**	EPA 300.0	37219		
2624395004	**BRGWA-2S**	EPA 300.0	37219		
2624395005	**BRGWA-2I**	EPA 300.0	37219		
2624395006	**BRGWA-12S**	EPA 300.0	37219		
2624395007	**BRGWA-12I**	EPA 300.0	37219		

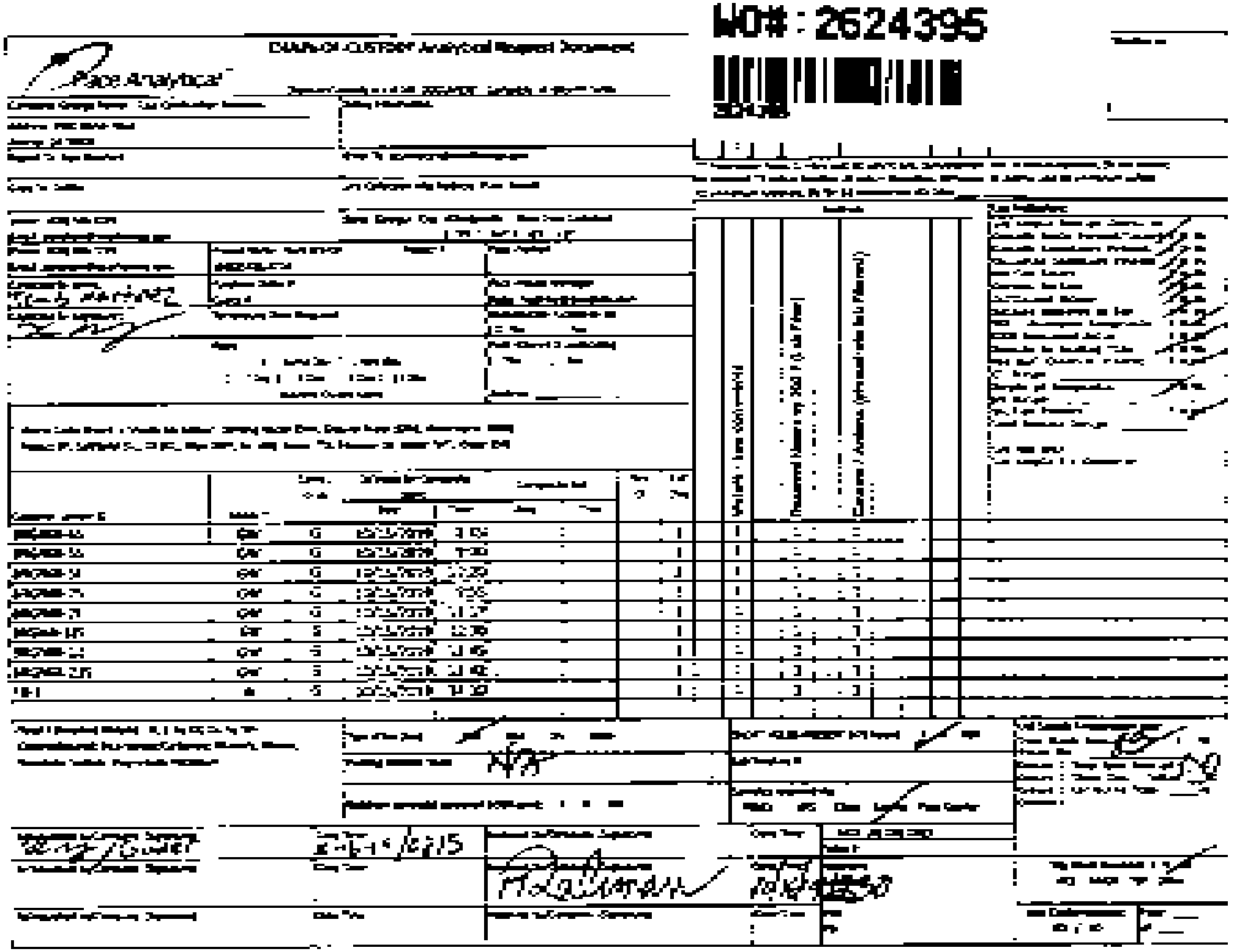
REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624395

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624395008	**BRGWA-23S**	EPA 300.0	37219		
2624395009	**FB-1**	EPA 300.0	37219		
2624395010	**BRGWC-25I**	EPA 300.0	37579		


WO# : 2624395
Pace Analytical

Sample Condition Upon Receipt

Pace Analytical

Client Name: Gra Power

Project #

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

Cooler Temperature: 1.0 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/16/19 DAR

Comments:

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

Client Notification/ Resolution:

Person Contacted: Date/Time:

Comments/ Resolution: 10860C-25T collected on 10/15/19 @ 1500 for Rad, Metals, Diss. Metals, IC-300 and TDS. Five containers labels had present but was not listed on the COC. Test was added to the requirements per Client's request.

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 container).

F-ALL-Q-020rev.07, 15August2008

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2624484

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 17, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2624484

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2624484

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624484001	**BRGWC-33S**	Water	10/16/19 09:48	10/17/19 11:35
2624484002	**BRGWC-34S**	Water	10/16/19 10:46	10/17/19 11:35
2624484003	**BRGWC-35S**	Water	10/16/19 12:02	10/17/19 11:35
2624484004	**BRGWC-37S**	Water	10/16/19 13:10	10/17/19 11:35
2624484005	**BRGWC-38S**	Water	10/16/19 14:45	10/17/19 11:35
2624484006	**Dup-1**	Water	10/16/19 00:00	10/17/19 11:35
2624484007	**EB-1**	Water	10/16/19 11:00	10/17/19 11:35
2624484008	**FB-2**	Water	10/16/19 13:05	10/17/19 11:35

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624484

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624484001	**BRGWC-33S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484002	**BRGWC-34S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484003	**BRGWC-35S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484004	**BRGWC-37S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484005	**BRGWC-38S**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484006	**Dup-1**	EPA 6020B	CSW	14
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624484007	**EB-1**	EPA 6020B	CSW	14
		SM 2540C	MZP	1
		EPA 300.0	MWB	3
2624484008	**FB-2**	EPA 6020B	CSW	14
		SM 2540C	MZP	1
		EPA 300.0	MWB	3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: BRGWC-33S **Lab ID: 2624484001** Collected: 10/16/19 09:48 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 23:04	7440-36-0	
Arsenic	**0.00056J**	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 23:04	7440-38-2	B
Barium	**0.019**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 23:04	7440-39-3	
Beryllium	**0.0018J**	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 23:04	7440-41-7	
Boron	**1.1**	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 23:04	7440-42-8	
Cadmium	**0.00039J**	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 23:04	7440-43-9	
Calcium	**46.5**	mg/L	5.0	0.55	50	10/20/19 16:44	10/22/19 23:09	7440-70-2	
Chromium	**0.00049J**	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 23:04	7440-47-3	
Cobalt	**0.042**	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 23:04	7440-48-4	
Lead	**0.000088J**	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 23:04	7439-92-1	
Lithium	**0.0098J**	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 23:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 23:04	7439-98-7	
Selenium	**0.0028J**	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 23:04	7782-49-2	
Thallium	**0.00019J**	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 23:04	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**281**	mg/L	10.0	10.0	1		10/22/19 13:14		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.4**	mg/L	1.0	0.024	1		10/24/19 17:04	16887-00-6	
Fluoride	**0.17J**	mg/L	0.30	0.029	1		10/24/19 17:04	16984-48-8	
Sulfate	**226**	mg/L	20.0	0.34	20		10/25/19 03:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: BRGWC-34S **Lab ID: 2624484002** Collected: 10/16/19 10:46 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/20/19 16:44	10/22/19 23:15	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/20/19 16:44	10/22/19 23:15	7440-38-2	
Barium	**0.022**	mg/L	0.010	0.00049	1	10/20/19 16:44	10/22/19 23:15	7440-39-3	
Beryllium	**0.00014J**	mg/L	0.0030	0.000074	1	10/20/19 16:44	10/22/19 23:15	7440-41-7	
Boron	**2.3**	mg/L	0.040	0.0049	1	10/20/19 16:44	10/22/19 23:15	7440-42-8	
Cadmium	**0.00040J**	mg/L	0.0025	0.00011	1	10/20/19 16:44	10/22/19 23:15	7440-43-9	
Calcium	**78.2**	mg/L	5.0	0.55	50	10/20/19 16:44	10/22/19 23:21	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/20/19 16:44	10/22/19 23:15	7440-47-3	
Cobalt	**0.0043J**	mg/L	0.0050	0.00030	1	10/20/19 16:44	10/22/19 23:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/20/19 16:44	10/22/19 23:15	7439-92-1	
Lithium	**0.00078J**	mg/L	0.030	0.00078	1	10/20/19 16:44	10/22/19 23:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/20/19 16:44	10/22/19 23:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/20/19 16:44	10/22/19 23:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/20/19 16:44	10/22/19 23:15	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**473**	mg/L	10.0	10.0	1		10/22/19 13:14		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**7.3**	mg/L	1.0	0.024	1		10/24/19 18:08	16887-00-6	
Fluoride	**0.13J**	mg/L	0.30	0.029	1		10/24/19 18:08	16984-48-8	
Sulfate	**325**	mg/L	20.0	0.34	20		10/25/19 03:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: BRGWC-35S **Lab ID: 2624484003** Collected: 10/16/19 12:02 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 18:43	7440-36-0	
Arsenic	**0.00040J**	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 18:43	7440-38-2	
Barium	**0.037**	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 18:43	7440-39-3	
Beryllium	**0.00015J**	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 18:43	7440-41-7	
Boron	**2.2**	mg/L	2.0	0.25	50	10/21/19 16:03	10/23/19 18:49	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 18:43	7440-43-9	
Calcium	**61.2**	mg/L	5.0	0.55	50	10/21/19 16:03	10/23/19 18:49	7440-70-2	M6
Chromium	**0.0064J**	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 18:43	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 18:43	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 18:43	7439-92-1	
Lithium	**0.0022J**	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 18:43	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 18:43	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 18:43	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 18:43	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**481**	mg/L	10.0	10.0	1		10/22/19 13:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.6**	mg/L	1.0	0.024	1		10/24/19 18:29	16887-00-6	
Fluoride	**0.080J**	mg/L	0.30	0.029	1		10/24/19 18:29	16984-48-8	
Sulfate	**277**	mg/L	20.0	0.34	20		10/25/19 04:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: BRGWC-37S **Lab ID: 2624484004** Collected: 10/16/19 13:10 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 19:34	7440-36-0	
Arsenic	**0.00078J**	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 19:34	7440-38-2	
Barium	**0.024**	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 19:34	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 19:34	7440-41-7	
Boron	**0.0055J**	mg/L	0.040	0.0049	1	10/21/19 16:03	10/23/19 19:34	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 19:34	7440-43-9	
Calcium	**3.4**	mg/L	0.10	0.011	1	10/21/19 16:03	10/23/19 19:34	7440-70-2	
Chromium	**0.0014J**	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 19:34	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 19:34	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 19:34	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 19:34	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 19:34	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 19:34	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 19:34	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**49.0**	mg/L	10.0	10.0	1		10/22/19 13:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.3**	mg/L	1.0	0.024	1		10/24/19 18:50	16887-00-6	
Fluoride	**0.059J**	mg/L	0.30	0.029	1		10/24/19 18:50	16984-48-8	
Sulfate	**0.29J**	mg/L	1.0	0.017	1		10/24/19 18:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: BRGWC-38S **Lab ID: 2624484005** Collected: 10/16/19 14:45 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 19:46	7440-36-0	
Arsenic	**0.0024J**	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 19:46	7440-38-2	
Barium	**0.015**	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 19:46	7440-39-3	
Beryllium	**0.0079**	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 19:46	7440-41-7	
Boron	**1.5**	mg/L	0.040	0.0049	1	10/21/19 16:03	10/23/19 19:46	7440-42-8	
Cadmium	**0.00057J**	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 19:46	7440-43-9	
Calcium	**38.4**	mg/L	5.0	0.55	50	10/21/19 16:03	10/23/19 19:52	7440-70-2	
Chromium	**0.0038J**	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 19:46	7440-47-3	
Cobalt	**0.21**	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 19:46	7440-48-4	
Lead	**0.00035J**	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 19:46	7439-92-1	
Lithium	**0.020J**	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 19:46	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 19:46	7439-98-7	
Selenium	**0.033**	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 19:46	7782-49-2	
Thallium	**0.00020J**	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 19:46	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**630**	mg/L	10.0	10.0	1		10/22/19 13:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.4**	mg/L	1.0	0.024	1		10/24/19 19:11	16887-00-6	
Fluoride	**0.61**	mg/L	0.30	0.029	1		10/24/19 19:11	16984-48-8	
Sulfate	**432**	mg/L	20.0	0.34	20		10/25/19 04:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: Dup-1 **Lab ID: 2624484006** Collected: 10/16/19 00:00 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 19:57	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 19:57	7440-38-2	
Barium	**0.023**	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 19:57	7440-39-3	
Beryllium	**0.00013J**	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 19:57	7440-41-7	
Boron	**2.4**	mg/L	2.0	0.25	50	10/21/19 16:03	10/23/19 20:03	7440-42-8	
Cadmium	**0.00040J**	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 19:57	7440-43-9	
Calcium	**81.4**	mg/L	5.0	0.55	50	10/21/19 16:03	10/23/19 20:03	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 19:57	7440-47-3	
Cobalt	**0.0043J**	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 19:57	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 19:57	7439-92-1	
Lithium	**0.00079J**	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 19:57	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 19:57	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 19:57	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 19:57	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/22/19 13:15		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**7.5**	mg/L	1.0	0.024	1		10/24/19 19:33	16887-00-6	
Fluoride	**0.13J**	mg/L	0.30	0.029	1		10/24/19 19:33	16984-48-8	
Sulfate	**317**	mg/L	20.0	0.34	20		10/25/19 04:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: EB-1 **Lab ID: 2624484007** Collected: 10/16/19 11:00 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 20:09	7440-36-0	
Arsenic	**0.00079J**	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 20:09	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 20:09	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 20:09	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/21/19 16:03	10/23/19 20:09	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 20:09	7440-43-9	
Calcium	**0.018J**	mg/L	0.10	0.011	1	10/21/19 16:03	10/23/19 20:09	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 20:09	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 20:09	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 20:09	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 20:09	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 20:09	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 20:09	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 20:09	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/23/19 15:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**0.059J**	mg/L	1.0	0.024	1		10/24/19 19:54	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		10/24/19 19:54	16984-48-8	
Sulfate	**0.042J**	mg/L	1.0	0.017	1		10/24/19 19:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624484

Sample: FB-2 **Lab ID: 2624484008** Collected: 10/16/19 13:05 Received: 10/17/19 11:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/21/19 16:03	10/23/19 20:15	7440-36-0	
Arsenic	**0.0011J**	mg/L	0.0050	0.00035	1	10/21/19 16:03	10/23/19 20:15	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	10/21/19 16:03	10/23/19 20:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/21/19 16:03	10/23/19 20:15	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	10/21/19 16:03	10/23/19 20:15	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/21/19 16:03	10/23/19 20:15	7440-43-9	
Calcium	**0.019J**	mg/L	0.10	0.011	1	10/21/19 16:03	10/23/19 20:15	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/21/19 16:03	10/23/19 20:15	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/21/19 16:03	10/23/19 20:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/21/19 16:03	10/23/19 20:15	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	10/21/19 16:03	10/23/19 20:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/21/19 16:03	10/23/19 20:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/21/19 16:03	10/23/19 20:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/21/19 16:03	10/23/19 20:15	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**16.0**	mg/L	10.0	10.0	1		10/23/19 15:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**0.034J**	mg/L	1.0	0.024	1		10/24/19 21:21	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		10/24/19 21:21	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/24/19 21:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

QC Batch: 37136 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624484001, 2624484002

METHOD BLANK: 167849 Matrix: Water
Associated Lab Samples: 2624484001, 2624484002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/22/19 18:23	
Arsenic	mg/L	0.00059J	0.0050	0.00035	10/22/19 18:23	
Barium	mg/L	ND	0.010	0.00049	10/22/19 18:23	
Beryllium	mg/L	ND	0.0030	0.000074	10/22/19 18:23	
Boron	mg/L	ND	0.040	0.0049	10/22/19 18:23	
Cadmium	mg/L	ND	0.0025	0.00011	10/22/19 18:23	
Calcium	mg/L	ND	0.10	0.011	10/22/19 18:23	
Chromium	mg/L	ND	0.010	0.00039	10/22/19 18:23	
Cobalt	mg/L	ND	0.0050	0.00030	10/22/19 18:23	
Lead	mg/L	ND	0.0050	0.000046	10/22/19 18:23	
Lithium	mg/L	ND	0.030	0.00078	10/22/19 18:23	
Molybdenum	mg/L	ND	0.010	0.00095	10/22/19 18:23	
Selenium	mg/L	ND	0.010	0.0013	10/22/19 18:23	
Thallium	mg/L	ND	0.0010	0.000052	10/22/19 18:23	

LABORATORY CONTROL SAMPLE: 167850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.098	98	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	0.099	99	80-120	
Boron	mg/L	1	0.96	96	80-120	
Cadmium	mg/L	0.1	0.097	97	80-120	
Calcium	mg/L	1	0.96	96	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.098	98	80-120	
Lithium	mg/L	0.1	0.095	95	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	0.098	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168476 168477

Parameter	Units	2624389004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.098	0.097	97	97	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168476 168477

Parameter	Units	2624389004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.00063J	0.1	0.1	0.095	0.098	95	97	75-125	3	20	
Barium	mg/L	0.0091J	0.1	0.1	0.11	0.11	100	103	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.092	0.094	92	94	75-125	2	20	
Boron	mg/L	ND	1	1	0.89	0.94	88	93	75-125	6	20	
Cadmium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	0	20	
Calcium	mg/L	3.7	1	1	4.5	4.5	88	82	75-125	1	20	
Chromium	mg/L	0.0083J	0.1	0.1	0.11	0.11	97	100	75-125	2	20	
Cobalt	mg/L	0.00097J	0.1	0.1	0.096	0.096	95	95	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.095	0.098	95	98	75-125	3	20	
Lithium	mg/L	ND	0.1	0.1	0.092	0.094	91	93	75-125	3	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	1	20	
Selenium	mg/L	ND	0.1	0.1	0.093	0.10	93	100	75-125	7	20	
Thallium	mg/L	ND	0.1	0.1	0.095	0.098	95	98	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

QC Batch: 37286 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624484003, 2624484004, 2624484005, 2624484006, 2624484007, 2624484008

METHOD BLANK: 168679 Matrix: Water
Associated Lab Samples: 2624484003, 2624484004, 2624484005, 2624484006, 2624484007, 2624484008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	10/23/19 18:31	
Arsenic	mg/L	ND	0.0050	0.00035	10/23/19 18:31	
Barium	mg/L	ND	0.010	0.00049	10/23/19 18:31	
Beryllium	mg/L	ND	0.0030	0.000074	10/23/19 18:31	
Boron	mg/L	ND	0.040	0.0049	10/23/19 18:31	
Cadmium	mg/L	ND	0.0025	0.00011	10/23/19 18:31	
Calcium	mg/L	ND	0.10	0.011	10/23/19 18:31	
Chromium	mg/L	ND	0.010	0.00039	10/23/19 18:31	
Cobalt	mg/L	ND	0.0050	0.00030	10/23/19 18:31	
Lead	mg/L	ND	0.0050	0.000046	10/23/19 18:31	
Lithium	mg/L	ND	0.030	0.00078	10/23/19 18:31	
Molybdenum	mg/L	ND	0.010	0.00095	10/23/19 18:31	
Selenium	mg/L	ND	0.010	0.0013	10/23/19 18:31	
Thallium	mg/L	ND	0.0010	0.000052	10/23/19 18:31	

LABORATORY CONTROL SAMPLE: 168680

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	0.10	101	80-120	
Beryllium	mg/L	0.1	0.10	103	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	0.1	0.099	99	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Selenium	mg/L	0.1	0.095	95	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168681 168682

Parameter	Units	2624484003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	100	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 168681 168682

Parameter	Units	2624484003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.00040J	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Barium	mg/L	0.037	0.1	0.1	0.15	0.14	109	107	75-125	1	20	
Beryllium	mg/L	0.00015J	0.1	0.1	0.095	0.094	95	94	75-125	0	20	
Boron	mg/L	2.2	1	1	3.1	3.1	90	90	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	1	20	
Calcium	mg/L	61.2	1	1	62.7	66.1	145	485	75-125	5	20	M6
Chromium	mg/L	0.0064J	0.1	0.1	0.11	0.10	100	98	75-125	2	20	
Cobalt	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.097	0.097	97	97	75-125	0	20	
Lithium	mg/L	0.0022J	0.1	0.1	0.096	0.095	94	93	75-125	1	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	104	101	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.096	0.096	96	95	75-125	0	20	
Thallium	mg/L	ND	0.1	0.1	0.098	0.098	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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

QC Batch: 37331 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624484001, 2624484002, 2624484003, 2624484004, 2624484005, 2624484006

LABORATORY CONTROL SAMPLE: 168856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	399	100	84-108	

SAMPLE DUPLICATE: 168857

Parameter	Units	2624541001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	237	249	5	10	

SAMPLE DUPLICATE: 168858

Parameter	Units	2624432004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	67.0	69.0	3	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

QC Batch: 37419 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624484007, 2624484008

LABORATORY CONTROL SAMPLE: 169291

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	391	98	84-108	

SAMPLE DUPLICATE: 169292

Parameter	Units	2624484007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

SAMPLE DUPLICATE: 169293

Parameter	Units	2624491004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	500	501	0	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624484

QC Batch: 37461 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624484001, 2624484002, 2624484003, 2624484004, 2624484005, 2624484006, 2624484007, 2624484008

METHOD BLANK: 169631 Matrix: Water
Associated Lab Samples: 2624484001, 2624484002, 2624484003, 2624484004, 2624484005, 2624484006, 2624484007, 2624484008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.043J	1.0	0.024	10/24/19 16:21	
Fluoride	mg/L	ND	0.30	0.029	10/24/19 16:21	
Sulfate	mg/L	ND	1.0	0.017	10/24/19 16:21	

LABORATORY CONTROL SAMPLE: 169632

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.6	106	90-110	
Fluoride	mg/L	10	10.9	109	90-110	
Sulfate	mg/L	10	10.4	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169633 169634

Parameter	Units	2624484001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.4	10	10	15.3	15.3	99	100	90-110	0	15	
Fluoride	mg/L	0.17J	10	10	11.1	11.1	110	110	90-110	0	15	

MATRIX SPIKE SAMPLE: 169635

Parameter	Units	2624487002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	4.6	10	14.7	101	90-110	
Fluoride	mg/L	0.076J	10	10.6	106	90-110	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2624484

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.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

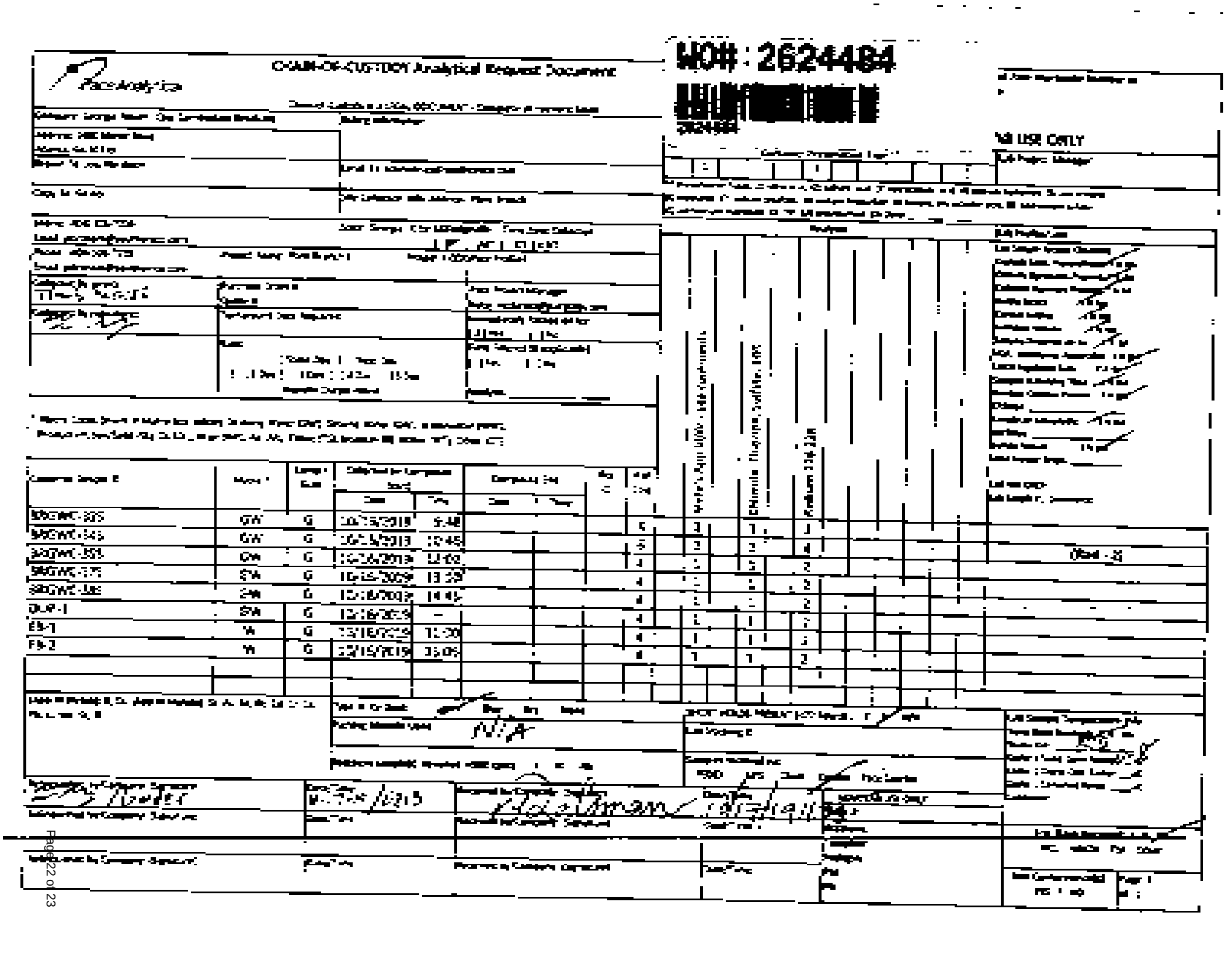
REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624484

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624484001	**BRGWC-33S**	EPA 3005A	37136	EPA 6020B	37255
2624484002	**BRGWC-34S**	EPA 3005A	37136	EPA 6020B	37255
2624484003	**BRGWC-35S**	EPA 3005A	37286	EPA 6020B	37308
2624484004	**BRGWC-37S**	EPA 3005A	37286	EPA 6020B	37308
2624484005	**BRGWC-38S**	EPA 3005A	37286	EPA 6020B	37308
2624484006	**Dup-1**	EPA 3005A	37286	EPA 6020B	37308
2624484007	**EB-1**	EPA 3005A	37286	EPA 6020B	37308
2624484008	**FB-2**	EPA 3005A	37286	EPA 6020B	37308
2624484001	**BRGWC-33S**	SM 2540C	37331		
2624484002	**BRGWC-34S**	SM 2540C	37331		
2624484003	**BRGWC-35S**	SM 2540C	37331		
2624484004	**BRGWC-37S**	SM 2540C	37331		
2624484005	**BRGWC-38S**	SM 2540C	37331		
2624484006	**Dup-1**	SM 2540C	37331		
2624484007	**EB-1**	SM 2540C	37419		
2624484008	**FB-2**	SM 2540C	37419		
2624484001	**BRGWC-33S**	EPA 300.0	37461		
2624484002	**BRGWC-34S**	EPA 300.0	37461		
2624484003	**BRGWC-35S**	EPA 300.0	37461		
2624484004	**BRGWC-37S**	EPA 300.0	37461		
2624484005	**BRGWC-38S**	EPA 300.0	37461		
2624484006	**Dup-1**	EPA 300.0	37461		
2624484007	**EB-1**	EPA 300.0	37461		
2624484008	**FB-2**	EPA 300.0	37461		



WO#: 2624484

CHAIN-OF-CUSTODY Analytical Request Document

For Lab Use Only

Sample ID	Matrix	Sample Type	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	# of Containers	Metals (Appendix III, Coal Combustion Residuals Rule)	Chlorides (Appendix III, Coal Combustion Residuals Rule)	Fluoride (Appendix III, Coal Combustion Residuals Rule)	Sulfate (Appendix III, Coal Combustion Residuals Rule)
MW-305	GW	G	10/15/2019	9:48			5	3	1	1	1
MW-345	GW	G	10/15/2019	10:45			5	3	1	1	1
MW-351	GW	G	10/16/2019	12:02			4	3	1	1	2
MW-375	GW	G	10/15/2019	13:39			4	3	1	1	2
MW-385	GW	G	10/15/2019	14:45			4	3	1	1	2
DUP-1	GW	G	10/16/2019	–			4	3	1	1	2
EB-1	W	G	10/16/2019	11:20			4	3	1	1	2
FB-1	W	G	10/15/2019	15:05			4	3	1	1	2

Other Analyses Requested: Total Dissolved Solids (TDS) (SM 2540C-2011)

Special Instructions: N/A

Relinquished by Company Signature: [signature] Date/Time: 10/16/19

Received by Company Signature: [signature] Date/Time: 10/16/19

Relinquished by Company Signature: Date/Time:

Received by Company Signature: Date/Time:

Page 22 of 23

Sample Condition Upon Receipt

Pace Analytical

Client Name: [illegible] Project #

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: [illegible] Type of Ice: ☑ Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature: [illegible] Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: 7/16/19

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

3000 Vials

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 DENR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect container).

F-ALL-C01 rev 3, 11Septembe 2006

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

November 14, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2624486

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 17, 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: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2624486

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2624486

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624486001	**BRGWC-33S**	Water	10/16/19 09:48	10/17/19 11:35
2624486002	**BRGWC-34S**	Water	10/16/19 10:46	10/17/19 11:35
2624486003	**BRGWC-35S**	Water	10/16/19 12:02	10/17/19 11:35
2624486004	**BRGWC-37S**	Water	10/16/19 13:10	10/17/19 11:35
2624486005	**BRGWC-38S**	Water	10/16/19 14:45	10/17/19 11:35
2624486006	**Dup-1**	Water	10/16/19 00:00	10/17/19 11:35
2624486007	**EB-1**	Water	10/16/19 11:00	10/17/19 11:35
2624486008	**FB-2**	Water	10/16/19 13:05	10/17/19 11:35

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624486

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624486001	**BRGWC-33S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486002	**BRGWC-34S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486003	**BRGWC-35S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486004	**BRGWC-37S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486005	**BRGWC-38S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486006	**Dup-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486007	**EB-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624486008	**FB-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: BRGWC-33S **Lab ID: 2624486001** Collected: 10/16/19 09:48 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.474 ± 0.268 (0.357) C:95% T:NA**	pCi/L	11/06/19 07:22	13982-63-3	
Radium-228	EPA 9320	**0.682 ± 0.524 (1.03) C:76% T:74%**	pCi/L	11/06/19 17:28	15262-20-1	
Total Radium	Total Radium Calculation	**1.16 ± 0.792 (1.39)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: BRGWC-34S **Lab ID: 2624486002** Collected: 10/16/19 10:46 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.192 ± 0.231 (0.473) C:91% T:NA**	pCi/L	11/06/19 07:22	13982-63-3	
Radium-228	EPA 9320	**0.369 ± 0.405 (0.846) C:75% T:92%**	pCi/L	11/06/19 17:29	15262-20-1	
Total Radium	Total Radium Calculation	**0.561 ± 0.636 (1.32)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: BRGWC-35S **Lab ID: 2624486003** Collected: 10/16/19 12:02 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.523 ± 0.306 (0.453) C:94% T:NA**	pCi/L	11/06/19 07:22	13982-63-3	
Radium-228	EPA 9320	**1.17 ± 0.548 (0.942) C:76% T:87%**	pCi/L	11/06/19 17:31	15262-20-1	
Total Radium	Total Radium Calculation	**1.69 ± 0.854 (1.40)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: BRGWC-37S **Lab ID: 2624486004** Collected: 10/16/19 13:10 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.403 ± 0.313 (0.576) C:96% T:NA**	pCi/L	11/06/19 07:22	13982-63-3	
Radium-228	EPA 9320	**0.412 ± 0.399 (0.818) C:73% T:94%**	pCi/L	11/06/19 17:31	15262-20-1	
Total Radium	Total Radium Calculation	**0.815 ± 0.712 (1.39)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: BRGWC-38S **Lab ID: 2624486005** Collected: 10/16/19 14:45 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.539 ± 0.306 (0.446) C:92% T:NA**	pCi/L	11/06/19 08:52	13982-63-3	
Radium-228	EPA 9320	**2.12 ± 0.687 (0.928) C:77% T:86%**	pCi/L	11/06/19 17:31	15262-20-1	
Total Radium	Total Radium Calculation	**2.66 ± 0.993 (1.37)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: Dup-1 **Lab ID: 2624486006** Collected: 10/16/19 00:00 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.698 ± 0.332 (0.404) C:95% T:NA**	pCi/L	11/06/19 07:33	13982-63-3	
Radium-228	EPA 9320	**1.34 ± 0.495 (0.721) C:77% T:94%**	pCi/L	11/06/19 17:31	15262-20-1	
Total Radium	Total Radium Calculation	**2.04 ± 0.827 (1.13)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: EB-1 **Lab ID: 2624486007** Collected: 10/16/19 11:00 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.414 ± 0.255 (0.296) C:88% T:NA**	pCi/L	11/06/19 07:34	13982-63-3	
Radium-228	EPA 9320	**2.21 ± 0.691 (0.922) C:86% T:68%**	pCi/L	11/11/19 11:03	15262-20-1	
Total Radium	Total Radium Calculation	**2.62 ± 0.946 (1.22)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

Sample: FB-2 **Lab ID: 2624486008** Collected: 10/16/19 13:05 Received: 10/17/19 11:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.473 ± 0.298 (0.428) C:87% T:NA**	pCi/L	11/06/19 07:34	13982-63-3	
Radium-228	EPA 9320	**0.455 ± 0.495 (1.03) C:75% T:80%**	pCi/L	11/06/19 17:29	15262-20-1	
Total Radium	Total Radium Calculation	**0.928 ± 0.793 (1.46)**	pCi/L	11/12/19 10:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

QC Batch: 368259 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2624486001, 2624486002, 2624486003, 2624486004, 2624486005, 2624486006, 2624486007, 2624486008

METHOD BLANK: 1786863 Matrix: Water
Associated Lab Samples: 2624486001, 2624486002, 2624486003, 2624486004, 2624486005, 2624486006, 2624486007, 2624486008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.306 ± 0.244 (0.419) C:96% T:NA	pCi/L	11/06/19 08:02	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch
Pace Project No.: 2624486

QC Batch: 368258 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2624486001, 2624486002, 2624486003, 2624486004, 2624486005, 2624486006, 2624486007, 2624486008

METHOD BLANK: 1786861 Matrix: Water
Associated Lab Samples: 2624486001, 2624486002, 2624486003, 2624486004, 2624486005, 2624486006, 2624486007, 2624486008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0170 ± 0.384 (0.894) C:77% T:79%	pCi/L	11/06/19 17:17	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2624486

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624486

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624486001	**BRGWC-33S**	EPA 9315	368259		
2624486002	**BRGWC-34S**	EPA 9315	368259		
2624486003	**BRGWC-35S**	EPA 9315	368259		
2624486004	**BRGWC-37S**	EPA 9315	368259		
2624486005	**BRGWC-38S**	EPA 9315	368259		
2624486006	**Dup-1**	EPA 9315	368259		
2624486007	**EB-1**	EPA 9315	368259		
2624486008	**FB-2**	EPA 9315	368259		
2624486001	**BRGWC-33S**	EPA 9320	368258		
2624486002	**BRGWC-34S**	EPA 9320	368258		
2624486003	**BRGWC-35S**	EPA 9320	368258		
2624486004	**BRGWC-37S**	EPA 9320	368258		
2624486005	**BRGWC-38S**	EPA 9320	368258		
2624486006	**Dup-1**	EPA 9320	368258		
2624486007	**EB-1**	EPA 9320	368258		
2624486008	**FB-2**	EPA 9320	368258		
2624486001	**BRGWC-33S**	Total Radium Calculation	370511		
2624486002	**BRGWC-34S**	Total Radium Calculation	370511		
2624486003	**BRGWC-35S**	Total Radium Calculation	370511		
2624486004	**BRGWC-37S**	Total Radium Calculation	370511		
2624486005	**BRGWC-38S**	Total Radium Calculation	370511		
2624486006	**Dup-1**	Total Radium Calculation	370511		
2624486007	**EB-1**	Total Radium Calculation	370511		
2624486008	**FB-2**	Total Radium Calculation	370511		

WO# : 2624486

CHAIN-OF-CUSTODY Analytical Request Document

LAB USE ONLY

Sample ID	Matrix	Comp / Grab	Collection Date	Collection Time	Containers No.	Preservative Type	Analysis Requested
[illegible]	GW	G	10/15/2019	9:48	7		
[illegible]	GW	G	10/15/2019	10:45	4		
[illegible]	GW	G	10/15/2019	11:00	2		
[illegible]	GW	G	10/15/2019	11:30	2		
[illegible]	GW	G	10/15/2019	12:45	2		
DUP-1	GW	G	10/15/2019	—	2		
FB-1	W	G	10/15/2019	11:20	2		
FB-2	W	G	10/15/2019	13:25	2		

[illegible]

Sample Condition Upon Receipt

Pace Analytical

Client Name: Groundwater Protection Project #

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°C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/24/19 AB

Comments:

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

3000 WTR

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 DENR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

F-ALL-C030rev.3, 11November2008

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2624659

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 23, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2624659

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2624659

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624659001	**PZ-15S**	Water	10/21/19 14:01	10/23/19 00:00
2624659002	**PZ-15I**	Water	10/21/19 15:11	10/23/19 00:00
2624659003	**IW-C-1**	Water	10/21/19 16:41	10/23/19 00:00

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624659

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624659001	**PZ-15S**	EPA 6010D	KLH	6
		EPA 6010D	KLH	6
		EPA 6020B	CSW	14
		EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		EPA 7470A	DRB	1
		SM 2320B	S1A	2
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624659002	**PZ-15I**	EPA 6010D	KLH	6
		EPA 6010D	KLH	6
		EPA 6020B	CSW	14
		EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		EPA 7470A	DRB	1
		SM 2320B	S1A	2
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624659003	**IW-C-1**	EPA 6010D	KLH	6
		EPA 6010D	KLH	6
		EPA 6020B	CSW	14
		EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		EPA 7470A	DRB	1
		SM 2320B	S1A	2
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624659

Sample: PZ-15S **Lab ID: 2624659001** Collected: 10/21/19 14:01 Received: 10/23/19 00:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	**0.054J**	mg/L	0.10	0.032	1	10/31/19 16:05	11/01/19 01:51	7429-90-5	
Iron	**0.10**	mg/L	0.040	0.015	1	10/31/19 16:05	11/01/19 01:51	7439-89-6	
Magnesium	**11.2**	mg/L	0.050	0.011	1	10/31/19 16:05	11/01/19 01:51	7439-95-4	
Manganese	**1.9**	mg/L	0.040	0.0061	1	10/31/19 16:05	11/01/19 01:51	7439-96-5	
Potassium	**6.6**	mg/L	0.20	0.026	1	10/31/19 16:05	11/01/19 01:51	7440-09-7	
Sodium	**22.6**	mg/L	1.0	0.19	1	10/31/19 16:05	11/01/19 01:51	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 18:00	11/03/19 12:05	7429-90-5	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 18:00	11/03/19 12:05	7439-89-6	
Magnesium, Dissolved	**11.3**	mg/L	0.050	0.011	1	11/01/19 18:00	11/03/19 12:05	7439-95-4	
Manganese, Dissolved	**1.4**	mg/L	0.040	0.0061	1	11/01/19 18:00	11/03/19 12:05	7439-96-5	
Potassium, Dissolved	**6.5**	mg/L	0.20	0.026	1	11/01/19 18:00	11/03/19 12:05	7440-09-7	
Sodium, Dissolved	**22.3**	mg/L	1.0	0.19	1	11/01/19 18:00	11/03/19 12:05	7440-23-5	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/28/19 20:04	10/29/19 20:59	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/28/19 20:04	10/29/19 20:59	7440-38-2	
Barium	**0.021**	mg/L	0.010	0.00049	1	10/28/19 20:04	10/29/19 20:59	7440-39-3	
Beryllium	**0.00019J**	mg/L	0.0030	0.000074	1	10/28/19 20:04	10/29/19 20:59	7440-41-7	
Boron	**1.3**	mg/L	0.040	0.0049	1	10/28/19 20:04	10/29/19 20:59	7440-42-8	
Cadmium	**0.00022J**	mg/L	0.0025	0.00011	1	10/28/19 20:04	10/29/19 20:59	7440-43-9	
Calcium	**55.6**	mg/L	5.0	0.55	50	10/28/19 20:04	10/29/19 21:05	7440-70-2	
Chromium	**0.00080J**	mg/L	0.010	0.00039	1	10/28/19 20:04	10/29/19 20:59	7440-47-3	
Cobalt	**0.0022J**	mg/L	0.0050	0.00030	1	10/28/19 20:04	10/29/19 20:59	7440-48-4	
Lead	**0.00021J**	mg/L	0.0050	0.000046	1	10/28/19 20:04	10/29/19 20:59	7439-92-1	
Lithium	**0.0059J**	mg/L	0.030	0.00078	1	10/28/19 20:04	10/29/19 20:59	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/28/19 20:04	10/29/19 20:59	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/28/19 20:04	10/29/19 20:59	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/28/19 20:04	10/29/19 20:59	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony, Dissolved	ND	mg/L	0.0030	0.00027	1	11/03/19 15:41	11/04/19 20:11	7440-36-0	
Arsenic, Dissolved	ND	mg/L	0.0050	0.00035	1	11/03/19 15:41	11/04/19 20:11	7440-38-2	
Barium, Dissolved	**0.025**	mg/L	0.010	0.00049	1	11/03/19 15:41	11/04/19 20:11	7440-39-3	
Beryllium, Dissolved	ND	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/04/19 20:11	7440-41-7	
Boron, Dissolved	**1.3**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/04/19 20:11	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 20:11	7440-43-9	
Calcium, Dissolved	**51.6**	mg/L	5.0	0.55	50	11/03/19 15:41	11/04/19 20:16	7440-70-2	
Chromium, Dissolved	ND	mg/L	0.010	0.00039	1	11/03/19 15:41	11/04/19 20:11	7440-47-3	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 20:11	7440-48-4	
Lead, Dissolved	ND	mg/L	0.0050	0.000046	1	11/03/19 15:41	11/04/19 20:11	7439-92-1	
Lithium, Dissolved	**0.012J**	mg/L	0.030	0.00078	1	11/03/19 15:41	11/04/19 20:11	7439-93-2	
Molybdenum, Dissolved	ND	mg/L	0.010	0.00095	1	11/03/19 15:41	11/04/19 20:11	7439-98-7	
Selenium, Dissolved	ND	mg/L	0.010	0.0013	1	11/03/19 15:41	11/04/19 20:11	7782-49-2	
Thallium, Dissolved	ND	mg/L	0.0010	0.000052	1	11/03/19 15:41	11/04/19 20:11	7440-28-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624659

Sample: PZ-15S **Lab ID: 2624659001** Collected: 10/21/19 14:01 Received: 10/23/19 00:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/29/19 08:27	10/29/19 14:16	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	ND	mg/L	0.00020	0.00014	1	11/03/19 15:41	11/04/19 10:39	7439-97-6	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**12.0**	mg/L	1.0	1.0	1		10/29/19 12:03		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/29/19 12:03		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**356**	mg/L	10.0	10.0	1		10/25/19 14:58		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/23/19 19:13		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/24/19 06:40	14797-55-8	H1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.4**	mg/L	1.0	0.024	1		10/30/19 23:10	16887-00-6	
Fluoride	**0.068J**	mg/L	0.30	0.029	1		10/30/19 23:10	16984-48-8	
Sulfate	**235**	mg/L	50.0	0.85	50		10/31/19 08:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624659

Sample: PZ-15I **Lab ID: 2624659002** Collected: 10/21/19 15:11 Received: 10/23/19 00:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/31/19 16:05	11/01/19 01:56	7429-90-5	
Iron	**0.051**	mg/L	0.040	0.015	1	10/31/19 16:05	11/01/19 01:56	7439-89-6	
Magnesium	**23.1**	mg/L	0.050	0.011	1	10/31/19 16:05	11/01/19 01:56	7439-95-4	
Manganese	**0.17**	mg/L	0.040	0.0061	1	10/31/19 16:05	11/01/19 01:56	7439-96-5	
Potassium	**7.7**	mg/L	0.20	0.026	1	10/31/19 16:05	11/01/19 01:56	7440-09-7	
Sodium	**26.5**	mg/L	1.0	0.19	1	10/31/19 16:05	11/01/19 01:56	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 18:00	11/03/19 12:10	7429-90-5	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 18:00	11/03/19 12:10	7439-89-6	
Magnesium, Dissolved	**22.8**	mg/L	0.050	0.011	1	11/01/19 18:00	11/03/19 12:10	7439-95-4	
Manganese, Dissolved	**0.16**	mg/L	0.040	0.0061	1	11/01/19 18:00	11/03/19 12:10	7439-96-5	
Potassium, Dissolved	**7.7**	mg/L	0.20	0.026	1	11/01/19 18:00	11/03/19 12:10	7440-09-7	
Sodium, Dissolved	**26.3**	mg/L	1.0	0.19	1	11/01/19 18:00	11/03/19 12:10	7440-23-5	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	10/28/19 20:04	10/29/19 21:11	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/28/19 20:04	10/29/19 21:11	7440-38-2	
Barium	**0.029**	mg/L	0.010	0.00049	1	10/28/19 20:04	10/29/19 21:11	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/28/19 20:04	10/29/19 21:11	7440-41-7	
Boron	**1.5**	mg/L	0.040	0.0049	1	10/28/19 20:04	10/29/19 21:11	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/28/19 20:04	10/29/19 21:11	7440-43-9	
Calcium	**51.0**	mg/L	5.0	0.55	50	10/28/19 20:04	10/29/19 21:16	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/28/19 20:04	10/29/19 21:11	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/28/19 20:04	10/29/19 21:11	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/28/19 20:04	10/29/19 21:11	7439-92-1	
Lithium	**0.013J**	mg/L	0.030	0.00078	1	10/28/19 20:04	10/29/19 21:11	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/28/19 20:04	10/29/19 21:11	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/28/19 20:04	10/29/19 21:11	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/28/19 20:04	10/29/19 21:11	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony, Dissolved	ND	mg/L	0.0030	0.00027	1	11/03/19 15:41	11/04/19 20:34	7440-36-0	
Arsenic, Dissolved	ND	mg/L	0.0050	0.00035	1	11/03/19 15:41	11/04/19 20:34	7440-38-2	
Barium, Dissolved	**0.016**	mg/L	0.010	0.00049	1	11/03/19 15:41	11/04/19 20:34	7440-39-3	
Beryllium, Dissolved	**0.00016J**	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/05/19 13:12	7440-41-7	
Boron, Dissolved	**1.2**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/05/19 13:12	7440-42-8	
Cadmium, Dissolved	**0.00017J**	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 20:34	7440-43-9	
Calcium, Dissolved	**50.0**	mg/L	5.0	0.55	50	11/03/19 15:41	11/04/19 20:39	7440-70-2	
Chromium, Dissolved	ND	mg/L	0.010	0.00039	1	11/03/19 15:41	11/04/19 20:34	7440-47-3	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 20:34	7440-48-4	
Lead, Dissolved	ND	mg/L	0.0050	0.000046	1	11/03/19 15:41	11/04/19 20:34	7439-92-1	
Lithium, Dissolved	**0.0056J**	mg/L	0.030	0.00078	1	11/03/19 15:41	11/05/19 13:12	7439-93-2	
Molybdenum, Dissolved	ND	mg/L	0.010	0.00095	1	11/03/19 15:41	11/04/19 20:34	7439-98-7	
Selenium, Dissolved	ND	mg/L	0.010	0.0013	1	11/03/19 15:41	11/04/19 20:34	7782-49-2	
Thallium, Dissolved	ND	mg/L	0.0010	0.000052	1	11/03/19 15:41	11/04/19 20:34	7440-28-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624659

Sample: PZ-15I **Lab ID: 2624659002** Collected: 10/21/19 15:11 Received: 10/23/19 00:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/29/19 08:27	10/29/19 14:19	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	ND	mg/L	0.00020	0.00014	1	11/03/19 15:41	11/04/19 10:41	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**24.0**	mg/L	20.0	20.0	1		10/28/19 14:50		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/28/19 14:50		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**430**	mg/L	10.0	10.0	1		10/25/19 14:58		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/23/19 19:14		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/24/19 07:02	14797-55-8	H1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.6**	mg/L	1.0	0.024	1		10/30/19 23:32	16887-00-6	
Fluoride	**0.15J**	mg/L	0.30	0.029	1		10/30/19 23:32	16984-48-8	
Sulfate	**266**	mg/L	20.0	0.34	20		10/31/19 08:22	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624659

Sample: IW-C-1 **Lab ID: 2624659003** Collected: 10/21/19 16:41 Received: 10/23/19 00:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/31/19 16:05	11/01/19 02:01	7429-90-5	
Iron	**25.6**	mg/L	0.040	0.015	1	10/31/19 16:05	11/01/19 02:01	7439-89-6	
Magnesium	**40.2**	mg/L	0.050	0.011	1	10/31/19 16:05	11/01/19 02:01	7439-95-4	
Manganese	**4.3**	mg/L	0.040	0.0061	1	10/31/19 16:05	11/01/19 02:01	7439-96-5	
Potassium	**9.8**	mg/L	0.20	0.026	1	10/31/19 16:05	11/01/19 02:01	7440-09-7	
Sodium	**42.5**	mg/L	10.0	1.9	10	10/31/19 16:05	11/03/19 02:17	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	**0.20**	mg/L	0.10	0.032	1	11/01/19 18:00	11/03/19 12:15	7429-90-5	
Iron, Dissolved	**0.11**	mg/L	0.040	0.015	1	11/01/19 18:00	11/03/19 12:15	7439-89-6	
Magnesium, Dissolved	**41.0**	mg/L	0.050	0.011	1	11/01/19 18:00	11/03/19 12:15	7439-95-4	
Manganese, Dissolved	**4.3**	mg/L	0.040	0.0061	1	11/01/19 18:00	11/03/19 12:15	7439-96-5	
Potassium, Dissolved	**10.1**	mg/L	0.20	0.026	1	11/01/19 18:00	11/03/19 12:15	7440-09-7	
Sodium, Dissolved	**32.7**	mg/L	10.0	1.9	10	11/01/19 18:00	11/04/19 15:20	7440-23-5	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	**0.00034J**	mg/L	0.0030	0.00027	1	10/28/19 20:04	10/29/19 21:34	7440-36-0	B
Arsenic	**1.9**	mg/L	0.0050	0.00035	1	10/28/19 20:04	10/29/19 21:34	7440-38-2	
Barium	**0.13**	mg/L	0.010	0.00049	1	10/28/19 20:04	10/29/19 21:34	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/28/19 20:04	10/29/19 21:34	7440-41-7	
Boron	**2.1**	mg/L	0.040	0.0049	1	10/28/19 20:04	10/29/19 21:34	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/28/19 20:04	10/29/19 21:34	7440-43-9	
Calcium	**151**	mg/L	5.0	0.55	50	10/28/19 20:04	10/29/19 21:39	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/28/19 20:04	10/29/19 21:34	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/28/19 20:04	10/29/19 21:34	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	10/28/19 20:04	10/29/19 21:34	7439-92-1	
Lithium	**0.13**	mg/L	0.030	0.00078	1	10/28/19 20:04	10/29/19 21:34	7439-93-2	
Molybdenum	**0.050**	mg/L	0.010	0.00095	1	10/28/19 20:04	10/29/19 21:34	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/28/19 20:04	10/29/19 21:34	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	10/28/19 20:04	10/29/19 21:34	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony, Dissolved	ND	mg/L	0.0030	0.00027	1	11/03/19 15:41	11/04/19 20:45	7440-36-0	
Arsenic, Dissolved	**0.24**	mg/L	0.0050	0.00035	1	11/03/19 15:41	11/04/19 20:45	7440-38-2	
Barium, Dissolved	**0.078**	mg/L	0.010	0.00049	1	11/03/19 15:41	11/04/19 20:45	7440-39-3	
Beryllium, Dissolved	ND	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/05/19 13:17	7440-41-7	
Boron, Dissolved	**2.4**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/05/19 13:17	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 20:45	7440-43-9	
Calcium, Dissolved	**150**	mg/L	5.0	0.55	50	11/03/19 15:41	11/04/19 20:51	7440-70-2	
Chromium, Dissolved	ND	mg/L	0.010	0.00039	1	11/03/19 15:41	11/04/19 20:45	7440-47-3	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 20:45	7440-48-4	
Lead, Dissolved	ND	mg/L	0.0050	0.000046	1	11/03/19 15:41	11/04/19 20:45	7439-92-1	
Lithium, Dissolved	**0.15**	mg/L	0.030	0.00078	1	11/03/19 15:41	11/05/19 13:17	7439-93-2	
Molybdenum, Dissolved	**0.046**	mg/L	0.010	0.00095	1	11/03/19 15:41	11/04/19 20:45	7439-98-7	
Selenium, Dissolved	ND	mg/L	0.010	0.0013	1	11/03/19 15:41	11/04/19 20:45	7782-49-2	
Thallium, Dissolved	ND	mg/L	0.0010	0.000052	1	11/03/19 15:41	11/04/19 20:45	7440-28-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624659

Sample: IW-C-1 **Lab ID: 2624659003** Collected: 10/21/19 16:41 Received: 10/23/19 00:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	10/29/19 08:27	10/29/19 16:33	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	ND	mg/L	0.00020	0.00014	1	11/03/19 15:41	11/04/19 10:49	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**184**	mg/L	20.0	20.0	1		10/28/19 14:56		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/28/19 14:56		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**858**	mg/L	10.0	10.0	1		10/25/19 14:58		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/23/19 19:20		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/24/19 07:24	14797-55-8	H1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**8.8**	mg/L	1.0	0.024	1		10/30/19 23:54	16887-00-6	
Fluoride	**0.97**	mg/L	0.30	0.029	1		10/30/19 23:54	16984-48-8	
Sulfate	**473**	mg/L	100	1.7	100		10/31/19 15:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

QC Batch: 37641 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2624659001, 2624659002, 2624659003

METHOD BLANK: 170922 Matrix: Water
Associated Lab Samples: 2624659001, 2624659002, 2624659003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	10/29/19 13:44	

LABORATORY CONTROL SAMPLE: 170923

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0025	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170924 170925

Parameter	Units	2624794001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L		0.0025	0.0025	0.0026	0.0025	103	101	75-125	2	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

QC Batch: 38080 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2624659001, 2624659002, 2624659003

METHOD BLANK: 173090 Matrix: Water
Associated Lab Samples: 2624659001, 2624659002, 2624659003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury, Dissolved	mg/L	ND	0.00020	0.00014	11/04/19 10:34	

LABORATORY CONTROL SAMPLE: 173091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	mg/L	0.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 173092 173093

Parameter	Units	2624686012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	mg/L	ND	0.0025	0.0025	0.0026	0.0025	105	99	75-125	6	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

QC Batch: 37765 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2624659001, 2624659002, 2624659003

METHOD BLANK: 171372 Matrix: Water
Associated Lab Samples: 2624659001, 2624659002, 2624659003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	mg/L	ND	0.10	0.032	11/01/19 00:53	
Iron	mg/L	ND	0.040	0.015	11/01/19 00:53	
Magnesium	mg/L	ND	0.050	0.011	11/01/19 00:53	
Manganese	mg/L	ND	0.040	0.0061	11/01/19 00:53	
Potassium	mg/L	ND	0.20	0.026	11/01/19 00:53	
Sodium	mg/L	ND	1.0	0.19	11/01/19 00:53	

LABORATORY CONTROL SAMPLE: 171373

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/L	1	1.0	101	80-120	
Iron	mg/L	1	1.0	103	80-120	
Magnesium	mg/L	1	1.0	104	80-120	
Manganese	mg/L	1	1.0	104	80-120	
Potassium	mg/L	1	0.99	99	80-120	
Sodium	mg/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171374 171375

Parameter	Units	2623705001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/L	ND	1	1	1.0	1.0	102	100	75-125	2	20	
Iron	mg/L	0.17	1	1	1.2	1.2	104	102	75-125	2	20	
Magnesium	mg/L	35.4	1	1	36.7	36.1	130	75	75-125	2	20	M1
Manganese	mg/L	9.0	1	1	10.3	10.1	126	110	75-125	2	20	M1
Potassium	mg/L	2.1	1	1	3.3	3.3	119	119	75-125	0	20	
Sodium	mg/L	13.1	1	1	14.3	14.1	125	100	75-125	2	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

QC Batch: 38053 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Associated Lab Samples: 2624659001, 2624659002, 2624659003

METHOD BLANK: 172832 Matrix: Water
Associated Lab Samples: 2624659001, 2624659002, 2624659003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	mg/L	ND	0.10	0.032	11/03/19 10:57	
Iron, Dissolved	mg/L	ND	0.040	0.015	11/03/19 10:57	
Magnesium, Dissolved	mg/L	ND	0.050	0.011	11/03/19 10:57	
Manganese, Dissolved	mg/L	ND	0.040	0.0061	11/03/19 10:57	
Potassium, Dissolved	mg/L	ND	0.20	0.026	11/03/19 10:57	
Sodium, Dissolved	mg/L	ND	1.0	0.19	11/03/19 10:57	

LABORATORY CONTROL SAMPLE: 172833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	mg/L	1	1.0	102	80-120	
Iron, Dissolved	mg/L	1	1.1	106	80-120	
Magnesium, Dissolved	mg/L	1	1.0	103	80-120	
Manganese, Dissolved	mg/L	1	1.1	105	80-120	
Potassium, Dissolved	mg/L	1	0.97	97	80-120	
Sodium, Dissolved	mg/L	1	0.96J	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 173035 173036

Parameter	Units	2624678005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	mg/L	ND	1	1	1.1	1.0	106	100	75-125	6	20	
Iron, Dissolved	mg/L	ND	1	1	1.1	1.0	110	104	75-125	6	20	
Magnesium, Dissolved	mg/L	38.6	1	1	42.6	40.0	402	138	75-125	6	20	M1
Manganese, Dissolved	mg/L	ND	1	1	1.1	1.0	108	104	75-125	4	20	
Potassium, Dissolved	mg/L	1.7	1	1	3.0	2.7	125	100	75-125	9	20	
Sodium, Dissolved	mg/L	28.1	1	1	30.8	28.7	270	57	75-125	7	20	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

QC Batch: 37696 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624659001, 2624659002, 2624659003

METHOD BLANK: 171182 Matrix: Water
Associated Lab Samples: 2624659001, 2624659002, 2624659003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.00029J	0.0030	0.00027	10/29/19 19:20	
Arsenic	mg/L	ND	0.0050	0.00035	10/29/19 19:20	
Barium	mg/L	ND	0.010	0.00049	10/29/19 19:20	
Beryllium	mg/L	ND	0.0030	0.000074	10/29/19 19:20	
Boron	mg/L	ND	0.040	0.0049	10/29/19 19:20	
Cadmium	mg/L	ND	0.0025	0.00011	10/29/19 19:20	
Calcium	mg/L	ND	0.10	0.011	10/29/19 19:20	
Chromium	mg/L	ND	0.010	0.00039	10/29/19 19:20	
Cobalt	mg/L	ND	0.0050	0.00030	10/29/19 19:20	
Lead	mg/L	ND	0.0050	0.000046	10/29/19 19:20	
Lithium	mg/L	ND	0.030	0.00078	10/29/19 19:20	
Molybdenum	mg/L	ND	0.010	0.00095	10/29/19 19:20	
Selenium	mg/L	ND	0.010	0.0013	10/29/19 19:20	
Thallium	mg/L	ND	0.0010	0.000052	10/29/19 19:20	

LABORATORY CONTROL SAMPLE: 171183

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	113	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.10	104	80-120	
Beryllium	mg/L	0.1	0.10	103	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	0.1	0.11	107	80-120	
Cobalt	mg/L	0.1	0.11	106	80-120	
Lead	mg/L	0.1	0.11	106	80-120	
Lithium	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.10	104	80-120	
Selenium	mg/L	0.1	0.10	102	80-120	
Thallium	mg/L	0.1	0.11	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171184 171185

Parameter	Units	2624794002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	111	112	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171184 171185

Parameter	Units	2624794002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.0046J	0.1	0.1	0.097	0.098	93	93	75-125	0	20	
Barium	mg/L	0.35	0.1	0.1	0.46	0.46	108	109	75-125	0	20	
Beryllium	mg/L	0.000078J	0.1	0.1	0.090	0.091	90	91	75-125	1	20	
Boron	mg/L	1.1	1	1	1.9	1.9	78	81	75-125	1	20	
Cadmium	mg/L		0.1	0.1	0.086	0.085	86	85	75-125	1	20	
Calcium	mg/L	260	1	1	269	272	841	1200	75-125	1	20	
Chromium	mg/L	0.0019J	0.1	0.1	0.11	0.11	104	103	75-125	1	20	
Cobalt	mg/L	ND	0.1	0.1	0.095	0.094	95	94	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.095	0.096	95	96	75-125	1	20	
Lithium	mg/L	0.096	0.1	0.1	0.20	0.20	101	102	75-125	0	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	109	110	75-125	0	20	
Selenium	mg/L	0.0049J	0.1	0.1	0.051	0.048	46	43	75-125	5	20	M1
Thallium	mg/L	ND	0.1	0.1	0.099	0.098	99	98	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

QC Batch: 38026 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 2624659001, 2624659002, 2624659003

METHOD BLANK: 172898 Matrix: Water
Associated Lab Samples: 2624659001, 2624659002, 2624659003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony, Dissolved	mg/L	ND	0.0030	0.00027	11/04/19 17:03	
Arsenic, Dissolved	mg/L	0.00093J	0.0050	0.00035	11/04/19 17:03	
Barium, Dissolved	mg/L	ND	0.010	0.00049	11/04/19 17:03	
Beryllium, Dissolved	mg/L	ND	0.0030	0.000074	11/04/19 17:03	
Boron, Dissolved	mg/L	ND	0.040	0.0049	11/04/19 17:03	
Cadmium, Dissolved	mg/L	ND	0.0025	0.00011	11/04/19 17:03	
Calcium, Dissolved	mg/L	ND	0.10	0.011	11/04/19 17:03	
Chromium, Dissolved	mg/L	ND	0.010	0.00039	11/04/19 17:03	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00030	11/04/19 17:03	
Lead, Dissolved	mg/L	ND	0.0050	0.000046	11/04/19 17:03	
Lithium, Dissolved	mg/L	ND	0.030	0.00078	11/04/19 17:03	
Molybdenum, Dissolved	mg/L	ND	0.010	0.00095	11/04/19 17:03	
Selenium, Dissolved	mg/L	ND	0.010	0.0013	11/04/19 17:03	
Thallium, Dissolved	mg/L	ND	0.0010	0.000052	11/04/19 17:03	

LABORATORY CONTROL SAMPLE: 172899

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony, Dissolved	mg/L	0.1	0.10	101	80-120	
Arsenic, Dissolved	mg/L	0.1	0.10	100	80-120	
Barium, Dissolved	mg/L	0.1	0.097	97	80-120	
Beryllium, Dissolved	mg/L	0.1	0.10	104	80-120	
Boron, Dissolved	mg/L	1	1.0	101	80-120	
Cadmium, Dissolved	mg/L	0.1	0.10	100	80-120	
Calcium, Dissolved	mg/L	1	0.98	98	80-120	
Chromium, Dissolved	mg/L	0.1	0.10	103	80-120	
Cobalt, Dissolved	mg/L	0.1	0.10	100	80-120	
Lead, Dissolved	mg/L	0.1	0.091	91	80-120	
Lithium, Dissolved	mg/L	0.1	0.10	104	80-120	
Molybdenum, Dissolved	mg/L	0.1	0.099	99	80-120	
Selenium, Dissolved	mg/L	0.1	0.10	101	80-120	
Thallium, Dissolved	mg/L	0.1	0.093	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 172900 172901

Parameter	Units	2624635001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony, Dissolved	mg/L	ND	0.1	0.1	0.10	0.10	104	100	75-125	4	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 172900 172901

Parameter	Units	2624635001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	mg/L	0.0017J	0.1	0.1	0.10	0.11	101	106	75-125	5	20	
Barium, Dissolved	mg/L	0.035	0.1	0.1	0.14	0.13	101	93	75-125	6	20	
Beryllium, Dissolved	mg/L	0.00089J	0.1	0.1	0.098	0.094	97	93	75-125	4	20	
Boron, Dissolved	mg/L	0.93	1	1	1.9	1.8	99	84	75-125	8	20	
Cadmium, Dissolved	mg/L	0.00022J	0.1	0.1	0.10	0.10	102	100	75-125	3	20	
Calcium, Dissolved	mg/L	59.9	1	1	59.1	61.4	-76	154	75-125	4	20	M6
Chromium, Dissolved	mg/L	0.010	0.1	0.1	0.11	0.11	101	101	75-125	0	20	
Cobalt, Dissolved	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20	
Lead, Dissolved	mg/L	ND	0.1	0.1	0.093	0.087	93	87	75-125	6	20	
Lithium, Dissolved	mg/L	0.0055J	0.1	0.1	0.10	0.098	97	92	75-125	4	20	
Molybdenum, Dissolved	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	20	
Selenium, Dissolved	mg/L	0.032	0.1	0.1	0.13	0.14	101	105	75-125	3	20	
Thallium, Dissolved	mg/L	0.000057J	0.1	0.1	0.093	0.089	93	89	75-125	5	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

QC Batch: 37558 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624659001, 2624659002, 2624659003

LABORATORY CONTROL SAMPLE: 170357

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	399	100	84-108	

SAMPLE DUPLICATE: 170358

Parameter	Units	2624635002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1550	1650	6	10	

SAMPLE DUPLICATE: 170359

Parameter	Units	2624682011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1120	1090	2	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

QC Batch: 37448 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2624659001, 2624659002, 2624659003

METHOD BLANK: 169586 Matrix: Water
Associated Lab Samples: 2624659001, 2624659002, 2624659003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	10/23/19 19:12	

LABORATORY CONTROL SAMPLE: 169587

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.54	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169588 169589

Parameter	Units	2624659002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.54	0.54	108	108	80-120	1	10	H1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

QC Batch: 37451 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624659001, 2624659002, 2624659003

METHOD BLANK: 169595 Matrix: Water
Associated Lab Samples: 2624659001, 2624659002, 2624659003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/24/19 01:53	

LABORATORY CONTROL SAMPLE: 169596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	5	5.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169821 169822

Parameter	Units	2624678003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	ND	10	10	9.8	9.8	98	98	90-110	0	15	H1

MATRIX SPIKE SAMPLE: 169823

Parameter	Units	2624663002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	2.3	10	11.1	88	90-110	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624659

QC Batch: 37858 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624659001, 2624659002, 2624659003

METHOD BLANK: 171795 Matrix: Water
Associated Lab Samples: 2624659001, 2624659002, 2624659003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.032J	1.0	0.024	10/30/19 20:37	
Fluoride	mg/L	ND	0.30	0.029	10/30/19 20:37	
Sulfate	mg/L	0.36J	1.0	0.017	10/30/19 20:37	

LABORATORY CONTROL SAMPLE: 171796

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.7	107	90-110	
Fluoride	mg/L	10	10.9	109	90-110	
Sulfate	mg/L	10	10.9	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171797 171798

Parameter	Units	2624403001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	123	100	100	328	328	205	205	90-110	0	15	M6
Fluoride	mg/L	1.0	100	100	107	106	106	105	90-110	0	15	

MATRIX SPIKE SAMPLE: 171799

Parameter	Units	2624685004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	18.0	10	26.2	82	90-110	M1
Fluoride	mg/L	0.20J	10	10.9	107	90-110	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2624659

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.
H1	Analysis conducted outside the EPA method holding time.
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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624659

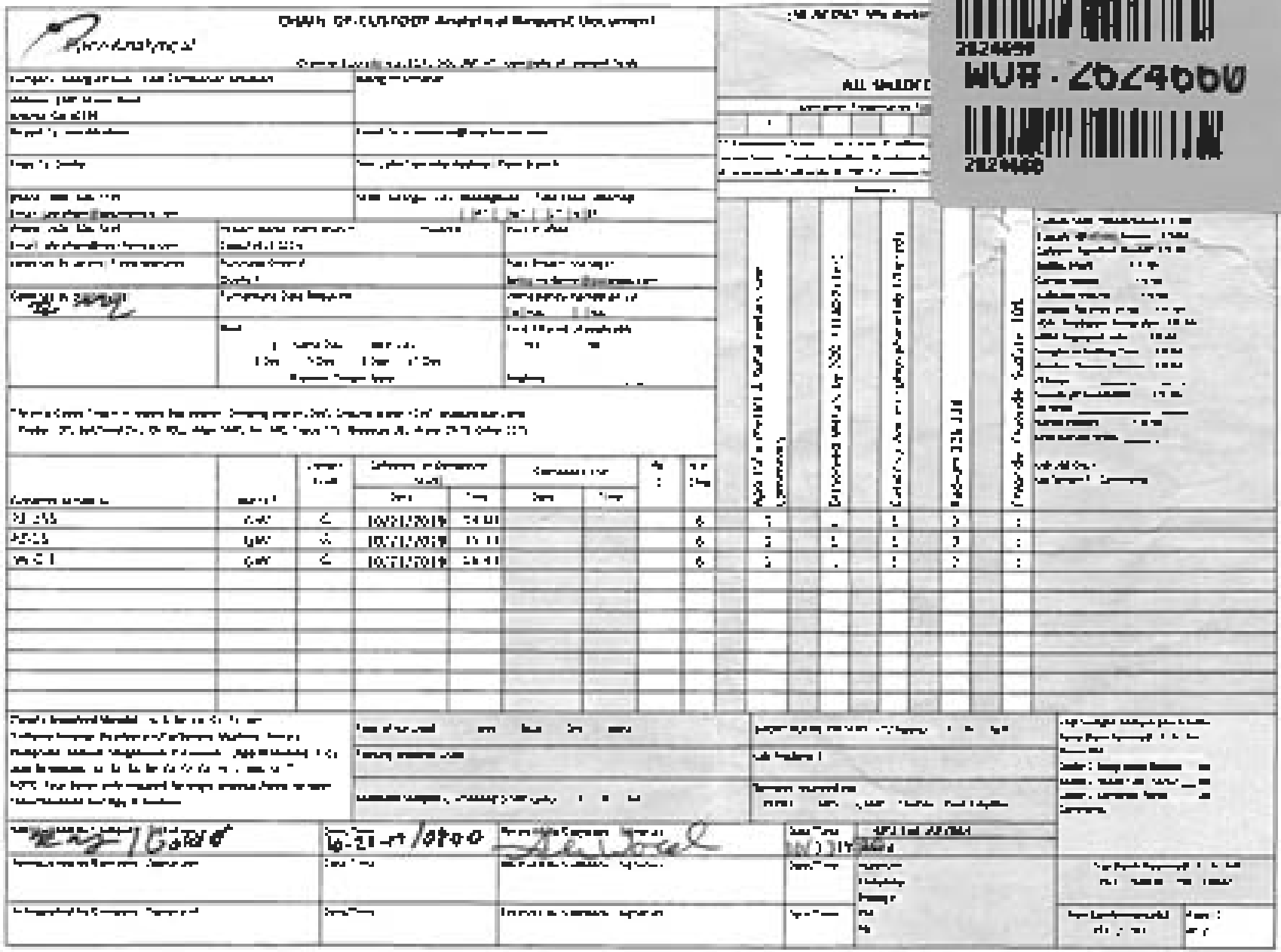
Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624659001	**PZ-15S**	EPA 3010A	37765	EPA 6010D	37960
2624659002	**PZ-15I**	EPA 3010A	37765	EPA 6010D	37960
2624659003	**IW-C-1**	EPA 3010A	37765	EPA 6010D	37960
2624659001	**PZ-15S**	EPA 3010A	38053	EPA 6010D	38066
2624659002	**PZ-15I**	EPA 3010A	38053	EPA 6010D	38066
2624659003	**IW-C-1**	EPA 3010A	38053	EPA 6010D	38066
2624659001	**PZ-15S**	EPA 3005A	37696	EPA 6020B	37751
2624659002	**PZ-15I**	EPA 3005A	37696	EPA 6020B	37751
2624659003	**IW-C-1**	EPA 3005A	37696	EPA 6020B	37751
2624659001	**PZ-15S**	EPA 3005A	38026	EPA 6020B	38086
2624659002	**PZ-15I**	EPA 3005A	38026	EPA 6020B	38086
2624659003	**IW-C-1**	EPA 3005A	38026	EPA 6020B	38086
2624659001	**PZ-15S**	EPA 7470A	37641	EPA 7470A	37746
2624659002	**PZ-15I**	EPA 7470A	37641	EPA 7470A	37746
2624659003	**IW-C-1**	EPA 7470A	37641	EPA 7470A	37746
2624659001	**PZ-15S**	EPA 7470A	38080	EPA 7470A	38085
2624659002	**PZ-15I**	EPA 7470A	38080	EPA 7470A	38085
2624659003	**IW-C-1**	EPA 7470A	38080	EPA 7470A	38085
2624659002	**PZ-15I**	SM 2320B	37659		
2624659003	**IW-C-1**	SM 2320B	37659		
2624659001	**PZ-15S**	SM 2320B	37728		
2624659001	**PZ-15S**	SM 2540C	37558		
2624659002	**PZ-15I**	SM 2540C	37558		
2624659003	**IW-C-1**	SM 2540C	37558		
2624659001	**PZ-15S**	SM 4500-P	37448		
2624659002	**PZ-15I**	SM 4500-P	37448		
2624659003	**IW-C-1**	SM 4500-P	37448		
2624659001	**PZ-15S**	EPA 300.0	37451		
2624659002	**PZ-15I**	EPA 300.0	37451		
2624659003	**IW-C-1**	EPA 300.0	37451		
2624659001	**PZ-15S**	EPA 300.0	37858		
2624659002	**PZ-15I**	EPA 300.0	37858		
2624659003	**IW-C-1**	EPA 300.0	37858		

WO# : 2624659

2624659

WO# : 2624660

2624660



Sample Conditions Upon Receipt

Pace Analytical

Client Name: Cross & Power

WO#: 2624659

PM: BH Due Date: 10/30/18

CLIENT: GAPower-CCP

WO#: 2624660

PM: BH Due Date: 11/26/18

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: IR3 Type of Ice: [ ] Wet [ ] Blue [ ] None [ ] Samples received on ice, cooling process has begun

Cooler Temperature: 1.6 Biological Tissue is Frozen: [ ] yes [ ] no

Temp should be above freezing to 6°C

Comments

Date and Initials of person examining contents

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/Resolution:

3000 W28

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)

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

November 25, 2019

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

RE: Project: Plant Branch Rads
Pace Project No.: 2624660

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 23, 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: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch Rads
Pace Project No.: 2624660

Pace Analytical Services Pennsylvania
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch Rads
Pace Project No.: 2624660

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624660001	**PZ-15S**	Water	10/21/19 14:01	10/23/19 00:00
2624660002	**PZ-15I**	Water	10/21/19 15:11	10/23/19 00:00
2624660003	**IW-C-1**	Water	10/21/19 16:41	10/23/19 00:00

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch Rads
Pace Project No.: 2624660

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624660001	**PZ-15S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624660002	**PZ-15I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624660003	**IW-C-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch Rads
Pace Project No.: 2624660

Sample: PZ-15S **Lab ID: 2624660001** Collected: 10/21/19 14:01 Received: 10/23/19 00:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.486 ± 0.292 (0.444) C:96% T:NA**	pCi/L	11/15/19 07:34	13982-63-3	
Radium-228	EPA 9320	**0.274 ± 0.346 (0.733) C:81% T:81%**	pCi/L	11/12/19 15:57	15262-20-1	
Total Radium	Total Radium Calculation	**0.760 ± 0.638 (1.18)**	pCi/L	11/18/19 15:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch Rads
Pace Project No.: 2624660

Sample: PZ-15I **Lab ID: 2624660002** Collected: 10/21/19 15:11 Received: 10/23/19 00:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**1.00 ± 0.410 (0.503) C:95% T:NA**	pCi/L	11/15/19 07:34	13982-63-3	
Radium-228	EPA 9320	**3.61 ± 0.898 (0.796) C:78% T:79%**	pCi/L	11/12/19 15:56	15262-20-1	
Total Radium	Total Radium Calculation	**4.61 ± 1.31 (1.30)**	pCi/L	11/18/19 15:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Branch Rads
Pace Project No.: 2624660

Sample: IW-C-1 **Lab ID: 2624660003** Collected: 10/21/19 16:41 Received: 10/23/19 00:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.461 ± 0.288 (0.442) C:93% T:NA**	pCi/L	11/15/19 07:34	13982-63-3	
Radium-228	EPA 9320	**0.0873 ± 0.386 (0.879) C:71% T:82%**	pCi/L	11/12/19 15:56	15262-20-1	
Total Radium	Total Radium Calculation	**0.548 ± 0.674 (1.32)**	pCi/L	11/18/19 15:16	7440-14-4	

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch Rads
Pace Project No.: 2624660

QC Batch: 369310 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2624660001, 2624660002, 2624660003

METHOD BLANK: 1791698 Matrix: Water
Associated Lab Samples: 2624660001, 2624660002, 2624660003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.590 ± 0.307 (0.405) C:93% T:NA	pCi/L	11/15/19 07:34	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Branch Rads
Pace Project No.: 2624660

QC Batch: 369311 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2624660001, 2624660002, 2624660003

METHOD BLANK: 1791699 Matrix: Water
Associated Lab Samples: 2624660001, 2624660002, 2624660003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.174 ± 0.362 (0.799) C:80% T:87%	pCi/L	11/12/19 15:54	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch Rads
Pace Project No.: 2624660

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch Rads
Pace Project No.: 2624660

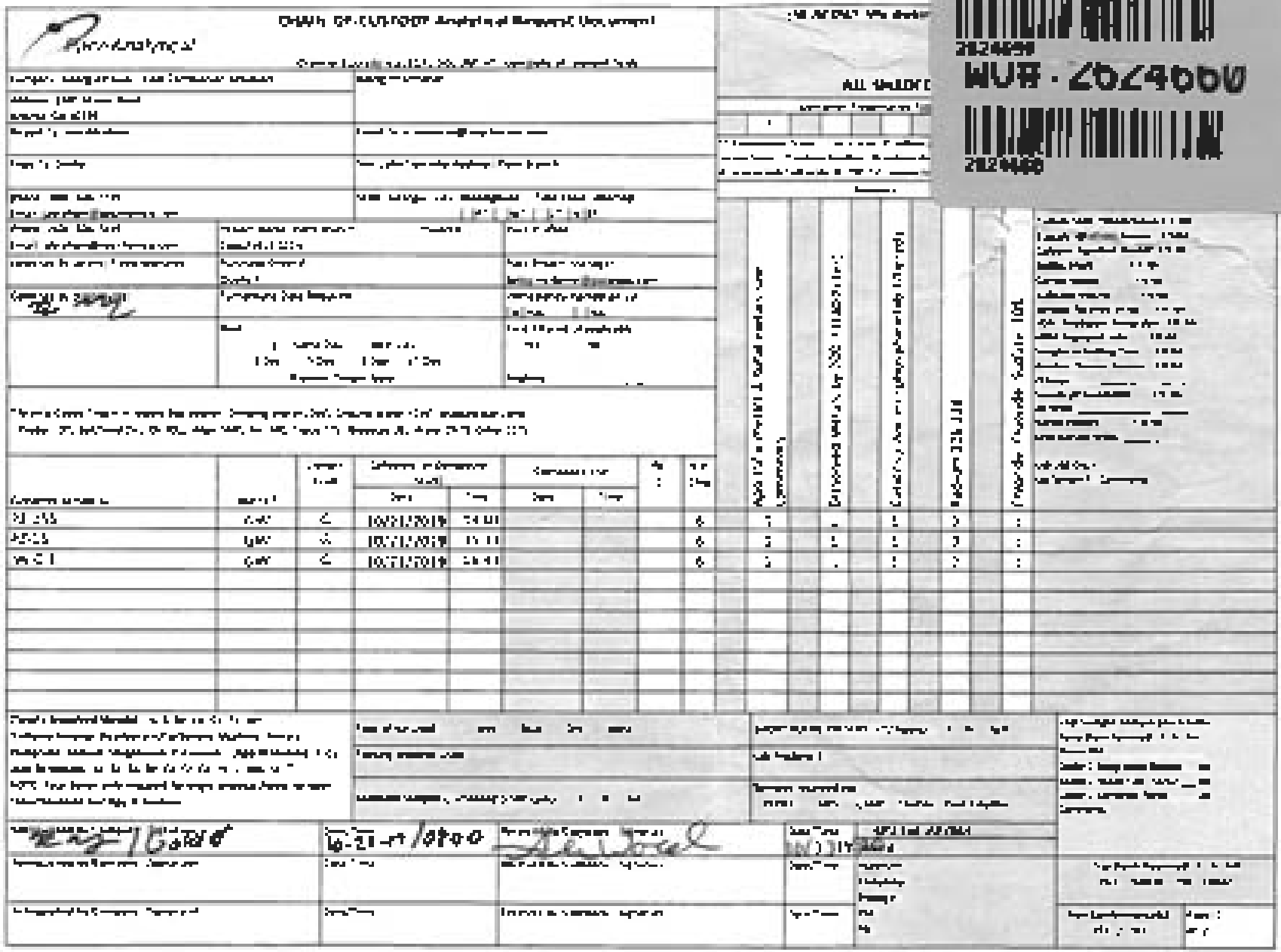
Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624660001	**PZ-15S**	EPA 9315	369310		
2624660002	**PZ-15I**	EPA 9315	369310		
2624660003	**IW-C-1**	EPA 9315	369310		
2624660001	**PZ-15S**	EPA 9320	369311		
2624660002	**PZ-15I**	EPA 9320	369311		
2624660003	**IW-C-1**	EPA 9320	369311		
2624660001	**PZ-15S**	Total Radium Calculation	371529		
2624660002	**PZ-15I**	Total Radium Calculation	371529		
2624660003	**IW-C-1**	Total Radium Calculation	371529		

WO# : 2624659

2624659

WO# : 2624660

2624660



Sample Conditions Upon Receipt

Pace Analytical

Client Name: Cross & Power

WO#: 2624659
PM: BH Due Date: 10/30/18
CLIENT: GAPower-CCP

WO#: 2624660
PM: BH Due Date: 11/26/18
CLIENT: GAPower-CCR

Courier: [ ] FedEx [ ] 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: IR3 Type of Ice: [ ] Wet [ ] Blue [ ] None [ ] Samples received on ice, cooling process has begun

Cooler Temperature: 1.6 Biological Tissue is Frozen: [ ] Yes [ ] No

Temp should be above freezing to 6°C

Comments

Date and Initials of person examining contents

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

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/Resolution:

3000 W28

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)

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: Plant Branch
Pace Project No.: 2624678

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 18, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: Plant Branch
Pace Project No.: 2624678

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: Plant Branch
Pace Project No.: 2624678

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624678001	**BRGWC-17S**	Water	10/17/19 10:45	10/18/19 15:00
2624678002	**BRGWC-36S**	Water	10/17/19 12:38	10/18/19 15:00
2624678003	**BRGWC-27I**	Water	10/17/19 09:50	10/18/19 15:00
2624678004	**BRGWC-30I**	Water	10/17/19 12:00	10/18/19 15:00
2624678005	**BRGWC-32S**	Water	10/17/19 10:50	10/18/19 15:00
2624678006	**BRGWC-45**	Water	10/17/19 14:08	10/18/19 15:00
2624678007	**EB-2**	Water	10/17/19 13:00	10/18/19 15:00
2624678008	**EB-3**	Water	10/17/19 14:41	10/18/19 15:00
2624678009	**FB-3**	Water	10/17/19 14:13	10/18/19 15:00
2624678010	**DUP-3**	Water	10/17/19 00:00	10/18/19 15:00

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624678

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624678001	**BRGWC-17S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678002	**BRGWC-36S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678003	**BRGWC-27I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678004	**BRGWC-30I**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678005	**BRGWC-32S**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678006	**BRGWC-45**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678007	**EB-2**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678008	**EB-3**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: Plant Branch
Pace Project No.: 2624678

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678009	**FB-3**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
2624678010	**DUP-3**	EPA 6010D	KLH	10
		EPA 6010D	KLH	10
		SM 2320B	S1A	2
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-17S **Lab ID: 2624678001** Collected: 10/17/19 10:45 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:06	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:06	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:06	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:06	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:06	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:06	7439-89-6	
Magnesium	**21.1**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:06	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:06	7439-96-5	
Potassium	**1.1**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:06	7440-09-7	
Sodium	**22.1**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:06	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 09:54	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 09:54	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 09:54	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 09:54	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 09:54	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 09:54	7439-89-6	
Magnesium, Dissolved	**21.5**	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 09:54	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 09:54	7439-96-5	
Potassium, Dissolved	**1.1**	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 09:54	7440-09-7	
Sodium, Dissolved	**22.0**	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 09:54	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**75.0**	mg/L	20.0	20.0	1		10/25/19 14:56		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/25/19 14:56		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.15**	mg/L	0.020	0.020	1		10/25/19 19:58		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.065**	mg/L	0.050	0.0050	1		10/24/19 02:59	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-36S **Lab ID: 2624678002** Collected: 10/17/19 12:38 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:11	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:11	7440-41-7	
Boron	**1.1**	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:11	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:11	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:11	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:11	7439-89-6	
Magnesium	**22.1**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:11	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:11	7439-96-5	
Potassium	**4.1**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:11	7440-09-7	
Sodium	**38.9**	mg/L	10.0	1.9	10	10/25/19 16:05	10/31/19 21:46	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 09:59	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 09:59	7440-41-7	
Boron, Dissolved	**1.1**	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 09:59	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 09:59	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 09:59	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 09:59	7439-89-6	
Magnesium, Dissolved	**23.0**	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 09:59	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 09:59	7439-96-5	
Potassium, Dissolved	**4.0**	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 09:59	7440-09-7	
Sodium, Dissolved	**36.6**	mg/L	10.0	1.9	10	11/01/19 17:23	11/05/19 17:18	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**16.0**	mg/L	1.0	1.0	1		10/28/19 11:44		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:44		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.19**	mg/L	0.020	0.020	1		10/25/19 19:59		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.035J**	mg/L	0.050	0.0050	1		10/30/19 07:30	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-27I **Lab ID: 2624678003** Collected: 10/17/19 09:50 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:16	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:16	7440-41-7	
Boron	**0.97**	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:16	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:16	7440-43-9	
Cobalt	**0.0090J**	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:16	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:16	7439-89-6	
Magnesium	**6.6**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:16	7439-95-4	
Manganese	**0.85**	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:16	7439-96-5	
Potassium	**5.9**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:16	7440-09-7	
Sodium	**17.4**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:16	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:04	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:04	7440-41-7	
Boron, Dissolved	**0.98**	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:04	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:04	7440-43-9	
Cobalt, Dissolved	**0.011J**	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:04	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:04	7439-89-6	
Magnesium, Dissolved	**7.1**	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:04	7439-95-4	
Manganese, Dissolved	**0.91**	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:04	7439-96-5	
Potassium, Dissolved	**6.2**	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:04	7440-09-7	
Sodium, Dissolved	**18.0**	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 10:04	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**16.5**	mg/L	1.0	1.0	1		10/28/19 11:49		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:49		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/25/19 20:00		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/24/19 02:37	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-30I **Lab ID: 2624678004** Collected: 10/17/19 12:00 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:24	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:24	7440-41-7	
Boron	**1.7**	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:24	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:24	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:24	7440-48-4	
Iron	**0.68**	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:24	7439-89-6	
Magnesium	**29.8**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:24	7439-95-4	
Manganese	**0.43**	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:24	7439-96-5	
Potassium	**4.4**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:24	7440-09-7	
Sodium	**26.7**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:24	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:08	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:08	7440-41-7	
Boron, Dissolved	**1.7**	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:08	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:08	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:08	7440-48-4	
Iron, Dissolved	**0.036J**	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:08	7439-89-6	
Magnesium, Dissolved	**32.5**	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:08	7439-95-4	
Manganese, Dissolved	**0.46**	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:08	7439-96-5	
Potassium, Dissolved	**4.5**	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:08	7440-09-7	
Sodium, Dissolved	**26.7**	mg/L	10.0	1.9	10	11/01/19 17:23	11/05/19 17:23	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**72.0**	mg/L	20.0	20.0	1		10/25/19 15:16		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/25/19 15:16		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.035**	mg/L	0.020	0.020	1		10/25/19 20:01		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.034J**	mg/L	0.050	0.0050	1		10/24/19 03:43	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-32S **Lab ID: 2624678005** Collected: 10/17/19 10:50 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:29	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:29	7440-41-7	
Boron	**1.5**	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:29	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:29	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:29	7440-48-4	
Iron	**0.067**	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:29	7439-89-6	
Magnesium	**37.9**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:29	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:29	7439-96-5	
Potassium	**1.8**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:29	7440-09-7	
Sodium	**28.9**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:29	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 18:00	11/03/19 11:07	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 18:00	11/03/19 11:07	7440-41-7	
Boron, Dissolved	**1.4**	mg/L	0.040	0.017	1	11/01/19 18:00	11/03/19 11:07	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 18:00	11/03/19 11:07	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 18:00	11/03/19 11:07	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 18:00	11/03/19 11:07	7439-89-6	
Magnesium, Dissolved	**38.6**	mg/L	0.050	0.011	1	11/01/19 18:00	11/03/19 11:07	7439-95-4	M1
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 18:00	11/03/19 11:07	7439-96-5	
Potassium, Dissolved	**1.7**	mg/L	0.20	0.026	1	11/01/19 18:00	11/03/19 11:07	7440-09-7	
Sodium, Dissolved	**28.1**	mg/L	1.0	0.19	1	11/01/19 18:00	11/03/19 11:07	7440-23-5	M1
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**21.0**	mg/L	20.0	20.0	1		10/25/19 15:20		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/25/19 15:20		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.063**	mg/L	0.020	0.020	1		10/25/19 20:03		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.13**	mg/L	0.050	0.0050	1		10/24/19 03:21	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: BRGWC-45 **Lab ID: 2624678006** Collected: 10/17/19 14:08 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:33	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:33	7440-41-7	
Boron	**0.064**	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:33	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:33	7440-43-9	
Cobalt	**0.0096J**	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:33	7440-48-4	
Iron	**0.34**	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:33	7439-89-6	
Magnesium	**19.0**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:33	7439-95-4	
Manganese	**0.37**	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:33	7439-96-5	
Potassium	**4.9**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:33	7440-09-7	
Sodium	**18.7**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:33	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:13	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:13	7440-41-7	
Boron, Dissolved	**0.065**	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:13	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:13	7440-43-9	
Cobalt, Dissolved	**0.0098J**	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:13	7440-48-4	
Iron, Dissolved	**0.25**	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:13	7439-89-6	
Magnesium, Dissolved	**19.6**	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:13	7439-95-4	
Manganese, Dissolved	**0.39**	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:13	7439-96-5	
Potassium, Dissolved	**4.9**	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:13	7440-09-7	
Sodium, Dissolved	**18.9**	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 10:13	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**42.0**	mg/L	20.0	20.0	1		10/25/19 15:24		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/25/19 15:24		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/25/19 20:03		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.056**	mg/L	0.050	0.0050	1		10/24/19 04:05	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: EB-2 **Lab ID: 2624678007** Collected: 10/17/19 13:00 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 16:38	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 16:38	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 16:38	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 16:38	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 16:38	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 16:38	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 16:38	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 16:38	7439-96-5	
Potassium	ND	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 16:38	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 16:38	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:33	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:33	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:33	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:33	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:33	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:33	7439-89-6	
Magnesium, Dissolved	ND	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:33	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:33	7439-96-5	
Potassium, Dissolved	ND	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:33	7440-09-7	
Sodium, Dissolved	ND	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 10:33	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:54		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:54		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/25/19 20:04		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.50	0.050	10		10/30/19 16:45	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: EB-3 **Lab ID: 2624678008** Collected: 10/17/19 14:41 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 20:32	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 20:32	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 20:32	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 20:32	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 20:32	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 20:32	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 20:32	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 20:32	7439-96-5	
Potassium	ND	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 20:32	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 20:32	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:38	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:38	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:38	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:38	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:38	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:38	7439-89-6	
Magnesium, Dissolved	ND	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:38	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:38	7439-96-5	
Potassium, Dissolved	ND	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:38	7440-09-7	
Sodium, Dissolved	ND	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 10:38	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:58		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 11:58		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/25/19 20:05		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/30/19 08:14	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: FB-3 **Lab ID: 2624678009** Collected: 10/17/19 14:13 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 20:37	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 20:37	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 20:37	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 20:37	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 20:37	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 20:37	7439-89-6	
Magnesium	ND	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 20:37	7439-95-4	
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 20:37	7439-96-5	
Potassium	ND	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 20:37	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 20:37	7440-23-5	
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 17:23	11/03/19 10:52	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 17:23	11/03/19 10:52	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.017	1	11/01/19 17:23	11/03/19 10:52	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 17:23	11/03/19 10:52	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 17:23	11/03/19 10:52	7440-48-4	
Iron, Dissolved	**0.052**	mg/L	0.040	0.015	1	11/01/19 17:23	11/03/19 10:52	7439-89-6	
Magnesium, Dissolved	ND	mg/L	0.050	0.011	1	11/01/19 17:23	11/03/19 10:52	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 17:23	11/03/19 10:52	7439-96-5	
Potassium, Dissolved	ND	mg/L	0.20	0.026	1	11/01/19 17:23	11/03/19 10:52	7440-09-7	
Sodium, Dissolved	ND	mg/L	1.0	0.19	1	11/01/19 17:23	11/03/19 10:52	7440-23-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 12:00		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		10/28/19 12:00		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/25/19 20:08		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/30/19 07:52	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: Plant Branch
Pace Project No.: 2624678

Sample: DUP-3 **Lab ID: 2624678010** Collected: 10/17/19 00:00 Received: 10/18/19 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum	ND	mg/L	0.10	0.032	1	10/25/19 16:05	10/28/19 20:42	7429-90-5	
Beryllium	ND	mg/L	0.010	0.0026	1	10/25/19 16:05	10/28/19 20:42	7440-41-7	
Boron	ND	mg/L	0.040	0.017	1	10/25/19 16:05	10/28/19 20:42	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00090	1	10/25/19 16:05	10/28/19 20:42	7440-43-9	
Cobalt	ND	mg/L	0.040	0.0052	1	10/25/19 16:05	10/28/19 20:42	7440-48-4	
Iron	ND	mg/L	0.040	0.015	1	10/25/19 16:05	10/28/19 20:42	7439-89-6	
Magnesium	**20.2**	mg/L	0.050	0.011	1	10/25/19 16:05	10/28/19 20:42	7439-95-4	M1
Manganese	ND	mg/L	0.040	0.0061	1	10/25/19 16:05	10/28/19 20:42	7439-96-5	
Potassium	**1.1**	mg/L	0.20	0.026	1	10/25/19 16:05	10/28/19 20:42	7440-09-7	
Sodium	**21.2**	mg/L	1.0	0.19	1	10/25/19 16:05	10/28/19 20:42	7440-23-5	M1
6010D MET ICP, Lab Filtered	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Aluminum, Dissolved	ND	mg/L	0.10	0.032	1	11/01/19 18:00	11/03/19 11:36	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.010	0.0026	1	11/01/19 18:00	11/03/19 11:36	7440-41-7	
Boron, Dissolved	**0.057**	mg/L	0.040	0.017	1	11/01/19 18:00	11/03/19 11:36	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.010	0.00090	1	11/01/19 18:00	11/03/19 11:36	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.040	0.0052	1	11/01/19 18:00	11/03/19 11:36	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.015	1	11/01/19 18:00	11/03/19 11:36	7439-89-6	
Magnesium, Dissolved	**21.1**	mg/L	0.050	0.011	1	11/01/19 18:00	11/03/19 11:36	7439-95-4	
Manganese, Dissolved	ND	mg/L	0.040	0.0061	1	11/01/19 18:00	11/03/19 11:36	7439-96-5	
Potassium, Dissolved	**1.1**	mg/L	0.20	0.026	1	11/01/19 18:00	11/03/19 11:36	7440-09-7	
Sodium, Dissolved	**21.7**	mg/L	1.0	0.19	1	11/01/19 18:00	11/03/19 11:36	7440-23-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**73.0**	mg/L	20.0	20.0	1		10/25/19 15:27		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/25/19 15:27		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.15**	mg/L	0.020	0.020	1		10/25/19 20:09		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.064**	mg/L	0.050	0.0050	1		10/30/19 06:23	14797-55-8	H1,M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 37568 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678005, 2624678006, 2624678007, 2624678008, 2624678009, 2624678010

METHOD BLANK: 170388 Matrix: Water
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678005, 2624678006, 2624678007, 2624678008, 2624678009, 2624678010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	mg/L	ND	0.10	0.032	10/28/19 15:13	
Beryllium	mg/L	ND	0.010	0.0026	10/28/19 15:13	
Boron	mg/L	ND	0.040	0.017	10/28/19 15:13	
Cadmium	mg/L	ND	0.010	0.00090	10/28/19 15:13	
Cobalt	mg/L	ND	0.040	0.0052	10/28/19 15:13	
Iron	mg/L	ND	0.040	0.015	10/28/19 15:13	
Magnesium	mg/L	ND	0.050	0.011	10/28/19 15:13	
Manganese	mg/L	ND	0.040	0.0061	10/28/19 15:13	
Potassium	mg/L	ND	0.20	0.026	10/28/19 15:13	
Sodium	mg/L	ND	1.0	0.19	10/28/19 15:13	

LABORATORY CONTROL SAMPLE: 170389

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/L	1	0.96	96	80-120	
Beryllium	mg/L	1	0.97	97	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cadmium	mg/L	1	0.99	99	80-120	
Cobalt	mg/L	1	0.96	96	80-120	
Iron	mg/L	1	0.96	96	80-120	
Magnesium	mg/L	1	0.97	97	80-120	
Manganese	mg/L	1	0.98	98	80-120	
Potassium	mg/L	1	0.96	96	80-120	
Sodium	mg/L	1	0.97J	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170390 170391

Parameter	Units	2624678010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/L	ND	1	1	0.98	0.98	98	98	75-125	0	20	
Beryllium	mg/L	ND	1	1	1.0	1.0	101	100	75-125	1	20	
Boron	mg/L	0.057	1	1	1.0	1.0	99	100	75-125	1	20	
Cadmium	mg/L	ND	1	1	1.0	1.0	101	100	75-125	1	20	
Cobalt	mg/L	ND	1	1	0.99	0.98	99	98	75-125	1	20	
Iron	mg/L	ND	1	1	1.0	1.0	100	104	75-125	4	20	
Magnesium	mg/L	21.1	1	1	21.3	20.8	115	62	75-125	3	20	M1
Manganese	mg/L	ND	1	1	1.0	1.0	102	100	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170390 170391

Parameter	Units	2624678010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Potassium	mg/L	1.1	1	1	2.2	2.1	107	102	75-125	2	20	
Sodium	mg/L	21.7	1	1	22.2	21.8	99	59	75-125	2	20	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 38007 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678006, 2624678007, 2624678008, 2624678009

METHOD BLANK: 172830 Matrix: Water
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678006, 2624678007, 2624678008, 2624678009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	mg/L	ND	0.10	0.032	11/04/19 15:30	
Beryllium, Dissolved	mg/L	ND	0.010	0.0026	11/04/19 15:30	
Boron, Dissolved	mg/L	ND	0.040	0.017	11/04/19 15:30	
Cadmium, Dissolved	mg/L	ND	0.010	0.00090	11/04/19 15:30	
Cobalt, Dissolved	mg/L	ND	0.040	0.0052	11/04/19 15:30	
Iron, Dissolved	mg/L	ND	0.040	0.015	11/04/19 15:30	
Magnesium, Dissolved	mg/L	ND	0.050	0.011	11/04/19 15:30	
Manganese, Dissolved	mg/L	ND	0.040	0.0061	11/04/19 15:30	
Potassium, Dissolved	mg/L	ND	0.20	0.026	11/04/19 15:30	
Sodium, Dissolved	mg/L	ND	1.0	0.19	11/04/19 15:30	

LABORATORY CONTROL SAMPLE: 172831

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	mg/L	1	1.1	106	80-120	
Beryllium, Dissolved	mg/L	1	1.0	104	80-120	
Boron, Dissolved	mg/L	1	1.0	101	80-120	
Cadmium, Dissolved	mg/L	1	1.1	107	80-120	
Cobalt, Dissolved	mg/L	1	1.1	107	80-120	
Iron, Dissolved	mg/L	1	1.1	108	80-120	
Magnesium, Dissolved	mg/L	1	1.1	107	80-120	
Manganese, Dissolved	mg/L	1	1.1	106	80-120	
Potassium, Dissolved	mg/L	1	1.0	102	80-120	
Sodium, Dissolved	mg/L	1	1.0	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 172834 172835

Parameter	Units	2624490001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	mg/L	0.16	1	1	1.2	1.2	102	104	75-125	2	20	
Beryllium, Dissolved	mg/L	ND	1	1	1.0	1.0	103	103	75-125	0	20	
Boron, Dissolved	mg/L	1.2	1	1	2.1	2.2	99	100	75-125	1	20	
Cadmium, Dissolved	mg/L	ND	1	1	1.0	1.0	102	104	75-125	1	20	
Cobalt, Dissolved	mg/L	0.048	1	1	1.1	1.1	104	105	75-125	1	20	
Iron, Dissolved	mg/L	ND	1	1	1.1	1.1	106	106	75-125	0	20	
Magnesium, Dissolved	mg/L	5.7	1	1	6.4	6.4	68	70	75-125	0	20	M1
Manganese, Dissolved	mg/L	1.5	1	1	2.5	2.4	98	96	75-125	1	20	
Potassium, Dissolved	mg/L	12.5	1	1	12.9	12.9	42	48	75-125	0	20	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 172834 172835

Parameter	Units	2624490001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sodium, Dissolved	mg/L	16.4	1	1	16.5	16.6	9	26	75-125	1	20	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 38053 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET Dissolved
Associated Lab Samples: 2624678005, 2624678010

METHOD BLANK: 172832 Matrix: Water
Associated Lab Samples: 2624678005, 2624678010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	mg/L	ND	0.10	0.032	11/03/19 10:57	
Beryllium, Dissolved	mg/L	ND	0.010	0.0026	11/03/19 10:57	
Boron, Dissolved	mg/L	ND	0.040	0.017	11/03/19 10:57	
Cadmium, Dissolved	mg/L	ND	0.010	0.00090	11/03/19 10:57	
Cobalt, Dissolved	mg/L	ND	0.040	0.0052	11/03/19 10:57	
Iron, Dissolved	mg/L	ND	0.040	0.015	11/03/19 10:57	
Magnesium, Dissolved	mg/L	ND	0.050	0.011	11/03/19 10:57	
Manganese, Dissolved	mg/L	ND	0.040	0.0061	11/03/19 10:57	
Potassium, Dissolved	mg/L	ND	0.20	0.026	11/03/19 10:57	
Sodium, Dissolved	mg/L	ND	1.0	0.19	11/03/19 10:57	

LABORATORY CONTROL SAMPLE: 172833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	mg/L	1	1.0	102	80-120	
Beryllium, Dissolved	mg/L	1	1.0	101	80-120	
Boron, Dissolved	mg/L	1	0.97	97	80-120	
Cadmium, Dissolved	mg/L	1	1.0	104	80-120	
Cobalt, Dissolved	mg/L	1	1.1	106	80-120	
Iron, Dissolved	mg/L	1	1.1	106	80-120	
Magnesium, Dissolved	mg/L	1	1.0	103	80-120	
Manganese, Dissolved	mg/L	1	1.1	105	80-120	
Potassium, Dissolved	mg/L	1	0.97	97	80-120	
Sodium, Dissolved	mg/L	1	0.96J	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 173035 173036

Parameter	Units	2624678005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	mg/L	ND	1	1	1.1	1.0	106	100	75-125	6	20	
Beryllium, Dissolved	mg/L	ND	1	1	1.1	1.0	106	100	75-125	5	20	
Boron, Dissolved	mg/L	1.4	1	1	2.6	2.5	117	103	75-125	5	20	
Cadmium, Dissolved	mg/L	ND	1	1	1.1	1.0	107	101	75-125	6	20	
Cobalt, Dissolved	mg/L	ND	1	1	1.1	1.0	108	102	75-125	6	20	
Iron, Dissolved	mg/L	ND	1	1	1.1	1.0	110	104	75-125	6	20	
Magnesium, Dissolved	mg/L	38.6	1	1	42.6	40.0	402	138	75-125	6	20	M1
Manganese, Dissolved	mg/L	ND	1	1	1.1	1.0	108	104	75-125	4	20	
Potassium, Dissolved	mg/L	1.7	1	1	3.0	2.7	125	100	75-125	9	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 173035 173036

Parameter	Units	2624678005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sodium, Dissolved	mg/L	28.1	1	1	30.8	28.7	270	57	75-125	7	20	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 37596 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678005, 2624678006, 2624678007, 2624678008, 2624678009, 2624678010

METHOD BLANK: 170601 Matrix: Water
Associated Lab Samples: 2624678001, 2624678002, 2624678003, 2624678004, 2624678005, 2624678006, 2624678007, 2624678008, 2624678009, 2624678010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	10/25/19 19:56	

LABORATORY CONTROL SAMPLE: 170602

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.56	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170603 170604

Parameter	Units	2624780001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	0.37	0.5	0.5	0.96	0.94	117	114	80-120	2	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 37451 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624678001, 2624678003, 2624678004, 2624678005, 2624678006

METHOD BLANK: 169595 Matrix: Water
Associated Lab Samples: 2624678001, 2624678003, 2624678004, 2624678005, 2624678006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/24/19 01:53	

LABORATORY CONTROL SAMPLE: 169596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	5	5.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169821 169822

Parameter	Units	2624678003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	ND	10	10	9.8	9.8	98	98	90-110	0	15	H1

MATRIX SPIKE SAMPLE: 169823

Parameter	Units	2624663002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	2.3	10	11.1	88	90-110	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: Plant Branch
Pace Project No.: 2624678

QC Batch: 37499 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624678002, 2624678007, 2624678008, 2624678009, 2624678010

METHOD BLANK: 169844 Matrix: Water
Associated Lab Samples: 2624678002, 2624678007, 2624678008, 2624678009, 2624678010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/30/19 05:16	

LABORATORY CONTROL SAMPLE: 169845

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	5	5.0	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 169846 169847

Parameter	Units	2624678010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	0.064	5	5	10.2	10.2	202	202	90-110	0	15	H1,M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: Plant Branch
Pace Project No.: 2624678

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

H1	Analysis conducted outside the EPA method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624678

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624678001	**BRGWC-17S**	EPA 3010A	37568	EPA 6010D	37588
2624678002	**BRGWC-36S**	EPA 3010A	37568	EPA 6010D	37588
2624678003	**BRGWC-27I**	EPA 3010A	37568	EPA 6010D	37588
2624678004	**BRGWC-30I**	EPA 3010A	37568	EPA 6010D	37588
2624678005	**BRGWC-32S**	EPA 3010A	37568	EPA 6010D	37588
2624678006	**BRGWC-45**	EPA 3010A	37568	EPA 6010D	37588
2624678007	**EB-2**	EPA 3010A	37568	EPA 6010D	37588
2624678008	**EB-3**	EPA 3010A	37568	EPA 6010D	37588
2624678009	**FB-3**	EPA 3010A	37568	EPA 6010D	37588
2624678010	**DUP-3**	EPA 3010A	37568	EPA 6010D	37588
2624678001	**BRGWC-17S**	EPA 3010A	38007	EPA 6010D	38048
2624678002	**BRGWC-36S**	EPA 3010A	38007	EPA 6010D	38048
2624678003	**BRGWC-27I**	EPA 3010A	38007	EPA 6010D	38048
2624678004	**BRGWC-30I**	EPA 3010A	38007	EPA 6010D	38048
2624678005	**BRGWC-32S**	EPA 3010A	38053	EPA 6010D	38066
2624678006	**BRGWC-45**	EPA 3010A	38007	EPA 6010D	38048
2624678007	**EB-2**	EPA 3010A	38007	EPA 6010D	38048
2624678008	**EB-3**	EPA 3010A	38007	EPA 6010D	38048
2624678009	**FB-3**	EPA 3010A	38007	EPA 6010D	38048
2624678010	**DUP-3**	EPA 3010A	38053	EPA 6010D	38066
2624678001	**BRGWC-17S**	SM 2320B	37559		
2624678004	**BRGWC-30I**	SM 2320B	37559		
2624678005	**BRGWC-32S**	SM 2320B	37559		
2624678006	**BRGWC-45**	SM 2320B	37559		
2624678010	**DUP-3**	SM 2320B	37559		
2624678002	**BRGWC-36S**	SM 2320B	37629		
2624678003	**BRGWC-27I**	SM 2320B	37629		
2624678007	**EB-2**	SM 2320B	37629		
2624678008	**EB-3**	SM 2320B	37629		
2624678009	**FB-3**	SM 2320B	37629		
2624678001	**BRGWC-17S**	SM 4500-P	37596		
2624678002	**BRGWC-36S**	SM 4500-P	37596		
2624678003	**BRGWC-27I**	SM 4500-P	37596		
2624678004	**BRGWC-30I**	SM 4500-P	37596		
2624678005	**BRGWC-32S**	SM 4500-P	37596		
2624678006	**BRGWC-45**	SM 4500-P	37596		
2624678007	**EB-2**	SM 4500-P	37596		
2624678008	**EB-3**	SM 4500-P	37596		
2624678009	**FB-3**	SM 4500-P	37596		
2624678010	**DUP-3**	SM 4500-P	37596		
2624678001	**BRGWC-17S**	EPA 300.0	37451		
2624678002	**BRGWC-36S**	EPA 300.0	37499		
2624678003	**BRGWC-27I**	EPA 300.0	37451		
2624678004	**BRGWC-30I**	EPA 300.0	37451		

REPORT OF LABORATORY ANALYSIS

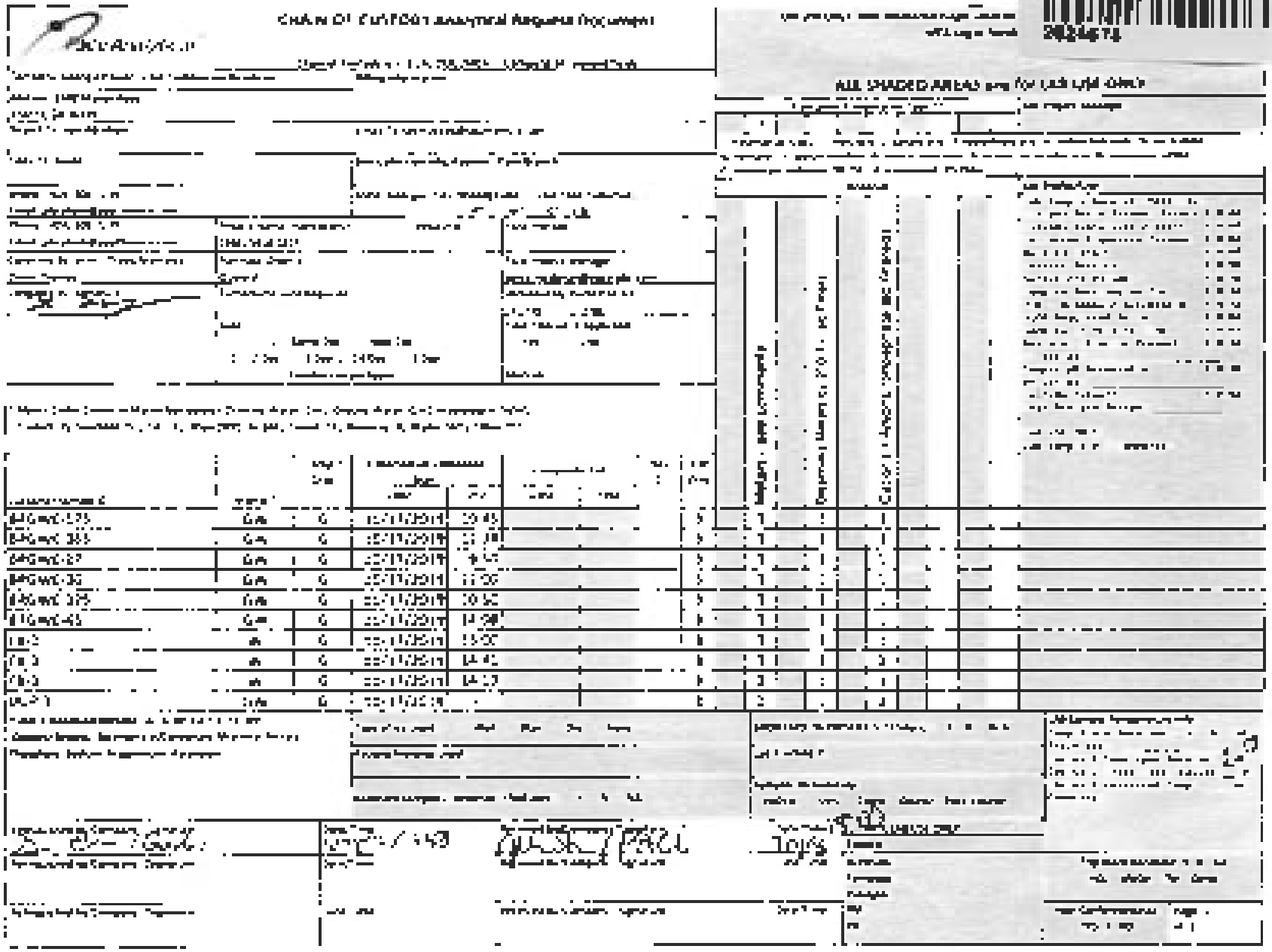
Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Branch
Pace Project No.: 2624678

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624678005	**BRGWC-32S**	EPA 300.0	37451		
2624678006	**BRGWC-45**	EPA 300.0	37451		
2624678007	**EB-2**	EPA 300.0	37499		
2624678008	**EB-3**	EPA 300.0	37499		
2624678009	**FB-3**	EPA 300.0	37499		
2624678010	**DUP-3**	EPA 300.0	37499		

WO# : 2624678



Client Name

Project #

Page 29 of 29

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

November 20, 2019

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

RE: Project: PLANT BRANCH
Pace Project No.: 2624770

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 23, 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: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: PLANT BRANCH
Pace Project No.: 2624770

Pace Analytical Services Pennsylvania
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: PLANT BRANCH
Pace Project No.: 2624770

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624770001	**PZ-13S**	Water	10/22/19 09:45	10/23/19 08:05
2624770002	**PZ-14I**	Water	10/22/19 11:20	10/23/19 08:05
2624770003	**PZ-14S**	Water	10/22/19 12:50	10/23/19 08:05
2624770004	**IW-C-2**	Water	10/22/19 09:51	10/23/19 08:05
2624770005	**IW-D-2**	Water	10/22/19 11:43	10/23/19 08:05
2624770006	**IW-E-1**	Water	10/22/19 13:55	10/23/19 08:05
2624770007	**IW-B-2**	Water	10/22/19 15:50	10/23/19 08:05
2624770008	**PB-4D**	Water	10/22/19 15:20	10/23/19 08:05
2624770009	**EB-4**	Water	10/22/19 16:40	10/23/19 08:05
2624770010	**FB-4**	Water	10/22/19 16:30	10/23/19 08:05
2624770011	**DUP-4**	Water	10/22/19 00:00	10/23/19 08:05

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT BRANCH
Pace Project No.: 2624770

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624770001	**PZ-13S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624770002	**PZ-14I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624770003	**PZ-14S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624770004	**IW-C-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624770005	**IW-D-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624770006	**IW-E-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624770007	**IW-B-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624770008	**PB-4D**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624770009	**EB-4**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624770010	**FB-4**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624770011	**DUP-4**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

Sample: PZ-13S **Lab ID: 2624770001** Collected: 10/22/19 09:45 Received: 10/23/19 08:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.549 ± 0.326 (0.515) C:87% T:NA**	pCi/L	11/15/19 10:17	13982-63-3	
Radium-228	EPA 9320	**0.0815 ± 0.381 (0.863) C:87% T:76%**	pCi/L	11/12/19 15:51	15262-20-1	
Total Radium	Total Radium Calculation	**0.631 ± 0.707 (1.38)**	pCi/L	11/18/19 14:56	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

Sample: PZ-14I **Lab ID: 2624770002** Collected: 10/22/19 11:20 Received: 10/23/19 08:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.925 ± 0.395 (0.446) C:82% T:NA**	pCi/L	11/15/19 10:17	13982-63-3	
Radium-228	EPA 9320	**0.915 ± 0.498 (0.898) C:79% T:79%**	pCi/L	11/12/19 15:51	15262-20-1	
Total Radium	Total Radium Calculation	**1.84 ± 0.893 (1.34)**	pCi/L	11/18/19 14:56	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

Sample: PZ-14S **Lab ID: 2624770003** Collected: 10/22/19 12:50 Received: 10/23/19 08:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.469 ± 0.268 (0.359) C:92% T:NA**	pCi/L	11/15/19 10:17	13982-63-3	
Radium-228	EPA 9320	**-0.0580 ± 0.332 (0.784) C:86% T:82%**	pCi/L	11/12/19 15:51	15262-20-1	
Total Radium	Total Radium Calculation	**0.469 ± 0.600 (1.14)**	pCi/L	11/18/19 14:56	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

Sample: IW-C-2 **Lab ID: 2624770004** Collected: 10/22/19 09:51 Received: 10/23/19 08:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.250 ± 0.263 (0.528) C:93% T:NA**	pCi/L	11/15/19 07:33	13982-63-3	
Radium-228	EPA 9320	**0.717 ± 0.505 (0.997) C:84% T:81%**	pCi/L	11/12/19 15:51	15262-20-1	
Total Radium	Total Radium Calculation	**0.967 ± 0.768 (1.53)**	pCi/L	11/18/19 15:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

Sample: IW-D-2 **Lab ID: 2624770005** Collected: 10/22/19 11:43 Received: 10/23/19 08:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.572 ± 0.338 (0.534) C:90% T:NA**	pCi/L	11/15/19 07:33	13982-63-3	
Radium-228	EPA 9320	**0.289 ± 0.363 (0.769) C:78% T:89%**	pCi/L	11/12/19 15:51	15262-20-1	
Total Radium	Total Radium Calculation	**0.861 ± 0.701 (1.30)**	pCi/L	11/18/19 15:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

Sample: IW-E-1 **Lab ID: 2624770006** Collected: 10/22/19 13:55 Received: 10/23/19 08:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.575 ± 0.325 (0.479) C:94% T:NA**	pCi/L	11/15/19 07:33	13982-63-3	
Radium-228	EPA 9320	**-0.0566 ± 0.377 (0.887) C:82% T:77%**	pCi/L	11/12/19 15:51	15262-20-1	
Total Radium	Total Radium Calculation	**0.575 ± 0.702 (1.37)**	pCi/L	11/18/19 15:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

Sample: IW-B-2 **Lab ID: 2624770007** Collected: 10/22/19 15:50 Received: 10/23/19 08:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.718 ± 0.374 (0.565) C:93% T:NA**	pCi/L	11/15/19 07:33	13982-63-3	
Radium-228	EPA 9320	**0.515 ± 0.360 (0.694) C:85% T:83%**	pCi/L	11/12/19 15:52	15262-20-1	
Total Radium	Total Radium Calculation	**1.23 ± 0.734 (1.26)**	pCi/L	11/18/19 15:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

Sample: PB-4D **Lab ID: 2624770008** Collected: 10/22/19 15:20 Received: 10/23/19 08:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.476 ± 0.304 (0.483) C:89% T:NA**	pCi/L	11/15/19 07:33	13982-63-3	
Radium-228	EPA 9320	**0.0938 ± 0.312 (0.705) C:83% T:86%**	pCi/L	11/12/19 15:52	15262-20-1	
Total Radium	Total Radium Calculation	**0.570 ± 0.616 (1.19)**	pCi/L	11/18/19 15:16	7440-14-4	

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

Sample: EB-4 **Lab ID: 2624770009** Collected: 10/22/19 16:40 Received: 10/23/19 08:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.278 ± 0.232 (0.404) C:87% T:NA**	pCi/L	11/15/19 10:17	13982-63-3	
Radium-228	EPA 9320	**-0.177 ± 0.369 (0.885) C:80% T:86%**	pCi/L	11/12/19 15:52	15262-20-1	
Total Radium	Total Radium Calculation	**0.278 ± 0.601 (1.29)**	pCi/L	11/18/19 15:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

Sample: FB-4 **Lab ID: 2624770010** Collected: 10/22/19 16:30 Received: 10/23/19 08:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.493 ± 0.211 (0.194) C:90% T:NA**	pCi/L	11/18/19 10:54	13982-63-3	
Radium-228	EPA 9320	**0.200 ± 0.379 (0.831) C:82% T:86%**	pCi/L	11/12/19 15:50	15262-20-1	
Total Radium	Total Radium Calculation	**0.693 ± 0.590 (1.03)**	pCi/L	11/18/19 15:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

Sample: DUP-4 **Lab ID: 2624770011** Collected: 10/22/19 00:00 Received: 10/23/19 08:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.466 ± 0.280 (0.387) C:93% T:NA**	pCi/L	11/15/19 07:33	13982-63-3	
Radium-228	EPA 9320	**0.803 ± 0.445 (0.813) C:82% T:82%**	pCi/L	11/12/19 15:50	15262-20-1	
Total Radium	Total Radium Calculation	**1.27 ± 0.725 (1.20)**	pCi/L	11/18/19 15:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

QC Batch: 369306 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2624770001, 2624770002, 2624770003, 2624770004, 2624770005, 2624770006, 2624770007, 2624770008, 2624770009, 2624770010, 2624770011

METHOD BLANK: 1791694 Matrix: Water
Associated Lab Samples: 2624770001, 2624770002, 2624770003, 2624770004, 2624770005, 2624770006, 2624770007, 2624770008, 2624770009, 2624770010, 2624770011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.317 ± 0.325 (0.673) C:79% T:91%	pCi/L	11/12/19 12:14	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT BRANCH
Pace Project No.: 2624770

QC Batch: 369307 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2624770001, 2624770002, 2624770003, 2624770004, 2624770005, 2624770006, 2624770007, 2624770008, 2624770009, 2624770010, 2624770011

METHOD BLANK: 1791695 Matrix: Water
Associated Lab Samples: 2624770001, 2624770002, 2624770003, 2624770004, 2624770005, 2624770006, 2624770007, 2624770008, 2624770009, 2624770010, 2624770011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.330 ± 0.234 (0.359) C:92% T:NA	pCi/L	11/15/19 08:32	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: PLANT BRANCH
Pace Project No.: 2624770

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

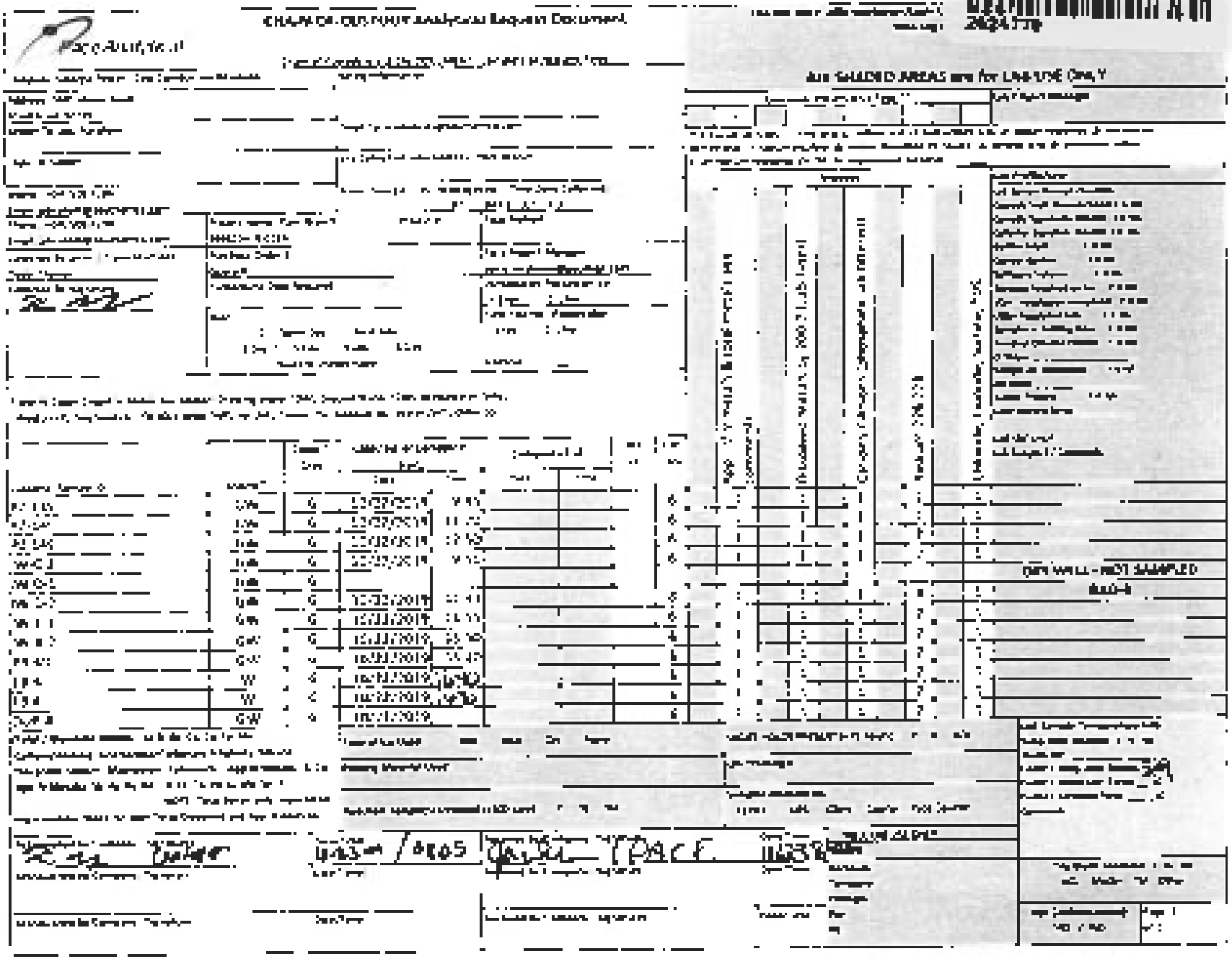
Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT BRANCH
Pace Project No.: 2624770

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624770001	**PZ-13S**	EPA 9315	369307		
2624770002	**PZ-14I**	EPA 9315	369307		
2624770003	**PZ-14S**	EPA 9315	369307		
2624770004	**IW-C-2**	EPA 9315	369307		
2624770005	**IW-D-2**	EPA 9315	369307		
2624770006	**IW-E-1**	EPA 9315	369307		
2624770007	**IW-B-2**	EPA 9315	369307		
2624770008	**PB-4D**	EPA 9315	369307		
2624770009	**EB-4**	EPA 9315	369307		
2624770010	**FB-4**	EPA 9315	369307		
2624770011	**DUP-4**	EPA 9315	369307		
2624770001	**PZ-13S**	EPA 9320	369306		
2624770002	**PZ-14I**	EPA 9320	369306		
2624770003	**PZ-14S**	EPA 9320	369306		
2624770004	**IW-C-2**	EPA 9320	369306		
2624770005	**IW-D-2**	EPA 9320	369306		
2624770006	**IW-E-1**	EPA 9320	369306		
2624770007	**IW-B-2**	EPA 9320	369306		
2624770008	**PB-4D**	EPA 9320	369306		
2624770009	**EB-4**	EPA 9320	369306		
2624770010	**FB-4**	EPA 9320	369306		
2624770011	**DUP-4**	EPA 9320	369306		
2624770001	**PZ-13S**	Total Radium Calculation	371524		
2624770002	**PZ-14I**	Total Radium Calculation	371524		
2624770003	**PZ-14S**	Total Radium Calculation	371524		
2624770004	**IW-C-2**	Total Radium Calculation	371529		
2624770005	**IW-D-2**	Total Radium Calculation	371529		
2624770006	**IW-E-1**	Total Radium Calculation	371529		
2624770007	**IW-B-2**	Total Radium Calculation	371529		
2624770008	**PB-4D**	Total Radium Calculation	371529		
2624770009	**EB-4**	Total Radium Calculation	371529		
2624770010	**FB-4**	Total Radium Calculation	371529		
2624770011	**DUP-4**	Total Radium Calculation	371529		

WO# : 2624770



Pace Analytical

Client Name

WO# : 2624770

Due Date:

CLIENT:

Courier

Tracking #

Custody Seal on Cooler/Box Present

Packing Material

Thermometer Used

Type of Ice

Cooler Temperature

Comments

Chain of Custody Present

Chain of Custody Filled Out

Chain of Custody Relinquished

Sample Labels Match COC

Samples Arrived within Hold Time

Short Hold Time Analysis (<72hr)

Rush Turn Around Time Requested

Sufficient Volume

Correct Containers Used

Pace Containers Used

Containers Intact

Filtered volume received for Dissolved tests

Sample labels match COC

Multiphasic analyses: Matrix

All containers needing preservation have been checked and noted below

Exceptions to VOA Headspace Requirements

Trip Blank Present

Trip Blank Custody Seals Present

Pace Trip Blank Lot # (if purchased)

Client Notification/Resolution

Person Contacted

Date/Time

Comments/Resolution

Project Manager Review

Date:

Note: Whenever there is a discrepancy affecting NC compliance, a copy of this form will be sent to the appropriate Pace Carolinas Office. Client Notification/Resolution should be documented below.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

December 17, 2019

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

RE: Project: PLANT BRANCH
Pace Project No.: 2624772

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 23, 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,

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

Enclosures

cc: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: PLANT BRANCH
Pace Project No.: 2624772

Pace Analytical Services Atlanta
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: PLANT BRANCH
Pace Project No.: 2624772

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624772001	**PZ-13S**	Water	10/22/19 09:45	10/23/19 08:05
2624772002	**PZ-14I**	Water	10/22/19 11:20	10/23/19 08:05
2624772003	**PZ-14S**	Water	10/22/19 12:50	10/23/19 08:05
2624772004	**IW-C-2**	Water	10/22/19 09:51	10/23/19 08:05
2624772005	**IW-D-2**	Water	10/22/19 11:43	10/23/19 08:05
2624772006	**IW-E-1**	Water	10/22/19 13:55	10/23/19 08:05
2624772007	**IW-B-2**	Water	10/22/19 15:50	10/23/19 08:05
2624772008	**PB-4D**	Water	10/22/19 15:20	10/23/19 08:05
2624772009	**EB-4**	Water	10/22/19 16:40	10/23/19 08:05
2624772010	**FB-4**	Water	10/22/19 16:30	10/23/19 08:05
2624772011	**DUP-4**	Water	10/22/19 00:00	10/23/19 08:05

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT BRANCH
Pace Project No.: 2624772

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624772001	**PZ-13S**	EPA 6020B	CSW	20
		EPA 6020B	CSW	7
		SM 2320B	S1A	3
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624772002	**PZ-14I**	EPA 6020B	CSW	20
		EPA 6020B	CSW	7
		SM 2320B	S1A	3
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624772003	**PZ-14S**	EPA 6020B	CSW	20
		EPA 6020B	CSW	7
		SM 2320B	S1A	3
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624772004	**IW-C-2**	EPA 6020B	CSW	20
		EPA 6020B	CSW	7
		SM 2320B	S1A	3
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624772005	**IW-D-2**	EPA 6020B	CSW	20
		EPA 6020B	CSW	7
		SM 2320B	S1A	3
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624772006	**IW-E-1**	EPA 6020B	CSW	20
		EPA 6020B	CSW	7

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT BRANCH
Pace Project No.: 2624772

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 2320B	S1A	3
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624772007	**IW-B-2**	EPA 6020B	CSW	20
		EPA 6020B	CSW	7
		SM 2320B	S1A	3
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624772008	**PB-4D**	EPA 6020B	CSW	20
		EPA 6020B	CSW	7
		SM 2320B	S1A	3
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624772009	**EB-4**	EPA 6020B	CSW	20
		EPA 6020B	CSW	7
		SM 2320B	S1A	3
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624772010	**FB-4**	EPA 6020B	CSW	20
		EPA 6020B	CSW	7
		SM 2320B	S1A	3
		SM 2540C	MZP	1
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3
2624772011	**DUP-4**	EPA 6020B	CSW	20
		EPA 6020B	CSW	7
		SM 2320B	S1A	3
		SM 2540C	MZP	1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT BRANCH
Pace Project No.: 2624772

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		SM 4500-P	JAD	1
		EPA 300.0	MWB	1
		EPA 300.0	MWB	3

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: PZ-13S **Lab ID: 2624772001** Collected: 10/22/19 09:45 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum	**0.24**	mg/L	0.10	0.0089	1	10/30/19 18:10	10/31/19 21:27	7429-90-5	
Antimony	ND	mg/L	0.0030	0.00027	1	10/30/19 18:10	10/31/19 21:27	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/30/19 18:10	10/31/19 21:27	7440-38-2	
Barium	**0.077**	mg/L	0.010	0.00049	1	10/30/19 18:10	10/31/19 21:27	7440-39-3	
Beryllium	**0.00040J**	mg/L	0.0030	0.000074	1	10/30/19 18:10	11/01/19 17:05	7440-41-7	
Boron	**0.0098J**	mg/L	0.040	0.0049	1	10/30/19 18:10	11/01/19 17:05	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/30/19 18:10	10/31/19 21:27	7440-43-9	
Calcium	**14.8**	mg/L	5.0	0.55	50	10/30/19 18:10	10/31/19 21:33	7440-70-2	
Chromium	**0.020**	mg/L	0.010	0.00039	1	10/30/19 18:10	10/31/19 21:27	7440-47-3	
Cobalt	**0.00037J**	mg/L	0.0050	0.00030	1	10/30/19 18:10	10/31/19 21:27	7440-48-4	
Iron	**0.30**	mg/L	0.040	0.0097	1	10/30/19 18:10	10/31/19 21:27	7439-89-6	
Lead	**0.00035J**	mg/L	0.0050	0.000046	1	10/30/19 18:10	10/31/19 21:27	7439-92-1	
Lithium	**0.0010J**	mg/L	0.030	0.00078	1	10/30/19 18:10	10/31/19 21:27	7439-93-2	
Magnesium	**8.0**	mg/L	0.050	0.0030	1	10/30/19 18:10	10/31/19 21:27	7439-95-4	
Manganese	**0.039**	mg/L	0.010	0.00057	1	10/30/19 18:10	10/31/19 21:27	7439-96-5	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/30/19 18:10	10/31/19 21:27	7439-98-7	
Potassium	**4.4**	mg/L	0.10	0.026	1	10/30/19 18:10	10/31/19 21:27	7440-09-7	
Selenium	**0.0033J**	mg/L	0.010	0.0013	1	10/30/19 18:10	10/31/19 21:27	7782-49-2	
Sodium	**18.9**	mg/L	0.10	0.015	1	10/30/19 18:10	11/01/19 17:05	7440-23-5	
Thallium	ND	mg/L	0.0010	0.000052	1	10/30/19 18:10	10/31/19 21:27	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum, Dissolved	ND	mg/L	0.10	0.0089	1	11/03/19 15:41	11/04/19 20:57	7429-90-5	
Beryllium, Dissolved	**0.00030J**	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/05/19 13:23	7440-41-7	
Boron, Dissolved	**0.0081J**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/05/19 13:23	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 20:57	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 20:57	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.0097	1	11/03/19 15:41	11/04/19 20:57	7439-89-6	
Manganese, Dissolved	**0.027**	mg/L	0.010	0.00057	1	11/03/19 15:41	11/04/19 20:57	7439-96-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**16.0**	mg/L	1.0	1.0	1		11/01/19 12:08		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		11/01/19 12:08		
Alkalinity, Total as CaCO3	**16.0**	mg/L	1.0	1.0	1		11/01/19 12:08		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**203**	mg/L	10.0	10.0	1		10/29/19 13:01		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.061**	mg/L	0.020	0.020	1		10/30/19 20:51		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.016J**	mg/L	0.050	0.0050	1		10/29/19 05:23	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: PZ-13S **Lab ID: 2624772001** Collected: 10/22/19 09:45 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.1**	mg/L	1.0	0.024	1		10/30/19 13:48	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/30/19 13:48	16984-48-8	
Sulfate	**93.2**	mg/L	10.0	0.17	10		10/30/19 20:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: PZ-14I **Lab ID: 2624772002** Collected: 10/22/19 11:20 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum	**0.062J**	mg/L	0.10	0.0089	1	10/30/19 18:10	10/31/19 21:39	7429-90-5	
Antimony	**0.028**	mg/L	0.0030	0.00027	1	10/30/19 18:10	10/31/19 21:39	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/30/19 18:10	10/31/19 21:39	7440-38-2	
Barium	**0.040**	mg/L	0.010	0.00049	1	10/30/19 18:10	10/31/19 21:39	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/30/19 18:10	11/01/19 17:11	7440-41-7	
Boron	**0.20**	mg/L	0.040	0.0049	1	10/30/19 18:10	11/01/19 17:11	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/30/19 18:10	10/31/19 21:39	7440-43-9	
Calcium	**39.2**	mg/L	5.0	0.55	50	10/30/19 18:10	10/31/19 21:45	7440-70-2	
Chromium	**0.0018J**	mg/L	0.010	0.00039	1	10/30/19 18:10	10/31/19 21:39	7440-47-3	
Cobalt	**0.00030J**	mg/L	0.0050	0.00030	1	10/30/19 18:10	10/31/19 21:39	7440-48-4	
Iron	**0.28**	mg/L	0.040	0.0097	1	10/30/19 18:10	10/31/19 21:39	7439-89-6	
Lead	**0.00015J**	mg/L	0.0050	0.000046	1	10/30/19 18:10	10/31/19 21:39	7439-92-1	
Lithium	**0.023J**	mg/L	0.030	0.00078	1	10/30/19 18:10	10/31/19 21:39	7439-93-2	
Magnesium	**5.8**	mg/L	0.050	0.0030	1	10/30/19 18:10	10/31/19 21:39	7439-95-4	
Manganese	**0.37**	mg/L	0.010	0.00057	1	10/30/19 18:10	10/31/19 21:39	7439-96-5	
Molybdenum	**0.091**	mg/L	0.010	0.00095	1	10/30/19 18:10	10/31/19 21:39	7439-98-7	
Potassium	**35.3**	mg/L	5.0	1.3	50	10/30/19 18:10	10/31/19 21:45	7440-09-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/30/19 18:10	10/31/19 21:39	7782-49-2	
Sodium	**110**	mg/L	5.0	0.75	50	10/30/19 18:10	10/31/19 21:45	7440-23-5	
Thallium	ND	mg/L	0.0010	0.000052	1	10/30/19 18:10	10/31/19 21:39	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum, Dissolved	ND	mg/L	0.10	0.0089	1	11/03/19 15:41	11/04/19 21:02	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/05/19 13:29	7440-41-7	
Boron, Dissolved	**0.18**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/05/19 13:29	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 21:02	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 21:02	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.0097	1	11/03/19 15:41	11/04/19 21:02	7439-89-6	
Manganese, Dissolved	**0.0038J**	mg/L	0.010	0.00057	1	11/03/19 15:41	11/04/19 21:02	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**190**	mg/L	20.0	20.0	1		10/29/19 18:04		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/29/19 18:04		
Alkalinity, Total as CaCO3	**190**	mg/L	20.0	20.0	1		10/29/19 18:04		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**486**	mg/L	10.0	10.0	1		10/29/19 13:01		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/30/19 20:53		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.046J**	mg/L	0.050	0.0050	1		10/29/19 06:04	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: PZ-14I **Lab ID: 2624772002** Collected: 10/22/19 11:20 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**12.2**	mg/L	1.0	0.024	1		10/30/19 14:54	16887-00-6	
Fluoride	**1.3**	mg/L	0.30	0.029	1		10/30/19 14:54	16984-48-8	
Sulfate	**133**	mg/L	20.0	0.34	20		10/31/19 22:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: PZ-14S **Lab ID: 2624772003** Collected: 10/22/19 12:50 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum	ND	mg/L	0.10	0.0089	1	10/30/19 18:10	10/31/19 21:50	7429-90-5	
Antimony	ND	mg/L	0.0030	0.00027	1	10/30/19 18:10	10/31/19 21:50	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	10/30/19 18:10	10/31/19 21:50	7440-38-2	
Barium	**0.026**	mg/L	0.010	0.00049	1	10/30/19 18:10	10/31/19 21:50	7440-39-3	
Beryllium	**0.00062J**	mg/L	0.0030	0.000074	1	10/30/19 18:10	11/01/19 17:16	7440-41-7	
Boron	**1.5**	mg/L	0.040	0.0049	1	10/30/19 18:10	11/01/19 17:16	7440-42-8	
Cadmium	**0.0011J**	mg/L	0.0025	0.00011	1	10/30/19 18:10	10/31/19 21:50	7440-43-9	
Calcium	**58.3**	mg/L	5.0	0.55	50	10/30/19 18:10	10/31/19 21:56	7440-70-2	
Chromium	**0.0012J**	mg/L	0.010	0.00039	1	10/30/19 18:10	10/31/19 21:50	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/30/19 18:10	10/31/19 21:50	7440-48-4	
Iron	ND	mg/L	0.040	0.0097	1	10/30/19 18:10	10/31/19 21:50	7439-89-6	
Lead	**0.000099J**	mg/L	0.0050	0.000046	1	10/30/19 18:10	10/31/19 21:50	7439-92-1	
Lithium	**0.0037J**	mg/L	0.030	0.00078	1	10/30/19 18:10	10/31/19 21:50	7439-93-2	
Magnesium	**4.6**	mg/L	0.050	0.0030	1	10/30/19 18:10	10/31/19 21:50	7439-95-4	
Manganese	**0.46**	mg/L	0.010	0.00057	1	10/30/19 18:10	10/31/19 21:50	7439-96-5	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/30/19 18:10	10/31/19 21:50	7439-98-7	
Potassium	**7.3**	mg/L	0.10	0.026	1	10/30/19 18:10	10/31/19 21:50	7440-09-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/30/19 18:10	10/31/19 21:50	7782-49-2	
Sodium	**14.8**	mg/L	0.10	0.015	1	10/30/19 18:10	11/01/19 17:16	7440-23-5	
Thallium	ND	mg/L	0.0010	0.000052	1	10/30/19 18:10	10/31/19 21:50	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum, Dissolved	ND	mg/L	0.10	0.0089	1	11/03/19 15:41	11/04/19 21:08	7429-90-5	
Beryllium, Dissolved	**0.00060J**	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/05/19 13:35	7440-41-7	
Boron, Dissolved	**1.4**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/05/19 13:35	7440-42-8	
Cadmium, Dissolved	**0.00095J**	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 21:08	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 21:08	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.0097	1	11/03/19 15:41	11/04/19 21:08	7439-89-6	
Manganese, Dissolved	**0.41**	mg/L	0.010	0.00057	1	11/03/19 15:41	11/04/19 21:08	7439-96-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**7.0**	mg/L	1.0	1.0	1		11/01/19 12:14		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		11/01/19 12:14		
Alkalinity, Total as CaCO3	**7.0**	mg/L	1.0	1.0	1		11/01/19 12:14		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**307**	mg/L	10.0	10.0	1		10/29/19 13:01		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/30/19 20:54		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	**0.0080J**	mg/L	0.050	0.0050	1		10/29/19 07:06	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: PZ-14S **Lab ID: 2624772003** Collected: 10/22/19 12:50 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.7**	mg/L	1.0	0.024	1		10/30/19 15:16	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/30/19 15:16	16984-48-8	
Sulfate	**170**	mg/L	20.0	0.34	20		10/31/19 22:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: IW-C-2 **Lab ID: 2624772004** Collected: 10/22/19 09:51 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum	**0.014J**	mg/L	0.10	0.0089	1	10/30/19 18:10	10/31/19 22:13	7429-90-5	
Antimony	**0.0037**	mg/L	0.0030	0.00027	1	10/30/19 18:10	10/31/19 22:13	7440-36-0	
Arsenic	**0.059**	mg/L	0.0050	0.00035	1	10/30/19 18:10	10/31/19 22:13	7440-38-2	
Barium	**0.10**	mg/L	0.010	0.00049	1	10/30/19 18:10	10/31/19 22:13	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/30/19 18:10	10/31/19 22:13	7440-41-7	
Boron	**1.0**	mg/L	0.040	0.0049	1	10/30/19 18:10	11/01/19 17:34	7440-42-8	
Cadmium	**0.00016J**	mg/L	0.0025	0.00011	1	10/30/19 18:10	10/31/19 22:13	7440-43-9	
Calcium	**71.4**	mg/L	5.0	0.55	50	10/30/19 18:10	10/31/19 22:19	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/30/19 18:10	10/31/19 22:13	7440-47-3	
Cobalt	**0.0038J**	mg/L	0.0050	0.00030	1	10/30/19 18:10	10/31/19 22:13	7440-48-4	
Iron	**1.8**	mg/L	0.040	0.0097	1	10/30/19 18:10	10/31/19 22:13	7439-89-6	
Lead	ND	mg/L	0.0050	0.000046	1	10/30/19 18:10	10/31/19 22:13	7439-92-1	
Lithium	**0.16**	mg/L	0.030	0.00078	1	10/30/19 18:10	10/31/19 22:13	7439-93-2	
Magnesium	**6.8**	mg/L	0.050	0.0030	1	10/30/19 18:10	10/31/19 22:13	7439-95-4	
Manganese	**0.34**	mg/L	0.010	0.00057	1	10/30/19 18:10	10/31/19 22:13	7439-96-5	
Molybdenum	**0.045**	mg/L	0.010	0.00095	1	10/30/19 18:10	10/31/19 22:13	7439-98-7	
Potassium	**11.7**	mg/L	0.10	0.026	1	10/30/19 18:10	11/01/19 17:34	7440-09-7	
Selenium	**0.035**	mg/L	0.010	0.0013	1	10/30/19 18:10	10/31/19 22:13	7782-49-2	
Sodium	**12.0**	mg/L	0.10	0.015	1	10/30/19 18:10	11/01/19 17:34	7440-23-5	
Thallium	**0.0021**	mg/L	0.0010	0.000052	1	10/30/19 18:10	10/31/19 22:13	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum, Dissolved	ND	mg/L	0.10	0.0089	1	11/03/19 15:41	11/04/19 21:14	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/05/19 13:40	7440-41-7	
Boron, Dissolved	**1.0**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/05/19 13:40	7440-42-8	
Cadmium, Dissolved	**0.00011J**	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 21:14	7440-43-9	
Cobalt, Dissolved	**0.0033J**	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 21:14	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.0097	1	11/03/19 15:41	11/04/19 21:14	7439-89-6	
Manganese, Dissolved	**0.32**	mg/L	0.010	0.00057	1	11/03/19 15:41	11/04/19 21:14	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**88.0**	mg/L	20.0	20.0	1		10/29/19 18:13		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/29/19 18:13		
Alkalinity, Total as CaCO3	**88.0**	mg/L	20.0	20.0	1		10/29/19 18:13		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**361**	mg/L	10.0	10.0	1		10/29/19 13:01		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.094**	mg/L	0.020	0.020	1		10/30/19 20:55		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/29/19 05:43	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: IW-C-2 **Lab ID: 2624772004** Collected: 10/22/19 09:51 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.1**	mg/L	1.0	0.024	1		10/30/19 15:39	16887-00-6	
Fluoride	**0.24J**	mg/L	0.30	0.029	1		10/30/19 15:39	16984-48-8	
Sulfate	**133**	mg/L	20.0	0.34	20		10/31/19 22:48	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: IW-D-2 **Lab ID: 2624772005** Collected: 10/22/19 11:43 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum	**0.12**	mg/L	0.10	0.0089	1	10/30/19 18:10	10/31/19 22:25	7429-90-5	
Antimony	**0.00037J**	mg/L	0.0030	0.00027	1	10/30/19 18:10	10/31/19 22:25	7440-36-0	
Arsenic	**1.4**	mg/L	0.025	0.0018	5	10/30/19 18:10	11/01/19 17:39	7440-38-2	
Barium	**0.037**	mg/L	0.010	0.00049	1	10/30/19 18:10	10/31/19 22:25	7440-39-3	
Beryllium	**0.00020J**	mg/L	0.0030	0.000074	1	10/30/19 18:10	10/31/19 22:25	7440-41-7	
Boron	**3.0**	mg/L	0.20	0.025	5	10/30/19 18:10	11/01/19 17:39	7440-42-8	
Cadmium	**0.030**	mg/L	0.0025	0.00011	1	10/30/19 18:10	10/31/19 22:25	7440-43-9	
Calcium	**487**	mg/L	5.0	0.55	50	10/30/19 18:10	10/31/19 22:30	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/30/19 18:10	10/31/19 22:25	7440-47-3	
Cobalt	**0.0060**	mg/L	0.0050	0.00030	1	10/30/19 18:10	10/31/19 22:25	7440-48-4	
Iron	**305**	mg/L	2.0	0.49	50	10/30/19 18:10	10/31/19 22:30	7439-89-6	
Lead	ND	mg/L	0.0050	0.000046	1	10/30/19 18:10	10/31/19 22:25	7439-92-1	
Lithium	**1.7**	mg/L	0.15	0.0039	5	10/30/19 18:10	11/01/19 17:39	7439-93-2	
Magnesium	**112**	mg/L	2.5	0.15	50	10/30/19 18:10	10/31/19 22:30	7439-95-4	
Manganese	**14.8**	mg/L	0.050	0.0029	5	10/30/19 18:10	11/01/19 17:39	7439-96-5	
Molybdenum	**0.039**	mg/L	0.010	0.00095	1	10/30/19 18:10	10/31/19 22:25	7439-98-7	
Potassium	**76.6**	mg/L	0.50	0.13	5	10/30/19 18:10	11/01/19 17:39	7440-09-7	
Selenium	ND	mg/L	0.050	0.0063	5	10/30/19 18:10	11/01/19 17:39	7782-49-2	D3
Sodium	**26.3**	mg/L	0.50	0.075	5	10/30/19 18:10	11/01/19 17:39	7440-23-5	
Thallium	**0.00052J**	mg/L	0.0010	0.000052	1	10/30/19 18:10	10/31/19 22:25	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum, Dissolved	**0.035J**	mg/L	0.10	0.0089	1	11/03/19 15:41	11/04/19 21:19	7429-90-5	
Beryllium, Dissolved	**0.00017J**	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/05/19 13:46	7440-41-7	
Boron, Dissolved	**2.7**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/05/19 13:46	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 21:19	7440-43-9	
Cobalt, Dissolved	**0.0059**	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 21:19	7440-48-4	
Iron, Dissolved	**250**	mg/L	10.0	2.4	250	11/03/19 15:41	11/05/19 14:44	7439-89-6	
Manganese, Dissolved	**14.3**	mg/L	0.50	0.029	50	11/03/19 15:41	11/05/19 13:52	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**21.0**	mg/L	20.0	20.0	1		10/29/19 18:18		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/29/19 18:18		
Alkalinity, Total as CaCO3	**21.0**	mg/L	20.0	20.0	1		10/29/19 18:18		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**3700**	mg/L	10.0	10.0	1		10/29/19 13:01		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/30/19 21:01		F6,H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/29/19 06:25	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: IW-D-2 **Lab ID: 2624772005** Collected: 10/22/19 11:43 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.6**	mg/L	1.0	0.024	1		10/30/19 16:01	16887-00-6	
Fluoride	**0.38**	mg/L	0.30	0.029	1		10/30/19 16:01	16984-48-8	
Sulfate	**1880**	mg/L	50.0	0.85	50		10/30/19 21:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: IW-E-1 **Lab ID: 2624772006** Collected: 10/22/19 13:55 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum	**0.027J**	mg/L	0.10	0.0089	1	10/30/19 18:10	10/31/19 22:36	7429-90-5	
Antimony	ND	mg/L	0.0030	0.00027	1	10/30/19 18:10	10/31/19 22:36	7440-36-0	
Arsenic	**0.024**	mg/L	0.0050	0.00035	1	10/30/19 18:10	10/31/19 22:36	7440-38-2	
Barium	**0.064**	mg/L	0.010	0.00049	1	10/30/19 18:10	10/31/19 22:36	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	10/30/19 18:10	10/31/19 22:36	7440-41-7	
Boron	**0.46**	mg/L	0.040	0.0049	1	10/30/19 18:10	11/01/19 17:45	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/30/19 18:10	10/31/19 22:36	7440-43-9	
Calcium	**26.9**	mg/L	5.0	0.55	50	10/30/19 18:10	10/31/19 22:42	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	10/30/19 18:10	10/31/19 22:36	7440-47-3	
Cobalt	**0.0030J**	mg/L	0.0050	0.00030	1	10/30/19 18:10	10/31/19 22:36	7440-48-4	
Iron	**33.2**	mg/L	2.0	0.49	50	10/30/19 18:10	10/31/19 22:42	7439-89-6	
Lead	ND	mg/L	0.0050	0.000046	1	10/30/19 18:10	10/31/19 22:36	7439-92-1	
Lithium	**0.24**	mg/L	0.030	0.00078	1	10/30/19 18:10	10/31/19 22:36	7439-93-2	
Magnesium	**5.3**	mg/L	0.050	0.0030	1	10/30/19 18:10	10/31/19 22:36	7439-95-4	
Manganese	**0.74**	mg/L	0.010	0.00057	1	10/30/19 18:10	10/31/19 22:36	7439-96-5	
Molybdenum	**0.0046J**	mg/L	0.010	0.00095	1	10/30/19 18:10	10/31/19 22:36	7439-98-7	
Potassium	**12.4**	mg/L	5.0	1.3	50	10/30/19 18:10	10/31/19 22:42	7440-09-7	
Selenium	ND	mg/L	0.010	0.0013	1	10/30/19 18:10	10/31/19 22:36	7782-49-2	
Sodium	**4.1**	mg/L	0.10	0.015	1	10/30/19 18:10	10/31/19 22:36	7440-23-5	
Thallium	ND	mg/L	0.0010	0.000052	1	10/30/19 18:10	10/31/19 22:36	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum, Dissolved	ND	mg/L	0.10	0.0089	1	11/03/19 15:41	11/04/19 21:25	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/05/19 13:57	7440-41-7	
Boron, Dissolved	**0.49**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/05/19 13:57	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 21:25	7440-43-9	
Cobalt, Dissolved	**0.0031J**	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 21:25	7440-48-4	
Iron, Dissolved	**29.3**	mg/L	2.0	0.49	50	11/03/19 15:41	11/05/19 14:03	7439-89-6	
Manganese, Dissolved	**0.77**	mg/L	0.010	0.00057	1	11/03/19 15:41	11/04/19 21:25	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**35.0**	mg/L	20.0	20.0	1		10/29/19 18:22		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/29/19 18:22		
Alkalinity, Total as CaCO3	**35.0**	mg/L	20.0	20.0	1		10/29/19 18:22		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**334**	mg/L	10.0	10.0	1		10/29/19 13:02		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/30/19 21:02		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/29/19 07:27	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: IW-E-1 **Lab ID: 2624772006** Collected: 10/22/19 13:55 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.1**	mg/L	1.0	0.024	1		10/30/19 16:23	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/30/19 16:23	16984-48-8	
Sulfate	**138**	mg/L	20.0	0.34	20		10/31/19 23:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: IW-B-2 **Lab ID: 2624772007** Collected: 10/22/19 15:50 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum	**0.023J**	mg/L	0.10	0.0089	1	11/01/19 16:00	11/04/19 01:24	7429-90-5	
Antimony	ND	mg/L	0.0030	0.00027	1	11/01/19 16:00	11/04/19 01:24	7440-36-0	
Arsenic	**2.5**	mg/L	0.25	0.018	50	11/01/19 16:00	11/04/19 01:29	7440-38-2	M6
Barium	**0.22**	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 01:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 01:24	7440-41-7	
Boron	**4.3**	mg/L	2.0	0.25	50	11/01/19 16:00	11/04/19 01:29	7440-42-8	
Cadmium	**0.00012J**	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 01:24	7440-43-9	
Calcium	**177**	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 01:29	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 01:24	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 01:24	7440-48-4	
Iron	**18.4**	mg/L	2.0	0.49	50	11/01/19 16:00	11/04/19 01:29	7439-89-6	M6
Lead	ND	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 01:24	7439-92-1	
Lithium	**0.29**	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 01:24	7439-93-2	M1
Magnesium	**57.2**	mg/L	2.5	0.15	50	11/01/19 16:00	11/04/19 01:29	7439-95-4	M6
Manganese	**2.3**	mg/L	0.50	0.029	50	11/01/19 16:00	11/04/19 01:29	7439-96-5	M6
Molybdenum	**0.49**	mg/L	0.010	0.00095	1	11/01/19 16:00	11/04/19 01:24	7439-98-7	
Potassium	**13.9**	mg/L	5.0	1.3	50	11/01/19 16:00	11/04/19 01:29	7440-09-7	M6
Selenium	ND	mg/L	0.010	0.0013	1	11/01/19 16:00	11/04/19 01:24	7782-49-2	
Sodium	**13.5**	mg/L	5.0	0.75	50	11/01/19 16:00	11/04/19 01:29	7440-23-5	M6
Thallium	ND	mg/L	0.0010	0.000052	1	11/01/19 16:00	11/04/19 01:24	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum, Dissolved	ND	mg/L	0.10	0.0089	1	11/03/19 15:41	11/04/19 21:42	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/05/19 14:32	7440-41-7	
Boron, Dissolved	**3.8**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/05/19 14:32	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 21:42	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 21:42	7440-48-4	
Iron, Dissolved	**0.011J**	mg/L	0.040	0.0097	1	11/03/19 15:41	11/04/19 21:42	7439-89-6	
Manganese, Dissolved	**1.9**	mg/L	0.050	0.0029	5	11/03/19 15:41	11/05/19 14:38	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**282**	mg/L	20.0	20.0	1		10/29/19 18:25		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/29/19 18:25		
Alkalinity, Total as CaCO3	**282**	mg/L	20.0	20.0	1		10/29/19 18:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**950**	mg/L	10.0	10.0	1		10/29/19 13:02		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	**0.032**	mg/L	0.020	0.020	1		10/30/19 21:03		F6,H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/29/19 10:14	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: IW-B-2 **Lab ID: 2624772007** Collected: 10/22/19 15:50 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**6.3**	mg/L	1.0	0.024	1		10/30/19 18:36	16887-00-6	
Fluoride	**1.4**	mg/L	0.30	0.029	1		10/30/19 18:36	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/30/19 18:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: PB-4D **Lab ID: 2624772008** Collected: 10/22/19 15:20 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum	**0.33**	mg/L	0.10	0.0089	1	11/01/19 16:00	11/04/19 02:15	7429-90-5	
Antimony	**0.00048J**	mg/L	0.0030	0.00027	1	11/01/19 16:00	11/04/19 02:15	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	11/01/19 16:00	11/04/19 02:15	7440-38-2	
Barium	**0.0086J**	mg/L	0.010	0.00049	1	11/01/19 16:00	11/04/19 02:15	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/01/19 16:00	11/04/19 13:14	7440-41-7	
Boron	**0.016J**	mg/L	0.040	0.0049	1	11/01/19 16:00	11/04/19 02:15	7440-42-8	B
Cadmium	ND	mg/L	0.0025	0.00011	1	11/01/19 16:00	11/04/19 02:15	7440-43-9	
Calcium	**20.9**	mg/L	0.10	0.011	1	11/01/19 16:00	11/04/19 02:15	7440-70-2	
Calcium	**23.2**	mg/L	5.0	0.55	50	11/01/19 16:00	11/04/19 02:21	7440-70-2	
Chromium	**0.0015J**	mg/L	0.010	0.00039	1	11/01/19 16:00	11/04/19 02:15	7440-47-3	
Cobalt	**0.00083J**	mg/L	0.0050	0.00030	1	11/01/19 16:00	11/04/19 02:15	7440-48-4	
Iron	**0.82**	mg/L	0.040	0.0097	1	11/01/19 16:00	11/04/19 02:15	7439-89-6	
Lead	**0.00016J**	mg/L	0.0050	0.000046	1	11/01/19 16:00	11/04/19 02:15	7439-92-1	
Lithium	**0.013J**	mg/L	0.030	0.00078	1	11/01/19 16:00	11/04/19 13:14	7439-93-2	
Magnesium	**4.8**	mg/L	0.050	0.0030	1	11/01/19 16:00	11/04/19 02:15	7439-95-4	
Manganese	**0.58**	mg/L	0.010	0.00057	1	11/01/19 16:00	11/04/19 02:15	7439-96-5	
Molybdenum	**0.019**	mg/L	0.010	0.00095	1	11/01/19 16:00	11/04/19 02:15	7439-98-7	
Potassium	**16.1**	mg/L	5.0	1.3	50	11/01/19 16:00	11/04/19 02:21	7440-09-7	
Selenium	ND	mg/L	0.010	0.0013	1	11/01/19 16:00	11/04/19 02:15	7782-49-2	
Sodium	**16.7**	mg/L	5.0	0.75	50	11/01/19 16:00	11/04/19 02:21	7440-23-5	
Thallium	ND	mg/L	0.0010	0.000052	1	11/01/19 16:00	11/04/19 02:15	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum, Dissolved	ND	mg/L	0.10	0.0089	1	11/03/19 15:41	11/04/19 18:07	7429-90-5	
Beryllium, Dissolved	**0.00032J**	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/04/19 18:07	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.0049	1	11/03/19 15:41	11/04/19 18:07	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 18:07	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 18:07	7440-48-4	
Iron, Dissolved	**0.013J**	mg/L	0.040	0.0097	1	11/03/19 15:41	11/04/19 18:07	7439-89-6	B
Manganese, Dissolved	**0.025**	mg/L	0.010	0.00057	1	11/03/19 15:41	11/04/19 18:07	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**118**	mg/L	20.0	20.0	1		10/30/19 20:03		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		10/30/19 20:03		
Alkalinity, Total as CaCO3	**118**	mg/L	20.0	20.0	1		10/30/19 20:03		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**197**	mg/L	10.0	10.0	1		10/29/19 13:02		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/30/19 21:03		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/29/19 09:53	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: PB-4D **Lab ID: 2624772008** Collected: 10/22/19 15:20 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**3.1**	mg/L	1.0	0.024	1		10/30/19 18:59	16887-00-6	
Fluoride	**0.089J**	mg/L	0.30	0.029	1		10/30/19 18:59	16984-48-8	
Sulfate	**1.2**	mg/L	1.0	0.017	1		10/30/19 18:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: EB-4 **Lab ID: 2624772009** Collected: 10/22/19 16:40 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum	ND	mg/L	0.10	0.0089	1	11/02/19 15:05	11/04/19 11:02	7429-90-5	
Antimony	ND	mg/L	0.0030	0.00027	1	11/02/19 15:05	11/04/19 11:02	7440-36-0	
Arsenic	**0.00077J**	mg/L	0.0050	0.00035	1	11/02/19 15:05	11/04/19 11:02	7440-38-2	B
Barium	**0.0018J**	mg/L	0.010	0.00049	1	11/02/19 15:05	11/04/19 11:02	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/02/19 15:05	11/04/19 11:02	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	11/02/19 15:05	11/04/19 11:02	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	11/02/19 15:05	11/04/19 11:02	7440-43-9	
Calcium	ND	mg/L	0.10	0.011	1	11/02/19 15:05	11/04/19 11:02	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	11/02/19 15:05	11/04/19 11:02	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	11/02/19 15:05	11/04/19 11:02	7440-48-4	
Iron	ND	mg/L	0.040	0.0097	1	11/02/19 15:05	11/04/19 11:02	7439-89-6	
Lead	ND	mg/L	0.0050	0.000046	1	11/02/19 15:05	11/04/19 11:02	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	11/02/19 15:05	11/04/19 11:02	7439-93-2	
Magnesium	ND	mg/L	0.050	0.0030	1	11/02/19 15:05	11/04/19 11:02	7439-95-4	
Manganese	ND	mg/L	0.010	0.00057	1	11/02/19 15:05	11/04/19 11:02	7439-96-5	
Molybdenum	ND	mg/L	0.010	0.00095	1	11/02/19 15:05	11/04/19 11:02	7439-98-7	
Potassium	ND	mg/L	0.10	0.026	1	11/02/19 15:05	11/04/19 11:02	7440-09-7	
Selenium	ND	mg/L	0.010	0.0013	1	11/02/19 15:05	11/04/19 11:02	7782-49-2	
Sodium	ND	mg/L	0.10	0.015	1	11/02/19 15:05	11/04/19 11:02	7440-23-5	
Thallium	ND	mg/L	0.0010	0.000052	1	11/02/19 15:05	11/04/19 11:02	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum, Dissolved	ND	mg/L	0.10	0.0089	1	11/03/19 15:41	11/04/19 18:13	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/04/19 18:13	7440-41-7	
Boron, Dissolved	**0.16**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/04/19 18:13	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 18:13	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 18:13	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.0097	1	11/03/19 15:41	11/04/19 18:13	7439-89-6	
Manganese, Dissolved	**0.0050J**	mg/L	0.010	0.00057	1	11/03/19 15:41	11/04/19 18:13	7439-96-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		11/01/19 12:21		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		11/01/19 12:21		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		11/01/19 12:21		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**10.0**	mg/L	10.0	10.0	1		10/29/19 13:02		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/30/19 21:04		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/29/19 11:16	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: EB-4 **Lab ID: 2624772009** Collected: 10/22/19 16:40 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	ND	mg/L	1.0	0.024	1		10/30/19 19:21	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/30/19 19:21	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/30/19 19:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: FB-4 **Lab ID: 2624772010** Collected: 10/22/19 16:30 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum	ND	mg/L	0.10	0.0089	1	11/02/19 15:05	11/04/19 11:08	7429-90-5	
Antimony	ND	mg/L	0.0030	0.00027	1	11/02/19 15:05	11/04/19 11:08	7440-36-0	
Arsenic	**0.00049J**	mg/L	0.0050	0.00035	1	11/02/19 15:05	11/04/19 11:08	7440-38-2	B
Barium	**0.0019J**	mg/L	0.010	0.00049	1	11/02/19 15:05	11/04/19 11:08	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/02/19 15:05	11/04/19 11:08	7440-41-7	
Boron	ND	mg/L	0.040	0.0049	1	11/02/19 15:05	11/04/19 11:08	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	11/02/19 15:05	11/04/19 11:08	7440-43-9	
Calcium	ND	mg/L	0.10	0.011	1	11/02/19 15:05	11/04/19 11:08	7440-70-2	
Chromium	**0.00079J**	mg/L	0.010	0.00039	1	11/02/19 15:05	11/04/19 11:08	7440-47-3	B
Cobalt	ND	mg/L	0.0050	0.00030	1	11/02/19 15:05	11/04/19 11:08	7440-48-4	
Iron	ND	mg/L	0.040	0.0097	1	11/02/19 15:05	11/04/19 11:08	7439-89-6	
Lead	ND	mg/L	0.0050	0.000046	1	11/02/19 15:05	11/04/19 11:08	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	11/02/19 15:05	11/04/19 11:08	7439-93-2	
Magnesium	ND	mg/L	0.050	0.0030	1	11/02/19 15:05	11/04/19 11:08	7439-95-4	
Manganese	ND	mg/L	0.010	0.00057	1	11/02/19 15:05	11/04/19 11:08	7439-96-5	
Molybdenum	ND	mg/L	0.010	0.00095	1	11/02/19 15:05	11/04/19 11:08	7439-98-7	
Potassium	ND	mg/L	0.10	0.026	1	11/02/19 15:05	11/04/19 11:08	7440-09-7	
Selenium	ND	mg/L	0.010	0.0013	1	11/02/19 15:05	11/04/19 11:08	7782-49-2	
Sodium	ND	mg/L	0.10	0.015	1	11/02/19 15:05	11/04/19 11:08	7440-23-5	
Thallium	ND	mg/L	0.0010	0.000052	1	11/02/19 15:05	11/04/19 11:08	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum, Dissolved	ND	mg/L	0.10	0.0089	1	11/03/19 15:41	11/04/19 18:19	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/04/19 18:19	7440-41-7	
Boron, Dissolved	ND	mg/L	0.040	0.0049	1	11/03/19 15:41	11/04/19 18:19	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 18:19	7440-43-9	
Cobalt, Dissolved	ND	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 18:19	7440-48-4	
Iron, Dissolved	ND	mg/L	0.040	0.0097	1	11/03/19 15:41	11/04/19 18:19	7439-89-6	
Manganese, Dissolved	ND	mg/L	0.010	0.00057	1	11/03/19 15:41	11/04/19 18:19	7439-96-5	
2320B Alkalinity Low Level	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	1.0	1.0	1		11/01/19 12:27		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	1.0	1.0	1		11/01/19 12:27		
Alkalinity, Total as CaCO3	ND	mg/L	1.0	1.0	1		11/01/19 12:27		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/29/19 13:02		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/30/19 21:05		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/29/19 10:55	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: FB-4 **Lab ID: 2624772010** Collected: 10/22/19 16:30 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	ND	mg/L	1.0	0.024	1		10/30/19 19:43	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/30/19 19:43	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/30/19 19:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: DUP-4 **Lab ID: 2624772011** Collected: 10/22/19 00:00 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum	**0.023J**	mg/L	0.10	0.0089	1	11/02/19 15:05	11/04/19 11:14	7429-90-5	
Antimony	ND	mg/L	0.0030	0.00027	1	11/02/19 15:05	11/04/19 11:14	7440-36-0	
Arsenic	**0.021**	mg/L	0.0050	0.00035	1	11/02/19 15:05	11/04/19 11:14	7440-38-2	
Barium	**0.062**	mg/L	0.010	0.00049	1	11/02/19 15:05	11/04/19 11:14	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	11/02/19 15:05	11/04/19 11:14	7440-41-7	
Boron	**0.46**	mg/L	0.040	0.0049	1	11/02/19 15:05	11/04/19 11:14	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	11/02/19 15:05	11/04/19 11:14	7440-43-9	
Calcium	**26.6**	mg/L	5.0	0.55	50	11/02/19 15:05	11/04/19 11:19	7440-70-2	
Chromium	ND	mg/L	0.010	0.00039	1	11/02/19 15:05	11/04/19 11:14	7440-47-3	
Cobalt	**0.0030J**	mg/L	0.0050	0.00030	1	11/02/19 15:05	11/04/19 11:14	7440-48-4	
Iron	**33.2**	mg/L	2.0	0.49	50	11/02/19 15:05	11/04/19 11:19	7439-89-6	M6
Lead	ND	mg/L	0.0050	0.000046	1	11/02/19 15:05	11/04/19 11:14	7439-92-1	
Lithium	**0.26**	mg/L	0.030	0.00078	1	11/02/19 15:05	11/04/19 11:14	7439-93-2	
Magnesium	**6.0**	mg/L	0.050	0.0030	1	11/02/19 15:05	11/04/19 11:14	7439-95-4	
Manganese	**0.78**	mg/L	0.010	0.00057	1	11/02/19 15:05	11/04/19 11:14	7439-96-5	
Molybdenum	**0.0044J**	mg/L	0.010	0.00095	1	11/02/19 15:05	11/04/19 11:14	7439-98-7	
Potassium	**12.9**	mg/L	0.10	0.026	1	11/02/19 15:05	11/04/19 11:14	7440-09-7	
Selenium	ND	mg/L	0.010	0.0013	1	11/02/19 15:05	11/04/19 11:14	7782-49-2	
Sodium	**4.7**	mg/L	0.10	0.015	1	11/02/19 15:05	11/04/19 11:14	7440-23-5	
Thallium	ND	mg/L	0.0010	0.000052	1	11/02/19 15:05	11/04/19 11:14	7440-28-0	
6020B MET ICPMS, Dissolved	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Aluminum, Dissolved	ND	mg/L	0.10	0.0089	1	11/03/19 15:41	11/04/19 18:25	7429-90-5	
Beryllium, Dissolved	ND	mg/L	0.0030	0.000074	1	11/03/19 15:41	11/04/19 18:25	7440-41-7	
Boron, Dissolved	**0.44**	mg/L	0.040	0.0049	1	11/03/19 15:41	11/04/19 18:25	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0025	0.00011	1	11/03/19 15:41	11/04/19 18:25	7440-43-9	
Cobalt, Dissolved	**0.0030J**	mg/L	0.0050	0.00030	1	11/03/19 15:41	11/04/19 18:25	7440-48-4	
Iron, Dissolved	**26.5**	mg/L	2.0	0.49	50	11/03/19 15:41	11/05/19 14:50	7439-89-6	
Manganese, Dissolved	**0.72**	mg/L	0.010	0.00057	1	11/03/19 15:41	11/04/19 18:25	7439-96-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity,Bicarbonate (CaCO3)	**22.0**	mg/L	20.0	20.0	1		11/04/19 14:11		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	20.0	20.0	1		11/04/19 14:11		
Alkalinity, Total as CaCO3	**22.0**	mg/L	20.0	20.0	1		11/04/19 14:11		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**321**	mg/L	10.0	10.0	1		10/29/19 13:02		
4500PE Ortho Phosphorus	Analytical Method: SM 4500-P								
Orthophosphate as P	ND	mg/L	0.020	0.020	1		10/30/19 21:06		H1
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	ND	mg/L	0.050	0.0050	1		10/29/19 04:21	14797-55-8	H1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 2624772

Sample: DUP-4 **Lab ID: 2624772011** Collected: 10/22/19 00:00 Received: 10/23/19 08:05 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**2.0**	mg/L	1.0	0.024	1		10/30/19 20:27	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/30/19 20:27	16984-48-8	
Sulfate	**136**	mg/L	20.0	0.34	20		10/31/19 23:33	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 37868 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624772001, 2624772002, 2624772003, 2624772004, 2624772005, 2624772006

METHOD BLANK: 171883 Matrix: Water
Associated Lab Samples: 2624772001, 2624772002, 2624772003, 2624772004, 2624772005, 2624772006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	mg/L	ND	0.10	0.0089	10/31/19 17:44	
Antimony	mg/L	ND	0.0030	0.00027	10/31/19 17:44	
Arsenic	mg/L	ND	0.0050	0.00035	10/31/19 17:44	
Barium	mg/L	ND	0.010	0.00049	10/31/19 17:44	
Beryllium	mg/L	ND	0.0030	0.000074	10/31/19 17:44	
Boron	mg/L	ND	0.040	0.0049	10/31/19 17:44	
Cadmium	mg/L	ND	0.0025	0.00011	10/31/19 17:44	
Calcium	mg/L	ND	0.10	0.011	10/31/19 17:44	
Chromium	mg/L	ND	0.010	0.00039	10/31/19 17:44	
Cobalt	mg/L	ND	0.0050	0.00030	10/31/19 17:44	
Iron	mg/L	ND	0.040	0.0097	10/31/19 17:44	
Lead	mg/L	ND	0.0050	0.000046	10/31/19 17:44	
Lithium	mg/L	ND	0.030	0.00078	10/31/19 17:44	
Magnesium	mg/L	ND	0.050	0.0030	10/31/19 17:44	
Manganese	mg/L	ND	0.010	0.00057	10/31/19 17:44	
Molybdenum	mg/L	ND	0.010	0.00095	10/31/19 17:44	
Potassium	mg/L	ND	0.10	0.026	10/31/19 17:44	
Selenium	mg/L	ND	0.010	0.0013	10/31/19 17:44	
Sodium	mg/L	ND	0.10	0.015	10/31/19 17:44	
Thallium	mg/L	ND	0.0010	0.000052	10/31/19 17:44	

LABORATORY CONTROL SAMPLE: 171884

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/L	1	1.1	109	80-120	
Antimony	mg/L	0.1	0.11	110	80-120	
Arsenic	mg/L	0.1	0.10	102	80-120	
Barium	mg/L	0.1	0.10	104	80-120	
Beryllium	mg/L	0.1	0.11	105	80-120	
Boron	mg/L	1	1.1	105	80-120	
Cadmium	mg/L	0.1	0.11	106	80-120	
Calcium	mg/L	1	1.0	103	80-120	
Chromium	mg/L	0.1	0.11	106	80-120	
Cobalt	mg/L	0.1	0.11	105	80-120	
Iron	mg/L	1	1.1	106	80-120	
Lead	mg/L	0.1	0.11	107	80-120	
Lithium	mg/L	0.1	0.11	107	80-120	
Magnesium	mg/L	1	1.0	103	80-120	
Manganese	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.11	106	80-120	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

LABORATORY CONTROL SAMPLE: 171884

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Potassium	mg/L	1	1.0	103	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Sodium	mg/L	1	1.0	103	80-120	
Thallium	mg/L	0.1	0.11	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171931 171932

Parameter	Units	2624685003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/L	0.22	1	1	1.2	1.2	96	95	75-125	1	20	
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	112	109	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.11	103	106	75-125	2	20	
Barium	mg/L	0.014	0.1	0.1	0.12	0.12	103	103	75-125	1	20	
Beryllium	mg/L	0.00088	0.1	0.1	0.091	0.094	90	93	75-125	3	20	
Boron	mg/L	0.59	1	1	1.5	1.5	91	91	75-125	0	20	
Cadmium	mg/L	0.00045J	0.1	0.1	0.11	0.11	105	107	75-125	2	20	
Calcium	mg/L	52.6	1	1	52.7	51.5	10	-112	75-125	2	20	M6
Chromium	mg/L	ND	0.1	0.1	0.10	0.10	100	101	75-125	1	20	
Cobalt	mg/L	0.073	0.1	0.1	0.17	0.17	97	97	75-125	0	20	
Iron	mg/L	2.3	1	1	2.9	2.9	61	59	75-125	1	20	M1
Lead	mg/L	0.00013J	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Lithium	mg/L	0.0015J	0.1	0.1	0.097	0.10	95	98	75-125	3	20	
Magnesium	mg/L	14.5	1	1	15.6	15.0	105	42	75-125	4	20	M6
Manganese	mg/L	9.4	0.1	0.1	9.3	9.1	-153	-325	75-125	2	20	M6
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	104	104	75-125	0	20	
Potassium	mg/L	7.0	1	1	7.8	7.7	79	72	75-125	1	20	M1
Selenium	mg/L	0.0022J	0.1	0.1	0.11	0.11	104	104	75-125	0	20	
Sodium	mg/L	22.2	1	1	22.8	22.0	62	-21	75-125	4	20	M6
Thallium	mg/L	0.00037J	0.1	0.1	0.10	0.10	101	101	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 38024 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624772007, 2624772008

METHOD BLANK: 172889 Matrix: Water
Associated Lab Samples: 2624772007, 2624772008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	mg/L	ND	0.10	0.0089	11/04/19 01:12	
Antimony	mg/L	ND	0.0030	0.00027	11/04/19 01:12	
Arsenic	mg/L	ND	0.0050	0.00035	11/04/19 01:12	
Barium	mg/L	ND	0.010	0.00049	11/04/19 01:12	
Beryllium	mg/L	ND	0.0030	0.000074	11/04/19 01:12	
Boron	mg/L	0.0059J	0.040	0.0049	11/04/19 01:12	
Cadmium	mg/L	ND	0.0025	0.00011	11/04/19 01:12	
Calcium	mg/L	ND	0.10	0.011	11/04/19 01:12	
Chromium	mg/L	ND	0.010	0.00039	11/04/19 01:12	
Cobalt	mg/L	ND	0.0050	0.00030	11/04/19 01:12	
Iron	mg/L	ND	0.040	0.0097	11/04/19 01:12	
Lead	mg/L	ND	0.0050	0.000046	11/04/19 01:12	
Lithium	mg/L	ND	0.030	0.00078	11/04/19 01:12	
Magnesium	mg/L	ND	0.050	0.0030	11/04/19 01:12	
Manganese	mg/L	ND	0.010	0.00057	11/04/19 01:12	
Molybdenum	mg/L	ND	0.010	0.00095	11/04/19 01:12	
Potassium	mg/L	ND	0.10	0.026	11/04/19 01:12	
Selenium	mg/L	ND	0.010	0.0013	11/04/19 01:12	
Sodium	mg/L	ND	0.10	0.015	11/04/19 01:12	
Thallium	mg/L	ND	0.0010	0.000052	11/04/19 01:12	

LABORATORY CONTROL SAMPLE: 172890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/L	1	1.1	114	80-120	
Antimony	mg/L	0.1	0.11	107	80-120	
Arsenic	mg/L	0.1	0.10	100	80-120	
Barium	mg/L	0.1	0.10	103	80-120	
Beryllium	mg/L	0.1	0.11	114	80-120	
Boron	mg/L	1	1.2	116	80-120	
Cadmium	mg/L	0.1	0.11	106	80-120	
Calcium	mg/L	1	1.1	106	80-120	
Chromium	mg/L	0.1	0.10	105	80-120	
Cobalt	mg/L	0.1	0.10	104	80-120	
Iron	mg/L	1	1.0	104	80-120	
Lead	mg/L	0.1	0.10	102	80-120	
Lithium	mg/L	0.1	0.11	112	80-120	
Magnesium	mg/L	1	1.1	107	80-120	
Manganese	mg/L	0.1	0.11	106	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

LABORATORY CONTROL SAMPLE: 172890

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Potassium	mg/L	1	1.0	105	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Sodium	mg/L	1	1.1	108	80-120	
Thallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 172891 172892

Parameter	Units	2624772007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/L	ND	1	1	1.0	0.94	98	91	75-125	7	20	
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	106	104	75-125	2	20	
Arsenic	mg/L	2.5	0.1	0.1	2.6	2.6	43	106	75-125	2	20	M6
Barium	mg/L	0.22	0.1	0.1	0.32	0.31	99	98	75-125	0	20	
Beryllium	mg/L	ND	0.1	0.1	0.090	0.086	90	86	75-125	5	20	
Boron	mg/L	3.8	1	1	5.1	5.2	85	95	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.11	0.10	107	103	75-125	4	20	
Calcium	mg/L	177	1	1	170	179	-693	243	75-125	5	20	M6
Chromium	mg/L	ND	0.1	0.1	0.099	0.097	99	97	75-125	2	20	
Cobalt	mg/L	ND	0.1	0.1	0.097	0.096	97	96	75-125	0	20	
Iron	mg/L	18.4	1	1	18.9	19.7	50	130	75-125	4	20	M6
Lead	mg/L	ND	0.1	0.1	0.092	0.090	92	90	75-125	2	20	
Lithium	mg/L	0.29	0.1	0.1	0.36	0.36	73	75	75-125	1	20	M1
Magnesium	mg/L	57.2	1	1	53.7	56.5	-353	-68	75-125	5	20	M6
Manganese	mg/L	1.9	0.1	0.1	2.4	2.5	73	163	75-125	4	20	M6
Molybdenum	mg/L	0.49	0.1	0.1	0.58	0.60	89	105	75-125	3	20	
Potassium	mg/L	13.9	1	1	13.5	14.5	-48	56	75-125	7	20	M6
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Sodium	mg/L	13.5	1	1	13.4	13.8	-13	25	75-125	3	20	M6
Thallium	mg/L	ND	0.1	0.1	0.093	0.092	93	92	75-125	2	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 38068 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624772009, 2624772010, 2624772011

METHOD BLANK: 173068 Matrix: Water
Associated Lab Samples: 2624772009, 2624772010, 2624772011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	mg/L	ND	0.10	0.0089	11/04/19 10:51	
Antimony	mg/L	ND	0.0030	0.00027	11/04/19 10:51	
Arsenic	mg/L	0.00064J	0.0050	0.00035	11/04/19 10:51	
Barium	mg/L	ND	0.010	0.00049	11/04/19 10:51	
Beryllium	mg/L	ND	0.0030	0.000074	11/04/19 10:51	
Boron	mg/L	ND	0.040	0.0049	11/04/19 10:51	
Cadmium	mg/L	ND	0.0025	0.00011	11/04/19 10:51	
Calcium	mg/L	ND	0.10	0.011	11/04/19 10:51	
Chromium	mg/L	0.00058J	0.010	0.00039	11/04/19 10:51	
Cobalt	mg/L	ND	0.0050	0.00030	11/04/19 10:51	
Iron	mg/L	ND	0.040	0.0097	11/04/19 10:51	
Lead	mg/L	ND	0.0050	0.000046	11/04/19 10:51	
Lithium	mg/L	ND	0.030	0.00078	11/04/19 10:51	
Magnesium	mg/L	ND	0.050	0.0030	11/04/19 10:51	
Manganese	mg/L	ND	0.010	0.00057	11/04/19 10:51	
Molybdenum	mg/L	ND	0.010	0.00095	11/04/19 10:51	
Potassium	mg/L	ND	0.10	0.026	11/04/19 10:51	
Selenium	mg/L	ND	0.010	0.0013	11/04/19 10:51	
Sodium	mg/L	ND	0.10	0.015	11/04/19 10:51	
Thallium	mg/L	ND	0.0010	0.000052	11/04/19 10:51	

LABORATORY CONTROL SAMPLE: 173069

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	mg/L	1	1.1	107	80-120	
Antimony	mg/L	0.1	0.10	104	80-120	
Arsenic	mg/L	0.1	0.098	98	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.096	96	80-120	
Boron	mg/L	1	0.93	93	80-120	
Cadmium	mg/L	0.1	0.10	102	80-120	
Calcium	mg/L	1	0.97	97	80-120	
Chromium	mg/L	0.1	0.098	98	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Iron	mg/L	1	0.98	98	80-120	
Lead	mg/L	0.1	0.093	93	80-120	
Lithium	mg/L	0.1	0.099	99	80-120	
Magnesium	mg/L	1	0.97	97	80-120	
Manganese	mg/L	0.1	0.10	101	80-120	
Molybdenum	mg/L	0.1	0.10	100	80-120	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

LABORATORY CONTROL SAMPLE: 173069

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Potassium	mg/L	1	0.98	98	80-120	
Selenium	mg/L	0.1	0.10	100	80-120	
Sodium	mg/L	1	0.97	97	80-120	
Thallium	mg/L	0.1	0.094	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 173072 173073

Parameter	Units	2624772011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	mg/L	ND	1	1	1.1	1.1	106	110	75-125	4	20	
Antimony	mg/L	ND	0.1	0.1	0.10	0.10	103	102	75-125	1	20	
Arsenic	mg/L	0.021	0.1	0.1	0.12	0.12	99	98	75-125	1	20	
Barium	mg/L	0.062	0.1	0.1	0.16	0.15	97	93	75-125	3	20	
Beryllium	mg/L	ND	0.1	0.1	0.095	0.094	95	94	75-125	1	20	
Boron	mg/L	0.44	1	1	1.4	1.4	92	89	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.11	103	105	75-125	2	20	
Calcium	mg/L	26.6	1	1	27.7	27.6	108	93	75-125	1	20	
Chromium	mg/L	ND	0.1	0.1	0.099	0.10	99	103	75-125	4	20	
Cobalt	mg/L	0.0030J	0.1	0.1	0.099	0.10	96	100	75-125	4	20	
Iron	mg/L	26.5	1	1	33.6	32.8	43	-33	75-125	2	20	M6
Lead	mg/L	ND	0.1	0.1	0.094	0.092	94	92	75-125	3	20	
Lithium	mg/L	0.26	0.1	0.1	0.37	0.35	108	94	75-125	4	20	
Magnesium	mg/L	6.0	1	1	7.0	6.8	99	81	75-125	3	20	
Manganese	mg/L	0.72	0.1	0.1	0.88	0.90	95	121	75-125	3	20	
Molybdenum	mg/L	0.0044J	0.1	0.1	0.10	0.10	100	100	75-125	0	20	
Potassium	mg/L	12.9	1	1	14.1	13.7	122	80	75-125	3	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.099	100	99	75-125	2	20	
Sodium	mg/L	4.7	1	1	5.5	5.5	84	75	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.094	0.094	94	94	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 38026 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 2624772001, 2624772002, 2624772003, 2624772004, 2624772005, 2624772006, 2624772007

METHOD BLANK: 172898 Matrix: Water
Associated Lab Samples: 2624772001, 2624772002, 2624772003, 2624772004, 2624772005, 2624772006, 2624772007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	mg/L	ND	0.10	0.0089	11/04/19 17:03	
Beryllium, Dissolved	mg/L	ND	0.0030	0.000074	11/04/19 17:03	
Boron, Dissolved	mg/L	ND	0.040	0.0049	11/04/19 17:03	
Cadmium, Dissolved	mg/L	ND	0.0025	0.00011	11/04/19 17:03	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00030	11/04/19 17:03	
Iron, Dissolved	mg/L	ND	0.040	0.0097	11/04/19 17:03	
Manganese, Dissolved	mg/L	ND	0.010	0.00057	11/04/19 17:03	

LABORATORY CONTROL SAMPLE: 172899

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	mg/L	1	1.1	112	80-120	
Beryllium, Dissolved	mg/L	0.1	0.10	104	80-120	
Boron, Dissolved	mg/L	1	1.0	101	80-120	
Cadmium, Dissolved	mg/L	0.1	0.10	100	80-120	
Cobalt, Dissolved	mg/L	0.1	0.10	100	80-120	
Iron, Dissolved	mg/L	1	1.0	102	80-120	
Manganese, Dissolved	mg/L	0.1	0.11	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 172900 172901

Parameter	Units	2624635001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	mg/L	ND	1	1	1.1	1.1	105	108	75-125	3	20	
Beryllium, Dissolved	mg/L	0.00089J	0.1	0.1	0.098	0.094	97	93	75-125	4	20	
Boron, Dissolved	mg/L	0.93	1	1	1.9	1.8	99	84	75-125	8	20	
Cadmium, Dissolved	mg/L	0.00022J	0.1	0.1	0.10	0.10	102	100	75-125	3	20	
Cobalt, Dissolved	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20	
Iron, Dissolved	mg/L	ND	1	1	0.99	0.99	99	99	75-125	0	20	
Manganese, Dissolved	mg/L	0.0045J	0.1	0.1	0.11	0.11	104	104	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 38081 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET Dissolved
Associated Lab Samples: 2624772008, 2624772009, 2624772010, 2624772011

METHOD BLANK: 173094 Matrix: Water
Associated Lab Samples: 2624772008, 2624772009, 2624772010, 2624772011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	mg/L	ND	0.10	0.0089	11/04/19 17:56	
Beryllium, Dissolved	mg/L	ND	0.0030	0.000074	11/04/19 17:56	
Boron, Dissolved	mg/L	ND	0.040	0.0049	11/04/19 17:56	
Cadmium, Dissolved	mg/L	ND	0.0025	0.00011	11/04/19 17:56	
Cobalt, Dissolved	mg/L	ND	0.0050	0.00030	11/04/19 17:56	
Iron, Dissolved	mg/L	0.013J	0.040	0.0097	11/04/19 17:56	
Manganese, Dissolved	mg/L	ND	0.010	0.00057	11/04/19 17:56	

LABORATORY CONTROL SAMPLE: 173095

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	mg/L	1	1.0	101	80-120	
Beryllium, Dissolved	mg/L	0.1	0.096	96	80-120	
Boron, Dissolved	mg/L	1	0.98	98	80-120	
Cadmium, Dissolved	mg/L	0.1	0.10	102	80-120	
Cobalt, Dissolved	mg/L	0.1	0.10	101	80-120	
Iron, Dissolved	mg/L	1	1.1	105	80-120	
Manganese, Dissolved	mg/L	0.1	0.10	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 173096 173097

Parameter	Units	2624780001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	mg/L	0.046J	1	1	1.0	0.98	97	94	75-125	3	20	
Beryllium, Dissolved	mg/L	ND	0.1	0.1	0.095	0.091	95	91	75-125	4	20	
Boron, Dissolved	mg/L	1.8	1	1	2.7	2.6	89	79	75-125	4	20	
Cadmium, Dissolved	mg/L	ND	0.1	0.1	0.10	0.095	100	95	75-125	6	20	
Cobalt, Dissolved	mg/L	0.00030J	0.1	0.1	0.10	0.096	101	96	75-125	5	20	
Iron, Dissolved	mg/L	ND	1	1	0.98	0.94	97	93	75-125	4	20	
Manganese, Dissolved	mg/L	0.027	0.1	0.1	0.12	0.12	96	96	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 37769 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2624772002, 2624772004, 2624772005, 2624772006, 2624772007

METHOD BLANK: 171447 Matrix: Water
Associated Lab Samples: 2624772002, 2624772004, 2624772005, 2624772006, 2624772007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/29/19 17:56	

LABORATORY CONTROL SAMPLE: 171448

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	99.0	99	85-115	

SAMPLE DUPLICATE: 171489

Parameter	Units	2624772002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	190	190	0	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 37830 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2624772008

METHOD BLANK: 171694 Matrix: Water
Associated Lab Samples: 2624772008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	10/30/19 19:32	

LABORATORY CONTROL SAMPLE: 171695

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	101	101	85-115	

SAMPLE DUPLICATE: 172043

Parameter	Units	2624772008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	118	117	1	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 38111 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 2624772011

METHOD BLANK: 173233 Matrix: Water
Associated Lab Samples: 2624772011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	20.0	20.0	11/04/19 12:04	

LABORATORY CONTROL SAMPLE: 173234

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	97.0	97	85-115	

SAMPLE DUPLICATE: 173252

Parameter	Units	2624818005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	655	660	1	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 37989 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity, Low Level
Associated Lab Samples: 2624772001, 2624772003, 2624772009, 2624772010

METHOD BLANK: 172677 Matrix: Water
Associated Lab Samples: 2624772001, 2624772003, 2624772009, 2624772010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	1.0	1.0	11/01/19 11:59	

LABORATORY CONTROL SAMPLE: 172678

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	50.0	100	85-115	

SAMPLE DUPLICATE: 172829

Parameter	Units	2624772009 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	ND		10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 37734 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624772001, 2624772002, 2624772003, 2624772004, 2624772005, 2624772006, 2624772007, 2624772008, 2624772009, 2624772010, 2624772011

LABORATORY CONTROL SAMPLE: 171260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	395	99	84-108	

SAMPLE DUPLICATE: 171261

Parameter	Units	2624674001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	269	270	0	10	

SAMPLE DUPLICATE: 171262

Parameter	Units	2624786001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	693	709	2	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 37857 Analysis Method: SM 4500-P
QC Batch Method: SM 4500-P Analysis Description: 4500PE Ortho Phosphorus
Associated Lab Samples: 2624772001, 2624772002, 2624772003, 2624772004, 2624772005, 2624772006, 2624772007, 2624772008, 2624772009, 2624772010, 2624772011

METHOD BLANK: 171773 Matrix: Water
Associated Lab Samples: 2624772001, 2624772002, 2624772003, 2624772004, 2624772005, 2624772006, 2624772007, 2624772008, 2624772009, 2624772010, 2624772011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	ND	0.020	0.020	10/30/19 20:43	

LABORATORY CONTROL SAMPLE: 171774

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.5	0.52	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171775 171776

Parameter	Units	2624949001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Orthophosphate as P	mg/L	ND	0.5	0.5	0.53	0.52	105	105	80-120	1	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 37577 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624772001, 2624772002, 2624772003, 2624772004, 2624772005, 2624772006, 2624772007, 2624772008, 2624772009, 2624772010, 2624772011

METHOD BLANK: 170482 Matrix: Water
Associated Lab Samples: 2624772001, 2624772002, 2624772003, 2624772004, 2624772005, 2624772006, 2624772007, 2624772008, 2624772009, 2624772010, 2624772011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrate as N	mg/L	ND	0.050	0.0050	10/26/19 03:48	

LABORATORY CONTROL SAMPLE: 170483

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 170484 170485

Parameter	Units	2624772011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrate as N	mg/L	ND	10	10	9.7	9.9	97	99	90-110	2	15	H1

MATRIX SPIKE SAMPLE: 170486

Parameter	Units	2624772001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	0.016J	10	10.0	100	90-110	H1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 2624772

QC Batch: 37829 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624772001, 2624772002, 2624772003, 2624772004, 2624772005, 2624772006, 2624772007, 2624772008, 2624772009, 2624772010, 2624772011

METHOD BLANK: 171687 Matrix: Water
Associated Lab Samples: 2624772001, 2624772002, 2624772003, 2624772004, 2624772005, 2624772006, 2624772007, 2624772008, 2624772009, 2624772010, 2624772011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.024	10/30/19 13:03	
Fluoride	mg/L	ND	0.30	0.029	10/30/19 13:03	
Sulfate	mg/L	ND	1.0	0.017	10/30/19 13:03	

LABORATORY CONTROL SAMPLE: 171688

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.0	100	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	9.6	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 171689 171690

Parameter	Units	2624772001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.1	10	10	12.2	12.2	101	101	90-110	1	15	
Fluoride	mg/L	ND	10	10	10.4	10.4	104	104	90-110	0	15	

MATRIX SPIKE SAMPLE: 171691

Parameter	Units	2624772010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	ND	10	9.9	99	90-110	
Fluoride	mg/L	ND	10	10.1	101	90-110	
Sulfate	mg/L	ND	10	9.8	98	90-110	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: PLANT BRANCH
Pace Project No.: 2624772

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.
F6	Sample was not filtered within 15 minutes of collection and does not meet sampling and/or regulatory requirements.
H1	Analysis conducted outside the EPA method holding time.
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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT BRANCH
Pace Project No.: 2624772

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624772001	**PZ-13S**	EPA 3005A	37868	EPA 6020B	37912
2624772002	**PZ-14I**	EPA 3005A	37868	EPA 6020B	37912
2624772003	**PZ-14S**	EPA 3005A	37868	EPA 6020B	37912
2624772004	**IW-C-2**	EPA 3005A	37868	EPA 6020B	37912
2624772005	**IW-D-2**	EPA 3005A	37868	EPA 6020B	37912
2624772006	**IW-E-1**	EPA 3005A	37868	EPA 6020B	37912
2624772007	**IW-B-2**	EPA 3005A	38024	EPA 6020B	38049
2624772008	**PB-4D**	EPA 3005A	38024	EPA 6020B	38049
2624772009	**EB-4**	EPA 3005A	38068	EPA 6020B	38073
2624772010	**FB-4**	EPA 3005A	38068	EPA 6020B	38073
2624772011	**DUP-4**	EPA 3005A	38068	EPA 6020B	38073
2624772001	**PZ-13S**	EPA 3005A	38026	EPA 6020B	38086
2624772002	**PZ-14I**	EPA 3005A	38026	EPA 6020B	38086
2624772003	**PZ-14S**	EPA 3005A	38026	EPA 6020B	38086
2624772004	**IW-C-2**	EPA 3005A	38026	EPA 6020B	38086
2624772005	**IW-D-2**	EPA 3005A	38026	EPA 6020B	38086
2624772006	**IW-E-1**	EPA 3005A	38026	EPA 6020B	38086
2624772007	**IW-B-2**	EPA 3005A	38026	EPA 6020B	38086
2624772008	**PB-4D**	EPA 3005A	38081	EPA 6020B	38089
2624772009	**EB-4**	EPA 3005A	38081	EPA 6020B	38089
2624772010	**FB-4**	EPA 3005A	38081	EPA 6020B	38089
2624772011	**DUP-4**	EPA 3005A	38081	EPA 6020B	38089
2624772002	**PZ-14I**	SM 2320B	37769		
2624772004	**IW-C-2**	SM 2320B	37769		
2624772005	**IW-D-2**	SM 2320B	37769		
2624772006	**IW-E-1**	SM 2320B	37769		
2624772007	**IW-B-2**	SM 2320B	37769		
2624772008	**PB-4D**	SM 2320B	37830		
2624772011	**DUP-4**	SM 2320B	38111		
2624772001	**PZ-13S**	SM 2320B	37989		
2624772003	**PZ-14S**	SM 2320B	37989		
2624772009	**EB-4**	SM 2320B	37989		
2624772010	**FB-4**	SM 2320B	37989		
2624772001	**PZ-13S**	SM 2540C	37734		
2624772002	**PZ-14I**	SM 2540C	37734		
2624772003	**PZ-14S**	SM 2540C	37734		
2624772004	**IW-C-2**	SM 2540C	37734		
2624772005	**IW-D-2**	SM 2540C	37734		
2624772006	**IW-E-1**	SM 2540C	37734		
2624772007	**IW-B-2**	SM 2540C	37734		
2624772008	**PB-4D**	SM 2540C	37734		
2624772009	**EB-4**	SM 2540C	37734		
2624772010	**FB-4**	SM 2540C	37734		
2624772011	**DUP-4**	SM 2540C	37734		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT BRANCH
Pace Project No.: 2624772

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624772001	**PZ-13S**	SM 4500-P	37857		
2624772002	**PZ-14I**	SM 4500-P	37857		
2624772003	**PZ-14S**	SM 4500-P	37857		
2624772004	**IW-C-2**	SM 4500-P	37857		
2624772005	**IW-D-2**	SM 4500-P	37857		
2624772006	**IW-E-1**	SM 4500-P	37857		
2624772007	**IW-B-2**	SM 4500-P	37857		
2624772008	**PB-4D**	SM 4500-P	37857		
2624772009	**EB-4**	SM 4500-P	37857		
2624772010	**FB-4**	SM 4500-P	37857		
2624772011	**DUP-4**	SM 4500-P	37857		
2624772001	**PZ-13S**	EPA 300.0	37577		
2624772002	**PZ-14I**	EPA 300.0	37577		
2624772003	**PZ-14S**	EPA 300.0	37577		
2624772004	**IW-C-2**	EPA 300.0	37577		
2624772005	**IW-D-2**	EPA 300.0	37577		
2624772006	**IW-E-1**	EPA 300.0	37577		
2624772007	**IW-B-2**	EPA 300.0	37577		
2624772008	**PB-4D**	EPA 300.0	37577		
2624772009	**EB-4**	EPA 300.0	37577		
2624772010	**FB-4**	EPA 300.0	37577		
2624772011	**DUP-4**	EPA 300.0	37577		
2624772001	**PZ-13S**	EPA 300.0	37829		
2624772002	**PZ-14I**	EPA 300.0	37829		
2624772003	**PZ-14S**	EPA 300.0	37829		
2624772004	**IW-C-2**	EPA 300.0	37829		
2624772005	**IW-D-2**	EPA 300.0	37829		
2624772006	**IW-E-1**	EPA 300.0	37829		
2624772007	**IW-B-2**	EPA 300.0	37829		
2624772008	**PB-4D**	EPA 300.0	37829		
2624772009	**EB-4**	EPA 300.0	37829		
2624772010	**FB-4**	EPA 300.0	37829		
2624772011	**DUP-4**	EPA 300.0	37829		

WO#: 2624772

CHAIN-OF-CUSTODY / Analytical Request Document

ALL SHADED AREAS are for LABORATORY ONLY

DRY WELL - NOT SAMPLED

RUSH

DATE / TIME

Sample Conditions Upon Rec

WO#: 2624772

Pace Analytical

Client Name: _____

PM: BH Due Date: 10/30/19

CLIENT: GRPower-COR

Courier: ☐ FedEx ☐ 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 _____ Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 3.4 °C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Date and Initials of person examining contents: _____

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

November 21, 2019

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

RE: Project: PLANT BRANCH RAD
Pace Project No.: 2624779

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 25, 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: Julie Lehrman, Golder Associates Inc.
Dawn Prell, Golder Associates Inc.
Eric Rolle, Georgia Power - Coal Combustion Residuals
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: PLANT BRANCH RAD
Pace Project No.: 2624779

Pace Analytical Services Pennsylvania
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: PLANT BRANCH RAD
Pace Project No.: 2624779

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624779001	**IW-B-1**	Water	10/24/19 10:10	10/25/19 11:00
2624779002	**SW-B-1**	Water	10/24/19 13:52	10/25/19 11:00
2624779003	**SW-E-1**	Water	10/24/19 12:45	10/25/19 11:00
2624779004	**EB-5**	Water	10/24/19 10:51	10/25/19 11:00

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT BRANCH RAD
Pace Project No.: 2624779

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624779001	**IW-B-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624779002	**SW-B-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624779003	**SW-E-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624779004	**EB-5**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH RAD
Pace Project No.: 2624779

Sample: IW-B-1 **Lab ID: 2624779001** Collected: 10/24/19 10:10 Received: 10/25/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.644 ± 0.309 (0.329) C:90% T:NA**	pCi/L	11/20/19 08:32	13982-63-3	
Radium-228	EPA 9320	**0.800 ± 0.403 (0.706) C:81% T:93%**	pCi/L	11/19/19 16:31	15262-20-1	
Total Radium	Total Radium Calculation	**1.44 ± 0.712 (1.04)**	pCi/L	11/20/19 14:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH RAD
Pace Project No.: 2624779

Sample: SW-B-1 **Lab ID: 2624779002** Collected: 10/24/19 13:52 Received: 10/25/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.362 ± 0.294 (0.500) C:66% T:NA**	pCi/L	11/20/19 08:32	13982-63-3	
Radium-228	EPA 9320	**0.274 ± 0.391 (0.841) C:81% T:83%**	pCi/L	11/19/19 16:31	15262-20-1	
Total Radium	Total Radium Calculation	**0.636 ± 0.685 (1.34)**	pCi/L	11/20/19 14:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH RAD
Pace Project No.: 2624779

Sample: SW-E-1 **Lab ID: 2624779003** Collected: 10/24/19 12:45 Received: 10/25/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.593 ± 0.324 (0.420) C:87% T:NA**	pCi/L	11/20/19 08:08	13982-63-3	
Radium-228	EPA 9320	**0.323 ± 0.466 (1.00) C:81% T:87%**	pCi/L	11/19/19 17:41	15262-20-1	
Total Radium	Total Radium Calculation	**0.916 ± 0.790 (1.42)**	pCi/L	11/20/19 14:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: PLANT BRANCH RAD
Pace Project No.: 2624779

Sample: EB-5 **Lab ID: 2624779004** Collected: 10/24/19 10:51 Received: 10/25/19 11:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.316 ± 0.228 (0.362) C:94% T:NA**	pCi/L	11/20/19 08:08	13982-63-3	
Radium-228	EPA 9320	**0.610 ± 0.425 (0.821) C:81% T:92%**	pCi/L	11/19/19 17:41	15262-20-1	
Total Radium	Total Radium Calculation	**0.926 ± 0.653 (1.18)**	pCi/L	11/20/19 14:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT BRANCH RAD
Pace Project No.: 2624779

QC Batch: 369884 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2624779001, 2624779002, 2624779003, 2624779004

METHOD BLANK: 1794407 Matrix: Water
Associated Lab Samples: 2624779001, 2624779002, 2624779003, 2624779004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.823 ± 0.392 (0.668) C:78% T:93%	pCi/L	11/19/19 12:53	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL - RADIOCHEMISTRY

Project: PLANT BRANCH RAD
Pace Project No.: 2624779

QC Batch: 369883 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2624779001, 2624779002, 2624779003, 2624779004

METHOD BLANK: 1794406 Matrix: Water
Associated Lab Samples: 2624779001, 2624779002, 2624779003, 2624779004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.162 ± 0.185 (0.360) C:94% T:NA	pCi/L	11/20/19 08:32	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: PLANT BRANCH RAD
Pace Project No.: 2624779

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

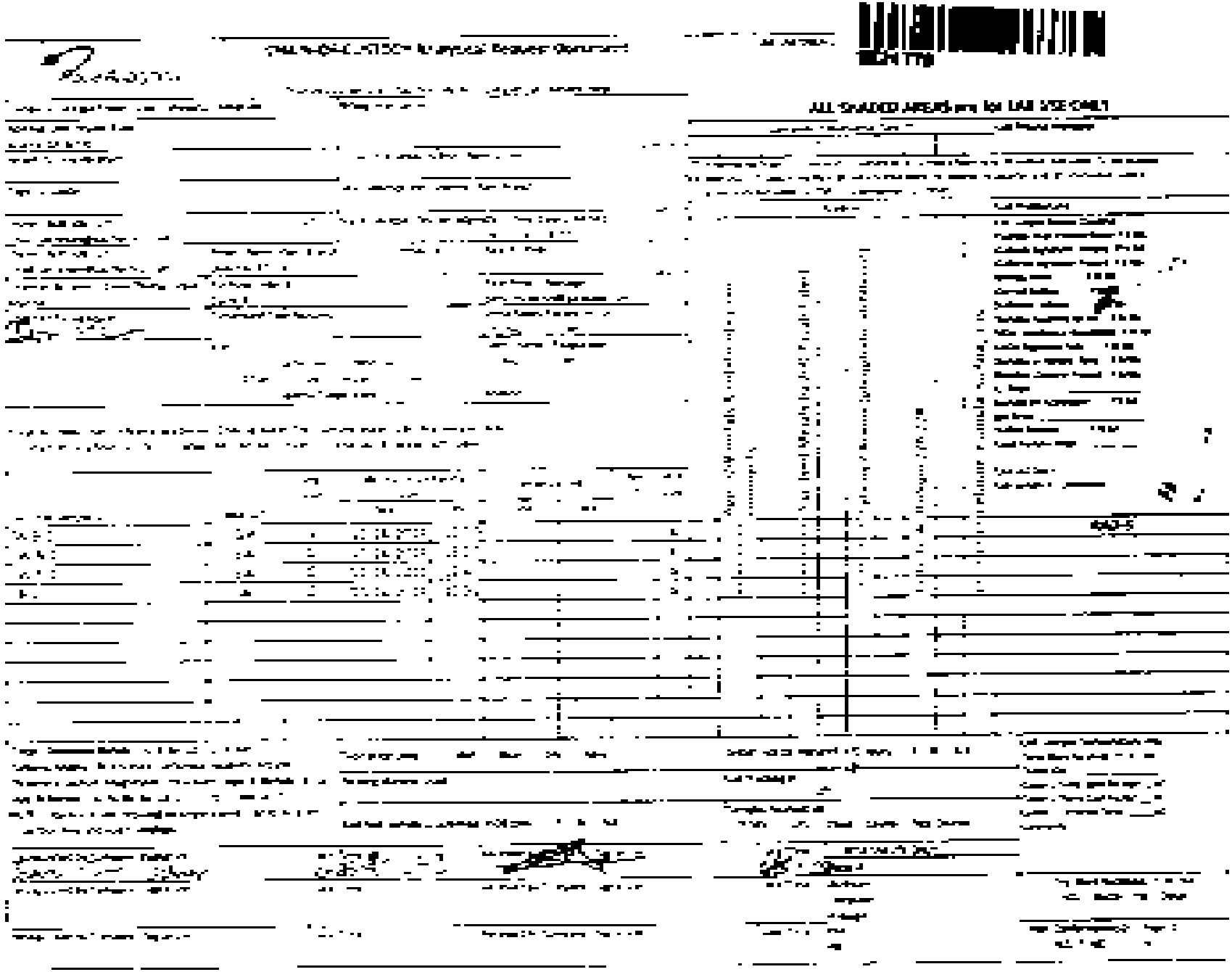
Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT BRANCH RAD
Pace Project No.: 2624779

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624779001	**IW-B-1**	EPA 9315	369883		
2624779002	**SW-B-1**	EPA 9315	369883		
2624779003	**SW-E-1**	EPA 9315	369883		
2624779004	**EB-5**	EPA 9315	369883		
2624779001	**IW-B-1**	EPA 9320	369884		
2624779002	**SW-B-1**	EPA 9320	369884		
2624779003	**SW-E-1**	EPA 9320	369884		
2624779004	**EB-5**	EPA 9320	369884		
2624779001	**IW-B-1**	Total Radium Calculation	371956		
2624779002	**SW-B-1**	Total Radium Calculation	371956		
2624779003	**SW-E-1**	Total Radium Calculation	371956		
2624779004	**EB-5**	Total Radium Calculation	371956		

WO#: 2624779



Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

March 24, 2020

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

RE: Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory between March 04, 2020 and March 06, 2020. 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,

Kevin Herring
kevin.herring@pacelabs.com
(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Lauren Petty, Southern Company Services, Inc.
Carolyn Powrozek, Golder
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Pace Analytical Services Atlanta
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

Pace Analytical Services Asheville
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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629734001	**BRGWA-6S**	Water	03/03/20 13:56	03/04/20 10:45
2629734002	**BRGWA-2S**	Water	03/03/20 11:40	03/04/20 10:45
2629734003	**BRGWA-2I**	Water	03/03/20 12:25	03/04/20 10:45
2629734004	**BRGWA-5S**	Water	03/03/20 10:33	03/04/20 10:45
2629734005	**BRGWA-5I**	Water	03/03/20 09:39	03/04/20 10:45
2629734006	**BRGWC-17S**	Water	03/03/20 15:45	03/04/20 10:45
2629734007	**BRGWC-33S**	Water	03/05/20 09:05	03/06/20 09:45
2629734008	**BRGWC-34S**	Water	03/05/20 09:58	03/06/20 09:45
2629734009	**BRGWC-35S**	Water	03/05/20 11:47	03/06/20 09:45
2629734010	**BRGWC-38S**	Water	03/05/20 12:15	03/06/20 09:45
2629734011	**DUP-3**	Water	03/05/20 00:00	03/06/20 09:45
2629734012	**FB-2**	Water	03/05/20 11:15	03/06/20 09:45
2629734013	**BRGWC-37S**	Water	03/05/20 14:34	03/06/20 09:45
2629734014	**BRGWC-36S**	Water	03/05/20 15:58	03/06/20 09:45

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629734001	**BRGWA-6S**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734002	**BRGWA-2S**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734003	**BRGWA-2I**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734004	**BRGWA-5S**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734005	**BRGWA-5I**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734006	**BRGWC-17S**	EPA 6010D	DRB	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	CDC	3	PASI-A
2629734007	**BRGWC-33S**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734008	**BRGWC-34S**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734009	**BRGWC-35S**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734010	**BRGWC-38S**	EPA 6010D	KLH	1	PASI-GA

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734011	**DUP-3**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734012	**FB-2**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734013	**BRGWC-37S**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
2629734014	**BRGWC-36S**	EPA 6010D	KLH	1	PASI-GA
		EPA 6020B	CSW	13	PASI-GA
		SM 2540C	NJ1	1	PASI-GA
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2629734001	**BRGWA-6S**					
EPA 6010D	Calcium	5.0	mg/L	0.50	03/11/20 18:37	
EPA 6020B	Arsenic	0.0018J	mg/L	0.0050	03/10/20 20:56	
EPA 6020B	Barium	0.019	mg/L	0.010	03/10/20 20:56	
EPA 6020B	Chromium	0.011	mg/L	0.010	03/10/20 20:56	
EPA 6020B	Cobalt	0.0011J	mg/L	0.0050	03/10/20 20:56	
EPA 6020B	Lead	0.000073J	mg/L	0.0050	03/10/20 20:56	
EPA 6020B	Lithium	0.0026J	mg/L	0.030	03/10/20 20:56	
SM 2540C	Total Dissolved Solids	54.0	mg/L	10.0	03/06/20 12:46	
EPA 300.0 Rev 2.1 1993	Chloride	2.9	mg/L	1.0	03/10/20 22:36	
EPA 300.0 Rev 2.1 1993	Fluoride	0.090J	mg/L	0.30	03/10/20 22:36	
EPA 300.0 Rev 2.1 1993	Sulfate	2.5	mg/L	1.0	03/10/20 22:36	
2629734002	**BRGWA-2S**					
EPA 6010D	Calcium	4.0	mg/L	0.50	03/11/20 18:41	
EPA 6020B	Arsenic	0.00098J	mg/L	0.0050	03/10/20 21:01	
EPA 6020B	Barium	0.011	mg/L	0.010	03/10/20 21:01	
EPA 6020B	Chromium	0.0098J	mg/L	0.010	03/10/20 21:01	
EPA 6020B	Cobalt	0.0015J	mg/L	0.0050	03/10/20 21:01	
SM 2540C	Total Dissolved Solids	41.0	mg/L	10.0	03/06/20 12:46	
EPA 300.0 Rev 2.1 1993	Chloride	1.9	mg/L	1.0	03/10/20 22:50	
EPA 300.0 Rev 2.1 1993	Fluoride	0.050J	mg/L	0.30	03/10/20 22:50	
EPA 300.0 Rev 2.1 1993	Sulfate	0.93J	mg/L	1.0	03/10/20 22:50	
2629734003	**BRGWA-2I**					
EPA 6010D	Calcium	20.0	mg/L	0.50	03/11/20 18:44	
EPA 6020B	Arsenic	0.0027J	mg/L	0.0050	03/10/20 21:07	
EPA 6020B	Barium	0.017	mg/L	0.010	03/10/20 21:07	
EPA 6020B	Boron	0.0082J	mg/L	0.10	03/10/20 21:07	
EPA 6020B	Chromium	0.00047J	mg/L	0.010	03/10/20 21:07	
EPA 6020B	Lithium	0.055	mg/L	0.030	03/10/20 21:07	
SM 2540C	Total Dissolved Solids	155	mg/L	10.0	03/06/20 12:46	
EPA 300.0 Rev 2.1 1993	Chloride	1.9	mg/L	1.0	03/10/20 23:05	
EPA 300.0 Rev 2.1 1993	Fluoride	0.066J	mg/L	0.30	03/10/20 23:05	
EPA 300.0 Rev 2.1 1993	Sulfate	7.1	mg/L	1.0	03/10/20 23:05	
2629734004	**BRGWA-5S**					
EPA 6010D	Calcium	23.2	mg/L	0.50	03/11/20 18:48	
EPA 6020B	Arsenic	0.0027J	mg/L	0.0050	03/10/20 21:24	
EPA 6020B	Barium	0.051	mg/L	0.010	03/10/20 21:24	
EPA 6020B	Chromium	0.0057J	mg/L	0.010	03/10/20 21:24	
EPA 6020B	Lead	0.000079J	mg/L	0.0050	03/10/20 21:24	
SM 2540C	Total Dissolved Solids	130	mg/L	10.0	03/06/20 12:47	
EPA 300.0 Rev 2.1 1993	Chloride	3.6	mg/L	1.0	03/10/20 23:19	
EPA 300.0 Rev 2.1 1993	Fluoride	0.057J	mg/L	0.30	03/10/20 23:19	
EPA 300.0 Rev 2.1 1993	Sulfate	0.71J	mg/L	1.0	03/10/20 23:19	
2629734005	**BRGWA-5I**					
EPA 6010D	Calcium	14.9	mg/L	0.50	03/11/20 18:51	
EPA 6020B	Arsenic	0.0024J	mg/L	0.0050	03/10/20 21:30	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2629734005	**BRGWA-5I**					
EPA 6020B	Barium	0.028	mg/L	0.010	03/10/20 21:30	
EPA 6020B	Chromium	0.0069J	mg/L	0.010	03/10/20 21:30	
EPA 6020B	Cobalt	0.00043J	mg/L	0.0050	03/10/20 21:30	
EPA 6020B	Lithium	0.0013J	mg/L	0.030	03/10/20 21:30	
EPA 6020B	Molybdenum	0.0023J	mg/L	0.010	03/10/20 21:30	
EPA 300.0 Rev 2.1 1993	Chloride	3.9	mg/L	1.0	03/11/20 00:03	
EPA 300.0 Rev 2.1 1993	Sulfate	2.8	mg/L	1.0	03/11/20 00:03	
2629734006	**BRGWC-17S**					
EPA 6010D	Calcium	29.7	mg/L	0.50	03/11/20 18:55	
EPA 6020B	Arsenic	0.0033J	mg/L	0.0050	03/10/20 21:36	
EPA 6020B	Barium	0.036	mg/L	0.010	03/10/20 21:36	
EPA 6020B	Boron	0.0075J	mg/L	0.10	03/10/20 21:36	
EPA 6020B	Chromium	0.0081J	mg/L	0.010	03/10/20 21:36	
EPA 6020B	Selenium	0.0019J	mg/L	0.010	03/10/20 21:36	
SM 2540C	Total Dissolved Solids	263	mg/L	10.0	03/06/20 12:47	
EPA 300.0 Rev 2.1 1993	Chloride	3.8	mg/L	1.0	03/11/20 00:46	
EPA 300.0 Rev 2.1 1993	Fluoride	0.093J	mg/L	0.30	03/11/20 00:46	
EPA 300.0 Rev 2.1 1993	Sulfate	95.4	mg/L	2.0	03/11/20 05:13	
2629734007	**BRGWC-33S**					
EPA 6010D	Calcium	48.1	mg/L	0.50	03/18/20 19:08	
EPA 6020B	Barium	0.022	mg/L	0.010	03/16/20 15:35	
EPA 6020B	Beryllium	0.0018J	mg/L	0.0030	03/16/20 15:35	
EPA 6020B	Boron	1.5	mg/L	0.10	03/16/20 15:35	
EPA 6020B	Cadmium	0.00038J	mg/L	0.0025	03/16/20 15:35	
EPA 6020B	Cobalt	0.037	mg/L	0.0050	03/16/20 15:35	
EPA 6020B	Lead	0.000087J	mg/L	0.0050	03/16/20 15:35	
EPA 6020B	Lithium	0.011J	mg/L	0.030	03/16/20 15:35	
EPA 6020B	Thallium	0.00020J	mg/L	0.0010	03/16/20 15:35	
SM 2540C	Total Dissolved Solids	292	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	4.8	mg/L	1.0	03/12/20 05:37	
EPA 300.0 Rev 2.1 1993	Fluoride	0.088J	mg/L	0.30	03/12/20 05:37	
EPA 300.0 Rev 2.1 1993	Sulfate	173	mg/L	4.0	03/12/20 13:56	
2629734008	**BRGWC-34S**					
EPA 6010D	Calcium	89.6	mg/L	0.50	03/18/20 19:11	
EPA 6020B	Barium	0.025	mg/L	0.010	03/16/20 15:41	
EPA 6020B	Beryllium	0.00015J	mg/L	0.0030	03/16/20 15:41	
EPA 6020B	Boron	2.1	mg/L	0.10	03/16/20 15:41	
EPA 6020B	Cadmium	0.00018J	mg/L	0.0025	03/16/20 15:41	
EPA 6020B	Cobalt	0.0031J	mg/L	0.0050	03/16/20 15:41	
EPA 6020B	Lithium	0.00089J	mg/L	0.030	03/16/20 15:41	
SM 2540C	Total Dissolved Solids	489	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	6.4	mg/L	1.0	03/12/20 05:52	
EPA 300.0 Rev 2.1 1993	Fluoride	0.072J	mg/L	0.30	03/12/20 05:52	
EPA 300.0 Rev 2.1 1993	Sulfate	287	mg/L	6.0	03/12/20 14:11	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2629734009	**BRGWC-35S**					
EPA 6010D	Calcium	69.9	mg/L	0.50	03/18/20 19:15	
EPA 6020B	Barium	0.039	mg/L	0.010	03/16/20 15:47	
EPA 6020B	Beryllium	0.00015J	mg/L	0.0030	03/16/20 15:47	
EPA 6020B	Boron	1.9	mg/L	0.10	03/16/20 15:47	
EPA 6020B	Chromium	0.0076J	mg/L	0.010	03/16/20 15:47	
EPA 6020B	Lithium	0.0021J	mg/L	0.030	03/16/20 15:47	
SM 2540C	Total Dissolved Solids	535	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	5.8	mg/L	1.0	03/12/20 06:35	
EPA 300.0 Rev 2.1 1993	Fluoride	0.067J	mg/L	0.30	03/12/20 06:35	
EPA 300.0 Rev 2.1 1993	Sulfate	269	mg/L	6.0	03/12/20 14:25	
2629734010	**BRGWC-38S**					
EPA 6010D	Calcium	39.8	mg/L	0.50	03/18/20 19:18	
EPA 6020B	Arsenic	0.0011J	mg/L	0.0050	03/16/20 15:52	B
EPA 6020B	Barium	0.016	mg/L	0.010	03/16/20 15:52	
EPA 6020B	Beryllium	0.0082	mg/L	0.0030	03/16/20 15:52	
EPA 6020B	Boron	1.6	mg/L	0.10	03/16/20 15:52	
EPA 6020B	Cadmium	0.00059J	mg/L	0.0025	03/16/20 15:52	
EPA 6020B	Chromium	0.0038J	mg/L	0.010	03/16/20 15:52	
EPA 6020B	Cobalt	0.22	mg/L	0.0050	03/16/20 15:52	
EPA 6020B	Lead	0.00041J	mg/L	0.0050	03/16/20 15:52	
EPA 6020B	Lithium	0.021J	mg/L	0.030	03/16/20 15:52	
EPA 6020B	Selenium	0.032	mg/L	0.010	03/16/20 15:52	
EPA 6020B	Thallium	0.00020J	mg/L	0.0010	03/16/20 15:52	
SM 2540C	Total Dissolved Solids	608	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	5.8	mg/L	1.0	03/12/20 06:50	
EPA 300.0 Rev 2.1 1993	Fluoride	0.92	mg/L	0.30	03/12/20 06:50	
EPA 300.0 Rev 2.1 1993	Sulfate	370	mg/L	8.0	03/12/20 14:40	
2629734011	**DUP-3**					
EPA 6010D	Calcium	66.8	mg/L	0.50	03/18/20 19:22	
EPA 6020B	Barium	0.038	mg/L	0.010	03/16/20 15:58	
EPA 6020B	Beryllium	0.00015J	mg/L	0.0030	03/16/20 15:58	
EPA 6020B	Boron	2.0	mg/L	0.10	03/16/20 15:58	
EPA 6020B	Chromium	0.0064J	mg/L	0.010	03/16/20 15:58	
EPA 6020B	Lithium	0.0020J	mg/L	0.030	03/16/20 15:58	
SM 2540C	Total Dissolved Solids	501	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	5.9	mg/L	1.0	03/12/20 07:04	
EPA 300.0 Rev 2.1 1993	Fluoride	0.079J	mg/L	0.30	03/12/20 07:04	
EPA 300.0 Rev 2.1 1993	Sulfate	276	mg/L	6.0	03/12/20 16:43	
2629734012	**FB-2**					
EPA 6020B	Boron	0.014J	mg/L	0.10	03/16/20 16:04	
2629734013	**BRGWC-37S**					
EPA 6010D	Calcium	3.7	mg/L	0.50	03/18/20 19:29	
EPA 6020B	Arsenic	0.00044J	mg/L	0.0050	03/16/20 16:09	B
EPA 6020B	Barium	0.025	mg/L	0.010	03/16/20 16:09	
EPA 6020B	Boron	0.0076J	mg/L	0.10	03/16/20 16:09	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
2629734013	**BRGWC-37S**					
EPA 6020B	Chromium	0.0016J	mg/L	0.010	03/16/20 16:09	
SM 2540C	Total Dissolved Solids	39.0	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	1.8	mg/L	1.0	03/12/20 08:02	
EPA 300.0 Rev 2.1 1993	Fluoride	0.050J	mg/L	0.30	03/12/20 08:02	
2629734014	**BRGWC-36S**					
EPA 6010D	Calcium	51.7	mg/L	0.50	03/18/20 19:32	
EPA 6020B	Barium	0.033	mg/L	0.010	03/16/20 16:15	
EPA 6020B	Beryllium	0.000092J	mg/L	0.0030	03/16/20 16:15	
EPA 6020B	Boron	1.1	mg/L	0.10	03/16/20 16:15	
EPA 6020B	Chromium	0.0087J	mg/L	0.010	03/16/20 16:15	
EPA 6020B	Lithium	0.0025J	mg/L	0.030	03/16/20 16:15	
EPA 6020B	Selenium	0.0034J	mg/L	0.010	03/16/20 16:15	
SM 2540C	Total Dissolved Solids	457	mg/L	10.0	03/12/20 12:58	
EPA 300.0 Rev 2.1 1993	Chloride	7.6	mg/L	1.0	03/12/20 08:17	
EPA 300.0 Rev 2.1 1993	Sulfate	262	mg/L	5.0	03/12/20 16:58	

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWA-6S **Lab ID: 2629734001** Collected: 03/03/20 13:56 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**5.0**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:37	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 20:56	7440-36-0	
Arsenic	**0.0018J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 20:56	7440-38-2	
Barium	**0.019**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 20:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 20:56	7440-41-7	
Boron	ND	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 20:56	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 20:56	7440-43-9	
Chromium	**0.011**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 20:56	7440-47-3	
Cobalt	**0.0011J**	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 20:56	7440-48-4	
Lead	**0.000073J**	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 20:56	7439-92-1	
Lithium	**0.0026J**	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 20:56	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 20:56	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 20:56	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 20:56	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**54.0**	mg/L	10.0	10.0	1		03/06/20 12:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**2.9**	mg/L	1.0	0.60	1		03/10/20 22:36	16887-00-6	
Fluoride	**0.090J**	mg/L	0.30	0.050	1		03/10/20 22:36	16984-48-8	
Sulfate	**2.5**	mg/L	1.0	0.50	1		03/10/20 22:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWA-2S **Lab ID: 2629734002** Collected: 03/03/20 11:40 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**4.0**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:41	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 21:01	7440-36-0	
Arsenic	**0.00098J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 21:01	7440-38-2	
Barium	**0.011**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 21:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 21:01	7440-41-7	
Boron	ND	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 21:01	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 21:01	7440-43-9	
Chromium	**0.0098J**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 21:01	7440-47-3	
Cobalt	**0.0015J**	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 21:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 21:01	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 21:01	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 21:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 21:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 21:01	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**41.0**	mg/L	10.0	10.0	1		03/06/20 12:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**1.9**	mg/L	1.0	0.60	1		03/10/20 22:50	16887-00-6	
Fluoride	**0.050J**	mg/L	0.30	0.050	1		03/10/20 22:50	16984-48-8	
Sulfate	**0.93J**	mg/L	1.0	0.50	1		03/10/20 22:50	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWA-2I **Lab ID: 2629734003** Collected: 03/03/20 12:25 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**20.0**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:44	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 21:07	7440-36-0	
Arsenic	**0.0027J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 21:07	7440-38-2	
Barium	**0.017**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 21:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 21:07	7440-41-7	
Boron	**0.0082J**	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 21:07	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 21:07	7440-43-9	
Chromium	**0.00047J**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 21:07	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 21:07	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 21:07	7439-92-1	
Lithium	**0.055**	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 21:07	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 21:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 21:07	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 21:07	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**155**	mg/L	10.0	10.0	1		03/06/20 12:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**1.9**	mg/L	1.0	0.60	1		03/10/20 23:05	16887-00-6	
Fluoride	**0.066J**	mg/L	0.30	0.050	1		03/10/20 23:05	16984-48-8	
Sulfate	**7.1**	mg/L	1.0	0.50	1		03/10/20 23:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWA-5S **Lab ID: 2629734004** Collected: 03/03/20 10:33 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**23.2**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:48	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 21:24	7440-36-0	
Arsenic	**0.0027J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 21:24	7440-38-2	
Barium	**0.051**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 21:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 21:24	7440-41-7	
Boron	ND	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 21:24	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 21:24	7440-43-9	
Chromium	**0.0057J**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 21:24	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 21:24	7440-48-4	
Lead	**0.000079J**	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 21:24	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 21:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 21:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 21:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 21:24	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**130**	mg/L	10.0	10.0	1		03/06/20 12:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**3.6**	mg/L	1.0	0.60	1		03/10/20 23:19	16887-00-6	
Fluoride	**0.057J**	mg/L	0.30	0.050	1		03/10/20 23:19	16984-48-8	
Sulfate	**0.71J**	mg/L	1.0	0.50	1		03/10/20 23:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWA-5I **Lab ID: 2629734005** Collected: 03/03/20 09:39 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**14.9**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:51	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 21:30	7440-36-0	
Arsenic	**0.0024J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 21:30	7440-38-2	
Barium	**0.028**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 21:30	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 21:30	7440-41-7	
Boron	ND	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 21:30	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 21:30	7440-43-9	
Chromium	**0.0069J**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 21:30	7440-47-3	
Cobalt	**0.00043J**	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 21:30	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 21:30	7439-92-1	
Lithium	**0.0013J**	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 21:30	7439-93-2	
Molybdenum	**0.0023J**	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 21:30	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 21:30	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 21:30	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		03/06/20 12:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**3.9**	mg/L	1.0	0.60	1		03/11/20 00:03	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		03/11/20 00:03	16984-48-8	
Sulfate	**2.8**	mg/L	1.0	0.50	1		03/11/20 00:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-17S **Lab ID: 2629734006** Collected: 03/03/20 15:45 Received: 03/04/20 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**29.7**	mg/L	0.50	0.14	1	03/10/20 18:00	03/11/20 18:55	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/05/20 22:25	03/10/20 21:36	7440-36-0	
Arsenic	**0.0033J**	mg/L	0.0050	0.00035	1	03/05/20 22:25	03/10/20 21:36	7440-38-2	
Barium	**0.036**	mg/L	0.010	0.00049	1	03/05/20 22:25	03/10/20 21:36	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/05/20 22:25	03/10/20 21:36	7440-41-7	
Boron	**0.0075J**	mg/L	0.10	0.0049	1	03/05/20 22:25	03/10/20 21:36	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/05/20 22:25	03/10/20 21:36	7440-43-9	
Chromium	**0.0081J**	mg/L	0.010	0.00039	1	03/05/20 22:25	03/10/20 21:36	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/05/20 22:25	03/10/20 21:36	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/05/20 22:25	03/10/20 21:36	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/05/20 22:25	03/10/20 21:36	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/05/20 22:25	03/10/20 21:36	7439-98-7	
Selenium	**0.0019J**	mg/L	0.010	0.0013	1	03/05/20 22:25	03/10/20 21:36	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/05/20 22:25	03/10/20 21:36	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**263**	mg/L	10.0	10.0	1		03/06/20 12:47		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**3.8**	mg/L	1.0	0.60	1		03/11/20 00:46	16887-00-6	
Fluoride	**0.093J**	mg/L	0.30	0.050	1		03/11/20 00:46	16984-48-8	
Sulfate	**95.4**	mg/L	2.0	1.0	2		03/11/20 05:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-33S **Lab ID: 2629734007** Collected: 03/05/20 09:05 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**48.1**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:08	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 15:35	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 15:35	7440-38-2	
Barium	**0.022**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 15:35	7440-39-3	
Beryllium	**0.0018J**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 15:35	7440-41-7	
Boron	**1.5**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 15:35	7440-42-8	
Cadmium	**0.00038J**	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 15:35	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 15:35	7440-47-3	
Cobalt	**0.037**	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 15:35	7440-48-4	
Lead	**0.000087J**	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 15:35	7439-92-1	
Lithium	**0.011J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 15:35	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 15:35	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 15:35	7782-49-2	
Thallium	**0.00020J**	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 15:35	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**292**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**4.8**	mg/L	1.0	0.60	1		03/12/20 05:37	16887-00-6	
Fluoride	**0.088J**	mg/L	0.30	0.050	1		03/12/20 05:37	16984-48-8	
Sulfate	**173**	mg/L	4.0	2.0	4		03/12/20 13:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-34S **Lab ID: 2629734008** Collected: 03/05/20 09:58 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**89.6**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:11	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 15:41	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 15:41	7440-38-2	
Barium	**0.025**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 15:41	7440-39-3	
Beryllium	**0.00015J**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 15:41	7440-41-7	
Boron	**2.1**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 15:41	7440-42-8	
Cadmium	**0.00018J**	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 15:41	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 15:41	7440-47-3	
Cobalt	**0.0031J**	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 15:41	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 15:41	7439-92-1	
Lithium	**0.00089J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 15:41	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 15:41	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 15:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 15:41	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**489**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**6.4**	mg/L	1.0	0.60	1		03/12/20 05:52	16887-00-6	
Fluoride	**0.072J**	mg/L	0.30	0.050	1		03/12/20 05:52	16984-48-8	
Sulfate	**287**	mg/L	6.0	3.0	6		03/12/20 14:11	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-35S **Lab ID: 2629734009** Collected: 03/05/20 11:47 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**69.9**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:15	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 15:47	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 15:47	7440-38-2	
Barium	**0.039**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 15:47	7440-39-3	
Beryllium	**0.00015J**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 15:47	7440-41-7	
Boron	**1.9**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 15:47	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 15:47	7440-43-9	
Chromium	**0.0076J**	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 15:47	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 15:47	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 15:47	7439-92-1	
Lithium	**0.0021J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 15:47	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 15:47	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 15:47	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 15:47	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**535**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**5.8**	mg/L	1.0	0.60	1		03/12/20 06:35	16887-00-6	
Fluoride	**0.067J**	mg/L	0.30	0.050	1		03/12/20 06:35	16984-48-8	
Sulfate	**269**	mg/L	6.0	3.0	6		03/12/20 14:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-38S **Lab ID: 2629734010** Collected: 03/05/20 12:15 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**39.8**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:18	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 15:52	7440-36-0	
Arsenic	**0.0011J**	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 15:52	7440-38-2	B
Barium	**0.016**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 15:52	7440-39-3	
Beryllium	**0.0082**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 15:52	7440-41-7	
Boron	**1.6**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 15:52	7440-42-8	
Cadmium	**0.00059J**	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 15:52	7440-43-9	
Chromium	**0.0038J**	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 15:52	7440-47-3	
Cobalt	**0.22**	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 15:52	7440-48-4	
Lead	**0.00041J**	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 15:52	7439-92-1	
Lithium	**0.021J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 15:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 15:52	7439-98-7	
Selenium	**0.032**	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 15:52	7782-49-2	
Thallium	**0.00020J**	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 15:52	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**608**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**5.8**	mg/L	1.0	0.60	1		03/12/20 06:50	16887-00-6	
Fluoride	**0.92**	mg/L	0.30	0.050	1		03/12/20 06:50	16984-48-8	
Sulfate	**370**	mg/L	8.0	4.0	8		03/12/20 14:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: DUP-3 **Lab ID: 2629734011** Collected: 03/05/20 00:00 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**66.8**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:22	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 15:58	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 15:58	7440-38-2	
Barium	**0.038**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 15:58	7440-39-3	
Beryllium	**0.00015J**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 15:58	7440-41-7	
Boron	**2.0**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 15:58	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 15:58	7440-43-9	
Chromium	**0.0064J**	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 15:58	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 15:58	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 15:58	7439-92-1	
Lithium	**0.0020J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 15:58	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 15:58	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 15:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 15:58	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**501**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**5.9**	mg/L	1.0	0.60	1		03/12/20 07:04	16887-00-6	
Fluoride	**0.079J**	mg/L	0.30	0.050	1		03/12/20 07:04	16984-48-8	
Sulfate	**276**	mg/L	6.0	3.0	6		03/12/20 16:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: FB-2 **Lab ID: 2629734012** Collected: 03/05/20 11:15 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	ND	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:25	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 16:04	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 16:04	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 16:04	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 16:04	7440-41-7	
Boron	**0.014J**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 16:04	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 16:04	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 16:04	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 16:04	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 16:04	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 16:04	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 16:04	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 16:04	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 16:04	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	ND	mg/L	1.0	0.60	1		03/12/20 07:19	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		03/12/20 07:19	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		03/12/20 07:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-37S **Lab ID: 2629734013** Collected: 03/05/20 14:34 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**3.7**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:29	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 16:09	7440-36-0	
Arsenic	**0.00044J**	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 16:09	7440-38-2	B
Barium	**0.025**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 16:09	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 16:09	7440-41-7	
Boron	**0.0076J**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 16:09	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 16:09	7440-43-9	
Chromium	**0.0016J**	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 16:09	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 16:09	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 16:09	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 16:09	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 16:09	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 16:09	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 16:09	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**39.0**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**1.8**	mg/L	1.0	0.60	1		03/12/20 08:02	16887-00-6	
Fluoride	**0.050J**	mg/L	0.30	0.050	1		03/12/20 08:02	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		03/12/20 08:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Sample: BRGWC-36S **Lab ID: 2629734014** Collected: 03/05/20 15:58 Received: 03/06/20 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A								
Calcium	**51.7**	mg/L	0.50	0.14	1	03/11/20 18:00	03/18/20 19:32	7440-70-2	
6020B MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00027	1	03/11/20 19:30	03/16/20 16:15	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	03/11/20 19:30	03/16/20 16:15	7440-38-2	
Barium	**0.033**	mg/L	0.010	0.00049	1	03/11/20 19:30	03/16/20 16:15	7440-39-3	
Beryllium	**0.000092J**	mg/L	0.0030	0.000074	1	03/11/20 19:30	03/16/20 16:15	7440-41-7	
Boron	**1.1**	mg/L	0.10	0.0049	1	03/11/20 19:30	03/16/20 16:15	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	03/11/20 19:30	03/16/20 16:15	7440-43-9	
Chromium	**0.0087J**	mg/L	0.010	0.00039	1	03/11/20 19:30	03/16/20 16:15	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	03/11/20 19:30	03/16/20 16:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	03/11/20 19:30	03/16/20 16:15	7439-92-1	
Lithium	**0.0025J**	mg/L	0.030	0.00078	1	03/11/20 19:30	03/16/20 16:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	03/11/20 19:30	03/16/20 16:15	7439-98-7	
Selenium	**0.0034J**	mg/L	0.010	0.0013	1	03/11/20 19:30	03/16/20 16:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	03/11/20 19:30	03/16/20 16:15	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**457**	mg/L	10.0	10.0	1		03/12/20 12:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993								
Chloride	**7.6**	mg/L	1.0	0.60	1		03/12/20 08:17	16887-00-6	
Fluoride	ND	mg/L	0.30	0.050	1		03/12/20 08:17	16984-48-8	
Sulfate	**262**	mg/L	5.0	2.5	5		03/12/20 16:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44425 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

METHOD BLANK: 203825 Matrix: Water
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	0.14	03/11/20 17:22	

LABORATORY CONTROL SAMPLE: 203826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	1.0	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203827 203828

Parameter	Units	2629679001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	5.3	1	1	6.6	6.3	129	101	75-125	4	20	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44482 Analysis Method: EPA 6010D
QC Batch Method: EPA 3010A Analysis Description: 6010D MET
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

METHOD BLANK: 204090 Matrix: Water
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	0.50	0.14	03/18/20 18:33	

LABORATORY CONTROL SAMPLE: 204091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.99	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204092 204093

Parameter	Units	2629733017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	37.9	1	1	38.6	39.1	76	118	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44282 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

METHOD BLANK: 202999 Matrix: Water
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	03/10/20 20:16	
Arsenic	mg/L	ND	0.0050	0.00035	03/10/20 20:16	
Barium	mg/L	ND	0.010	0.00049	03/10/20 20:16	
Beryllium	mg/L	ND	0.0030	0.000074	03/10/20 20:16	
Boron	mg/L	ND	0.10	0.0049	03/10/20 20:16	
Cadmium	mg/L	ND	0.0025	0.00011	03/10/20 20:16	
Chromium	mg/L	ND	0.010	0.00039	03/10/20 20:16	
Cobalt	mg/L	ND	0.0050	0.00030	03/10/20 20:16	
Lead	mg/L	ND	0.0050	0.000046	03/10/20 20:16	
Lithium	mg/L	ND	0.030	0.00078	03/10/20 20:16	
Molybdenum	mg/L	ND	0.010	0.00095	03/10/20 20:16	
Selenium	mg/L	ND	0.010	0.0013	03/10/20 20:16	
Thallium	mg/L	ND	0.0010	0.000052	03/10/20 20:16	

LABORATORY CONTROL SAMPLE: 203000

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	100	80-120	
Barium	mg/L	0.1	0.10	102	80-120	
Beryllium	mg/L	0.1	0.10	100	80-120	
Boron	mg/L	1	1.0	103	80-120	
Cadmium	mg/L	0.1	0.10	101	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	103	80-120	
Lithium	mg/L	0.1	0.10	103	80-120	
Molybdenum	mg/L	0.1	0.10	105	80-120	
Selenium	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.10	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203001 203002

Parameter	Units	2629733001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	111	110	75-125	1	20	
Arsenic	mg/L	0.0015J	0.1	0.1	0.11	0.11	106	105	75-125	1	20	
Barium	mg/L	0.060	0.1	0.1	0.17	0.18	115	116	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 203001 203002

Parameter	Units	2629733001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	0	20	
Boron	mg/L	0.0065J	1	1	1.0	1.0	102	103	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.11	0.11	106	105	75-125	0	20	
Chromium	mg/L	0.0028J	0.1	0.1	0.11	0.11	112	107	75-125	4	20	
Cobalt	mg/L	ND	0.1	0.1	0.11	0.11	107	108	75-125	1	20	
Lead	mg/L	ND	0.1	0.1	0.11	0.10	108	105	75-125	2	20	
Lithium	mg/L	ND	0.1	0.1	0.099	0.099	99	99	75-125	0	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.11	108	105	75-125	2	20	
Selenium	mg/L	ND	0.1	0.1	0.11	0.10	106	104	75-125	3	20	
Thallium	mg/L	ND	0.1	0.1	0.11	0.10	107	105	75-125	2	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44487 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

METHOD BLANK: 204143 Matrix: Water
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	03/16/20 14:26	
Arsenic	mg/L	0.00036J	0.0050	0.00035	03/16/20 14:26	
Barium	mg/L	ND	0.010	0.00049	03/16/20 14:26	
Beryllium	mg/L	ND	0.0030	0.000074	03/16/20 14:26	
Boron	mg/L	ND	0.10	0.0049	03/16/20 14:26	
Cadmium	mg/L	ND	0.0025	0.00011	03/16/20 14:26	
Chromium	mg/L	ND	0.010	0.00039	03/16/20 14:26	
Cobalt	mg/L	ND	0.0050	0.00030	03/16/20 14:26	
Lead	mg/L	ND	0.0050	0.000046	03/16/20 14:26	
Lithium	mg/L	ND	0.030	0.00078	03/16/20 14:26	
Molybdenum	mg/L	ND	0.010	0.00095	03/16/20 14:26	
Selenium	mg/L	ND	0.010	0.0013	03/16/20 14:26	
Thallium	mg/L	ND	0.0010	0.000052	03/16/20 14:26	

LABORATORY CONTROL SAMPLE: 204144

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	0.098	98	80-120	
Beryllium	mg/L	0.1	0.10	101	80-120	
Boron	mg/L	1	1.0	101	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Chromium	mg/L	0.1	0.10	101	80-120	
Cobalt	mg/L	0.1	0.099	99	80-120	
Lead	mg/L	0.1	0.096	96	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.099	99	80-120	
Selenium	mg/L	0.1	0.095	95	80-120	
Thallium	mg/L	0.1	0.097	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204145 204146

Parameter	Units	2629733015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.10	106	102	75-125	3	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	105	101	75-125	4	20	
Barium	mg/L	0.025	0.1	0.1	0.13	0.12	102	98	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 204145 204146

Parameter	Units	2629733015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.1	0.1	0.095	0.092	95	92	75-125	4	20	
Boron	mg/L	1.5	1	1	2.6	2.4	112	94	75-125	7	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	104	102	75-125	2	20	
Chromium	mg/L	ND	0.1	0.1	0.098	0.096	97	95	75-125	2	20	
Cobalt	mg/L	0.0011J	0.1	0.1	0.098	0.098	97	97	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.096	0.095	96	95	75-125	1	20	
Lithium	mg/L	0.016J	0.1	0.1	0.12	0.11	99	93	75-125	5	20	
Molybdenum	mg/L	ND	0.1	0.1	0.11	0.10	106	100	75-125	6	20	
Selenium	mg/L	ND	0.1	0.1	0.10	0.10	101	99	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.098	0.095	98	95	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44309 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

LABORATORY CONTROL SAMPLE: 203157

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	396	99	84-108	

SAMPLE DUPLICATE: 203158

Parameter	Units	2629679001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	52.0	49.0	6	10	

SAMPLE DUPLICATE: 203159

Parameter	Units	2629766004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	63.0	67.0	6	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 44505 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

LABORATORY CONTROL SAMPLE: 204334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	390	98	84-108	

SAMPLE DUPLICATE: 204335

Parameter	Units	2629733017 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	297	314	6	10	

SAMPLE DUPLICATE: 204336

Parameter	Units	2629734014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	457	455	0	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 529177 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

METHOD BLANK: 2826406 Matrix: Water
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/10/20 19:28	
Fluoride	mg/L	ND	0.10	0.050	03/10/20 19:28	
Sulfate	mg/L	ND	1.0	0.50	03/10/20 19:28	

LABORATORY CONTROL SAMPLE: 2826407

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.6	97	90-110	
Fluoride	mg/L	2.5	2.6	102	90-110	
Sulfate	mg/L	50	51.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826408 2826409

Parameter	Units	92468412012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	0.93J	50	50	52.4	51.9	103	102	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	3.0	2.9	119	114	90-110	4	10	M1
Sulfate	mg/L	7.7	50	50	60.6	59.7	106	104	90-110	2	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2826410 2826411

Parameter	Units	2629734005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.9	50	50	54.3	55.1	101	102	90-110	2	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	103	105	90-110	2	10	
Sulfate	mg/L	2.8	50	50	55.2	56.0	105	106	90-110	1	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

QC Batch: 529688 Analysis Method: EPA 300.0 Rev 2.1 1993
QC Batch Method: EPA 300.0 Rev 2.1 1993 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

METHOD BLANK: 2829146 Matrix: Water
Associated Lab Samples: 2629734007, 2629734008, 2629734009, 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	03/12/20 02:58	
Fluoride	mg/L	ND	0.10	0.050	03/12/20 02:58	
Sulfate	mg/L	ND	1.0	0.50	03/12/20 02:58	

LABORATORY CONTROL SAMPLE: 2829147

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.6	101	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	
Sulfate	mg/L	50	52.4	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2829148 2829149

Parameter	Units	92468620006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	14.1	50	50	64.3	64.6	100	101	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	103	105	90-110	1	10	
Sulfate	mg/L	13.1	50	50	64.2	64.4	102	103	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2829150 2829151

Parameter	Units	2629734012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	50	50	50.4	50.8	101	102	90-110	1	10	
Fluoride	mg/L	ND	2.5	2.5	2.7	2.8	110	110	90-110	0	10	
Sulfate	mg/L	ND	50	50	52.4	52.6	104	105	90-110	0	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629734001	**BRGWA-6S**	EPA 3010A	44425	EPA 6010D	44437
2629734002	**BRGWA-2S**	EPA 3010A	44425	EPA 6010D	44437
2629734003	**BRGWA-2I**	EPA 3010A	44425	EPA 6010D	44437
2629734004	**BRGWA-5S**	EPA 3010A	44425	EPA 6010D	44437
2629734005	**BRGWA-5I**	EPA 3010A	44425	EPA 6010D	44437
2629734006	**BRGWC-17S**	EPA 3010A	44425	EPA 6010D	44437
2629734007	**BRGWC-33S**	EPA 3010A	44482	EPA 6010D	44490
2629734008	**BRGWC-34S**	EPA 3010A	44482	EPA 6010D	44490
2629734009	**BRGWC-35S**	EPA 3010A	44482	EPA 6010D	44490
2629734010	**BRGWC-38S**	EPA 3010A	44482	EPA 6010D	44490
2629734011	**DUP-3**	EPA 3010A	44482	EPA 6010D	44490
2629734012	**FB-2**	EPA 3010A	44482	EPA 6010D	44490
2629734013	**BRGWC-37S**	EPA 3010A	44482	EPA 6010D	44490
2629734014	**BRGWC-36S**	EPA 3010A	44482	EPA 6010D	44490
2629734001	**BRGWA-6S**	EPA 3005A	44282	EPA 6020B	44315
2629734002	**BRGWA-2S**	EPA 3005A	44282	EPA 6020B	44315
2629734003	**BRGWA-2I**	EPA 3005A	44282	EPA 6020B	44315
2629734004	**BRGWA-5S**	EPA 3005A	44282	EPA 6020B	44315
2629734005	**BRGWA-5I**	EPA 3005A	44282	EPA 6020B	44315
2629734006	**BRGWC-17S**	EPA 3005A	44282	EPA 6020B	44315
2629734007	**BRGWC-33S**	EPA 3005A	44487	EPA 6020B	44511
2629734008	**BRGWC-34S**	EPA 3005A	44487	EPA 6020B	44511
2629734009	**BRGWC-35S**	EPA 3005A	44487	EPA 6020B	44511
2629734010	**BRGWC-38S**	EPA 3005A	44487	EPA 6020B	44511
2629734011	**DUP-3**	EPA 3005A	44487	EPA 6020B	44511
2629734012	**FB-2**	EPA 3005A	44487	EPA 6020B	44511
2629734013	**BRGWC-37S**	EPA 3005A	44487	EPA 6020B	44511
2629734014	**BRGWC-36S**	EPA 3005A	44487	EPA 6020B	44511
2629734001	**BRGWA-6S**	SM 2540C	44309		
2629734002	**BRGWA-2S**	SM 2540C	44309		
2629734003	**BRGWA-2I**	SM 2540C	44309		
2629734004	**BRGWA-5S**	SM 2540C	44309		
2629734005	**BRGWA-5I**	SM 2540C	44309		
2629734006	**BRGWC-17S**	SM 2540C	44309		
2629734007	**BRGWC-33S**	SM 2540C	44505		
2629734008	**BRGWC-34S**	SM 2540C	44505		
2629734009	**BRGWC-35S**	SM 2540C	44505		
2629734010	**BRGWC-38S**	SM 2540C	44505		
2629734011	**DUP-3**	SM 2540C	44505		
2629734012	**FB-2**	SM 2540C	44505		
2629734013	**BRGWC-37S**	SM 2540C	44505		
2629734014	**BRGWC-36S**	SM 2540C	44505		
2629734001	**BRGWA-6S**	EPA 300.0 Rev 2.1 1993	529177		
2629734002	**BRGWA-2S**	EPA 300.0 Rev 2.1 1993	529177		
2629734003	**BRGWA-2I**	EPA 300.0 Rev 2.1 1993	529177		
2629734004	**BRGWA-5S**	EPA 300.0 Rev 2.1 1993	529177		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT BRANCH AP-E 2ND SA
Pace Project No.: 2629734

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2629734005	**BRGWA-5I**	EPA 300.0 Rev 2.1 1993	529177		
2629734006	**BRGWC-17S**	EPA 300.0 Rev 2.1 1993	529177		
2629734007	**BRGWC-33S**	EPA 300.0 Rev 2.1 1993	529688		
2629734008	**BRGWC-34S**	EPA 300.0 Rev 2.1 1993	529688		
2629734009	**BRGWC-35S**	EPA 300.0 Rev 2.1 1993	529688		
2629734010	**BRGWC-38S**	EPA 300.0 Rev 2.1 1993	529688		
2629734011	**DUP-3**	EPA 300.0 Rev 2.1 1993	529688		
2629734012	**FB-2**	EPA 300.0 Rev 2.1 1993	529688		
2629734013	**BRGWC-37S**	EPA 300.0 Rev 2.1 1993	529688		
2629734014	**BRGWC-36S**	EPA 300.0 Rev 2.1 1993	529688		

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

WO#: 2629734

Project Number: 166254.18

ITEM #	SAMPLE ID	Matrix	Collected Date	Collected Time	# of Containers	Preservation	Analyses Test	Pace Project No./ Lab I.D.
1	BRGWC-33S	WT	G	0805	5	2	3	
2	BRGWC-34S	WT	G	0958	5	2	3	
3	BRGWC-35S	WT	G	1147	7	2	5	Hg Low Predicting S
4	BRGWC-38S	WT	G	1215	5	2	3	
5	DUP 3	WT	G	—	5	2	3	
6	FB-2	WT	G	1115	5	2	3	
7	BRGWC-37S	WT	G	1434	5	2	3	
8	BRGWC-36S	WT	G	1558	5	2	3	
9								
10								
11								
12								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	DARREN COX / GHD	5-6-14	945	Charlie Hanks	5/6/14	0945	0.2 Y N Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: DARREN COX

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 05-06-14

Sample Condition Upon Re

WO#: 2629734

PM: KH Due Date: 03/18/26

CLIENT: 28-GA Pace

Pace Analytical

Client Name:

Cooler | | FedEx | | UPS | | USPS | | Client | | Commercial | | Pace

Tracking #:

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

Packing Material: | | Bubble Wrap | | Bubble Bags | | None | | Other

Thermometer Used

Type of Ice: Blue None | | Samples received using multiple coolers

Cooler Temperature

Biological Tissue is Frozen: yes no

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents:

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

April 06, 2020

Mr. Joju Abraham
Georgia Power
2480 Maner Road
Atlanta, GA 30339

RE: Project: 2629734
Pace Project No.: 30353315

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory between March 05, 2020 and March 10, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

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

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
(724)850-5612
Project Manager

Enclosures

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 2629734
Pace Project No.: 30353315

Pace Analytical Services Pennsylvania
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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: 2629734
Pace Project No.: 30353315

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2629734001	**BRGWA-6S**	Water	03/03/20 13:56	03/05/20 09:15
2629734002	**BRGWA-2S**	Water	03/03/20 11:40	03/05/20 09:15
2629734003	**BRGWA-2I**	Water	03/03/20 12:25	03/05/20 09:15
2629734004	**BRGWA-5S**	Water	03/03/20 10:33	03/05/20 09:15
2629734005	**BRGWA-5I**	Water	03/03/20 09:39	03/05/20 09:15
2629734006	**BRGWC-17S**	Water	03/03/20 15:45	03/05/20 09:15
2629734007	**BRGWC-33S**	Water	03/05/20 09:05	03/10/20 09:20
2629734008	**BRGWC-34S**	Water	03/05/20 09:58	03/10/20 09:20
2629734009	**BRGWC-35S**	Water	03/05/20 11:47	03/10/20 09:20
2629734010	**BRGWC-38S**	Water	03/05/20 12:15	03/10/20 09:20
2629734011	**DUP-3**	Water	03/05/20 00:01	03/10/20 09:20
2629734012	**FB-2**	Water	03/05/20 11:15	03/10/20 09:20
2629734013	**BRGWC-37S**	Water	03/05/20 14:34	03/10/20 09:20
2629734014	**BRGWC-36S**	Water	03/05/20 15:58	03/10/20 09:20

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 2629734
Pace Project No.: 30353315

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2629734001	**BRGWA-6S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734002	**BRGWA-2S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734003	**BRGWA-2I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734004	**BRGWA-5S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734005	**BRGWA-5I**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734006	**BRGWC-17S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734007	**BRGWC-33S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734008	**BRGWC-34S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734009	**BRGWC-35S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734010	**BRGWC-38S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734011	**DUP-3**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734012	**FB-2**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734013	**BRGWC-37S**	EPA 9315	LAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 2629734
Pace Project No.: 30353315

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2629734014	**BRGWC-36S**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

Sample: BRGWA-6S **Lab ID: 2629734001** Collected: 03/03/20 13:56 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.397 ± 0.306 (0.514) C:77% T:NA**	pCi/L	03/12/20 08:21	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**-0.106 ± 0.323 (0.784) C:71% T:87%**	pCi/L	03/24/20 19:45	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.397 ± 0.629 (1.30)**	pCi/L	04/03/20 13:26	7440-14-4	

Sample: BRGWA-2S **Lab ID: 2629734002** Collected: 03/03/20 11:40 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.342 ± 0.357 (0.719) C:70% T:NA**	pCi/L	03/12/20 08:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.476 ± 0.405 (0.816) C:71% T:89%**	pCi/L	03/24/20 19:47	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.818 ± 0.762 (1.54)**	pCi/L	04/03/20 13:26	7440-14-4	

Sample: BRGWA-2I **Lab ID: 2629734003** Collected: 03/03/20 12:25 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.535 ± 0.350 (0.567) C:79% T:NA**	pCi/L	03/12/20 08:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.644 ± 0.436 (0.838) C:72% T:85%**	pCi/L	03/24/20 19:48	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.18 ± 0.786 (1.41)**	pCi/L	04/03/20 13:26	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

Sample: BRGWA-5S **Lab ID: 2629734004** Collected: 03/03/20 10:33 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.936 ± 0.427 (0.475) C:76% T:NA**	pCi/L	03/12/20 08:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.565 ± 0.411 (0.803) C:71% T:92%**	pCi/L	03/24/20 19:48	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.50 ± 0.838 (1.28)**	pCi/L	04/03/20 14:54	7440-14-4	

Sample: BRGWA-5I **Lab ID: 2629734005** Collected: 03/03/20 09:39 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.559 ± 0.436 (0.767) C:59% T:NA**	pCi/L	03/12/20 08:23	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.437 ± 0.376 (0.759) C:72% T:95%**	pCi/L	03/24/20 19:48	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.996 ± 0.812 (1.53)**	pCi/L	04/03/20 14:54	7440-14-4	

Sample: BRGWC-17S **Lab ID: 2629734006** Collected: 03/03/20 15:45 Received: 03/05/20 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.369 ± 0.266 (0.413) C:88% T:NA**	pCi/L	03/12/20 08:23	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.387 ± 0.437 (0.916) C:69% T:79%**	pCi/L	03/24/20 19:48	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.756 ± 0.703 (1.33)**	pCi/L	04/03/20 14:54	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

Sample: BRGWC-33S **Lab ID: 2629734007** Collected: 03/05/20 09:05 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.462 ± 0.210 (0.193) C:93% T:NA**	pCi/L	03/23/20 10:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.221 ± 0.336 (0.727) C:81% T:83%**	pCi/L	04/02/20 11:49	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.683 ± 0.546 (0.920)**	pCi/L	04/06/20 07:58	7440-14-4	

Sample: BRGWC-34S **Lab ID: 2629734008** Collected: 03/05/20 09:58 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.463 ± 0.217 (0.232) C:93% T:NA**	pCi/L	03/23/20 10:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.329 ± 0.339 (0.701) C:84% T:87%**	pCi/L	04/02/20 11:49	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.792 ± 0.556 (0.933)**	pCi/L	04/06/20 07:58	7440-14-4	

Sample: BRGWC-35S **Lab ID: 2629734009** Collected: 03/05/20 11:47 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.657 ± 0.256 (0.228) C:95% T:NA**	pCi/L	03/23/20 10:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.201 ± 0.318 (0.689) C:84% T:88%**	pCi/L	04/02/20 11:49	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.858 ± 0.574 (0.917)**	pCi/L	04/06/20 07:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

Sample: BRGWC-38S **Lab ID: 2629734010** Collected: 03/05/20 12:15 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.710 ± 0.272 (0.221) C:90% T:NA**	pCi/L	03/23/20 10:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**1.50 ± 0.498 (0.693) C:84% T:92%**	pCi/L	04/02/20 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**2.21 ± 0.770 (0.914)**	pCi/L	04/06/20 07:59	7440-14-4	

Sample: DUP-3 **Lab ID: 2629734011** Collected: 03/05/20 00:01 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.667 ± 0.260 (0.231) C:88% T:NA**	pCi/L	03/23/20 10:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.0551 ± 0.315 (0.720) C:83% T:88%**	pCi/L	04/02/20 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.722 ± 0.575 (0.951)**	pCi/L	04/06/20 07:59	7440-14-4	

Sample: FB-2 **Lab ID: 2629734012** Collected: 03/05/20 11:15 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.467 ± 0.225 (0.273) C:91% T:NA**	pCi/L	03/23/20 10:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.332 ± 0.346 (0.719) C:83% T:88%**	pCi/L	04/02/20 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.799 ± 0.571 (0.992)**	pCi/L	04/06/20 07:59	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

Sample: BRGWC-37S **Lab ID: 2629734013** Collected: 03/05/20 14:34 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.503 ± 0.220 (0.193) C:94% T:NA**	pCi/L	03/23/20 10:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.288 ± 0.368 (0.784) C:83% T:90%**	pCi/L	04/02/20 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.791 ± 0.588 (0.977)**	pCi/L	04/06/20 07:59	7440-14-4	

Sample: BRGWC-36S **Lab ID: 2629734014** Collected: 03/05/20 15:58 Received: 03/10/20 09:20 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 9315	**0.920 ± 0.318 (0.208) C:79% T:NA**	pCi/L	03/23/20 10:25	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 9320	**0.383 ± 0.343 (0.698) C:83% T:90%**	pCi/L	04/02/20 14:55	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.30 ± 0.661 (0.906)**	pCi/L	04/06/20 07:59	7440-14-4	

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 387070 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

METHOD BLANK: 1875172 Matrix: Water
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.386 ± 0.179 (0.259) C:94% T:NA	pCi/L	03/11/20 19:21	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 387086 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

METHOD BLANK: 1875203 Matrix: Water
Associated Lab Samples: 2629734001, 2629734002, 2629734003, 2629734004, 2629734005, 2629734006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.371 ± 0.288 (0.559) C:81% T:88%	pCi/L	03/24/20 19:46	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 388323 | Analysis Method: EPA 9320
QC Batch Method: EPA 9320 | Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

METHOD BLANK: 1881006 Matrix: Water
Associated Lab Samples: 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0681 ± 0.261 (0.594) C:84% T:89%	pCi/L	04/02/20 14:56	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 388319
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734007, 2629734008, 2629734009

METHOD BLANK: 1881002 Matrix: Water
Associated Lab Samples: 2629734007, 2629734008, 2629734009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.174 ± 0.140 (0.217) C:89% T:NA	pCi/L	03/23/20 10:13	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 388322
QC Batch Method: EPA 9320
Analysis Method: EPA 9320
Analysis Description: 9320 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734007, 2629734008, 2629734009

METHOD BLANK: 1881005 Matrix: Water
Associated Lab Samples: 2629734007, 2629734008, 2629734009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.510 ± 0.340 (0.651) C:86% T:94%	pCi/L	04/02/20 11:49	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2629734
Pace Project No.: 30353315

QC Batch: 388320 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

METHOD BLANK: 1881003 Matrix: Water
Associated Lab Samples: 2629734010, 2629734011, 2629734012, 2629734013, 2629734014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.387 ± 0.205 (0.273) C:94% T:NA	pCi/L	03/23/20 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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 2629734
Pace Project No.: 30353315

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.

TNTC - Too Numerous To Count

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: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. Is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(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.

Chain of Custody

Pace Analytical

☐ Samples sent directly to the Subcontracting Laboratory

State Of Origin: GA

Cust. Received: ☐ Yes ☐ No

Workorder Name: [illegible] Workorder Number: [illegible] Customer Purchase Order: [illegible] Results Requested By: [illegible]

Kevin Herring
Pace Analytical Charlotte
9800 Kincey Ave
Suite 100
Huntersville NC 28078
Phone (704) 875-9092

Pace Analytical Pittsburgh
1638 Roseytown Road
Suite 2,3,4
Greensburg, PA 15601
Phone (724) 850-5600

WO#: 30353315

	Sample ID	Matrix	Collected	Sample Type	Preservation												Analysis Code
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]												
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]												
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]												
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]												
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]												
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]												

Transfers	Relinquished By	Date/Time	Received By	Date/Time
1	[illegible]	[illegible]	[illegible]	[illegible]
2				
3				

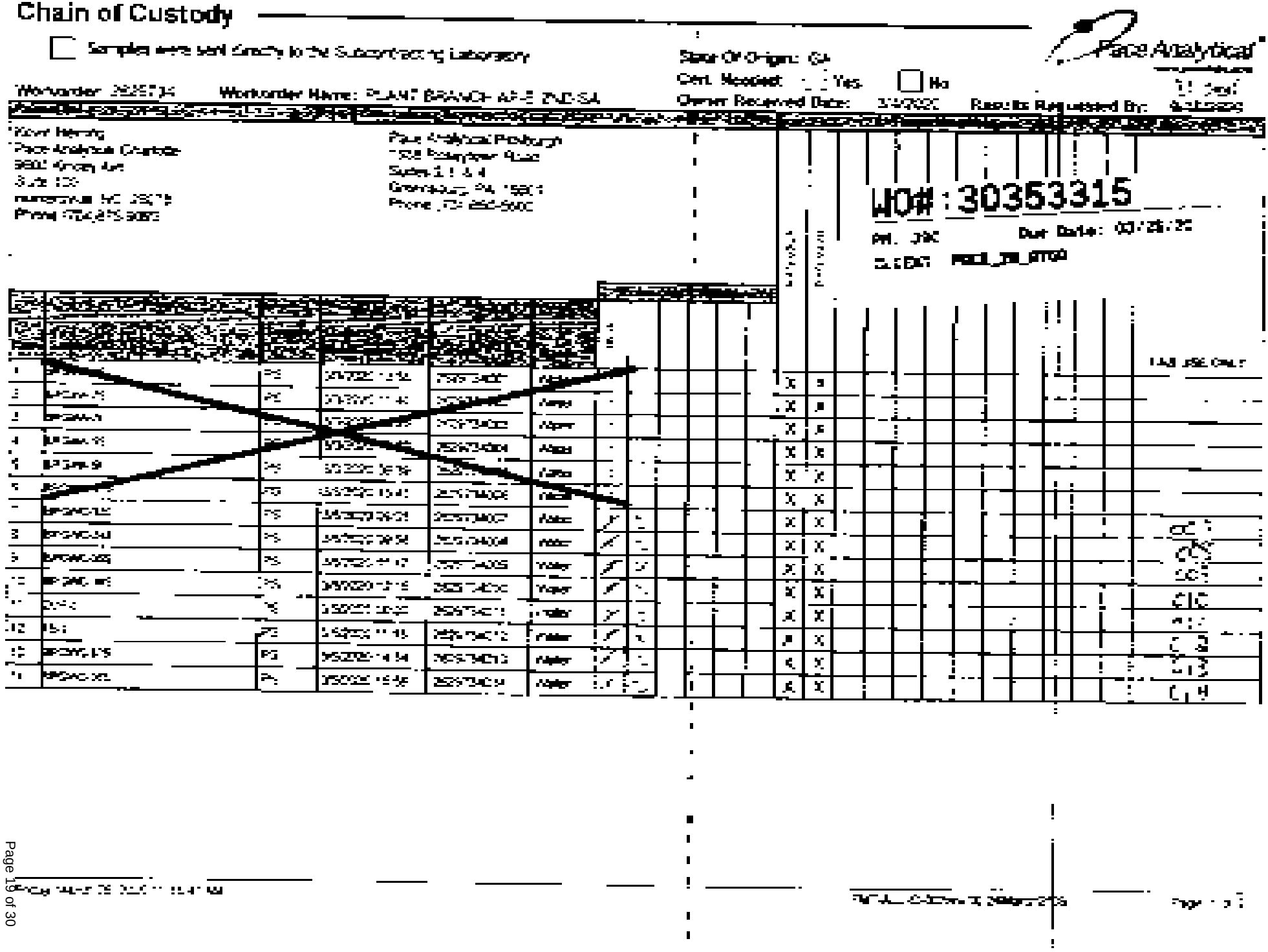
Cooler Temperature on Receipt: [illegible] °C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

***In order to maintain client confidentiality, location name of the sampling site, Sampler's name and signature may not be provided on the COC document. The chain of custody is considered complete as is since this information is available in the owner laboratory.

[illegible]

[illegible]

[illegible]



Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory

Workorder: [illegible] Workorder Name: PLANT BRANCH AP-E [illegible]

State Of Origin: GA

Cert. Needed: ☐ Yes ☐ No

Owner Received Date: [illegible] Results Requested By: [illegible]

Pace Analytical

[illegible]

Kevin Herring
Pace Analytical Charlotte
9800 Kincey Ave
Suite 100
Huntersville, NC 28078
Phone (704)875-9092

Pace Analytical Pittsburgh
1638 Roseytown Road
Suites 2, 3 & 4
Greensburg, PA 15601
Phone (724)850-5600

WO# : 30353315

PM: [illegible] Due Date: [illegible]

CLIENT: PACE_[illegible]

1	[illegible]	PS	[illegible]	[illegible]	[illegible]			X	X	
2	[illegible]	PS	[illegible]	[illegible]	Water			X	X	
3	[illegible]	[illegible]	[illegible]	[illegible]	Water			X	X	
4	[illegible]	PS	[illegible]	[illegible]	Water			X	X	
5	[illegible]	PS	[illegible]	[illegible]	Water			X	X	
6	[illegible]	PS	[illegible]	[illegible]	Water			X	X	
7	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
8	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
9	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
10	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
11	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
12	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
13	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]
14	[illegible]	PS	[illegible]	[illegible]	Water	✓	[illegible]	X	X	[illegible]

LAB USE ONLY

Samples	Relinquished By	Date/Time	Received By	Date/Time	
1					
2					
3					

Cooler Temperature on Receipt ___°C/N°C | Custody Seal Y or (N) | Received on Ice Y or (N) | Samples Intact Y or N

**In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on the COC document.
The chain of custody is considered complete as is since this information is available in the originating laboratory.

3035315

Pittsburgh Lab Sample Condition Upon Receipt

Client Name

Project #

Label

Custody Seal on Cooler/Box Present:

Thermometer Used

Type of Ice

Cooler Temperature

Observed Temp

Correction Factor

Temp Blank Temperature

Comments

pH Upon Receipt

Date and Initials of Person Examining Contents

Client Approved to Hold Past Hold Time

Client Approved Dilution

Residual Chlorine Present

Adjusted pH

Lot # of pH Paper

Additional Sample Volume Received

Sample Condition Upon Receipt

Client Notified/Resolution

Person Contacted

Date/Time

Contacted By

Comments/Resolution

A check in this box indicates that additional information has been stored in eLogin.

Pittsburgh Lab Sample Condition Upon Receipt

Client Name Pace Analytical Project # 30353335

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Tracking #: 1163 9506 8797

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used: Type of Ice: Wet Blue Dry None

Cooler Temperature Observed Temp 4.4 °C Corr. Factor °C Final Temp °C

Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Comments:

Chain of Custody Present: Yes No N/A 1.

Chain of Custody Filled Out: Yes No N/A 2.

Chain of Custody Relinquished: Yes No N/A 3.

Sampler Name & Signature on COC: Yes No N/A 4.

Samples Arrived within Hold Time: Yes No N/A 5.

Short Hold Time Analysis (<72 hr remaining): Yes No N/A 6.

Rush Turn Around Time Requested: Yes No N/A 7.

Sufficient Volume: Yes No N/A 8.

Correct Containers Used: Yes No N/A 9.

-Pace Containers Used: Yes No N/A

Containers Intact: Yes No N/A 10.

Filtered volume received for Dissolved tests: Yes No N/A 11.

Sample Labels match COC: Yes No N/A 12.

-Includes date/time/ID/Analysis Matrix:

All containers needing preservation have been checked and noted below: Yes No N/A 13.

Exceptions noted in comments below:

All containers needing preservation are found to be in compliance with EPA recommendation: Yes No N/A

Initial when completed: Lot # of added preservative:

Samples checked for dechlorination: Yes No N/A 14.

Headspace in VOA Vials (>6mm): Yes No N/A 15.

Trip Blank Present: Yes No N/A 16.

Trip Blank Custody Seals Present: Yes No N/A

Pace Trip Blank Lot # (if purchased):

Client Notification/Resolution:

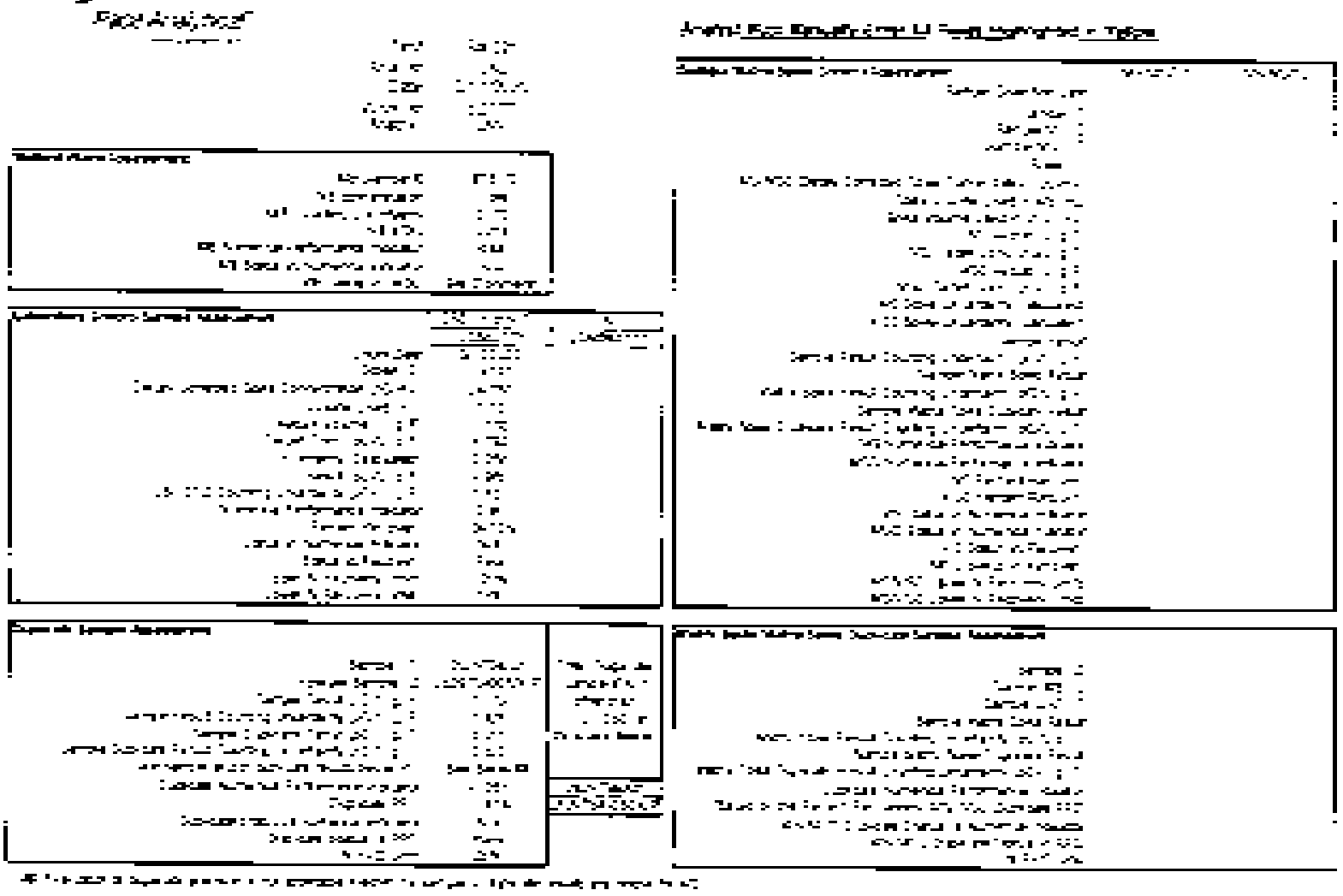
Person Contacted: Date/Time: By:

Comments/Resolution:

- A check in this box indicates that additional information has been noted in comments.

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).

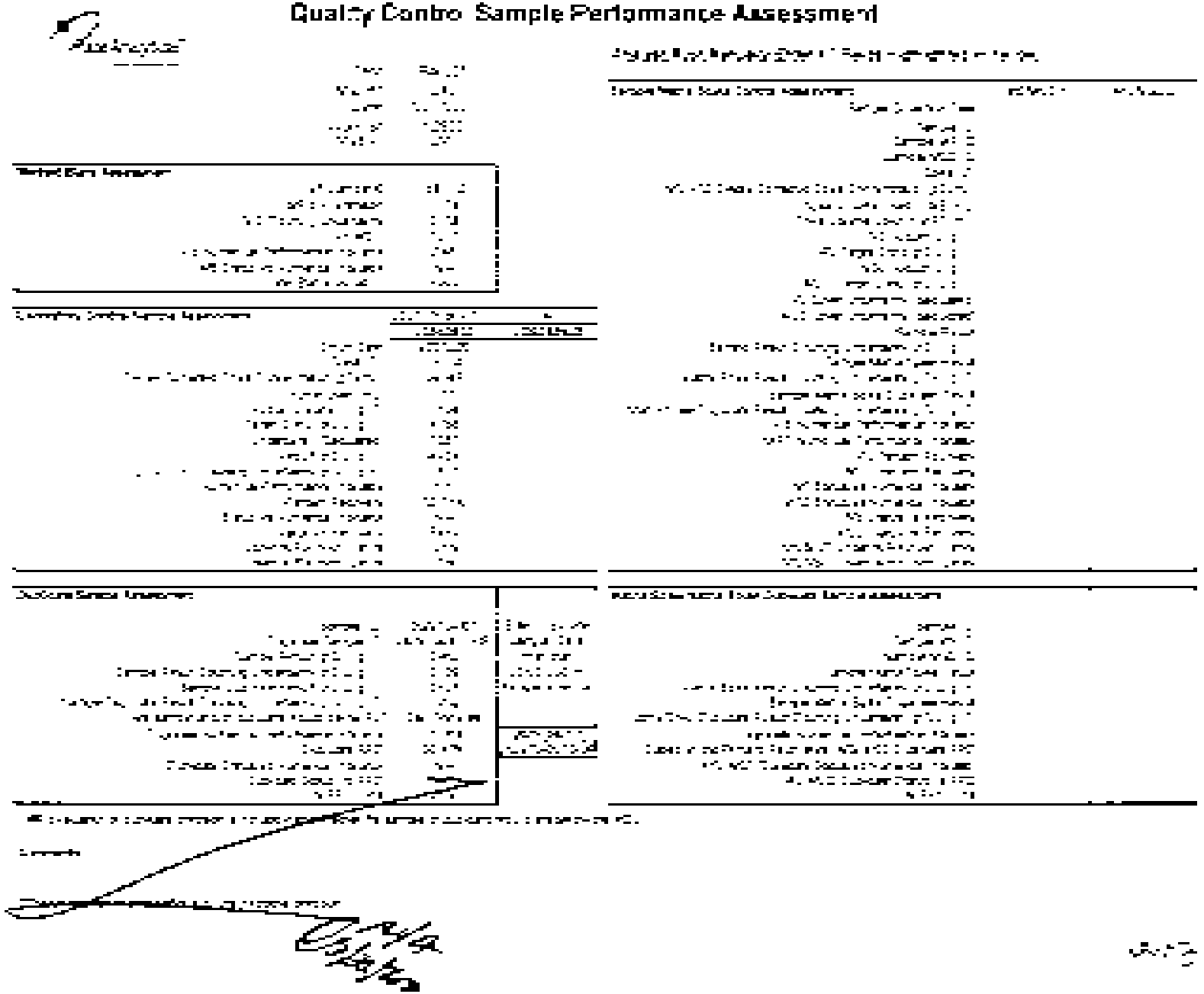
Quality Control Sample Performance Assessment



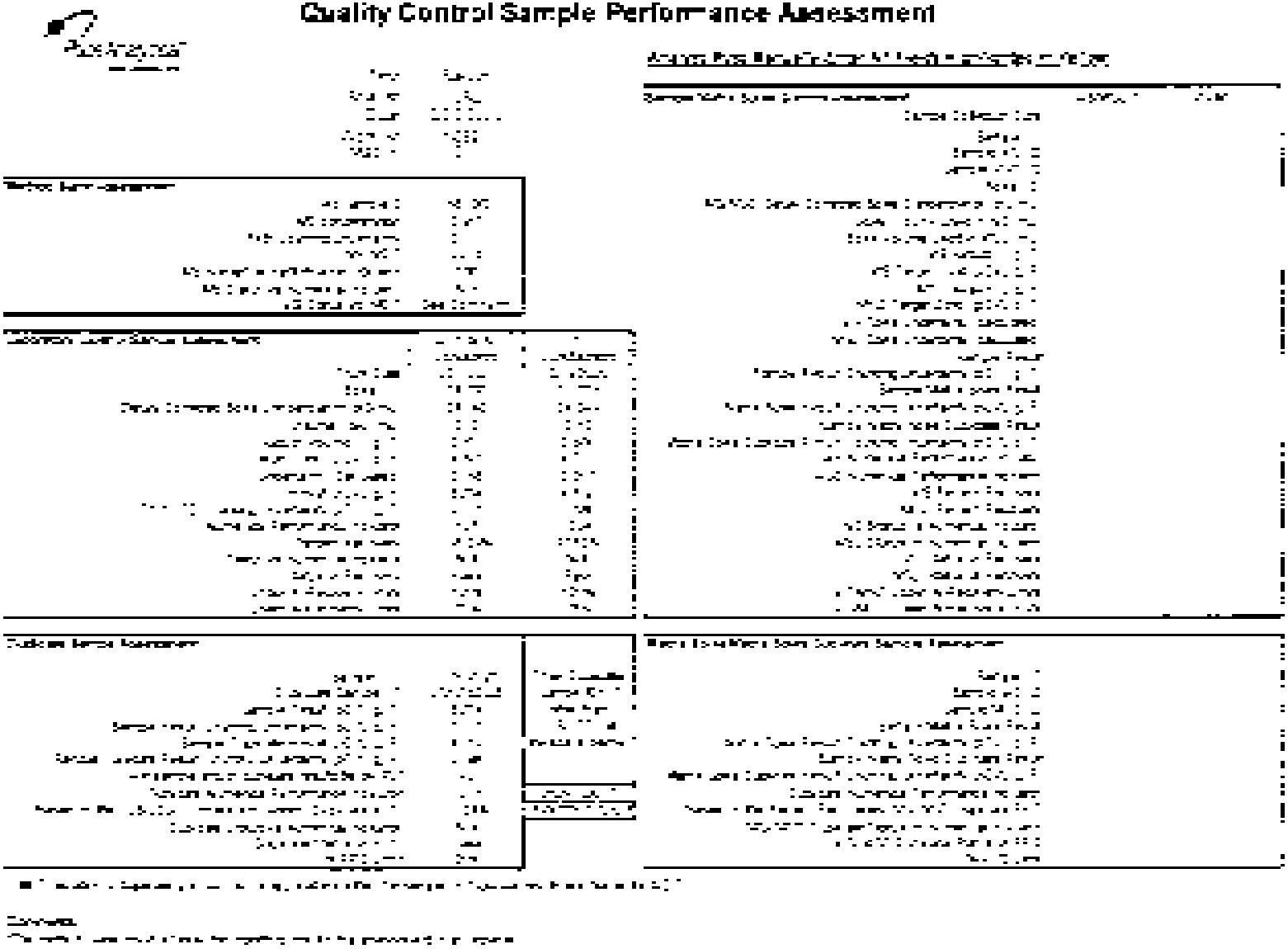
Quality Control Sample Performance Assessment

[illegible]

Quality Control Sample Performance Assessment

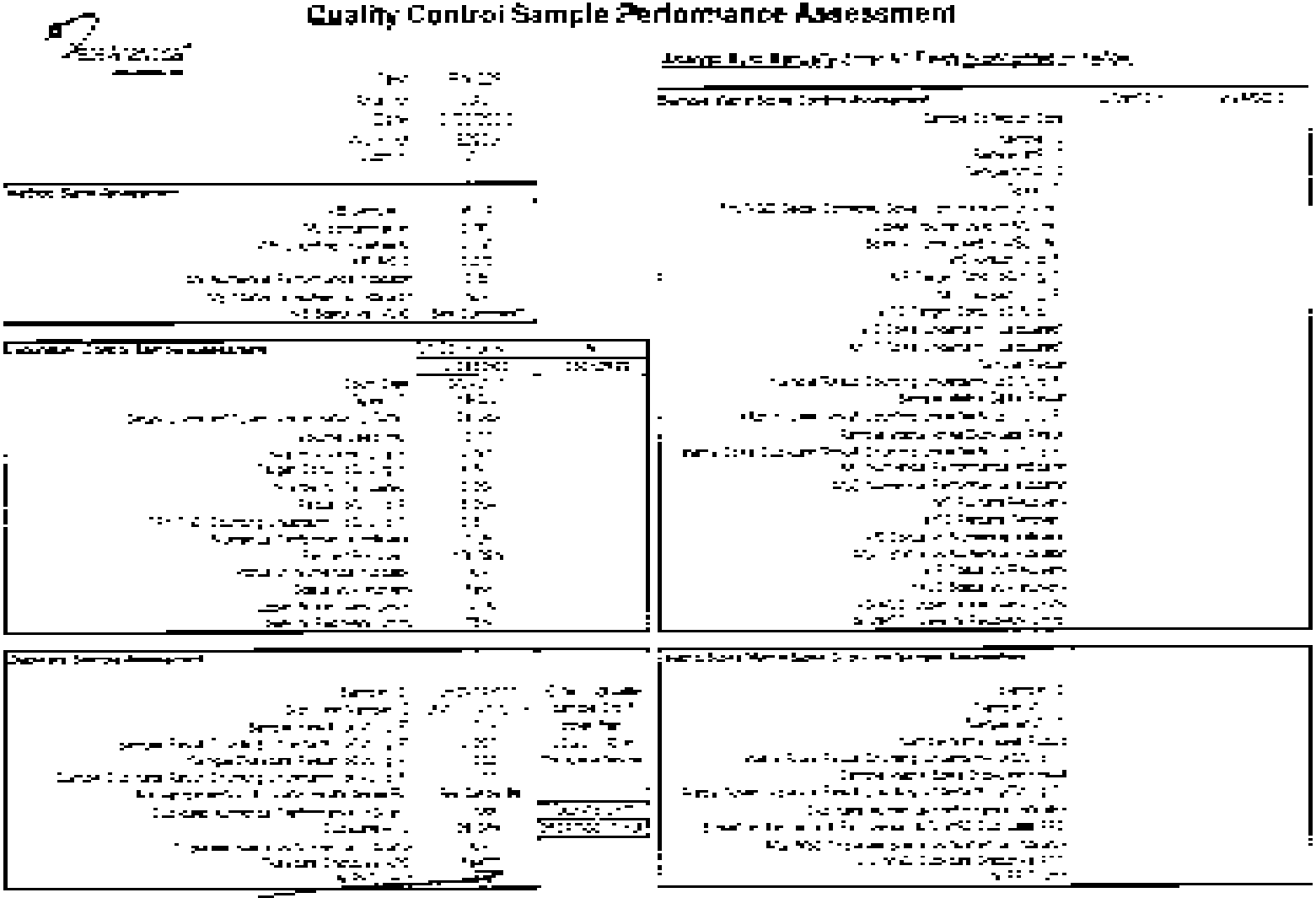


Quality Control Sample Performance Assessment

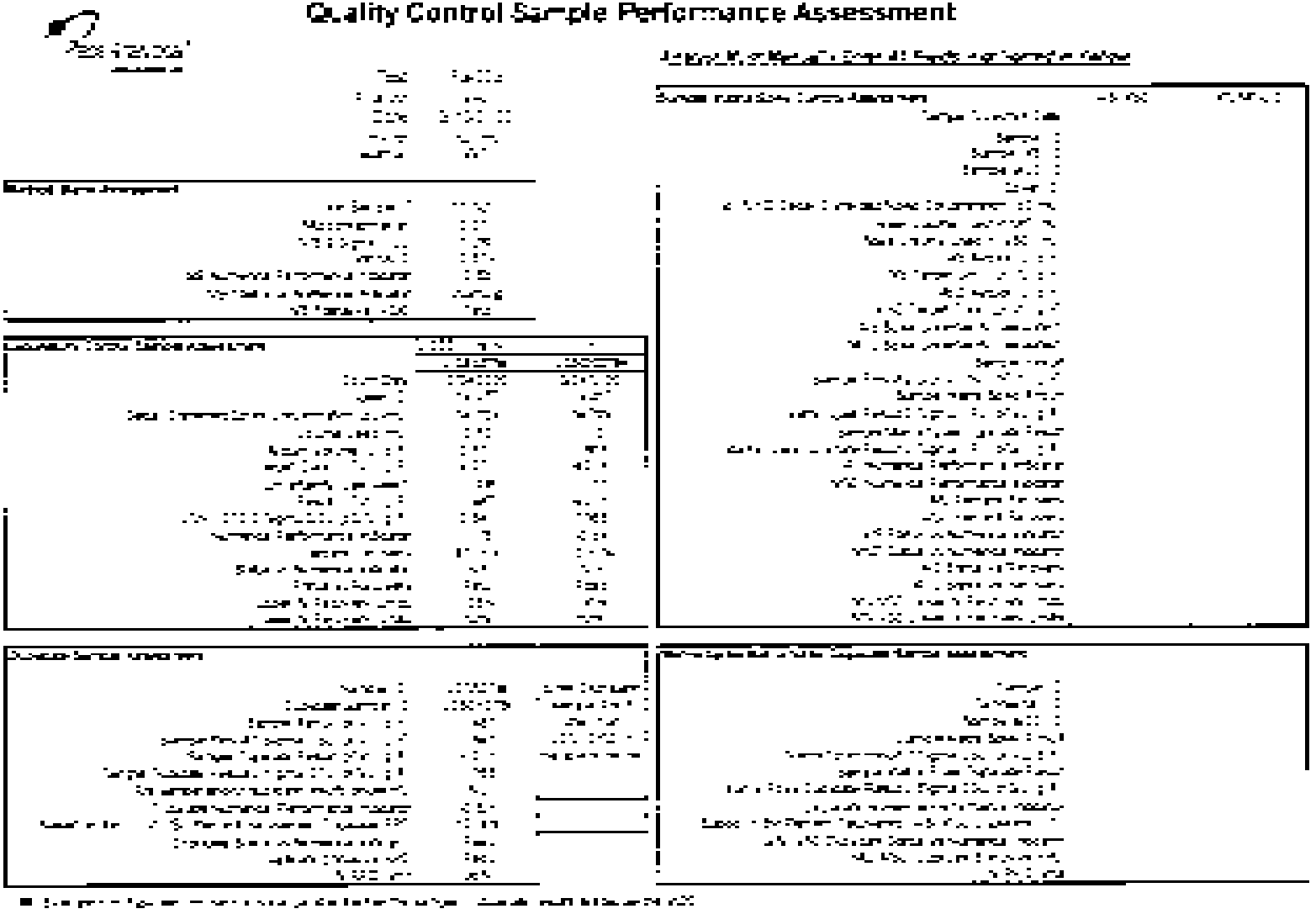


Page 26 of 30

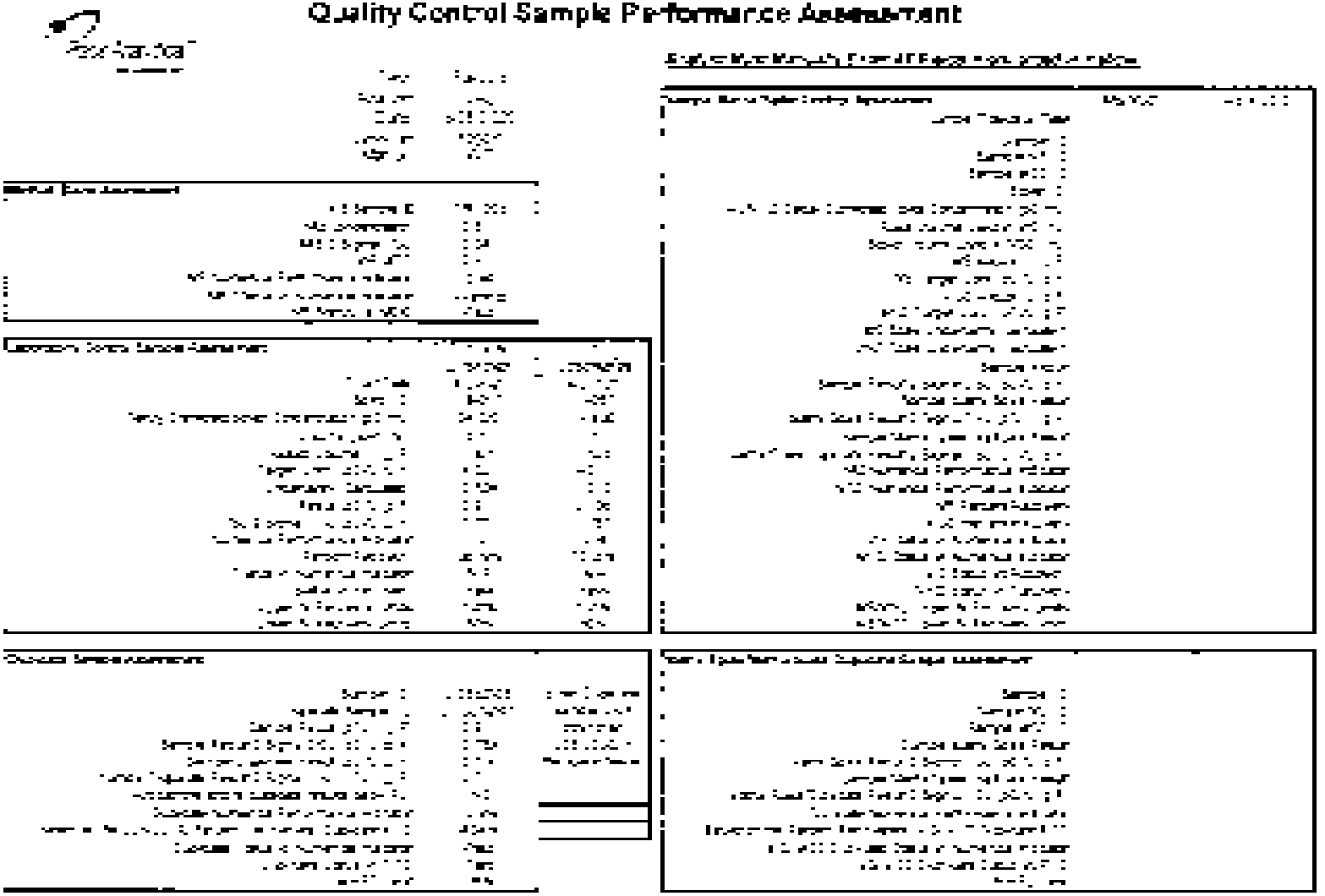
Quality Control Sample Performance Assessment



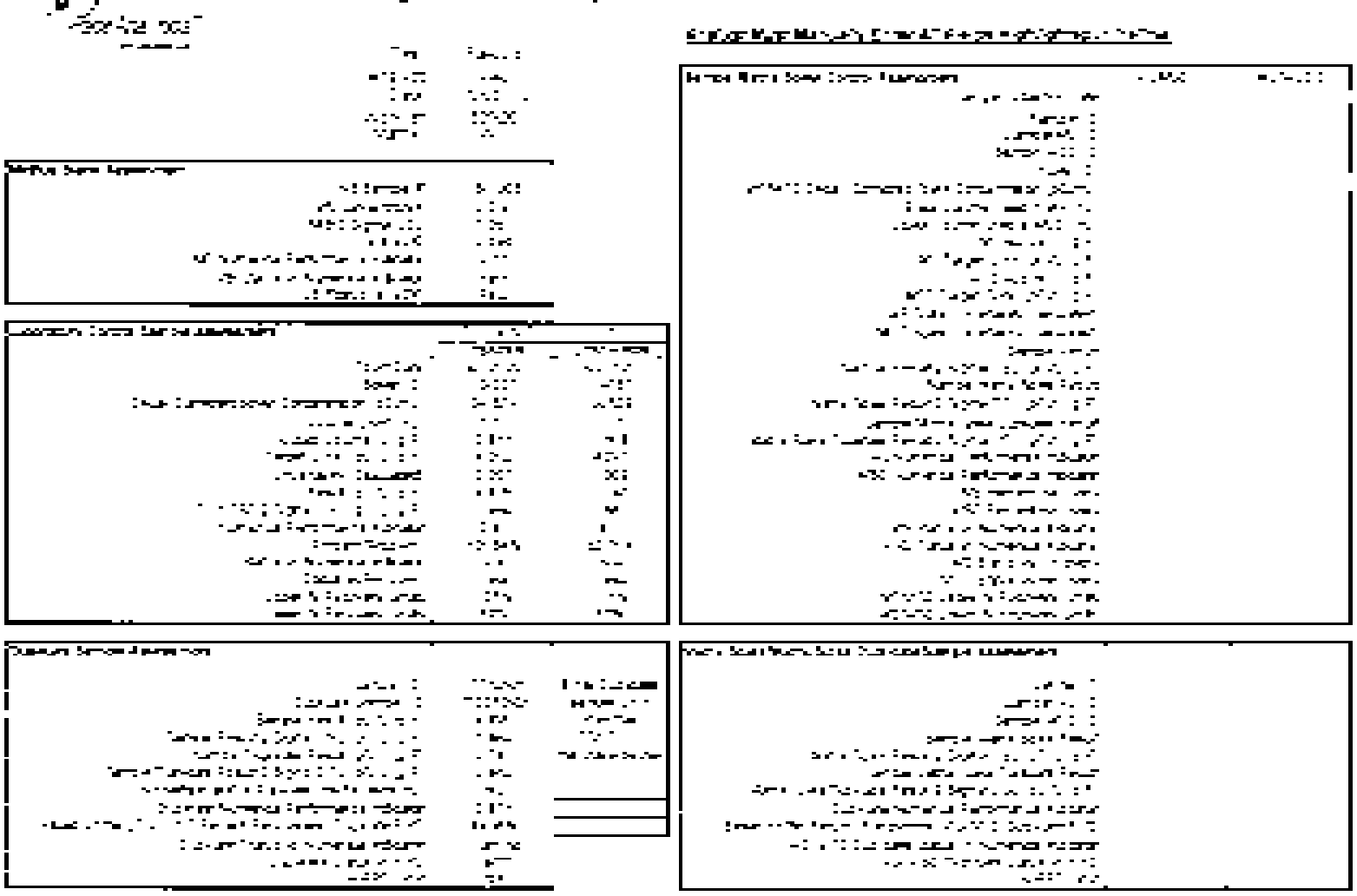
Quality Control Sample Performance Assessment



Quality Control Sample Performance Assessment



Quality Control Sample Performance Assessment



Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

June 15, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT BRANCH
Pace Project No.: 92480746

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 05, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

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

Sincerely,

Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Carolyn Powrozek, Golder
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: PLANT BRANCH
Pace Project No.: 92480746

Pace Analytical Services Charlotte
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville
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

Pace Analytical Services Peachtree Corners
110 Technology Pkwy, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: PLANT BRANCH
Pace Project No.: 92480746

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92480746001	**DBW-01**	Water	06/05/20 11:55	06/05/20 15:55
92480746002	**DBW-02**	Water	06/05/20 12:01	06/05/20 15:55

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT BRANCH
Pace Project No.: 92480746

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92480746001	**DBW-01**	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	13	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		SM 2450C-2011	JRS	1	PASI-GA
		SM 2320B-2011	ECH	3	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A
92480746002	**DBW-02**	EPA 6010D	DRB	4	PASI-GA
		EPA 6020B	CW1	13	PASI-GA
		EPA 7470A	VB	1	PASI-GA
		SM 2450C-2011	JRS	1	PASI-GA
		SM 2320B-2011	ECH	3	PASI-A
		EPA 300.0 Rev 2.1 1993	BRJ	3	PASI-A

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte
PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: PLANT BRANCH
Pace Project No.: 92480746

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92480746001	**DBW-01**					
	pH	7.45	Std. Units		06/08/20 09:05	
EPA 6010D	Calcium	398	mg/L	10.0	06/09/20 13:18	
EPA 6010D	Magnesium	2.1	mg/L	0.050	06/08/20 19:05	
EPA 6010D	Potassium	15.3	mg/L	0.20	06/08/20 19:05	
EPA 6010D	Sodium	90.8	mg/L	1.0	06/08/20 19:05	
EPA 6020B	Antimony	0.00087J	mg/L	0.0030	06/08/20 15:44	
EPA 6020B	Arsenic	0.0011J	mg/L	0.0050	06/08/20 15:44	
EPA 6020B	Barium	0.066	mg/L	0.010	06/08/20 15:44	
EPA 6020B	Boron	0.045J	mg/L	0.10	06/08/20 15:44	
EPA 6020B	Chromium	0.0020J	mg/L	0.010	06/08/20 15:44	
EPA 6020B	Cobalt	0.0015J	mg/L	0.0050	06/08/20 15:44	
EPA 6020B	Lead	0.00019J	mg/L	0.0050	06/08/20 15:44	
EPA 6020B	Molybdenum	0.035	mg/L	0.010	06/08/20 15:44	
EPA 6020B	Selenium	0.0018J	mg/L	0.010	06/08/20 15:44	
EPA 6020B	Thallium	0.000077J	mg/L	0.0010	06/08/20 15:44	
SM 2450C-2011	Total Dissolved Solids	1980	mg/L	10.0	06/09/20 13:17	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	38.9	mg/L	5.0	06/10/20 20:05	
SM 2320B-2011	Alkalinity, Total as CaCO3	38.9	mg/L	5.0	06/10/20 20:05	
EPA 300.0 Rev 2.1 1993	Chloride	7.2	mg/L	1.0	06/09/20 17:29	
EPA 300.0 Rev 2.1 1993	Fluoride	0.40	mg/L	0.10	06/09/20 17:29	
EPA 300.0 Rev 2.1 1993	Sulfate	1160	mg/L	23.0	06/09/20 20:35	
92480746002	**DBW-02**					
	pH	7.23	Std. Units		06/08/20 09:05	
EPA 6010D	Calcium	34.2	mg/L	1.0	06/08/20 19:09	
EPA 6010D	Magnesium	5.8	mg/L	0.050	06/08/20 19:09	
EPA 6010D	Potassium	3.6	mg/L	0.20	06/08/20 19:09	
EPA 6010D	Sodium	11.6	mg/L	1.0	06/08/20 19:09	
EPA 6020B	Antimony	0.00081J	mg/L	0.0030	06/08/20 16:07	
EPA 6020B	Barium	0.011	mg/L	0.010	06/08/20 16:07	
EPA 6020B	Boron	0.0077J	mg/L	0.10	06/08/20 16:07	
EPA 6020B	Chromium	0.00050J	mg/L	0.010	06/08/20 16:07	
EPA 6020B	Cobalt	0.00043J	mg/L	0.0050	06/08/20 16:07	
EPA 6020B	Lead	0.000098J	mg/L	0.0050	06/08/20 16:07	
EPA 6020B	Lithium	0.013J	mg/L	0.030	06/08/20 16:07	
EPA 6020B	Molybdenum	0.0014J	mg/L	0.010	06/08/20 16:07	
SM 2450C-2011	Total Dissolved Solids	178	mg/L	10.0	06/09/20 13:18	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	153	mg/L	5.0	06/10/20 20:12	
SM 2320B-2011	Alkalinity, Total as CaCO3	153	mg/L	5.0	06/10/20 20:12	
EPA 300.0 Rev 2.1 1993	Chloride	3.7	mg/L	1.0	06/09/20 17:43	
EPA 300.0 Rev 2.1 1993	Fluoride	0.44	mg/L	0.10	06/09/20 17:43	
EPA 300.0 Rev 2.1 1993	Sulfate	3.2	mg/L	1.0	06/09/20 17:43	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 92480746

Sample: DBW-01 **Lab ID: 92480746001** Collected: 06/05/20 11:55 Received: 06/05/20 15:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**7.45**	Std. Units			1		06/08/20 09:05		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**398**	mg/L	10.0	1.4	10	06/08/20 11:00	06/09/20 13:18	7440-70-2	
Magnesium	**2.1**	mg/L	0.050	0.011	1	06/08/20 11:00	06/08/20 19:05	7439-95-4	
Potassium	**15.3**	mg/L	0.20	0.026	1	06/08/20 11:00	06/08/20 19:05	7440-09-7	
Sodium	**90.8**	mg/L	1.0	0.19	1	06/08/20 11:00	06/08/20 19:05	7440-23-5	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	**0.00087J**	mg/L	0.0030	0.00027	1	06/08/20 11:00	06/08/20 15:44	7440-36-0	
Arsenic	**0.0011J**	mg/L	0.0050	0.00035	1	06/08/20 11:00	06/08/20 15:44	7440-38-2	
Barium	**0.066**	mg/L	0.010	0.00049	1	06/08/20 11:00	06/08/20 15:44	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/08/20 11:00	06/08/20 15:44	7440-41-7	
Boron	**0.045J**	mg/L	0.10	0.0049	1	06/08/20 11:00	06/08/20 15:44	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/08/20 11:00	06/08/20 15:44	7440-43-9	
Chromium	**0.0020J**	mg/L	0.010	0.00039	1	06/08/20 11:00	06/08/20 15:44	7440-47-3	
Cobalt	**0.0015J**	mg/L	0.0050	0.00030	1	06/08/20 11:00	06/08/20 15:44	7440-48-4	
Lead	**0.00019J**	mg/L	0.0050	0.000046	1	06/08/20 11:00	06/08/20 15:44	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	06/08/20 11:00	06/08/20 15:44	7439-93-2	
Molybdenum	**0.035**	mg/L	0.010	0.00095	1	06/08/20 11:00	06/08/20 15:44	7439-98-7	
Selenium	**0.0018J**	mg/L	0.010	0.0013	1	06/08/20 11:00	06/08/20 15:44	7782-49-2	
Thallium	**0.000077J**	mg/L	0.0010	0.000052	1	06/08/20 11:00	06/08/20 15:44	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00020	0.00014	1	06/08/20 10:00	06/09/20 14:03	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**1980**	mg/L	10.0	10.0	1		06/09/20 13:17		
2320B Alkalinity	Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity,Bicarbonate (CaCO3)	**38.9**	mg/L	5.0	5.0	1		06/10/20 20:05		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/10/20 20:05		
Alkalinity, Total as CaCO3	**38.9**	mg/L	5.0	5.0	1		06/10/20 20:05		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**7.2**	mg/L	1.0	0.60	1		06/09/20 17:29	16887-00-6	
Fluoride	**0.40**	mg/L	0.10	0.050	1		06/09/20 17:29	16984-48-8	
Sulfate	**1160**	mg/L	23.0	11.5	23		06/09/20 20:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 92480746

Sample: DBW-02 **Lab ID: 92480746002** Collected: 06/05/20 12:01 Received: 06/05/20 15:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**7.23**	Std. Units			1		06/08/20 09:05		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**34.2**	mg/L	1.0	0.14	1	06/08/20 11:00	06/08/20 19:09	7440-70-2	
Magnesium	**5.8**	mg/L	0.050	0.011	1	06/08/20 11:00	06/08/20 19:09	7439-95-4	
Potassium	**3.6**	mg/L	0.20	0.026	1	06/08/20 11:00	06/08/20 19:09	7440-09-7	
Sodium	**11.6**	mg/L	1.0	0.19	1	06/08/20 11:00	06/08/20 19:09	7440-23-5	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Antimony	**0.00081J**	mg/L	0.0030	0.00027	1	06/08/20 11:00	06/08/20 16:07	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	06/08/20 11:00	06/08/20 16:07	7440-38-2	
Barium	**0.011**	mg/L	0.010	0.00049	1	06/08/20 11:00	06/08/20 16:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	06/08/20 11:00	06/08/20 16:07	7440-41-7	
Boron	**0.0077J**	mg/L	0.10	0.0049	1	06/08/20 11:00	06/08/20 16:07	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	06/08/20 11:00	06/08/20 16:07	7440-43-9	
Chromium	**0.00050J**	mg/L	0.010	0.00039	1	06/08/20 11:00	06/08/20 16:07	7440-47-3	
Cobalt	**0.00043J**	mg/L	0.0050	0.00030	1	06/08/20 11:00	06/08/20 16:07	7440-48-4	
Lead	**0.000098J**	mg/L	0.0050	0.000046	1	06/08/20 11:00	06/08/20 16:07	7439-92-1	
Lithium	**0.013J**	mg/L	0.030	0.00078	1	06/08/20 11:00	06/08/20 16:07	7439-93-2	
Molybdenum	**0.0014J**	mg/L	0.010	0.00095	1	06/08/20 11:00	06/08/20 16:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	06/08/20 11:00	06/08/20 16:07	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	06/08/20 11:00	06/08/20 16:07	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Peachtree Corners, GA								
Mercury	ND	mg/L	0.00020	0.00014	1	06/08/20 10:00	06/09/20 14:05	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**178**	mg/L	10.0	10.0	1		06/09/20 13:18		
2320B Alkalinity	Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity,Bicarbonate (CaCO3)	**153**	mg/L	5.0	5.0	1		06/10/20 20:12		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/10/20 20:12		
Alkalinity, Total as CaCO3	**153**	mg/L	5.0	5.0	1		06/10/20 20:12		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**3.7**	mg/L	1.0	0.60	1		06/09/20 17:43	16887-00-6	
Fluoride	**0.44**	mg/L	0.10	0.050	1		06/09/20 17:43	16984-48-8	
Sulfate	**3.2**	mg/L	1.0	0.50	1		06/09/20 17:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480746

QC Batch: 545809
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92480746001, 92480746002

METHOD BLANK: 2905940 Matrix: Water
Associated Lab Samples: 92480746001, 92480746002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	06/08/20 18:07	
Magnesium	mg/L	ND	0.050	0.011	06/08/20 18:07	
Potassium	mg/L	ND	0.20	0.026	06/08/20 18:07	
Sodium	mg/L	ND	1.0	0.19	06/08/20 18:07	

LABORATORY CONTROL SAMPLE: 2905941

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.93J	93	80-120	
Magnesium	mg/L	1	0.96	96	80-120	
Potassium	mg/L	1	0.94	94	80-120	
Sodium	mg/L	1	0.97J	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2905942 2905943

Parameter	Units	92480726001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	9370 ug/L	1	1	10.3	10.4	98	100	75-125	0	20	
Magnesium	mg/L	1610 ug/L	1	1	2.6	2.6	97	96	75-125	1	20	
Potassium	mg/L	1430 ug/L	1	1	2.4	2.4	94	98	75-125	2	20	
Sodium	mg/L	2840 ug/L	1	1	3.8	3.8	98	97	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480746

QC Batch: 545808
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92480746001, 92480746002

METHOD BLANK: 2905927 Matrix: Water
Associated Lab Samples: 92480746001, 92480746002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	06/08/20 14:47	
Arsenic	mg/L	ND	0.0050	0.00035	06/08/20 14:47	
Barium	mg/L	ND	0.010	0.00049	06/08/20 14:47	
Beryllium	mg/L	ND	0.0030	0.000074	06/08/20 14:47	
Boron	mg/L	ND	0.10	0.0049	06/08/20 14:47	
Cadmium	mg/L	ND	0.0025	0.00011	06/08/20 14:47	
Chromium	mg/L	ND	0.010	0.00039	06/08/20 14:47	
Cobalt	mg/L	ND	0.0050	0.00030	06/08/20 14:47	
Lead	mg/L	0.000055J	0.0050	0.000046	06/08/20 14:47	
Lithium	mg/L	ND	0.030	0.00078	06/08/20 14:47	
Molybdenum	mg/L	ND	0.010	0.00095	06/08/20 14:47	
Selenium	mg/L	ND	0.010	0.0013	06/08/20 14:47	
Thallium	mg/L	ND	0.0010	0.000052	06/08/20 14:47	

LABORATORY CONTROL SAMPLE: 2905928

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.11	106	80-120	
Arsenic	mg/L	0.1	0.099	99	80-120	
Barium	mg/L	0.1	0.099	99	80-120	
Beryllium	mg/L	0.1	0.094	94	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Chromium	mg/L	0.1	0.10	103	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	
Lead	mg/L	0.1	0.10	101	80-120	
Lithium	mg/L	0.1	0.098	98	80-120	
Molybdenum	mg/L	0.1	0.10	103	80-120	
Selenium	mg/L	0.1	0.097	97	80-120	
Thallium	mg/L	0.1	0.099	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2905929 2905930

Parameter	Units	92480748001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.1	0.1	0.11	0.11	105	108	75-125	2	20	
Arsenic	mg/L	ND	0.1	0.1	0.10	0.10	101	100	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480746

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2905929 2905930

Parameter	Units	92480748001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.054	0.1	0.1	0.15	0.15	97	98	75-125	1	20	
Beryllium	mg/L	ND	0.1	0.1	0.088	0.085	88	85	75-125	3	20	
Boron	mg/L	0.52	1	1	1.3	1.4	81	84	75-125	2	20	
Cadmium	mg/L	ND	0.1	0.1	0.10	0.10	100	100	75-125	1	20	
Chromium	mg/L	0.0020J	0.1	0.1	0.11	0.10	103	100	75-125	3	20	
Cobalt	mg/L	0.0012J	0.1	0.1	0.10	0.10	101	100	75-125	2	20	
Lead	mg/L	0.00066J	0.1	0.1	0.096	0.099	95	98	75-125	3	20	
Lithium	mg/L	0.022J	0.1	0.1	0.11	0.11	90	89	75-125	1	20	
Molybdenum	mg/L	0.0093J	0.1	0.1	0.12	0.12	107	107	75-125	0	20	
Selenium	mg/L	0.0076J	0.1	0.1	0.11	0.11	100	98	75-125	1	20	
Thallium	mg/L	0.000072J	0.1	0.1	0.098	0.096	97	96	75-125	1	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480746

QC Batch: 545791
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92480746001, 92480746002

METHOD BLANK: 2905811 Matrix: Water
Associated Lab Samples: 92480746001, 92480746002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00014	06/09/20 13:44	

LABORATORY CONTROL SAMPLE: 2905812

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0021	82	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2905813 2905814

Parameter	Units	92480520001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	0.27 ug/L	0.0025	0.0025	0.0028	0.0022	101	79	75-125	22		

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480746

QC Batch: 546101
QC Batch Method: SM 2450C-2011
Analysis Method: SM 2450C-2011
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92480746001, 92480746002

METHOD BLANK: 2907078 Matrix: Water
Associated Lab Samples: 92480746001, 92480746002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/09/20 13:16	

LABORATORY CONTROL SAMPLE: 2907079

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	401	100	84-108	

SAMPLE DUPLICATE: 2907080

Parameter	Units	92479841001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	897	916	2	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480746

QC Batch: 546290
QC Batch Method: SM 2320B-2011
Analysis Method: SM 2320B-2011
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92480746001, 92480746002

METHOD BLANK: 2907956 Matrix: Water
Associated Lab Samples: 92480746001, 92480746002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	06/10/20 16:12	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	06/10/20 16:12	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	06/10/20 16:12	

LABORATORY CONTROL SAMPLE: 2907957

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	52.4	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2907958 2907959

Parameter	Units	92480014024 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	103	50	50	157	160	109	114	80-120	2	25	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2907960 2907961

Parameter	Units	92480014029 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	235	50	50	288	296	107	122	80-120	3	25	M1

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480746

QC Batch: 546000
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92480746001, 92480746002

METHOD BLANK: 2906662 Matrix: Water
Associated Lab Samples: 92480746001, 92480746002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/09/20 11:11	
Fluoride	mg/L	ND	0.10	0.050	06/09/20 11:11	
Sulfate	mg/L	ND	1.0	0.50	06/09/20 11:11	

LABORATORY CONTROL SAMPLE: 2906663

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.3	99	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	49.6	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2906664 2906665

Parameter	Units	92480500001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	66.3	50	50	109	110	85	87	90-110	1	10	M1
Fluoride	mg/L	0.073J	2.5	2.5	2.5	2.5	98	99	90-110	1	10	
Sulfate	mg/L	53.2	50	50	97.2	97.5	88	88	90-110	0	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2906666 2906667

Parameter	Units	92480750002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8.5	50	50	63.2	61.9	109	107	90-110	2	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	100	101	90-110	0	10	
Sulfate	mg/L	7.4	50	50	62.1	60.9	109	107	90-110	2	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: PLANT BRANCH
Pace Project No.: 92480746

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.

TNTC - Too Numerous To Count

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.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT BRANCH
Pace Project No.: 92480746

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92480746001	**DBW-01**				
92480746002	**DBW-02**				
92480746001	**DBW-01**	EPA 3010A	545809	EPA 6010D	545873
92480746002	**DBW-02**	EPA 3010A	545809	EPA 6010D	545873
92480746001	**DBW-01**	EPA 3005A	545808	EPA 6020B	545847
92480746002	**DBW-02**	EPA 3005A	545808	EPA 6020B	545847
92480746001	**DBW-01**	EPA 7470A	545791	EPA 7470A	545867
92480746002	**DBW-02**	EPA 7470A	545791	EPA 7470A	545867
92480746001	**DBW-01**	SM 2450C-2011	546101		
92480746002	**DBW-02**	SM 2450C-2011	546101		
92480746001	**DBW-01**	SM 2320B-2011	546290		
92480746002	**DBW-02**	SM 2320B-2011	546290		
92480746001	**DBW-01**	EPA 300.0 Rev 2.1 1993	546000		
92480746002	**DBW-02**	EPA 300.0 Rev 2.1 1993	546000		

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
Required Client Information:

Section B
Required Project Information:

Section C
Invoice Information:

Regulatory Agency

State / Location

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample IDs must be unique	SAMPLE TYPE	MATRIX CODE	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	# OF CONTAINERS	Preservatives	Analyses Test	Residual Chlorine (Y/N)	
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

92480746

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed:

WO# : 92480746

92480746

Pace Analytical	Document Name: Bottle Identification Form (BIF)	Document Issued: March 14, 2019 Page 1 of 1
	Document No.: F-CAR-CI-043-Rev.00	Issuing Authority: Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, ULHg

**Bottom half of box is to list number of bottle

Project # **WO# : 92480746**

PM: KLH1 Due Date: 08/19/20

CLIENT: GA-GR Power

Matrix	Items	BP4U-125 mL Plastic Unpreserved (N/A) (CH)	BP1U-250 mL Plastic Unpreserved (N/A)	BP1U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4N-125 mL Plastic H2SO4 (pH < 2) (CH)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic Zinc Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (CH)	WGKU-White glass Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (CH)	AG3U-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (CH)	AG1N-1 liter Amber H2SO4 (pH < 2)	AG1N-250 mL Amber H2SO4 (pH < 2)	AG3S(DG3A)-250 mL Amber Sulfuric (N/A)(CH)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA NaTiO3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VG9AS-40 mL VOA ascorbic/sulfuric acid (N/A)	VG9B-40 mL VOA ascorbic acid/HCl (N/A)	BP1T-125 mL Sterile Plastic (N/A - Tot)	BP1T-250 mL Sterile Plastic (N/A - Tot)	BP1A-250 mL Plastic (NaOH/ZnAc) (>9 & <12)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Headspace vials (N/A)
	1		2	1			1																		1		
	2		2	1			1																				
	3																										
	4																										
	5																										
	6																										
	7																										
	8																										
	9																										
	10																										
	11																										
	12																										

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

June 12, 2020

Joju Abraham
Georgia Power-CCR
2480 Maner Road
Atlanta, GA 30339

RE: Project: PLANT BRANCH
Pace Project No.: 92480748

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 05, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Asheville
- Pace Analytical Services - Charlotte
- Pace Analytical Services - Peachtree Corners, GA

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

Sincerely,

Kevin Herring
kevin.herring@pacelabs.com
1(704)875-9092
HORIZON Database Administrator

Enclosures

cc: Daniela Herrera, Golder
Ben Hodges, Georgia Power
Jimmy Jones, Golder Associates Inc.
Kristen Jurinko
Julie Lehrman, Golder Associates Inc.
Ms. Lauren Petty, Southern Co. Services
Carolyn Powrozek, Golder
Dawn Prell, Golder Associates Inc.
Tim Richards, Golder Associates - Atlanta

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

CERTIFICATIONS

Project: PLANT BRANCH
Pace Project No.: 92480748

Pace Analytical Services Charlotte
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services Asheville
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

Pace Analytical Services Peachtree Corners
110 Technology Pkwy, 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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE SUMMARY

Project: PLANT BRANCH
Pace Project No.: 92480748

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92480748001	**PZ-53D**	Water	06/04/20 13:13	06/05/20 15:55
92480748002	**FB**	Water	06/04/20 11:15	06/05/20 15:55
92480748003	**EB**	Water	06/04/20 11:30	06/05/20 15:55
92480748004	**FD**	Water	06/04/20 00:00	06/05/20 15:55

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SAMPLE ANALYTE COUNT

Project: PLANT BRANCH
Pace Project No.: 92480748

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92480748001	**PZ-53D**	EPA 6010D	DRB	4
		EPA 6020B	CW1	3
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		EPA 300.0 Rev 2.1 1993	BRJ	3
92480748002	**FB**	EPA 6010D	DRB	4
		EPA 6020B	CW1	3
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		EPA 300.0 Rev 2.1 1993	BRJ	3
92480748003	**EB**	EPA 6010D	DRB	4
		EPA 6020B	CW1	3
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		EPA 300.0 Rev 2.1 1993	BRJ	3
92480748004	**FD**	EPA 6010D	DRB	4
		EPA 6020B	CW1	3
		SM 2450C-2011	JRS	1
		SM 2320B-2011	ECH	3
		EPA 300.0 Rev 2.1 1993	BRJ	3

PASI-A = Pace Analytical Services - Asheville
PASI-C = Pace Analytical Services - Charlotte
PASI-GA = Pace Analytical Services - Peachtree Corners, GA

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

SUMMARY OF DETECTION

Project: PLANT BRANCH
Pace Project No.: 92480748

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92480748001	**PZ-53D**					
	pH	6.81	Std. Units		06/08/20 09:17	
EPA 6010D	Calcium	61.2	mg/L	1.0	06/08/20 18:15	
EPA 6010D	Magnesium	14.5	mg/L	0.050	06/08/20 18:15	
EPA 6010D	Potassium	6.2	mg/L	0.20	06/08/20 18:15	
EPA 6010D	Sodium	72.7	mg/L	1.0	06/08/20 18:15	
EPA 6020B	Boron	0.52	mg/L	0.10	06/08/20 14:59	
EPA 6020B	Cobalt	0.0012J	mg/L	0.0050	06/08/20 14:59	
SM 2450C-2011	Total Dissolved Solids	569	mg/L	10.0	06/09/20 13:17	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	53.4	mg/L	5.0	06/09/20 19:28	
SM 2320B-2011	Alkalinity, Total as CaCO3	53.4	mg/L	5.0	06/09/20 19:28	
EPA 300.0 Rev 2.1 1993	Chloride	29.6	mg/L	1.0	06/09/20 14:20	
EPA 300.0 Rev 2.1 1993	Fluoride	0.19	mg/L	0.10	06/09/20 14:20	
EPA 300.0 Rev 2.1 1993	Sulfate	255	mg/L	5.0	06/09/20 20:06	
92480748002	**FB**					
EPA 6020B	Boron	0.012J	mg/L	0.10	06/08/20 15:27	
92480748003	**EB**					
EPA 300.0 Rev 2.1 1993	Sulfate	1.1	mg/L	1.0	06/09/20 14:47	
92480748004	**FD**					
EPA 6010D	Calcium	60.0	mg/L	1.0	06/08/20 18:28	
EPA 6010D	Magnesium	14.3	mg/L	0.050	06/08/20 18:28	
EPA 6010D	Potassium	6.2	mg/L	0.20	06/08/20 18:28	
EPA 6010D	Sodium	75.8	mg/L	1.0	06/08/20 18:28	
EPA 6020B	Boron	0.50	mg/L	0.10	06/08/20 15:38	
EPA 6020B	Cobalt	0.0012J	mg/L	0.0050	06/08/20 15:38	
SM 2450C-2011	Total Dissolved Solids	564	mg/L	10.0	06/09/20 13:17	
SM 2320B-2011	Alkalinity,Bicarbonate (CaCO3)	53.7	mg/L	5.0	06/09/20 19:48	
SM 2320B-2011	Alkalinity, Total as CaCO3	53.7	mg/L	5.0	06/09/20 19:48	
EPA 300.0 Rev 2.1 1993	Chloride	31.0	mg/L	1.0	06/09/20 15:01	
EPA 300.0 Rev 2.1 1993	Fluoride	0.19	mg/L	0.10	06/09/20 15:01	
EPA 300.0 Rev 2.1 1993	Sulfate	272	mg/L	6.0	06/09/20 20:21	

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 92480748

Sample: PZ-53D **Lab ID: 92480748001** Collected: 06/04/20 13:13 Received: 06/05/20 15:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method: Pace Analytical Services - Charlotte								
pH	**6.81**	Std. Units			1		06/08/20 09:17		
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**61.2**	mg/L	1.0	0.14	1	06/08/20 11:00	06/08/20 18:15	7440-70-2	
Magnesium	**14.5**	mg/L	0.050	0.011	1	06/08/20 11:00	06/08/20 18:15	7439-95-4	
Potassium	**6.2**	mg/L	0.20	0.026	1	06/08/20 11:00	06/08/20 18:15	7440-09-7	
Sodium	**72.7**	mg/L	1.0	0.19	1	06/08/20 11:00	06/08/20 18:15	7440-23-5	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Beryllium	ND	mg/L	0.0030	0.000074	1	06/08/20 11:00	06/08/20 14:59	7440-41-7	
Boron	**0.52**	mg/L	0.10	0.0049	1	06/08/20 11:00	06/08/20 14:59	7440-42-8	
Cobalt	**0.0012J**	mg/L	0.0050	0.00030	1	06/08/20 11:00	06/08/20 14:59	7440-48-4	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**569**	mg/L	10.0	10.0	1		06/09/20 13:17		
2320B Alkalinity	Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity,Bicarbonate (CaCO3)	**53.4**	mg/L	5.0	5.0	1		06/09/20 19:28		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/09/20 19:28		
Alkalinity, Total as CaCO3	**53.4**	mg/L	5.0	5.0	1		06/09/20 19:28		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**29.6**	mg/L	1.0	0.60	1		06/09/20 14:20	16887-00-6	
Fluoride	**0.19**	mg/L	0.10	0.050	1		06/09/20 14:20	16984-48-8	
Sulfate	**255**	mg/L	5.0	2.5	5		06/09/20 20:06	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 92480748

Sample: FB **Lab ID: 92480748002** Collected: 06/04/20 11:15 Received: 06/05/20 15:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.14	1	06/08/20 11:00	06/08/20 18:20	7440-70-2	
Magnesium	ND	mg/L	0.050	0.011	1	06/08/20 11:00	06/08/20 18:20	7439-95-4	
Potassium	ND	mg/L	0.20	0.026	1	06/08/20 11:00	06/08/20 18:20	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	06/08/20 11:00	06/08/20 18:20	7440-23-5	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Beryllium	ND	mg/L	0.0030	0.000074	1	06/08/20 11:00	06/08/20 15:27	7440-41-7	
Boron	**0.012J**	mg/L	0.10	0.0049	1	06/08/20 11:00	06/08/20 15:27	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/08/20 11:00	06/08/20 15:27	7440-48-4	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		06/09/20 13:17		
2320B Alkalinity	Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/09/20 19:43		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/09/20 19:43		
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		06/09/20 19:43		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		06/09/20 14:34	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		06/09/20 14:34	16984-48-8	
Sulfate	ND	mg/L	1.0	0.50	1		06/09/20 14:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 92480748

Sample: EB **Lab ID: 92480748003** Collected: 06/04/20 11:30 Received: 06/05/20 15:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	ND	mg/L	1.0	0.14	1	06/08/20 11:00	06/08/20 18:24	7440-70-2	
Magnesium	ND	mg/L	0.050	0.011	1	06/08/20 11:00	06/08/20 18:24	7439-95-4	
Potassium	ND	mg/L	0.20	0.026	1	06/08/20 11:00	06/08/20 18:24	7440-09-7	
Sodium	ND	mg/L	1.0	0.19	1	06/08/20 11:00	06/08/20 18:24	7440-23-5	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Beryllium	ND	mg/L	0.0030	0.000074	1	06/08/20 11:00	06/08/20 15:33	7440-41-7	
Boron	ND	mg/L	0.10	0.0049	1	06/08/20 11:00	06/08/20 15:33	7440-42-8	
Cobalt	ND	mg/L	0.0050	0.00030	1	06/08/20 11:00	06/08/20 15:33	7440-48-4	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		06/09/20 13:17		
2320B Alkalinity	Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity,Bicarbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/09/20 19:46		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/09/20 19:46		
Alkalinity, Total as CaCO3	ND	mg/L	5.0	5.0	1		06/09/20 19:46		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	ND	mg/L	1.0	0.60	1		06/09/20 14:47	16887-00-6	
Fluoride	ND	mg/L	0.10	0.050	1		06/09/20 14:47	16984-48-8	
Sulfate	**1.1**	mg/L	1.0	0.50	1		06/09/20 14:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

ANALYTICAL RESULTS

Project: PLANT BRANCH
Pace Project No.: 92480748

Sample: FD **Lab ID: 92480748004** Collected: 06/04/20 00:00 Received: 06/05/20 15:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D ATL ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Pace Analytical Services - Peachtree Corners, GA								
Calcium	**60.0**	mg/L	1.0	0.14	1	06/08/20 11:00	06/08/20 18:28	7440-70-2	
Magnesium	**14.3**	mg/L	0.050	0.011	1	06/08/20 11:00	06/08/20 18:28	7439-95-4	
Potassium	**6.2**	mg/L	0.20	0.026	1	06/08/20 11:00	06/08/20 18:28	7440-09-7	
Sodium	**75.8**	mg/L	1.0	0.19	1	06/08/20 11:00	06/08/20 18:28	7440-23-5	
6020 MET ICPMS	Analytical Method: EPA 6020B Preparation Method: EPA 3005A Pace Analytical Services - Peachtree Corners, GA								
Beryllium	ND	mg/L	0.0030	0.000074	1	06/08/20 11:00	06/08/20 15:38	7440-41-7	
Boron	**0.50**	mg/L	0.10	0.0049	1	06/08/20 11:00	06/08/20 15:38	7440-42-8	
Cobalt	**0.0012J**	mg/L	0.0050	0.00030	1	06/08/20 11:00	06/08/20 15:38	7440-48-4	
2540C Total Dissolved Solids	Analytical Method: SM 2450C-2011 Pace Analytical Services - Peachtree Corners, GA								
Total Dissolved Solids	**564**	mg/L	10.0	10.0	1		06/09/20 13:17		
2320B Alkalinity	Analytical Method: SM 2320B-2011 Pace Analytical Services - Asheville								
Alkalinity,Bicarbonate (CaCO3)	**53.7**	mg/L	5.0	5.0	1		06/09/20 19:48		
Alkalinity,Carbonate (CaCO3)	ND	mg/L	5.0	5.0	1		06/09/20 19:48		
Alkalinity, Total as CaCO3	**53.7**	mg/L	5.0	5.0	1		06/09/20 19:48		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Rev 2.1 1993 Pace Analytical Services - Asheville								
Chloride	**31.0**	mg/L	1.0	0.60	1		06/09/20 15:01	16887-00-6	
Fluoride	**0.19**	mg/L	0.10	0.050	1		06/09/20 15:01	16984-48-8	
Sulfate	**272**	mg/L	6.0	3.0	6		06/09/20 20:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480748

QC Batch: 545809
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010D
Analysis Description: 6010D ATL
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92480748001, 92480748002, 92480748003, 92480748004

METHOD BLANK: 2905940 Matrix: Water
Associated Lab Samples: 92480748001, 92480748002, 92480748003, 92480748004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	mg/L	ND	1.0	0.14	06/08/20 18:07	
Magnesium	mg/L	ND	0.050	0.011	06/08/20 18:07	
Potassium	mg/L	ND	0.20	0.026	06/08/20 18:07	
Sodium	mg/L	ND	1.0	0.19	06/08/20 18:07	

LABORATORY CONTROL SAMPLE: 2905941

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	1	0.93J	93	80-120	
Magnesium	mg/L	1	0.96	96	80-120	
Potassium	mg/L	1	0.94	94	80-120	
Sodium	mg/L	1	0.97J	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2905942 2905943

Parameter	Units	92480726001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	9370 ug/L	1	1	10.3	10.4	98	100	75-125	0	20	
Magnesium	mg/L	1610 ug/L	1	1	2.6	2.6	97	96	75-125	1	20	
Potassium	mg/L	1430 ug/L	1	1	2.4	2.4	94	98	75-125	2	20	
Sodium	mg/L	2840 ug/L	1	1	3.8	3.8	98	97	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480748

QC Batch: 545808
QC Batch Method: EPA 3005A
Analysis Method: EPA 6020B
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92480748001, 92480748002, 92480748003, 92480748004

METHOD BLANK: 2905927 Matrix: Water
Associated Lab Samples: 92480748001, 92480748002, 92480748003, 92480748004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Beryllium	mg/L	ND	0.0030	0.000074	06/08/20 14:47	
Boron	mg/L	ND	0.10	0.0049	06/08/20 14:47	
Cobalt	mg/L	ND	0.0050	0.00030	06/08/20 14:47	

LABORATORY CONTROL SAMPLE: 2905928

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Beryllium	mg/L	0.1	0.094	94	80-120	
Boron	mg/L	1	0.97	97	80-120	
Cobalt	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2905929 2905930

Parameter	Units	92480748001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	mg/L	ND	0.1	0.1	0.088	0.085	88	85	75-125	3	20	
Boron	mg/L	0.52	1	1	1.3	1.4	81	84	75-125	2	20	
Cobalt	mg/L	0.0012J	0.1	0.1	0.10	0.10	101	100	75-125	2	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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480748

QC Batch: 546101 | Analysis Method: SM 2450C-2011
QC Batch Method: SM 2450C-2011 | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Peachtree Corners, GA
Associated Lab Samples: 92480748001, 92480748002, 92480748003, 92480748004

METHOD BLANK: 2907078 Matrix: Water
Associated Lab Samples: 92480748001, 92480748002, 92480748003, 92480748004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/09/20 13:16	

LABORATORY CONTROL SAMPLE: 2907079

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	401	100	84-108	

SAMPLE DUPLICATE: 2907080

Parameter	Units	92479841001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	897	916	2	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480748

QC Batch: 546047
QC Batch Method: SM 2320B-2011
Analysis Method: SM 2320B-2011
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92480748001, 92480748002, 92480748003, 92480748004

METHOD BLANK: 2906839 Matrix: Water
Associated Lab Samples: 92480748001, 92480748002, 92480748003, 92480748004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	5.0	06/09/20 17:42	
Alkalinity,Bicarbonate (CaCO3)	mg/L	ND	5.0	5.0	06/09/20 17:42	
Alkalinity,Carbonate (CaCO3)	mg/L	ND	5.0	5.0	06/09/20 17:42	

LABORATORY CONTROL SAMPLE: 2906840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	48.2	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2906841 2906842

Parameter	Units	92480014012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	140	50	50	196	201	111	121	80-120	2	25	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2906843 2906844

Parameter	Units	92480014014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	mg/L	34.9	50	50	84.9	84.4	100	99	80-120	1	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.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALITY CONTROL DATA

Project: PLANT BRANCH
Pace Project No.: 92480748

QC Batch: 546000
QC Batch Method: EPA 300.0 Rev 2.1 1993
Analysis Method: EPA 300.0 Rev 2.1 1993
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Asheville
Associated Lab Samples: 92480748001, 92480748002, 92480748003, 92480748004

METHOD BLANK: 2906662 Matrix: Water
Associated Lab Samples: 92480748001, 92480748002, 92480748003, 92480748004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.60	06/09/20 11:11	
Fluoride	mg/L	ND	0.10	0.050	06/09/20 11:11	
Sulfate	mg/L	ND	1.0	0.50	06/09/20 11:11	

LABORATORY CONTROL SAMPLE: 2906663

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	49.3	99	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	50	49.6	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2906664 2906665

Parameter	Units	92480500001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	66.3	50	50	109	110	85	87	90-110	1	10	M1
Fluoride	mg/L	0.073J	2.5	2.5	2.5	2.5	98	99	90-110	1	10	
Sulfate	mg/L	53.2	50	50	97.2	97.5	88	88	90-110	0	10	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2906666 2906667

Parameter	Units	92480750002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8.5	50	50	63.2	61.9	109	107	90-110	2	10	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.6	100	101	90-110	0	10	
Sulfate	mg/L	7.4	50	50	62.1	60.9	109	107	90-110	2	10	

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

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

QUALIFIERS

Project: PLANT BRANCH
Pace Project No.: 92480748

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.

TNTC - Too Numerous To Count

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.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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.

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
(770)734-4200

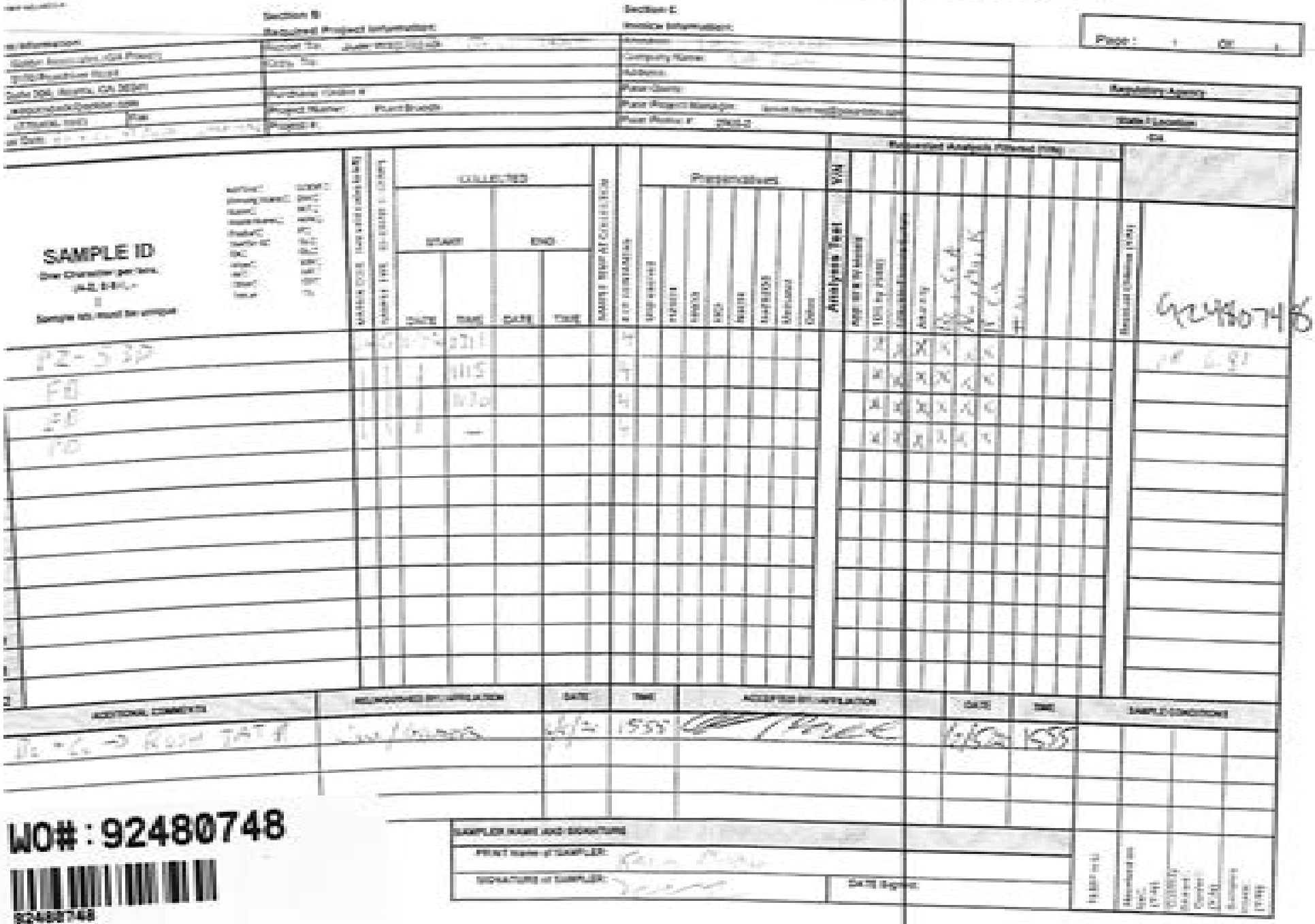
QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PLANT BRANCH
Pace Project No.: 92480748

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92480748001	**PZ-53D**				
92480748001	**PZ-53D**	EPA 3010A	545809	EPA 6010D	545873
92480748002	**FB**	EPA 3010A	545809	EPA 6010D	545873
92480748003	**EB**	EPA 3010A	545809	EPA 6010D	545873
92480748004	**FD**	EPA 3010A	545809	EPA 6010D	545873
92480748001	**PZ-53D**	EPA 3005A	545808	EPA 6020B	545847
92480748002	**FB**	EPA 3005A	545808	EPA 6020B	545847
92480748003	**EB**	EPA 3005A	545808	EPA 6020B	545847
92480748004	**FD**	EPA 3005A	545808	EPA 6020B	545847
92480748001	**PZ-53D**	SM 2450C-2011	546101		
92480748002	**FB**	SM 2450C-2011	546101		
92480748003	**EB**	SM 2450C-2011	546101		
92480748004	**FD**	SM 2450C-2011	546101		
92480748001	**PZ-53D**	SM 2320B-2011	546047		
92480748002	**FB**	SM 2320B-2011	546047		
92480748003	**EB**	SM 2320B-2011	546047		
92480748004	**FD**	SM 2320B-2011	546047		
92480748001	**PZ-53D**	EPA 300.0 Rev 2.1 1993	546000		
92480748002	**FB**	EPA 300.0 Rev 2.1 1993	546000		
92480748003	**EB**	EPA 300.0 Rev 2.1 1993	546000		
92480748004	**FD**	EPA 300.0 Rev 2.1 1993	546000		

CHAIN-OF-CUSTODY / Analytical Request Document

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



WO# : 92480748

Pace Analytical	Document Name: Bottle Identification Form (BIF)	Document Issued: March 14, 2019 Page 1 of 1
	Document No.: F-CAR-CS-043-Rev.00	Issuing Authority: Pace Carolinas Quality Office

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, Ul-Hg

**Bottom half of box is to list number of bottle

Project #

WO#: 92480748

PM: KLHI Due Date: 06/08/20

CLIENT: GA-GA Power

Matrix	Sample	BP4U-125 mL Plastic Unpreserved (N/A) (O)	BP3N-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4N-125 mL Plastic H2SO4 (pH < 2) (O)	BP3N-250 mL Plastic NaOH (pH > 12)	BP4Z-125 mL Plastic Zn Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (O)	WGFU-Wide-mouthed Glass Jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (O)	AG1H-1 liter Amber HCl (pH < 2)	AG1N-1 liter Amber Unpreserved (N/A) (O)	AG2S-500 mL Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG4S(DRO/8015)-250 mL Amber NaHSO4 (N/A)(O)	DG9H-40 mL VOA HCl (N/A)	VG9H-40 mL VOA HCl (N/A)	VG9U-40 mL VOA Unpres (N/A)	DG9T-40 mL VOA w/TSP (N/A)	VG9AT (8 vials per kit)-40mL Na2S2O3 Tab (N/A)	VG9X (3 vials per kit)-40mL Ascorbic Ac (N/A)	SP5T-125 mL Sterile Plastic (N/A - 5d)	SP2T-250 mL Sterile Plastic (N/A - 14d)		BP3A-250 mL Plastic (NH4)2SO4 (9.0-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)
	1		2	1																							
	2		2	1																							
	3		2	1																							
	4		2	1																							
	5																										
	6																										
	7																										
	8																										
	9																										
	10																										
	11																										
	12																										

pH Adjustment Log for Preserved Samples

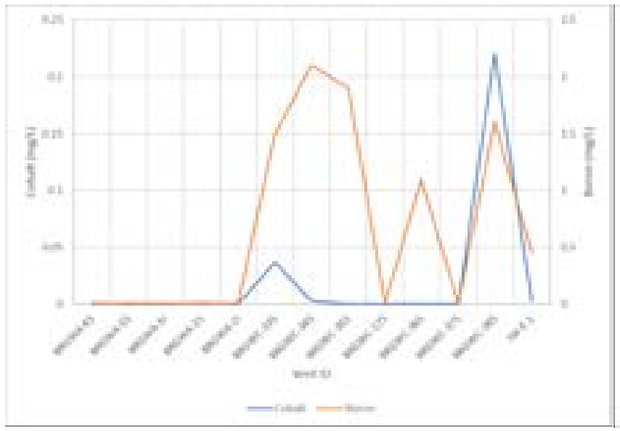
Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added

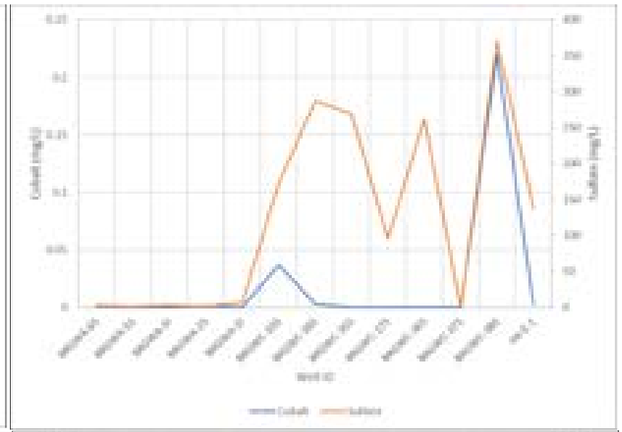
Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certificate Out of hold, incorrect preservative, out of temp, incorrect containers.

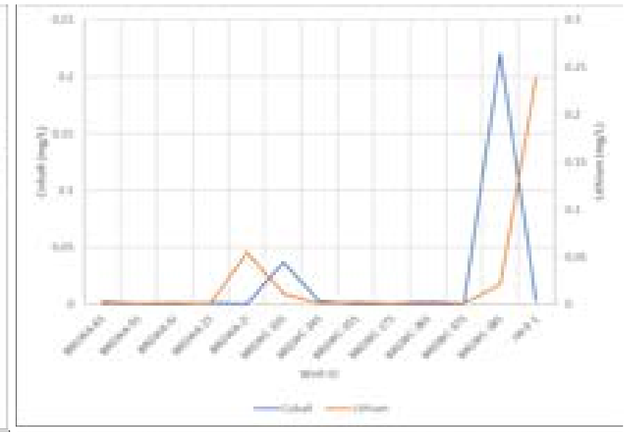
APPENDIX D

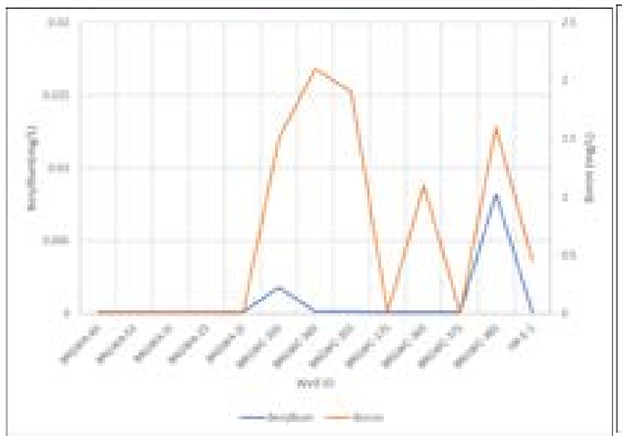
Correlation Analysis

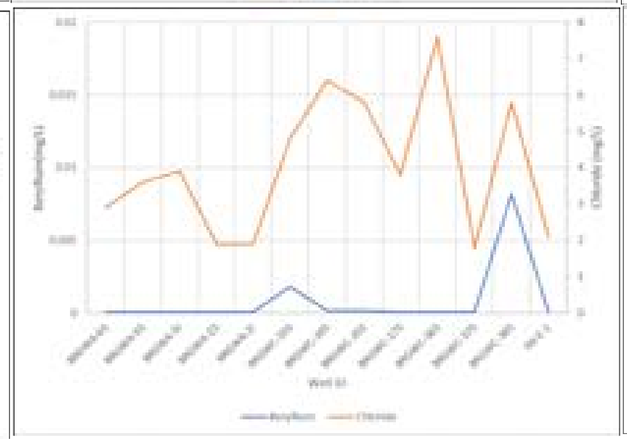
PATH: C:\Users\pjnolan\Documents\Project docs\Branch\ASD | FILE NAME: 2020 REVISED Data Analysis.xlsx

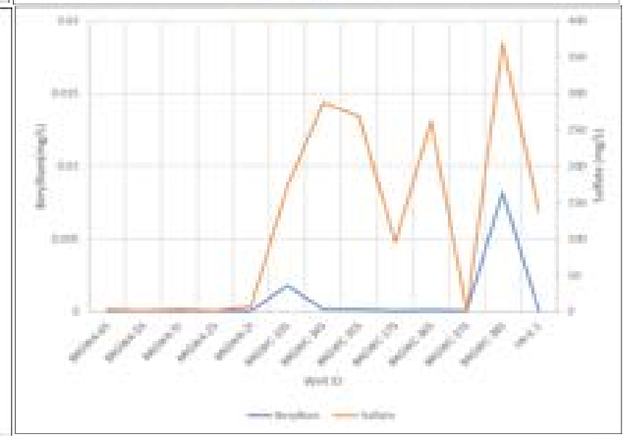


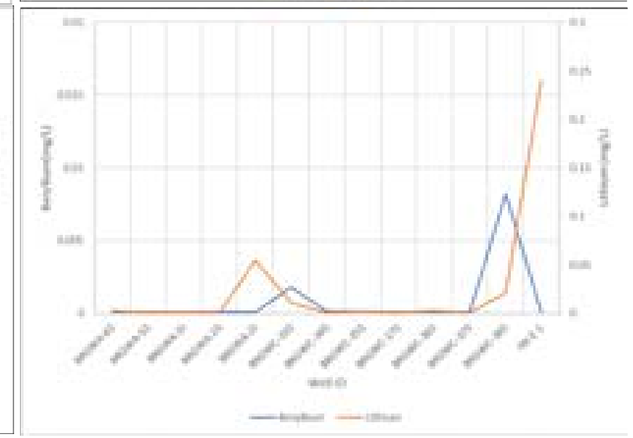












CLIENT
GEORGIA POWER COMPANY
PLANT BRANCH

CONSULTANT
GOLDER

PROJECT
AP-E ALTERNATE SOURCE DEMONSTRATION

TITLE
Correlation Analysis

PROJECT NO.	PHASE	REV.	FIGURE
16625418	100		

golder.com