Georgia Power Company

Plant Yates – Ash Pond 1

Newnan, Georgia
Coweta County

2019 SEMIANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

Atlantic Coast Consulting, Inc.

CERTIFICATION STATEMENT

This *2019 Second Semiannual Groundwater Monitoring & Corrective Action Report*, Georgia Power Company - Plant Yates Ash Pond 1 has been prepared in compliance with Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10 by a qualified groundwater scientist or engineer with:

ATLANTIC COAST CONSULTING, INC.

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TABLE OF CONTENTS

Figures

Appendices

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (US EPA) Coal Combustion Residuals (CCR) rule (Rule 40 Code of Federal Regulations [(CFR]) 257 Subpart D) and the Georgia Environmental Protection Division (GA EPD) Rules of Solid Waste Management 391-3-4-.10, Atlantic Coast Consulting, Inc. (ACC) has prepared this Semiannual Groundwater Monitoring Report to document groundwater monitoring activities at Georgia Power Company's (GPC's) Plant Yates AP-1 (Site). 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 Subpart D. For ease of reference, the US EPA CCR rules are cited within this report. For ease of reference, the US EPA CCR rules are cited within this report.

Groundwater monitoring and reporting for CCR units is performed in accordance with the monitoring requirements §§ 257.90 through 257.95 of the Federal CCR rule and the Georgia EPD rule 391-3-4-.10(6)(a)-(c). This report documents the two monitoring events conducted during this monitoring period: (1) an initial assessment monitoring event in August 2019 as a result of statistical exceedances during the first detection monitoring event, and (2) the subsequent assessment event conducted in October 2019, which served as the second semiannual compliance monitoring event for the year.

1.1 Site Description and Background

Plant Yates is located at 708 Dyer Road, on the east bank of the Chattahoochee River in Coweta County, Georgia near the Coweta and Carroll County line, approximately 8 miles northwest of the city of Newnan and 13 miles southeast of the city of Carrollton. Plant Yates occupies approximately 2,400 acres. Figure 1, Site Location Map, depicts the site location relative to the surrounding area.

AP-1 was closed by-removal; the CCR material was removed from AP-1 to an onsite landfill. A permit application to comply with EPD Rules was submitted in November 2018 and is currently under review. Semiannual reporting is completed pursuant to 391-3-4-.10(6)(c).

1.2 Site Geology and Hydrogeologic Setting

Plant Yates is located in the Inner Piedmont Physiographic Province of western Georgia, immediately southeast of the regional zone of deformation referred to as the Brevard Zone. Rock units at Plant Yates are primarily interlayered gneiss and schists. The rocks in the area have been subjected to several episodes of metamorphism and intrusion by igneous bodies. Extensive jointing occurs in the area. Surface expressions of the joints are observed on topographic maps and aerial photos of the Plant Yates area.

A thin layer of soil from one to two feet thick overlies a thick layer of saprolite. The saprolite, which extends to typical depths of 20-40 feet below ground surface, was formed in-place by the physical and chemical weathering of the underlying metamorphic rocks. There is typically a zone of variable thickness (approximately 5-20 feet) of transitionally weathered rock between the saprolite and competent bedrock. Localized alluvial soils consisting of generally coarser material (silty-sand, clayey silt, and silty clay with well-rounded gravel and cobbles) than that observed in saprolite may be related to historical river channel migration.

At Plant Yates, groundwater is typically encountered slightly above the saprolite/weathered rock interface. Groundwater flow in the saprolite zone is through interconnected pores and relict textures and fractures. As the rock becomes increasing competent with depth groundwater flow occurs mainly through joints and fractures (i.e. secondary porosity). Recharge to the water-bearing zones in fractured bedrock takes place by seepage through the overlying mantle of soil/saprolite, or by direct entrance through openings in outcrops. The average depth of the water table at Plant Yates varies with topography, ranging from approximately 5 to 50 feet below ground surface. The water table occurs in the saprolite and in the transitionally weathered zone, at least several feet above the top of rock.

In-situ slug tests were performed in saprolite and weathered bedrock at multiple locations on the site. The hydraulic conductivity at these locations is typically in a range from 10^{-3} to 10^{-4} centimeters per second, based on multiple rising-head and falling-head slug tests. This indicates a fairly uniform medium across the saprolite and weathered rock horizon. The values from the field test fall within the standard range of hydraulic conductivity values associated with a silty sand.

1.3 Groundwater Monitoring Well Network and CCR Unit Description

Pursuant to § 257.91, a groundwater monitoring system was installed within the uppermost aquifer at the CCR Unit AP-1. The monitoring system is designed to monitor groundwater passing the waste boundary of the CCR Units within the uppermost aquifer. Figure 2, Well Location Map, shows the monitoring well locations. Wells were located to serve as upgradient and downgradient monitoring points based on groundwater flow direction (Table 1A, Monitoring Network Well Summary, and Table 1B, Non-Network Well Summary).

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 partially weathered rock (transition zone), and “D” indicates upper bedrock. The monitoring well network for the Site is provided on Figure 2, Well Location Map.

2.0 GROUNDWATER MONITORING ACTIVITIES

Pursuant to 40 CFR § 257.90(e), the following describes monitoring-related activities performed in the second half of 2019. All groundwater sampling was performed in accordance with § 257.93. Samples were collected from each well in the certified monitoring system shown on Figure 2.

Based on results of the 2019 Annual Groundwater and Corrective Action Monitoring Report, assessment monitoring was initiated at the site. Table 2, Groundwater Sampling Event Summary, summarizes groundwater events conducted at AP-1 during the second half of 2019. During the initial assessment monitoring event completed in August 2019 groundwater samples were collected and analyzed for Appendix IV constituents to meet the requirement of § 257.95(b). During the October 2019 semiannual (assessment) sampling event, groundwater samples were collected for both Appendix III and the Appendix IV constituents detected during the August 2019 event.

2.1 Monitoring Well Installation/Maintenance

Monitoring well-related activities were limited to visual inspection of well conditions prior to sampling, recording the site conditions, and performing exterior maintenance to provide safe access for sampling.

Downgradient monitoring network wells were installed along the downgradient waste boundary pursuant to § 257.91(a)(2). In November 2019 two additional wells (YAMW-6 and YAMW-7) were installed to further characterize groundwater conditions in the vicinity of well YGWC-46. Details regarding the well are included on Table 1B and locations presented on Figure 2. Installation details for these locations are provided in Appendix A, Well Installation Report.

2.2 Detection Monitoring Program

In accordance with § 257.94(b), the detection groundwater monitoring program was implemented by collecting 8 background groundwater samples. In addition, a 9th round of groundwater samples was collected from the CCR monitoring wells as the initial detection monitoring event. Groundwater samples were collected from each monitoring well and analyzed for Appendix III constituents according to § 257.94(a). The background study and the initial detection monitoring event were documented in the 2019 Annual Groundwater Monitoring & Corrective Action Report, dated July 31, 2019.

2.3 Initial Assessment Monitoring

Statistically Significant Increases (SSI) of Appendix III constituents were identified in the initial detection monitoring event (March 2019). Pursuant to § 257.94(e)(1), GPC implemented assessment monitoring in accordance with § 257.95. The initial assessment monitoring event was conducted from August 20 - 21, 2019. Pursuant to § 257.95(b), the CCR monitoring wells were sampled for the full suite of Appendix IV constituents during the initial assessment event. Following receipt of the initial Appendix IV sample results, the 2019 second semiannual monitoring event/assessment monitoring event was conducted October 8 - 9, 2019. Pursuant to § 257.95(d)(1), Groundwater samples collected from the CCR monitoring wells were analyzed for Appendix III constituents and those Appendix IV constituents detected during the initial assessment event in August.

3.0 SAMPLE METHODOLOGY AND ANALYSIS

The following sections describe the methods used to conduct groundwater monitoring at the Site.

3.1 Groundwater Flow Direction, Gradient, and Velocity

Prior to each sampling event, groundwater elevations were recorded from the certified well network and piezometers at the Site. Groundwater elevations recorded during the October 2019 monitoring event are summarized in Table 3, Summary of Groundwater Elevations – October 2019. The general direction of groundwater flow across the site is towards the west. The groundwater flow patterns observed during the October 2019 monitoring event are consistent with historical patterns.

The groundwater flow velocity at Plant Yates was calculated using a derivation of Darcy's Law.

Specifically:

Equation

$$v = \frac{K(dh/dl)}{P_e}$$

where: v = ground water velocity
K = hydraulic conductivity
dh/dl = hydraulic gradient
P_e = effective porosity

Groundwater flow velocities were calculated for the site based on hydraulic gradients, average hydraulic conductivity based on previous slug test data, and an estimated effective porosity of 0.20 (based on a review of several sources, including Driscoll, 1986; US EPA, 1989; Freeze and Cherry, 1979). Groundwater flow velocities have been calculated and are tabulated on Table 4, Groundwater Flow Velocity Calculations – October 2019. The calculated flow velocity is 1.4 feet per day or 505 feet per year.

3.2 Groundwater Sampling

Groundwater samples were collected using low-flow sampling procedures in accordance with 40 CFR § 257.93(a). Purging and sampling was performed using a dedicated bladder pump in each well.

Monitoring wells were purged and sampled using low-flow sampling procedures. A SmarTroll (In-Situ field instrument) was used to monitor and record field water quality parameters (pH, conductivity, and dissolved oxygen) during well purging to verify stabilization prior to sampling. Turbidity was measured using a Hach 2100Q portable turbidimeter. Groundwater samples were collected when the following stabilization criteria were met:

- ± 0.1 standard units for pH
- ± 10% for specific conductance
- ± 10% for DO where DO > 0.5 mg/L. No criterion applies if DO < 0.5 mg/L.
- Turbidity measurements less than 10 nephelometric turbidity units (NTU)

Once stabilization was achieved, samples were collected directly into appropriately preserved laboratory-supplied sample containers. Sample bottles were placed in ice-packed coolers and submitted to Pace Analytical Services, LLC (Pace) of Peachtree Corners, Georgia following chain-of-custody protocol. Stabilization logs for each sample are included in Appendix B, Laboratory Analytical and Field Sampling Reports.

3.3 Laboratory Analyses

Groundwater samples collected in October 2019 for the semiannual monitoring event were analyzed for Appendix III constituents, and those Appendix IV constituents detected in the initial assessment monitoring event (August 2019). Constituents not detected during the initial assessment event and were not analyzed during the subsequent semiannual event in accordance with 257.95(d)(1). Appendix IV parameters not detected above the laboratory MDL during the initial assessment event included: antimony, beryllium, chromium, fluoride lead, mercury, and selenium. Table 5, Summary of Groundwater Monitoring Parameters, presents a summary of the constituents monitored during the semiannual event.

Analytical data collected in monitoring events from the second half of 2019 (August 2019 and October 2019) are summarized in Table 6A, Summary of Groundwater Analytical Data – August 2019, and Table 6B, Summary of Groundwater Analytical Data – October 2019, respectively.

Laboratory analyses were performed by Pace. Pace is accredited by the National Environmental Laboratory Accreditation Program (NELAP) and maintains a NELAP certification for all parameters analyzed for this project. In addition, Pace is certified to perform analysis by the State of Georgia. Laboratory reports and chain-of-custody records for the monitoring events are presented in Appendix B.

3.4 Quality Assurance and Quality Control

During each sampling event, quality assurance/quality control samples (QA/QC) are collected at a rate of one QA/QC sample per every 10 groundwater samples. Equipment blanks (where non-dedicated sampling equipment is used) and duplicate samples were 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 validated in accordance with US EPA guidance (US EPA, 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 RPDs, field and equipment blanks, and reporting limits. Where appropriate, validation qualifiers and flags are applied to the data using US EPA procedures as guidance (US EPA, 2017).

Values followed by a "J" flag indicate that the value is an estimated analyte concentration detected between the method detection limit (MDL) and the laboratory reporting limit (PQL). 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.

4.0 STATISTICAL ANALYSIS

Statistical analysis of groundwater monitoring data was performed on samples collected from the certified groundwater monitoring network pursuant to § 257.93(f) and following the statistical analysis plan. The statistical method used at the site was developed by Groundwater Stats Consulting, LLC (GSC), in accordance with 40 CFR § 257.93(f) using methodology presented in *Statistical Analysis of Groundwater Data at RCRA Facilities, Unified Guidance*, March 2009, US EPA 530/R-09-007 (US EPA, 2009). To develop the statistical method, analytical data collected during the background period were evaluated and used to develop statistical limits for each Appendix III parameter. Subsequent detection monitoring results were compared to the statistical limits to determine if concentrations were statistically different from background.

Pursuant to § 257.95(d)(2) GPC will establish groundwater protection standards for the Appendix IV monitoring parameters and complete statistical analysis of the Appendix IV groundwater monitoring data obtained during the first semiannual assessment monitoring event within 90 days of obtaining the results. GPC will complete the assessment monitoring and statistical

analysis in accordance with § 257.95 and report the results in the Annual Groundwater Monitoring and Corrective Action Report, due August 1, 2020.

4.1 Statistical Methods

Sanitas groundwater statistical software was used to perform the statistical analyses at the site. Sanitasis a decision support software package that incorporates the statistical tests required of Subtitle C and D facilities by US EPA regulations and guidance as recommended in the Unified Guidance (US EPA, 2009) document.

Groundwater analytical data will be evaluated through use of interwell prediction limits, combined with a 1-of-2 resampling strategy. Using this method, upgradient well data are pooled to establish a background statistical limit. Data from the October 2019 monitoring event were compared to the statistical limit to determine whether any concentrations exceed background levels. When an initial statistically significant increase (SSI) or questionable result occurs, a second sample may be collected to verify the initial result or determine if the result was an outlier.

If the initial finding is not verified by resampling, the resampled value will replace the initial finding. When the resample confirms the initial finding, the exceedance will be reported.

The following are also applicable to the site statistical analysis method:

- Statistical analyses are not performed on analytes containing 100% non-detects (US EPA Unified Guidance, 2009, Chapter 6).
- When data contain less than 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 the Kaplan-Meier non-detect 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% non-detects.

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 US EPA regulations and guidance as recommended in the Unified Guidance (US EPA, 2009) document. A summary of the statistical methodology used at the Site for routine groundwater monitoring is provided in Table 7, Summary of Statistical Methods.

4.2 Statistical Analyses Results – Appendix III

Analytical data from the assessment monitoring event in October 2019 at AP-1 were statistically analyzed in accordance with the PE-certified statistical methods. Appendix III statistical analysis was performed to determine if constituents have returned to background levels. Appendix C, Statistical Analyses.

Based on the statistical results presented in Appendix C, the following summarizes parameters exhibiting SSIs as follows:

- Boron: YGWC-44, YGWC-45, YGWC-46

- Calcium: YGWC-44, YGWC-45, YGWC-46
- Chloride: YGWC-44, YGWC-46
- pH: YGWC-45, YGWC-46
- Sulfate: YGWC-45
- TDS: YGWC-45, YGWC-46

Appendix III constituents have not returned to background levels and assessment monitoring should continue pursuant to 40 CFR § 257.95(f). Statistical analysis of the Appendix IV assessment monitoring results for the October 2019 sampling event will be completed in 2020 following the requirements of 40 CFR 257.95(d).

4.3 Appendix IV Background Data

Pursuant to § 257.95, Appendix IV groundwater quality data will be parameters will be evaluated to determine if concentrations statistically analyzed exceeded the established groundwater protection standards if assessment monitoring is implemented. The Appendix III statistical analysis is included as Appendix C.

Based on review of the Appendix III statistical analyses presented in Appendix C, Appendix III constituents have not returned to background levels. Exceedances were noted and are presented on the prediction limit summary table included in Appendix C. Because the site is in Assessment Monitoring, no resamples will be collected at this time; however, concentrations will continue to be monitored and will be evaluated during the next subsequent sample event.

4.3 Statistical Analyses – Appendix IV

Pursuant to §257.95, Appendix IV groundwater quality data will be statistically analyzed and compared to groundwater protection standards within 90 days of receiving data from the first (October 2019) assessment monitoring event. GPC will complete the assessment monitoring and statistical analysis in accordance with § 257.95 and report the results in the Annual Groundwater Monitoring and Corrective Action Report, due August 1, 2020.

5.0 MONITORING PROGRAM STATUS

In accordance with GA EPD rule 391-3-4-.10(6)(a) and 40 CFR §257.94(e), an assessment monitoring program was initiated in November 2019. The Site will remain in assessment monitoring due to SSIs for Appendix III parameters.

6.0 CONCLUSIONS AND FUTURE ACTIONS

Statistical evaluations of the groundwater monitoring data for Ash Pond 1 identified SSIs of Appendix III groundwater monitoring constituents. GPC has initiated assessment monitoring pursuant to §257.95. During the first semiannual period of 2020 GPC will establish groundwater protection standards for Appendix IV constituents and complete statistical analysis of the first semiannual assessment monitoring results according to the regulations. Results of the statistical analysis will be presented in the 2020 first semiannual groundwater monitoring report.

The next monitoring event is planned for the first half of 2020 and will include sampling for Appendix III analytes and Appendix IV constituents detected during the August 2019 monitoring event.

7.0 REFERENCES

Driscoll, Fletcher G., 1986 *Groundwater and Wells*, Johnson Screens, Saint Paul, Minnesota, 1089 pp.

EPRI, 2015 Technical Report, Groundwater Monitoring Guidance for the Coal Combustion Residuals Rule.

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US EPA. 2011. *Data Validation Standard Operating Procedures*. Science and Ecosystem Support Division. Region IV. Athens, GA. September.

US EPA. 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.

TABLES

Table 1A
Monitoring Network Well Summary

Well ID	Installation Date (mm/dd/yyyy)	Bottom Depth (ft BTOC)	Bottom Elevation (ft MSL)	Depth to Top of Screen (ft MSL)	Top of Screen Elevation (ft MSL)	Hydraulic Location
YGWA-47	7/11/2016	59.40	701.94	49.40	711.94	Upgradient
YGWC-44	7/13/2016	89.95	672.77	79.95	682.77	Downgradient
YGWC-45	7/10/2016	73.80	649.30	63.80	659.30	Downgradient
YGWC-46	7/11/2016	82.98	667.23	72.98	677.23	Downgradient

Notes:
1. ft BTOC indicates feet below top of casing.
2. ft MSL indicates feet mean sea level.

Table 1B
Non-Network Well Summary

Well ID	Installation Date (mm/dd/yyyy)	Bottom Depth (ft BTOC)	Bottom Elevation (ft MSL)	Depth to Top of Screen (ft BTOC)	Top of Screen Elevation (ft MSL)	Purpose
PZ-09S	5/19/2014	57.00	653.10	47.00	663.10	Piezometer
PZ-09I	5/19/2014	77.00	633.10	67.00	643.10	Piezometer
PZ-10S	5/19/2014	16.30	682.00	6.30	692.00	Piezometer
PZ-10I	5/19/2014	46.50	651.80	36.50	661.80	Piezometer
YAMW-6	11/18/2019	72.00	660.80	61.50	661.10	Downgradient
YAMW-7	11/15/2019	122.30	611.16	112.00	621.50	Downgradient

Notes:
1. ft BTOC indicates feet below top of casing.
2. ft MSL indicates feet mean sea level.

Table 2
Second 2019 Groundwater Sampling Event Summary

Well	Hydraulic Location	Aug. 20-21, 2019	Oct. 8-9, 2019
Purpose of Sampling Event		Assessment	Second 2019 Semiannual
YGWA-47	Upgradient	Scan	A-02
YGWC-44	Downgradient	Scan	A-02
YGWC-45	Downgradient	Scan	A-02
YGWC-46	Downgradient	Scan	A-02

Notes:
1. Scan = All Appendix IV
2. A-XX = Assessment Event Number (Appendix III and Detected Appendix IV)

Table 3A
Summary of Groundwater Elevations
August 2019

Well ID	TOC Elevation (ft MSL)	Depth-to-Water (ft BTOC)	Groundwater Elevation (ft MSL)
YGWA-47	758.04	33.80	724.24
YGWC-44	758.27	49.53	708.74
YGWC-45	719.30	22.78	696.52
YGWC-46	747.23	48.00	699.23
PZ-9S	711.90	19.74	692.16
PZ-9I	712.04	19.47	692.57
PZ-10S	700.35	8.35	692.00
PZ-10I	700.27	13.90	686.37
YAMW-6	732.73	N/A	N/A
YAMW-7	733.50	N/A	N/A

Notes:
1. ft BTOC indicates feet below top of casing.
2. ft MSL indicates feet mean sea level.
3. Depths to water measured August 19-20, 2019.
4. N/A = Not Applicable. Location installed November 2019.

Table 3B
Summary of Groundwater Elevations
October 2019

Well ID	TOC Elevation (ft MSL)	Depth-to-Water (ft BTOC)	Groundwater Elevation (ft MSL)
YGWA-47	758.04	35.55	722.49
YGWC-44	758.27	50.61	707.66
YGWC-45	719.30	22.85	696.45
YGWC-46	747.23	48.18	699.05
PZ-9S	711.90	20.36	691.54
PZ-9I	712.04	20.62	691.42
PZ-10S	700.35	8.07	692.28
PZ-10I	700.27	14.11	686.16
YAMW-6	732.73	N/A	N/A
YAMW-7	733.50	N/A	N/A

Notes:
1. ft BTOC indicates feet below top of casing.
2. ft MSL indicates feet mean sea level.
3. Depths to water measured October 7-8, 2019.
4. N/A = Not Applicable. Location installed November 2019.

Table 4
CALCULATED GROUNDWATER FLOW RATE
October 2019

Equation

$$v = \frac{K\,(dh/dl)}{P_e}$$

where: v = ground water velocity
K = hydraulic conductivity
dh/dl = hydraulic gradient
P_e = effective porosity

Values Used in Calculation

	Value		Source
K =	3.7E-03 10.49	cm/sec ft/day	See note 1.
dh/dl =	30.95/1173 0.026	ft/ft unitless	Hydraulic gradient from GWA-47 to PZ-09S
P_e =	0.20	unitless	See note 2.

Calculation

v = 1.4 ft/day

v = 505 ft/yr

Notes

(1) Slug tests performed by Atlantic Coast Consulting, Inc. (2017).

(2) Default value for silty sands from Interim Final RCRA Investigation (EPA, 1989).

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Table 5

Summary of Groundwater Monitoring Parameters

Appendix III (40 CFR 257)	Appendix IV (40 CFR 257)
Boron	*Antimony*
Calcium	Arsenic
Chloride	Barium
Fluoride	*Beryllium*
pH	Cadmium
Sulfate	*Chromium*
Total Dissolved Solids	Cobalt
	Fluoride
	Lead
	Lithium
	Mercury
	Molybdenum
	Radium 226 and 228 combined
	Selenium
	Thallium

Notes:
1. Italicized groundwater monitoring parameters not detected during initial assessment monitoring event (August 2019) and therefore not included in semiannual parameter list (October 2019)..

Table 6A
Summary of Groundwater Analytical Data
August 2019

Substance		YGWA-47	YGWC-44	YGWC-45	YGWC-46
		8/20/2019	8/20/2019	8/20/2019	8/21/2019
Appendix IV	Antimony	ND	ND	ND	ND
	Arsenic	ND	ND (0.00097 J)	ND (0.00078 J)	ND (0.00074 J)
	Barium	0.024	0.10	0.057	0.023
	Beryllium	ND	ND	ND	ND
	Cadmium	ND	ND	ND	ND (0.00012 J)
	Chromium	ND	ND	ND	ND
	Cobalt	ND (0.00092 J)	ND (0.0020 J)	ND (0.00071 J)	0.027
	Fluoride	ND	ND	ND	ND
	Lead	ND	ND	ND	ND
	Lithium	ND (0.0036 J)	ND (0.013 J)	ND (0.012 J)	ND (0.0076 J)
	Mercury	ND	ND	ND	ND
	Molybdenum	ND	ND	ND (0.0011 J)	ND (0.0012 J)
	Radium	2.44	1.71	2.23	1.31
	Selenium	ND	ND	ND	ND
	Thallium	ND (0.000058 J)	ND	ND	ND

Notes:

1. Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
2. ND (Not Detected) indicates the substance was not detected above the laboratory method detection limit (MDL).
3. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instrument could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated value.
4. U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated.
5. Appendix IV = parameters evaluated during Assessment Monitoring.

Table 6B
Summary of Groundwater Analytical Data
October 2019

Substance		YGWA-47	YGWC-44	YGWC-45	YGWC-46
		10/8/2019	10/8/2019	10/9/2019	10/9/2019
Appendix III	Boron	ND (0.012 J)	0.58	0.35	1.1
	Calcium	9.7	28.1	47.9	64.2
	Chloride	4.4	14.8	5.1	25.0
	Fluoride	ND (0.034 J)	ND	ND	ND (0.12 J)
	Sulfate	52.3	142	183	ND
	TDS	172	324	432	809
Appendix IV	Arsenic	ND	ND	ND	ND
	Barium	0.025	0.098	0.058	0.024
	Cadmium	ND	ND	ND	ND
	Cobalt	ND (0.0014 J)	ND (0.0017 J)	ND (0.00070 J)	0.024
	Lithium	ND (0.0036 J)	ND (0.012 J)	ND (0.012 J)	ND (0.0078 J)
	Molybdenum	ND	ND	ND (0.0012 J)	ND (0.0013 J)
	Radium	1.72	0.769 U	1.61	0.892 U
	Thallium	ND (0.000084 J)	ND	ND	ND

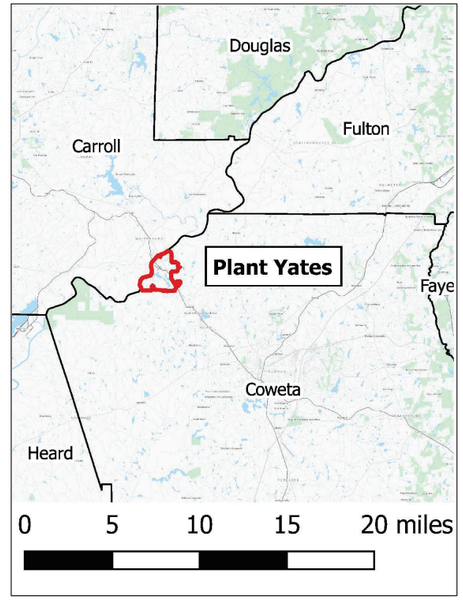
Notes:

1. Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
2. ND (Not Detected) indicates the substance was not detected above the laboratory method detection limit (MDL).
3. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instrument could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated value.
4. TDS indicates total dissolved solids.
5. U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated.
6. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.

Table 7
Statistical Method Summary

Plant Yates AP-1 Statistical Method Summary		
Monitoring Well Network	Upgradient Well	YGWA--47
	Downgradient Wells	YGWC-44, YGWC-45, and YGWC-46
CCR Monitoring Parameters	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
Statistical Methodology	Data Screening Proposed Background	Evaluate outliers, trends, and seasonality when sufficient data are available
	Statistical Limits	Interwell statistical limits

FIGURES



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PROJECT:

PLANT YATES

708 DYER ROAD
NEWNAN, GEORGIA

REVISIONS

Drawn by: MM

Checked by: EP

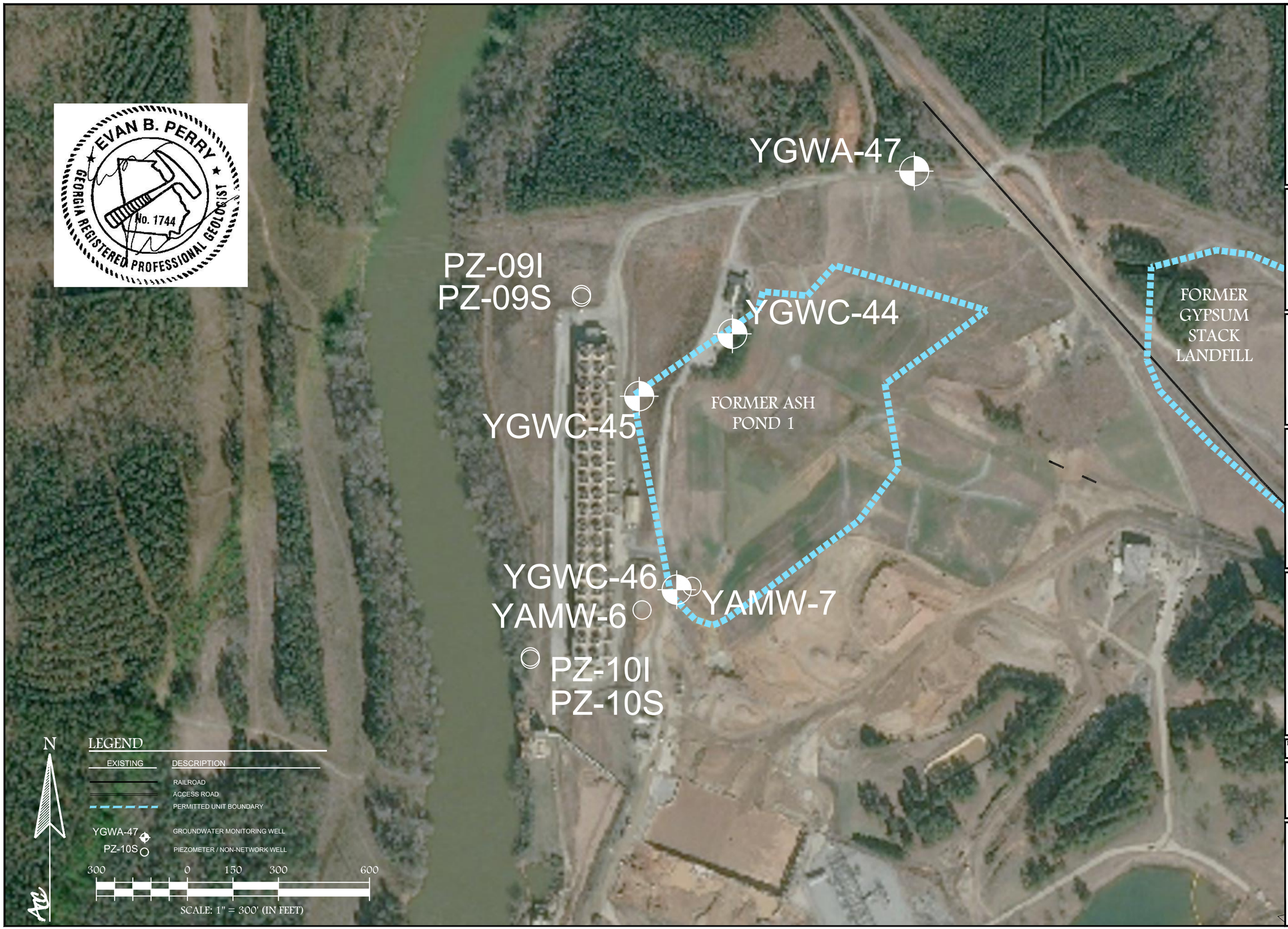
PROJECT NUMBER:

I054-110

July 2019

SITE LOCATION MAP

FIGURE 1



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PROJECT:
PLANT YATES
AP-1

708 DYER ROAD
NEWNAN, GEORGIA

REVISIONS

Drawn by: MM
Checked by: EP

PROJECT NUMBER:
I054-110
January 2020

WELL LOCATION MAP

FIGURE 2

Summary of Groundwater Elevations
Plant Yates Landfill
Ash Pond 1
October 2019 Sampling Event

Monitoring Well ID	Total Depth (ft btoc)	Top of Casing (MSL)	Depth to Water (feet)	Groundwater Elevation (MSL)
YGWA-47	59.50	758.04	35.55	722.49
YGWC-44	90.00	758.27	50.61	707.66
YGWC-45	74.00	719.30	22.85	696.45
YGWC-46	83.00	747.23	48.18	699.05
PZ-09S	59.20	711.90	20.36	691.54
PZ-09I	79.68	712.04	20.62	691.42
PZ-10S	18.90	700.35	8.07	692.28
PZ-10I	49.55	700.27	14.11	686.16

Notes: Depths to water measured within a 24-hour period October 7-8, 2019.
ft btoc - feet below top of casing.
MSL = Mean Sea Level.

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NOTE:
1. WELLS WITH "I" SUFFIXES MONITOR DEEPER INTERVALS AND ARE NOT USED TO CONSTRUCT WATER TABLE CONTOURS.
2. AERIAL IMAGE FROM 2018.

690 700 710 720 730

YGWA-47
722.49

PZ-09I
PZ-09S
691.54

YGWC-44
707.66

YGWC-45
696.45

FORMER
ASH
POND 1

FORMER
GYPSUM STACK
LANDFILL

YGWC-46
699.05

PZ-10I
PZ-10S
692.28

690 700 710 720 730

N

LEGEND

EXISTING	DESCRIPTION
	PERMITTED UNIT BOUNDARY
800	WATER TABLE CONTOUR
	GROUNDWATER FLOW DIRECTION (INFERRED)
YGWC-46 699.05	GROUNDWATER MONITORING WELL WATER TABLE CONTOUR ELEVATION
PZ-10S 692.28	PIEZOMETER WATER TABLE CONTOUR ELEVATION

300 0 150 300 600

SCALE: 1" = 300' (IN FEET)

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PROJECT:
PLANT YATES

708 DYER ROAD
NEWNAN, GEORGIA

REVISIONS

Drawn by: RW
Checked by: MM

PROJECT NUMBER:
I054-110
November 2019

OCTOBER 2019
WATER TABLE
CONTOUR MAP

FIGURE 3

APPENDICES

APPENDIX A

WELL INSTALLATION REPORT

Georgia Power Company
Plant Yates – Ash Pond 1

Newnan, Georgia
Coweta County

WELL INSTALLATION REPORT

Atlantic Coast Consulting, Inc.

Georgia Power Company
Plant Yates – Ash Pond 1
Newnan, Georgia
Coweta County

WELL INSTALLATION REPORT
PROFESSIONAL CERTIFICATION

Evan B. Perry
Georgia Registered Professional
Geologist No. 1744

Richard T. Deason
Georgia Registered Professional
Engineer No. 27467

TABLE OF CONTENTS

Cover Sheet

Table of Contents

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), a groundwater monitoring system was developed for Plant Yates Ash Pond 1 (AP-1) to monitor groundwater quality in the uppermost aquifer. This Monitoring Well Certification Report documents installation details for the detection groundwater monitoring system required by §257.91. The groundwater flow regime and geologic characteristics of the facility that the network design is based upon are described in the *Hydrogeologic Monitoring Plan* (ACC, 2018). This document presents details for the AP-1 monitoring network.

An Atlantic Coast Consulting, Inc. (ACC) professional engineer has reviewed the groundwater monitoring system and certified that the groundwater monitoring system has been designed and constructed to meet the requirements of §257.91. Those requirements include:

40 CFR §257.91(a), the groundwater monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer that:

(1) Accurately represent the quality of background groundwater that has not been affected by leakage from a CCR unit; and

(2) Accurately represent the quality of groundwater passing the waste boundary of the CCR unit.

40 CFR §257.91(b), the number, spacing, and depths of groundwater monitoring system must be determined based upon site-specific technical information that must include a characterization of:

(1) Aquifer thickness, groundwater flow rate, groundwater flow direction, including seasonal and temporal fluctuations in groundwater flow; and

(2) Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including, but not limited to, thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities.

This report documents well installation activities at the Georgia Power Company (GPC) Plant Yates Ash Pond 1. Plant Yates is located at 708 Dyer Road, on the east bank of the Chattahoochee River in Coweta County, Georgia near the Coweta and Carroll County line, approximately 8 miles northwest of the city of Newnan and 13 miles southeast of the city of Carrollton. Plant Yates has ceased coal combustion activities and is no longer generating new CCR.

The facility has installed one upgradient groundwater monitoring network well YGWA-47 and three downgradient groundwater monitoring network wells (YGWC-44, YGWC-45, and YGWC-46) along the perimeter of Ash Pond 1. Additionally, there are 6 non-network wells (PZ-9S, PZ-9I, PZ-10S, PZ-10I, YAMW-6, and YAMW-7) in the vicinity of AP-1. Piezometers are currently maintained for water level measurements. Piezometers suffixed with an “S” are installed in overburden (saprolitic soil), an “I” indicates partially weathered rock, and “D” indicates

bedrock. As typical of the Piedmont Physiographic Province, there is likely a high degree of connectivity between the overburden, partially weathered rock, fractured bedrock and the materials comprise a single uppermost aquifer. The four network monitoring wells are completed in the partially weathered bedrock. The monitoring well locations are presented on Figure 1.

1.1 Justification for Well Network

There is requirement provided in 40 CFR §257.91(f), that requires if the groundwater monitoring system includes the minimum number of monitoring wells specified (one upgradient and three downgradient), the certification must document the basis for that determination. The groundwater monitoring system for Ash Pond 1 includes the minimum number of monitoring wells, therefore this section is included to provide the basis for the determination.

The aerial extent of Ash Pond 1 is limited (totals 23.44 acres). Additionally, the facility has been closed by removal (i.e. the potential source of impact is no longer present). Beyond those considerations, there are documented geologic considerations that support the adequacy of the groundwater monitoring network. These considerations include:

- Simple site geology: strata are consistent across the site; geology is comprised of metamorphic silicate rock with no solution channels such as those present in limestone formations.
- Relatively low groundwater flow rates: The groundwater low rate at Plant Yates ranges from approximately 7.3 to 266 feet per year. The relatively low groundwater flow rates allow for a significant dispersive component to groundwater flow (i.e. as opposed to system with purely advective flow).

2.0 Drilling and Well Installation

Wells were properly designed and installed according to accepted industry standards and following guidelines presented in *Manual for Groundwater Monitoring* (EPD, 1991).

Groundwater monitoring network wells were installed along the boundaries of Ash Pond 1 in a mobilization completed July 2016. All well locations are shown on Figure 1, Well Location Map. The non-network piezometers were installed in 2014. Assessment groundwater monitoring wells were installed in November 2019. Prior to drilling, proposed well locations were surveyed to within ± 0.5-foot horizontal accuracy, and staked in the field. A summary of well installation dates, locations, elevations, screen intervals, and purposes is provided in Table 1, Summary of Well Installation Dates, Coordinates, Elevations, Screen Intervals, and Purposes. Boring and well construction logs are included in Attachment B, Boring and Well Construction Logs.

2.1 Drilling Method

Cascade Drilling, LP (Cascade) performed drilling services during the mobilization in July 2016 as well as in 2014 for the piezometers and November 2019 for assessment wells. Monitoring wells were installed by Cascade using Rotosonic (Sonic) drilling technology. Sonic drilling utilizes high-frequency mechanical vibrations to advance drilling tools through various geologic media. The method is well-suited for collecting continuous samples in unconsolidated formations, reducing waste from cuttings, and running downhole geophysics.

Subsurface materials encountered during drilling generally consist of and clay, silt, and sand materials at shallow intervals (i.e. saprolitic material). A zone of partially weathered bedrock is typically present below the overburden. The weathered bedrock transitions to increasing competent bedrock with depth. The uppermost groundwater typically occurs in overburden.

2.2 Screened Interval

Wells and piezometers are installed in overburden and partially weathered rock. The bottom 10 feet are screened.

2.3 Well Casing and Screens

Wells and piezometers are constructed of two-inch inside diameter ASTM Schedule 40 polyvinyl chloride (PVC) casing affixed to a prepacked dual-wall slotted PVC screen. The casings and prepacked screens arrived pre-cleaned and packaged by the manufacturer. Well construction materials are sufficiently durable to resist chemical and physical degradation and not interfere with the quality of groundwater samples. Casing and screen sections are flush-threaded. Solvent or glue was not used to construct the wells.

2.4 Well Intake Design

Wells and piezometers were designed and constructed to: (1) allow sufficient groundwater flow to the well for sampling; (2) minimize the passage of formation materials (turbidity) into the wells; and (3) ensure sufficient structural integrity to prevent collapse of the well. Wells and piezometers are screened using 0.010-inch slotted PVC prepacked dual-wall well screens. The prepacked dual-wall well screens combine a centralized inner well screen, a void for site-specific filter sand pack, and an outer conductor screen in one integrated unit. Based on the nature of deposits, the screen will retain at least 90 percent of the filter pack and 40 percent of the formation.

2.5 Filter Pack

A filter pack sand size #1 was used for all filter packs at the site. This size sand is approximately 20-40 sieve range, medium fine well-rounded quartz (silica) sand.

Filter pack material was placed within the prepacked dual-wall well screens and in the annular space between the outside of the prepack screen and borehole wall to ensure an adequate thickness of filter pack material between the well and the formation. Filter pack material placed in the annular space outside of the well screen extended approximately 2 feet above the top of the screen, except in a few cases where up to 6 feet were used to ensure low turbidity samples. No bridging occurred during filter pack placement.

After placing the filter pack, the wells were pumped to ensure settlement of the filter pack, prior to installing the annular seal. The depth of top of filter pack was measured and recorded in well construction logs provided in Attachment A.

2.6 Annular Seal

After installing the filter pack, 2 to 9 feet of bentonite pellets were placed in the annular space above the filter pack to seal the annulus and prevent vertical flow of water along the well casing. Bentonite pellets were allowed to hydrate and settle in accordance with manufacturers recommendations prior to grouting the well. A cement-bentonite grout was used as the annular sealant above the bentonite seal. The cement-bentonite grout was

tremied into place from the top of the bentonite seal to approximately 2 feet below land surface (BLS). The grout was injected at a low velocity to not disrupt the bentonite seal and the tremie pipe was raised as grout filled the annular space. A concrete seal extends from 2 feet BLS to land surface and was blended into a mounded cement apron extending outward from the edge of the borehole to direct rainwater run-off away from the well.

2.7 Cap and Protective Casing

The well was fitted with a cap and a protective cover was installed over the well to protect the casing from damage and secure the well from tampering. The annular space between the well pipe and protective casing was filled with pea stone and a small weep hole was drilled near the base of the protective cover to provide a path for water entering the protective casing to drain. Bollards were installed around the four corners of the concrete pad to protect the well. Wells are clearly marked with signs with the proper designation. Locations that are part of the groundwater monitoring network have been fitted with dedicated bladder pumps. The tops of the pumps are protected with caps to prevent particulate matter from entering the well. Construction details are documented in Well Construction Logs provided in Attachment A.

3.0 Well Development

Wells and piezometers were developed using a submersible pump to (1) restore the natural hydraulic conductivity of the formation and (2) to remove fine-grained sediment to ensure low-turbidity groundwater samples. Wells were alternatively surged and purged until visually clear of particulates. Turbidity, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), and specific conductivity measurements were made to ensure that each well was fully developed. A turbidity of less than 10 nephelometric turbidity units (NTU) was documented at each well prior to ceasing well development activities. The stabilization logs from development or from initial sampling to document low turbidity conditions are included in Attachment B, Well Development Forms.

All equipment and tubing placed in the well was decontaminated or disposed of between wells.

4.0 Survey

Wells and piezometers locations and top of casing (TOC) elevations were surveyed by Southern Company Services. Northings and eastings are in feet relative to the North America Datum of 1983 (NAD83) in the Georgia State Plane Coordinate System (West). TOC and ground surface elevations are in feet relative to NAVD88. Survey data are tabulated in Table 1. Well survey data are provided in Attachment C, Well Survey Documents.

5.0 General References

Atlantic Coast Consulting, Inc., November 2018. *Hydrogeologic Monitoring Plan – Plant Yates Ash Landfill R6*.

Atlantic Coast Consulting, Inc. November 2018. *Hydrogeologic Assessment Report* – Plant *Yates Ash Landfill R6*.

Georgia Department of Natural Resources, Environmental Protection Division. 1991. *Manual for Groundwater Monitoring.*

U.S. EPA Region IV SESD, 2013, Design and Installation of Monitoring Wells – Operating Procedure: SESDGUID-101-R1.

TABLE

Table 1
Summary of Well Installation Dates, Coordinates, Elevations, Screen Intervals, and Purposes

Well	Completion Date	Easting	Northing	Bottom Depth (ft BTOC)	Bottom Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Purpose
Network Locations								
YGWA-47	7/11/2016	2071818.0	1262410.8	59.4	701.94	711.94	758.04	Upgradient
YGWC-44	7/13/2016	2071218.6	1261874.5	89.95	672.77	682.77	758.27	Downgradient
YGWC-45	7/10/2016	2070911.9	1261668.9	73.80	649.30	659.30	719.30	Downgradient
YGWC-46	7/11/2016	2071035.3	1261031.4	82.98	667.23	677.23	747.23	Downgradient

Notes:
1. ft BTOC indicates feet below top of casing.
2. ft MSL indicates feet mean sea level.

Table 2
Summary of Piezometer and Assessment Well Installation Dates, Coordinates, Elevations, Screen Intervals, and Purposes

Well	Completion Date	Easting	Northing	Bottom Depth (ft BTOC)	Bottom Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Purpose
Non-Network Locations								
PZ-09S	5/19/2014	2070721.6	1262003.3	57.0	653.1	663.1	711.90	Water Level Only
PZ-09I	5/19/2014	2070721.1	1261995.6	77.0	633.1	643.1	712.04	Water Level Only
PZ-10S	5/19/2014	2070553.3	1260802.3	16.3	682.0	692.0	700.35	Water Level Only
PZ-10I	5/19/2014	2070552.8	1260809.7	46.5	651.8	661.8	700.27	Water Level Only
YAMW-6	11/18/2019	2070921.2	1260964.3	71.9	661.1	671.1	732.73	Delineation
YAMW-7	11/15/2019	2071085.7	1261041.9	122.3	611.4	621.4	733.50	Delineation

Notes:
1. ft BTOC indicates feet below top of casing.
2. ft MSL indicates feet mean sea level.

ATLANTIC COAST CONSULTING, INC.

FIGURE

LEGEND

EXISTING	DESCRIPTION
	PERMITTED UNIT BOUNDARY
YGWC-46	GROUNDWATER MONITORING WELL
PZ-10S	PIEZOMETER
YAMW-6	ASSESSMENT MONITORING WELL

NOTE:
1. AERIAL IMAGE FROM 2018.

YGWA-47
PZ-09I
PZ-09S
YGWC-44
FORMER GYPSUM STACK LANDFILL
YGWC-45
FORMER ASH POND 1
YAMW-7
YGWC-46
YAMW-6
PZ-10I
PZ-10S

N

300 0 150 300 600

SCALE: 1" = 300' (IN FEET)

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PROJECT:
PLANT YATES

708 DYER ROAD
NEWNAN, GEORGIA

REVISIONS

Drawn by: MM
Checked by: EP

PROJECT NUMBER:
I054-110
January 2020

WELL LOCATION MAP

FIGURE 1

EVAN B. PERRY ★ GEORGIA REGISTERED PROFESSIONAL GEOLOGIST ★ No. 1744

P:\Industrial\054--Southern Company\110--Groundwater Consulting Services\Plant Yates\1--Well Certification Reports\AP-1\DWG\Plant Yates AP-1 Well Location Map.dwg 2020-02-05 RYAN WALKER

ATTACHMENTS

ATLANTIC COAST CONSULTING, INC.

ATTACHMENT A

Boring and Well Construction Logs

RECORD OF BOREHOLE YGWA-47 (PZ-47)

PROJECT: SCS Plant Yates
PROJECT NUMBER: 1660300
DRILLED DEPTH: 56.50 ft
LOCATION: Newnan, GA

DRILL RIG: Sonic PS-150
DATE STARTED: 7/10/16
DATE COMPLETED: 7/11/16

NORTHING: 1,262,410.75
EASTING: 2,071,818.00
GS ELEVATION: 755.35
TOC ELEVATION: 758.04 ft

DEPTH W.L.: 21.6 ft (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 7/11/2016
TIME W.L.: 07:30

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES
0	755	0.00 - 10.00 no recovery; hydrovac			745.35				
10	745	10.00 - 13.00 silt SAND fining downward to low-plasticity CLAY, red, dry loose	SM-CL		10.00 742.35	1		6.00 6.00	
		13.00 - 20.00 sandy SILT, orange to white, loose, dry	ML		13.00				Portland Type 1
20	735	20.00 - 21.00 highly weathered, mica schist, relict laminations (saprolite)			735.35 20.00 734.35	2		10.00 10.00	
		21.00 - 24.00 orange to white, loose, dry			21.00 731.35				
25	730	24.00 - 26.00 orange to white, relict laminations, loose, dry (saprolite)			24.00 729.35				
		26.00 - 28.00 well sorted sand with some silt, relict laminations, saprolite - schistose			26.00 727.35	3		3.00 4.00	
		28.00 - 30.00 orange to white, relict laminations, loose, dry			28.00 725.35				
30	725	30.00 - 36.00 transitionally weathered rock, highly weathered mica SCHIST, pulverized from drilling, dry	PWR		30.00	4		6.00 6.00	
35	720	36.00 - 46.00 bedrock - AMPHIBOLITE/SCHIST, deep oxide staining, secondary mineralization	SCHIST		719.35 36.00	5		3.00 10.00	Bentonite Pellets and Chips
40	715								
45	710				709.35				
		46.00 - 56.00 AMPHIBOLITE/SCHIST grading to GNEISS, secondary mineralization, garnet, pyrite inclusions, some quartzite banding			46.00	6		7.00 10.00	0.010" Slotted Screen
50		Log continued on next page							

WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0.0'-46.1'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 46.1'-56.1'
Material: U-Pack Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010"
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 43.4'-56.5'
Type: #1 Type Sand

FILTER PACK SEAL
Interval: 33.7'-43.4'
Type: Bentonite Pellets and Chips

ANNULUS SEAL
Interval: 0.0'-33.7'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: 4" Sonic
Rock Drill: 4" Sonic

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Dale

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel Kirkman, PG
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE YWA-47 (PZ-47)

PROJECT: SCS Plant Yates
PROJECT NUMBER: 1660300
DRILLED DEPTH: 56.50 ft
LOCATION: Newnan, GA

DRILL RIG: Sonic PS-150
DATE STARTED: 7/10/16
DATE COMPLETED: 7/11/16

NORTHING: 1,262,410.75
EASTING: 2,071,818.00
GS ELEVATION: 755.35
TOC ELEVATION: 758.04 ft

DEPTH W.L.: 21.6 ft (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 7/11/2016
TIME W.L.: 07:30

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES	WELL CONSTRUCTION DETAILS
50	705	46.00 - 56.00 AMPHIBOLITE/SCHIST grading to GNEISS, secondary mineralization, garnet, pyrite inclusions, some quartzite banding *(Continued)*				6		7.00 / 10.00	#1 Type Sand	**WELL CASING** Interval: 0.0'-46.1' Material: Schedule 40 PVC Diameter: 2" Joint Type: Threaded
55	700				699.35					**WELL SCREEN** Interval: 46.1'-56.1' Material: U-Pack Schedule 40 PVC Diameter: 2' Slot Size: 0.010" End Cap: Schedule 40 PVC
		Boring completed at 56.50 ft			56.00				Sump	**FILTER PACK** Interval: 43.4'-56.5' Type: #1 Type Sand
60	695									**FILTER PACK SEAL** Interval: 33.7'-43.4' Type: Bentonite Pellets and Chips
65	690									**ANNULUS SEAL** Interval: 0.0'-33.7' Type: Portland Type 1
70	685									**WELL COMPLETION** Pad: 4'x4'x4" Protective Casing: Aluminum
75	680									**DRILLING METHODS** Soil Drill: 4" Sonic Rock Drill: 4" Sonic
80	675									
85	670									
90	665									
95	660									
100										

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Dale

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel Kirkman, PG
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE YGWC-44/ PZ-44

SHEET 1 of 2

PROJECT: SCS Plant Yates
PROJECT NUMBER: 1660300
DRILLED DEPTH: 87.00 ft
LOCATION: Newnan, GA

DRILL RIG: Sonic PS-150
DATE STARTED: 7/11/16
DATE COMPLETED: 7/13/16

NORTHING: 1,261,874.46
EASTING: 2,071,218.56
GS ELEVATION: 755.39
TOC ELEVATION: 758.27 ft

DEPTH W.L.: 34.1 ft (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 7/13/2016
TIME W.L.: N/A

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES
0	755	0.00 - 10.00 No recovery; hydrovac			745.39				
10	745	10.00 - 17.00 silty SAND, red to light brown, moist, micaceous, plagioclase	SM		10.00 738.39	1		7.00/7.00	
20	735	17.00 - 27.00 poorly sorted SAND, fine to medium sand, dark red to tan, dry to moist	SP		17.00 728.39	2		10.00/10.00	
30	725	27.00 - 28.00 silty SAND, some clay, red 28.00 - 34.00 some gravel, red, increasing mica with depth, moist	SM		27.00 727.39 28.00 721.39	3		10.00/10.00	Portland Type 1
35	720	34.00 - 37.00 tan to grey, plagioclase with biotite			34.00 718.39				
40	715	37.00 - 47.00 tan to orange, occasional saprolite, biotite lenses			37.00 708.39	4		10.00/10.00	
45	710	47.00 - 57.00 medium to fine sand, some gravel, grey to tan, plagioclase, dry to moist			47.00	5		8.00/10.00	
50		Log continued on next page							

WELL CASING
Interval: 0.0'-75.5'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 75.5'-85.5'
Material: U-Pack Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010'
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 72.5'-87.0'
Type: #1 Type Sand

FILTER PACK SEAL
Interval: 67.0'-72.5'
Type: Bentonite Pellets and Chips

ANNULUS SEAL
Interval: 0.0'-67'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: 4" Sonic
Rock Drill: 4" Sonic

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Kirk Fraley
CHECKED BY: Rachel Kirkman, PG
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD YATES BORING LOGS.GPJ PIEDMONT.GDT 9/26/17

RECORD OF BOREHOLE YGWC-44/ PZ-44

SHEET 2 of 2

PROJECT: SCS Plant Yates
PROJECT NUMBER: 1660300
DRILLED DEPTH: 87.00 ft
LOCATION: Newnan, GA

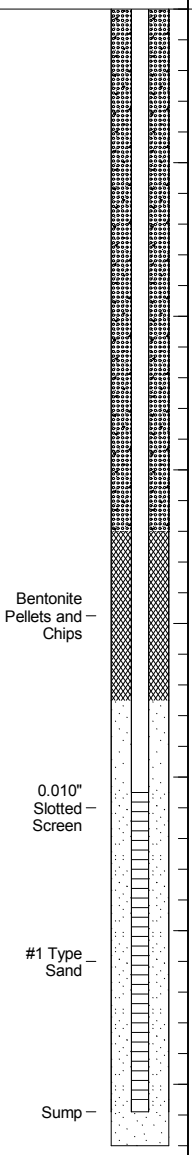
DRILL RIG: Sonic PS-150
DATE STARTED: 7/11/16
DATE COMPLETED: 7/13/16

NORTHING: 1,261,874.46
EASTING: 2,071,218.56
GS ELEVATION: 755.39
TOC ELEVATION: 758.27 ft

DEPTH W.L.: 34.1 ft (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 7/13/2016
TIME W.L.: N/A

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC
50	705	47.00 - 57.00 medium to fine sand, some gravel, grey to tan, plagioclase, dry to moist *(Continued)*				5		8.00 / 10.00
55	700				698.39			
		57.00 - 63.00 some gravel, grey-tan, weathered quartz lenses, dry-moist			57.00	6		8.00 / 10.00
60	695				692.39			
		63.00 - 66.00 transitionally weathered rock - with silty sand and gravel, grey, tan, quartz lenses	PWR		63.00			
65	690				689.39			
		66.00 - 87.00 bedrock - AMPHIBOLITE, grading to feldspathic Gneiss, fresh to weathered, strong foliation	SCHIST		66.00	7		7.00 / 10.00
70	685							
75	680					8		5.00 / 10.00
80	675							
85	670				668.39			
		Boring completed at 87.00 ft						
90	665							
95	660							
100								

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0.0'-75.5'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 75.5'-85.5'
Material: U-Pack Schedule 40 PVC
Diameter: 2"
Slot Size: 0.010'
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 72.5'-87.0'
Type: #1 Type Sand

FILTER PACK SEAL
Interval: 67.0'-72.5'
Type: Bentonite Pellets and Chips

ANNULUS SEAL
Interval: 0.0'-67'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: 4" Sonic
Rock Drill: 4" Sonic

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Kirk Fraley
CHECKED BY: Rachel Kirkman, PG
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD YATES BORING LOGS.GPJ PIEDMONT.GDT 9/26/17

RECORD OF BOREHOLE YGWC-45/ PZ-45

SHEET 1 of 2

PROJECT: SCS Plant Yates
PROJECT NUMBER: 1660300
DRILLED DEPTH: 71.30 ft
LOCATION: Newnan, GA

DRILL RIG: Sonic PS-150
DATE STARTED: 7/9/16
DATE COMPLETED: 7/10/16

NORTHING: 1,261,668.89
EASTING: 2,070,911.89
GS ELEVATION: 716.34
TOC ELEVATION: 719.30 ft

DEPTH W.L.: 20.3 ft (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 7/10/2016
TIME W.L.: 08:20

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES
0	715	0.00 - 10.00 no recovery; hydrovac			706.34				
10	705	10.00 - 16.00 sandy SILT, reddish brown to light yellowish brown, cohesive, low plastic, moist	ML		10.00 700.34	1		6.00 6.00	
15	700	16.00 - 24.00 reddish brown to light yellowish brown, cohesive, low plastic, moist			16.00 692.34	2		10.00 10.00	
25	690	24.00 - 26.00 silty SAND, dark brown and angular trace gravel, yellowish grey, fine to medium sand, cohesive, moist	SM		24.00 690.34				Portland _ Type 1
		26.00 - 33.00 dark brown and angular trace gravel, yellowish grey, fine to medium sand, feldspar nodules, weathered amphibolite pieces, cohesive, moist			26.00 683.34	3		10.00 10.00	
30	685	33.00 - 35.00 trace gravel, greenish black, fine to medium sand, coarse and angular gravel, dry			33.00 681.34				
35	680	35.00 - 36.00 yellowish grey, dry			35.00 680.34				
		36.00 - 45.00 SAND, some gravel and silt, fine to coarse sand, subangular and highly weathered, dark reddish brown, increasing gravel, dry, loose	SW		36.00 671.34	4		10.00 10.00	
40	675	45.00 - 46.00 SAND, some gravel and silt, fine to coarse sand, subangular and highly weathered, dark reddish brown, increasing gravel, saprolite texture noted, dry, loose			45.00 670.34				
45	670	46.00 - 51.00 SAND, some gravel and silt, fine to coarse sand, subangular and highly weathered, dark reddish brown, gneissic fabric noted, increasing gravel, dry, loose (saprolite)			46.00	5		5.00 5.00	
50		Log continued on next page							

WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0.0'-60.0'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 60.0'-70.0'
Material: U-Pack Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010" Slotted Screen
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 58.0'-71.3'
Type: #1 Type Sand

FILTER PACK SEAL
Interval: 51.0'-58.0'
Type: Bentonite Pellets and Chips

ANNULUS SEAL
Interval: 0.0'-51.0'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: 4" Sonic
Rock Drill: 4" Sonic

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Dale

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel Kirkman, PG
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD YATES BORING LOGS.GPJ PIEDMONT.GDT 9/26/17

RECORD OF BOREHOLE YGWC-45/ PZ-45

SHEET 2 of 2

PROJECT: SCS Plant Yates
PROJECT NUMBER: 1660300
DRILLED DEPTH: 71.30 ft
LOCATION: Newnan, GA

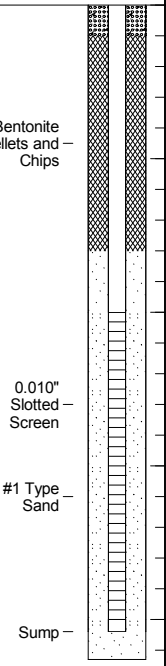
DRILL RIG: Sonic PS-150
DATE STARTED: 7/9/16
DATE COMPLETED: 7/10/16

NORTHING: 1,261,668.89
EASTING: 2,070,911.89
GS ELEVATION: 716.34
TOC ELEVATION: 719.30 ft

DEPTH W.L.: 20.3 ft (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 7/10/2016
TIME W.L.: 08:20

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC
					665.34	5		
	665	51.00 - 56.00 transitionally weathered rock - highly weathered garnet SCHIST, some amphibolite, coarse to fine sand	PWR		51.00 660.34	6		5.00/5.00
	660	56.00 - 66.00 bedrock - AMPHIBOLITE/SCHIST, competent, pyrite inclusions	SCHIST		56.00 650.34	7		4.00/10.00
	650	66.00 - 71.00 competent, pyrite inclusions			66.00 645.34	8		4.00/5.00
	645	Boring completed at 71.30 ft			71.00			

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0.0'-60.0'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 60.0'-70.0'
Material: U-Pack Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010" Slotted Screen
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 58.0'-71.3'
Type: #1 Type Sand

FILTER PACK SEAL
Interval: 51.0'-58.0'
Type: Bentonite Pellets and Chips

ANNULUS SEAL
Interval: 0.0'-51.0'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: 4" Sonic
Rock Drill: 4" Sonic

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Dale

GA INSPECTOR: Ben Hodges
CHECKED BY: Rachel Kirkman, PG
DATE: 9/29/17

Golder Associates

BOREHOLE RECORD YATES BORING LOGS.GPJ PIEDMONT.GDT 9/26/17

RECORD OF BOREHOLE YGWC-46/ PZ-46

PROJECT: SCS Plant Yates
PROJECT NUMBER: 1660300
DRILLED DEPTH: 80.00 ft
LOCATION: Newnan, GA

DRILL RIG: Sonic PS-150
DATE STARTED: 7/10/16
DATE COMPLETED: 7/11/16

NORTHING: 1,261,031.44
EASTING: 2,071,035.31
GS ELEVATION: 744.32
TOC ELEVATION: 747.23 ft

DEPTH W.L.: 42.2 ft (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 7/11/2016
TIME W.L.: 08:00

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLE NO.	TYPE	REC	MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES
0		0.00 - 10.00 no recovery; hydrovac							
5	740								
	735				734.32				
10		10.00 - 20.00 silty SAND, fine to medium sand, non-plastic to low plastic fines, red to tan to orange tan to grey tan, micaceous, plagioclase zones, cohesive, moist	SM		10.00	1		6.50 8.00	
15	730								
	725				724.32				
20		20.00 - 23.00 fine to coarse SAND, tan	SP-SM		20.00 721.32	2		8.00 10.00	
25	720	23.00 - 28.00 silty SAND, fine to medium sand, non-plastic to low plastic fines, red to tan to orange tan to grey tan, micaceous, plagioclase zones, cohesive, moist	SM		23.00 716.32				
	715	28.00 - 31.00 fine to coarse SAND, tan	SP-SM		28.00 713.32	3		8.50 10.00	Portland Type 1
30		31.00 - 39.00 silty SAND, fine to medium sand, non-plastic to low plastic fines, red to tan to orange tan to grey tan, micaceous, plagioclase zones, cohesive, moist	SM		31.00 705.32				
35	710								
	705	39.00 - 44.00 transitionally weathered rock - highly weathered AMPHIBOLITE to SCHIST, fine-grained, grey and black, iron deposits	PWR		39.00 700.32	4		7.80 10.00	
40									
	700	44.00 - 48.00 medium to highly weathered, medium strong to extremely strong, quartz, migmatite granite layers present			44.00 696.32				
45									
	695	48.00 - 59.00 highly weathered biotite GNEISS, green seams, quartz fragments			48.00	5		5.00 10.00	
50		Log continued on next page							

WELL CASING
Interval: 0.0'-70.0'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 70.0'-80.0'
Material: U-Pack Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010" Slotted Screen
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 68.0'-80.0'
Type: #1 Type Sand

FILTER PACK SEAL
Interval: 62.5'-68.0'
Type: Bentonite Pellets and Chips

ANNULUS SEAL
Interval: 0.0'-62.5'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: 4" Sonic
Rock Drill: 4" Sonic

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Courtney Vissman
CHECKED BY: Rachel Kirkman, PG
DATE: 9/29/17

Golder Associates

RECORD OF BOREHOLE YGWC-46/ PZ-46

PROJECT: SCS Plant Yates
PROJECT NUMBER: 1660300
DRILLED DEPTH: 80.00 ft
LOCATION: Newnan, GA

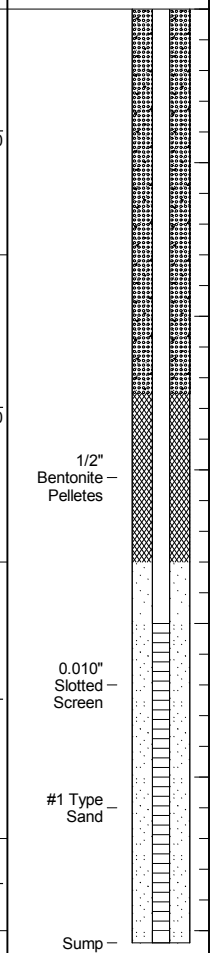
DRILL RIG: Sonic PS-150
DATE STARTED: 7/10/16
DATE COMPLETED: 7/11/16

NORTHING: 1,261,031.44
EASTING: 2,071,035.31
GS ELEVATION: 744.32
TOC ELEVATION: 747.23 ft

DEPTH W.L.: 42.2 ft (bgs)
ELEVATION W.L.: (amsl)
DATE W.L.: 7/11/2016
TIME W.L.: 08:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE: DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)	SAMPLES: SAMPLE NO.	TYPE	REC
50		48.00 - 59.00 highly weathered biotite GNEISS, green seams, quartz fragments *(Continued)*				5		5.00 / 10.00
55	690				685.32			
60	685	59.00 - 60.00 highly weathered migmatitic GNEISS			59.00 684.32			
		60.00 - 68.00 biotite GNEISS with AMPHIBOLITE, dark, highly weathered with quartz bands			60.00	6		5.00 / 10.00
65	680				676.32			
70	675	68.00 - 73.00 AMBPHIBOLITE, medium to highly weathered, medium strong to extremely strong, quartz, migmatite granite layers			68.00	7		5.00 / 9.00
					671.32			
75	670	73.00 - 75.00 medium to highly weathered, medium strong to extremely strong, quartz, migmatite granite layers, iron staining			73.00 669.32			
		75.00 - 78.00 highly weathered biotite GNEISS and SCHIST			75.00			
80	665	78.00 - 80.00 bedrock - AMPHIBOLITE, extremely strong, high quartz content, stains	SCHIST		666.32 78.00 664.32	8		3.00 / 3.00
		Boring completed at 80.00 ft						
85	660							
90	655							
95	650							
100	645							

MONITORING WELL/ PIEZOMETER DIAGRAM and NOTES



WELL CONSTRUCTION DETAILS

WELL CASING
Interval: 0.0'-70.0'
Material: Schedule 40 PVC
Diameter: 2"
Joint Type: Threaded

WELL SCREEN
Interval: 70.0'-80.0'
Material: U-Pack Schedule 40 PVC
Diameter: 2'
Slot Size: 0.010" Slotted Screen
End Cap: Schedule 40 PVC

FILTER PACK
Interval: 68.0'-80.0'
Type: #1 Type Sand

FILTER PACK SEAL
Interval: 62.5'-68.0'
Type: Bentonite Pellets and Chips

ANNULUS SEAL
Interval: 0.0'-62.5'
Type: Portland Type 1

WELL COMPLETION
Pad: 4'x4'x4"
Protective Casing: Aluminum

DRILLING METHODS
Soil Drill: 4" Sonic
Rock Drill: 4" Sonic

LOG SCALE: 1 in = 6.5 ft
DRILLING COMPANY: Cascade Drilling
DRILLER: Tom Ardito

GA INSPECTOR: Courtney Vissman
CHECKED BY: Rachel Kirkman, PG
DATE: 9/29/17

Golder Associates

BORING PZ-9I
PAGE 1 OF 2
ECS37976

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Yates Hydro-Geological Study
LOCATION Newnan, GA

DATE STARTED 5/2/2014 **COMPLETED** 5/19/2014 **SURF. ELEV.** 709.8 **COORDINATES:** N:1,261,995.57 E:2,070,721.12
CONTRACTOR Cascade Drilling **EQUIPMENT** PS-150 **METHOD** Rotosonic
DRILLED BY D. Wilcox **LOGGED BY** B. Smelser **CHECKED BY** **ANGLE** **BEARING**
BORING DEPTH 77 ft. **GROUND WATER DEPTH: DURING** **COMP.** 13.6 ft. **DELAYED**
NOTES Surface Elevation noted above is the elevation of the survey pin located in the top of the concrete pad; Top of Casing Elevation = 712.044

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA
				Surface: protective aluminum cover with bollards; 4-foot square concrete pad
				ELEV. (DEPTH)
		Fill (FILL) - reddish brown grading to dark reddish brown with black mottling @ 2' grading to rusty red @ 4', damp, medium stiff to stiff, low plasticity, very fine to lower fine grain, cohesive; micaceous; trace organics near surface		← Surface Seal: concrete
			707.8	(2.0)
5			702.8	
		Silt (ML) - orangish brown with light brown/tan to rusty red mottling, damp, very stiff to stiff decreasing to medium stiff to soft, low plasticity, very fine to upper fine grain, cohesive; decreasing clay content with depth to a more silty sand with clay; increasing grain size with depth; micaceous		
10				
		▼	695.8	
15		**Silty Sand (SM)** - rusty red with black mottling, damp, medium dense, no plasticity, lower fine to upper fine grain, cohesive; micaceous; thin layer of interbedded/mottled, fine to medium sized with trace upper coarse to fine gravel sized bottom ash	692.8	
		Poorly-graded Sand (SP) - orangish brown, moist, medium dense to loose, no plasticity, lower medium to lower coarse grain, *alluvium*, noncohesive; rounded to subrounded grains; rounded gravel to cobble sized inclusions; possible alluvial sediments		Annular Fill: 90/10 Portland Cement/Bentonite Powder
20			687.3	
		Silty Sand (SM) - dark brown to orangish brown with rusty red to light gray to greenish gray mottling, moist, medium dense to loose, no plasticity, lower fine to lower medium grain, *saprolite*, cohesive; completely weathered to residual soil; subangular to subrounded grains; micaceous		
25				
		- SM: medium gray to light gray with white mottling, trace greenish gray to dark brown mottling, moist, medium dense, no plasticity, lower fine to lower medium grain, *saprolite*, noncohesive; completely weathered to resiudual soil; subangular to angular grains; micaceous		←
30				
35		- SM: light brown to orangish brown with light gray mottling, moist, medium dense to loose interbedded with zones of dense, no plasticity, upper fine to upper medium grain, *saprolite*, noncohesive; completely weathered to residual soil; quartz, muscovite, biotite identifiable; micaceous; angular to subangular grains		
40				

2012 GEOTECH LOG WITH WELL - ESEE2012DATABASE.GDT - 7/9/14 14:47 - \\ALTRCFS02\X2DBSMEL$\GINT\PLANT YATES HYDRO-GEOLOGICAL STUDY.GPJ

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Yates Hydro-Geological Study

LOCATION Newnan, GA

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA
				Surface: protective aluminum cover with bollards; 4-foot square concrete pad
				(CONTINUED) ELEV. (DEPTH)
45		**Silty Sand (SM)***(Con't)*		
		- SM: light brown to orangish brown with interbedded zones of light gray, moist, medium dense to loose interbedded with zones of dense, no plasticity, upper fine to upper medium grain, *saprolite*, noncohesive; completely weathered to residual soil; remnant rock fabric visible in the light gray interbedded zones, @ approx. 45-47'; grain size in this zone increases to lower coarse to upper coarse; quartz, muscovite, biotite identifiable; micaceous		Annular Fill: 90/10 Portland Cement/Bentonite Powder
50				
55		- SM: light gray, dry, loose, no plasticity, lower fine to upper medium grain, *saprolite*, noncohesive; completely weathered to residual soil; brittle/friable gravel sized rock fragments with thin (1-2") zones of rubble/broken rock; angular to subangular rock fragments; rock fragment becomes harder/more competent with depth		
60			650.3	
		Biotite Gneiss		648.3 (61.5)
		- brownish gray with orangish brown staining, lower fine to lower medium grain, medium hard to soft, moderately to highly weathered, banded, quartz, plagioclase, biotite, muscovite visible; some mineral decomposition visible; low to moderately angled fractures; no visible healing/fracture fill		Annular Seal: 3/8 Hole Plug (medium bentonite chips)
65				644.7 (65.1)
				Filter: 20/30 Silica Sand
				643.1 (66.7)
70		- Biotite Gneiss grading to Granitic Gneiss: light gray to white, some orangish staining, lower fine to lower medium grain, medium hard, slightly to moderately weathered, banded, quartz, plagioclase, biotite, muscovite, trace chlorite, trace garnet, hornblende; moderately angled fractures visible; total to moderate fracture healing; quartz fracture fill (1-2 mm to 6-8 mm thick); highly fractured/rubble zone @ approx. 70-72'; thin zones of highly weathered rock visible		**Well: 2" OD PVC (SCH 40)**
				Screen: 10 ft; pre-pack
75			632.8	633.1
				Sump:0.30 ft. 632.8

Bottom of borehole at 77.0 feet.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-9S
PAGE 1 OF 2
ECS37976

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Yates Hydro-Geological Study
LOCATION Newnan, GA

DATE STARTED 5/2/2014 **COMPLETED** 5/19/2014 **SURF. ELEV.** 709.8 **COORDINATES:** N:1,262,003.29 E:2,070,721.60
CONTRACTOR Cascade Drilling **EQUIPMENT** PS-150 **METHOD** Rotosonic
DRILLED BY D. Wilcox **LOGGED BY** B. Smelser **CHECKED BY** **ANGLE** **BEARING**
BORING DEPTH 57 ft. **GROUND WATER DEPTH: DURING** **COMP.** 13.51 ft. **DELAYED**
NOTES Surface Elevation noted above is the elevation of the survey pin located in the top of the concrete pad; Top of Casing Elevation = 711.896

DEPTH (ft) | GRAPHIC LOG | STRATA DESCRIPTION | ELEV.

Fill (FILL)
- reddish brown grading to dark reddish brown with black mottling @ 2' grading to rusty red @ 4', damp, medium stiff to stiff, low plasticity, very fine to lower fine grain, cohesive; micaceous; trace organics near surface

702.8

Silt (ML)
- orangish brown with light brown/tan to rusty red mottling, damp, very stiff to stiff decreasing to medium stiff to soft, low plasticity, very fine to upper fine grain, cohesive; decreasing clay content with depth to a more silty sand with clay; increasing grain size with depth; micaceous

▼

695.8

Silty Sand (SM)
- rusty red with black mottling, damp, medium dense, no plasticity, lower fine to upper fine grain, cohesive; micaceous; thin layer of interbedded/mottled, fine to medium sized with trace upper coarse to fine gravel sized bottom ash

692.8

Poorly-graded Sand (SP)
- orangish brown, moist, medium dense to loose, no plasticity, lower medium to lower coarse grain, *alluvium*, noncohesive; rounded to subrounded grains; rounded gravel to cobble sized inclusions; possible alluvial sediments

687.3

Silty Sand (SM)
- dark brown to orangish brown with rusty red to light gray to greenish gray mottling, moist, medium dense to loose, no plasticity, lower fine to lower medium grain, *saprolite*, cohesive; completely weathered to residual soil; subangular to subrounded grains; micaceous

- SM: medium gray to light gray with white mottling, trace greenish gray to dark brown mottling, moist, medium dense, no plasticity, lower fine to lower medium grain, *saprolite*, noncohesive; completely weathered to resiudual soil; subangular to angular grains; micaceous

- SM: light brown to orangish brown with light gray mottling, moist, medium dense to loose interbedded with zones of dense, no plasticity, upper fine to upper medium grain, *saprolite*, noncohesive; completely weathered to residual soil; quartz, muscovite, biotite identifiable; micaceous; angular to subangular grains

667.8

WELL DATA

Surface:
protective aluminum cover with bollards; 4-foot square concrete pad

ELEV. (DEPTH)

← Surface Seal: concrete
707.8
(2.0)

← Annular Fill: 90/10 Portland Cement/Bentonite Powder

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-9S
PAGE 2 OF 2
ECS37976

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Yates Hydro-Geological Study
LOCATION Newnan, GA

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA
				Surface: protective aluminum cover with bollards; 4-foot square concrete pad
				(CONTINUED) ELEV. (DEPTH)
45		**Silty Sand (SM)***(Con't)* - SM: light brown to orangish brown with interbedded zones of light gray, moist, medium dense to loose interbedded with zones of dense, no plasticity, upper fine to upper medium grain, *saprolite*, noncohesive; completely weathered to residual soil; remnant rock fabric visible in the light gray interbedded zones, @ approx. 45-47'; grain size in this zone increases to lower coarse to upper coarse; quartz, muscovite, biotite identifiable; micaceous		(42.0) Annular Seal: 3/8 Hole Plug (medium bentonite chips) 664.6 (45.2) Filter: 20/30 Silica Sand 663.1 (46.7)
50				**Well: 2" OD PVC (SCH 40)**
55		- SM: light gray, dry, loose, no plasticity, lower fine to upper medium grain, *saprolite*, noncohesive; completely weathered to residual soil; brittle/friable gravel sized rock fragments with thin (1-2") zones of rubble/broken rock; angular to subangular rock fragments; rock fragment becomes harder/more competent with depth	652.8	Screen: 10 ft; pre-pack 653.1 Sump:0.30 ft. 652.8
		Bottom of borehole at 57.0 feet.		

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-10I
PAGE 1 OF 2
ECS37976

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Yates Hydro-Geological Study
LOCATION Newnan, GA

DATE STARTED 4/17/2014 **COMPLETED** 5/19/2014 **SURF. ELEV.** 698.0 **COORDINATES:** N:1,260,809.74 E:2,070,552.83
CONTRACTOR Cascade Drilling **EQUIPMENT** PS-150 **METHOD** Rotosonic
DRILLED BY D. Wilcox **LOGGED BY** B. Smelser **CHECKED BY** **ANGLE** **BEARING**
BORING DEPTH 46.5 ft. **GROUND WATER DEPTH: DURING** **COMP.** 10.26 ft. **DELAYED**
NOTES Surface Elevation noted above is the elevation of the survey pin located in the top of the concrete pad; Top of Casing Elevation = 700.266

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Surface: protective aluminum cover with bollards; 4-foot square concrete pad	
		Clayey Sand (SC) - reddish brown, damp, medium dense, low to no plasticity, lower fine to upper fine grain, cohesive; micaceous; trace organics near surface		←Surface Seal: concrete	696.0 (2.0)
			694.0		
5		**Silty Sand (SM)** - reddish brown, dry, medium dense to loose, no plasticity, lower fine to upper fine grain, cohesive; micaceous; subangular to subrounded grains			
		- SM: dark brown, damp, medium dense, no plasticity, lower fine to upper fine grain, cohesive; micaceous; subangular grains			
10		▼			
		- SM: dark brown, damp, medium dense, no plasticity, lower fine to upper fine grain, cohesive; micaceous; subangular grains		Annular Fill: 90/10 Portland Cement/Bentonite Powder	
15			682.0	←	
		Interlayered/Alternating Biotite Gneiss and Mica Schist - light gray, lower fine to upper fine grain, hard, not weathered, banded, quartz, plagioclase, biotite, muscovite, hornblende; low to moderately angled fractures; no visible healing/fracture fill; distinct contact between silty sand (above) and biotite gneiss (below); no apparent weathering zone i.e. no visible saprolite			
20		- Interlayered/Alternating Biotite Gneiss and Mica Schist: light gray to dark gray (gneiss) to dark greenish gray (schist), lower fine to upper fine grain, medium hard, not to slightly weathered, banded, slight schistose foliation, quartz, plagioclase, biotite, muscovite, hornblende, trace chlorite, trace pyrite; grading from predominately gneiss towards the top to predominately schist with depth; moderate to high angle fracturing; fracturing appears to take place along schistose foliations; no visible healing/fracture fill			
25					

2012 GEOTECH LOG WITH WELL - ESEE2012DATABASE.GDT - 6/23/14 13:43 - \\ALTRCFS02\X2DBSMEL$\GINT\PLANT YATES HYDRO-GEOLOGICAL STUDY.GPJ

(Continued Next Page)

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-10I
PAGE 2 OF 2
ECS37976

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Yates Hydro-Geological Study
LOCATION Newnan, GA

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Surface: protective aluminum cover with bollards; 4-foot square concrete pad	
		Interlayered/Alternating Biotite Gneiss and Mica Schist *(Con't)*		(CONTINUED)	
30		- Interlayered/Alternating Biotite Gneiss and Mica Schist: light gray to dark gray (gneiss) to dark greenish gray (schist), lower fine to upper fine grain, medium hard, not to slightly weathered, banded, slight schistose foliation, quartz, plagioclase, biotite, muscovite, hornblende, pyrite, trace chlorite; low to moderately angled fracturing; majority of fractures along schistose foliated planes; some healing with quartz and pyrite fracture fill; trace high angle mechanical fractures		Annular Fill: 90/10 Portland Cement/Bentonite Powder	667.3 (30.7)
				Annular Seal: 3/8 Hole Plug (medium bentonite chips)	
35					663.5 (34.5)
				Filter: 20/30 Silica Sand	
					661.8 (36.2)
40		- Biotite Gneiss: medium gray to light gray, lower fine to upper medium grain, medium hard to hard, not to slightly weathered, banded, slight schistose foliation, quartz, plagioclase, biotite, muscovite, hornblende, pyrite, trace chlorite; predominately composed of felsic/siliceous minerals; decrease in interlayered mica schist; moderate to high angled fractures; total healing; quartz, pyrite, mica fracture fill @ approx. 45.5'; some visible staining around some fractures		**Well: 2" OD PVC (SCH 40)**	
				Screen: 10 ft; pre-pack	
45			651.5		651.8
				Sump:0.30 ft.	651.5

Bottom of borehole at 46.5 feet.

SOUTHERN COMPANY

LOG OF TEST BORING AND WELL INSTALLATION

BORING PZ-10S
PAGE 1 OF 1
ECS37976

SOUTHERN COMPANY SERVICES, INC.
EARTH SCIENCE AND ENVIRONMENTAL ENGINEERING

PROJECT Plant Yates Hydro-Geological Study
LOCATION Newnan, GA

DATE STARTED 4/17/2014 **COMPLETED** 5/19/2014 **SURF. ELEV.** 698.0 **COORDINATES:** N:1,260,802.29 E:2,070,553.32
CONTRACTOR Cascade Drilling **EQUIPMENT** PS-150 **METHOD** Rotosonic
DRILLED BY D. Wilcox **LOGGED BY** B. Smelser **CHECKED BY** _____ **ANGLE** _____ **BEARING** _____
BORING DEPTH 16.3 ft. **GROUND WATER DEPTH: DURING** _____ **COMP.** 4.1 ft. **DELAYED** _____
NOTES Surface Elevation noted above is the elevation of the survey pin located in the top of the concrete pad; Top of Casing Elevation = 700.348

DEPTH (ft)	GRAPHIC LOG	STRATA DESCRIPTION	ELEV.	WELL DATA	ELEV. (DEPTH)
				Surface: protective aluminum cover with bollards; 4-foot square concrete pad	
		Clayey Sand (SC) - reddish brown, damp, medium dense, low to no plasticity, lower fine to upper fine grain, cohesive; micaceous; trace organics near surface		Surface Seal: concrete	696.0 (2.0)
			694.0	Annular Seal: 3/8 Hole Plug (medium bentonite chips)	693.5 (4.5)
5		**Silty Sand (SM)** - reddish brown, dry, medium dense to loose, no plasticity, lower fine to upper fine grain, cohesive; micaceous; subangular to subrounded grains		Filter: 20/30 Silica Sand	692.0 (6.0)
10		- SM: dark brown, damp, medium dense, no plasticity, lower fine to upper fine grain, cohesive; micaceous; subangular grains		**Well: 2" OD PVC (SCH 40)**	
		- SM: dark brown, damp, medium dense, no plasticity, lower fine to upper fine grain, cohesive; micaceous; subangular grains		Screen: 10 ft; pre-pack	
15			681.7	Sump:0.30 ft.	682.0 681.7

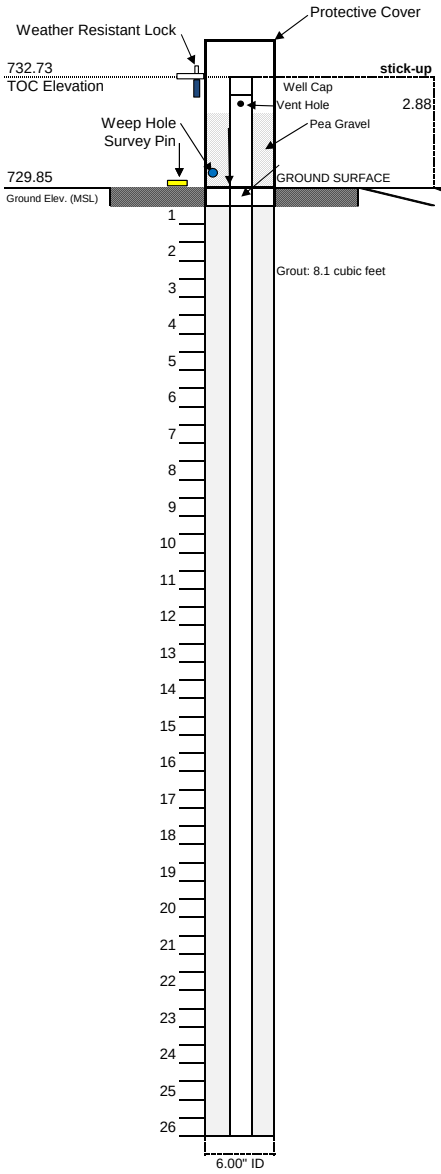
Bottom of borehole at 16.3 feet.

ATLANTIC COAST CONSULTING, INC.

YAMW-6

BORING ID

PROJECT:	Plant Yates	**PROJECT NO.:**	I054-110
TOTAL DEPTH:	71.89 ft. BTOC	**SITE LOCATION:**	Newnan, Georgia
DATE BEGIN:	13-Nov-2019	**DRILLER:**	Jamie Everson
DATE COMPLETE:	18-Nov-2019	**RIG TYPE:**	T-300 Rotosonic
INSTALLED BY:	Cascade	**METHOD:**	Rotosonic
SUPERVISED BY:	Taylor Goble		
WATER 1ST ENCOUNTERED:	40' BGS		
WATER AFTER 48 HOURS:	35.74' BGS		



Northing: 1260964.384
Easting: 2070921.276

SURFACE COMPLETION:
4"x4" Aluminum Protective Casing
4'x4'x4" Concrete Pad
Weather Resistant Lock
Survey Pin

SOIL DESCRIPTION

Core Photos

0-10' Hydrovac. No observable cuttings

10-15' White silty sand, dry, soft, well sorted, micaceous, and fine grained

15-20' As above except more silt content around 18' and rare brown mottling

20-25' Brittle white micaceous, strong cleavage, friable, dry

25-30' Color change to light brown. Continuation of friable and micaceous. Rock pieces present, quartz rich and brittle with larger rock pieces present at 28'. Dry

MATERIALS:

GROUT:		Bentonite Grout
MANUFACTURER:		AquaGuard
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER:		Pel-Plug
FILTER PACK SAND:		20/30 Mesh
MANUFACTURER:		Filter Media
WELL SCREEN:		Sch. 40 - 2" PVC
MANUFACTURER:		Campbell Monoflex
SLOT SIZE:		0.010-Inch Slot
WELL CASING:		Sch. 40 - 2" PVC
MANUFACTURER:		Campbell Monoflex

Soil Descriptions from Unified Soil Classification System

BTOC - Below Top of Casing
ID - Inside Diameter; OD - Outside Diameter
MSL - Mean Sea Level
BGS - Below Ground Surface

ATLANTIC COAST CONSULTING, INC.

YAMW-6

BORING ID

PROJECT:	Plant Yates	**PROJECT NO.:**	I054-110
TOTAL DEPTH:	71.89 ft. BTOC	**SITE LOCATION:**	Newnan, Georgia
DATE BEGIN:	13-Nov-2019	**DRILLER:**	Jamie Everson
DATE COMPLETE:	18-Nov-2019	**RIG TYPE:**	T-300 Rotosonic
INSTALLED BY:	Cascade	**METHOD:**	Rotosonic
SUPERVISED BY:	Taylor Goble		
WATER 1ST ENCOUNTERED:	40' BGS		
WATER AFTER 48 HOURS:	35.74' BGS		

Elevation MSL	Depth BGS	
	28	
	29	
	30	30-35' As above
	31	
	32	
	33	
	34	
	35	35-40' Color change to white silty sand. Larger rock pieces that are no longer friable or micaceous. Dry. Many rock pieces around 1-2 inch in size
	36	
	37	
	38	
	39	Bedrock at 39'
	40	40-45' Gneiss/schist rock. Iron staining present
	41	
	42	
	43	
	44	
	45	45-50' As above
	46	
	47	
	48	
681.14	48.71	Top of Bentonite Seal
Elevation	Depth	Bentonite Seal: 0.33 cubic feet
	50	50-55' Gneiss/schist rock. Well fractured, iron staining present. Trace pyrite inclusions present
679.14	50.71	Top of Filter Pack
Elevation	Depth	Filter Pack: 2.0 cubic feet
	52	

6.00" OD

MATERIALS:

GROUT:	Bentonite Grout
MANUFACTURER:	AquaGuard
BENTONITE SEAL:	3/8" Bentonite Pellets
MANUFACTURER:	Pel-Plug
FILTER PACK SAND:	20/30 Mesh
MANUFACTURER:	Filter Media
WELL SCREEN:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line
SLOT SIZE:	0.010-Inch Slot
WELL CASING:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line

TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
MSL - Mean Sea Level
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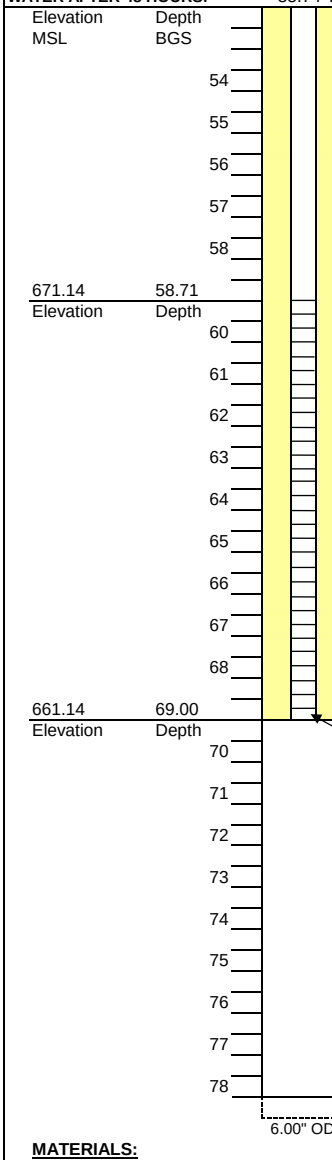
ATLANTIC COAST CONSULTING, INC.

YAMW-6

BORING ID

PROJECT:	Plant Yates	**PROJECT NO.:**	I054-110
TOTAL DEPTH:	71.89 ft. BTOC	**SITE LOCATION:**	Newnan, Georgia
DATE BEGIN:	13-Nov-2019	**DRILLER:**	Jamie Everson
DATE COMPLETE:	18-Nov-2019	**RIG TYPE:**	T-300 Rotosonic
INSTALLED BY:	Cascade	**METHOD:**	Rotosonic
SUPERVISED BY:	Taylor Goble		
WATER 1ST ENCOUNTERED:	40' BGS		
WATER AFTER 48 HOURS:	35.74' BGS		



55-60' As above

60-65' As above except minimal fractures present

65-69' Iron staining present, gneiss/schist, well fractured

Total well depth 69.01' BGS

MATERIALS:

GROUT:	Bentonite Grout
MANUFACTURER:	AquaGuard
BENTONITE SEAL:	3/8" Bentonite Pellets
MANUFACTURER:	Pel-Plug
FILTER PACK SAND:	20/30 Mesh
MANUFACTURER:	Filter Media
WELL SCREEN:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line
SLOT SIZE:	0.010-Inch Slot
WELL CASING:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line

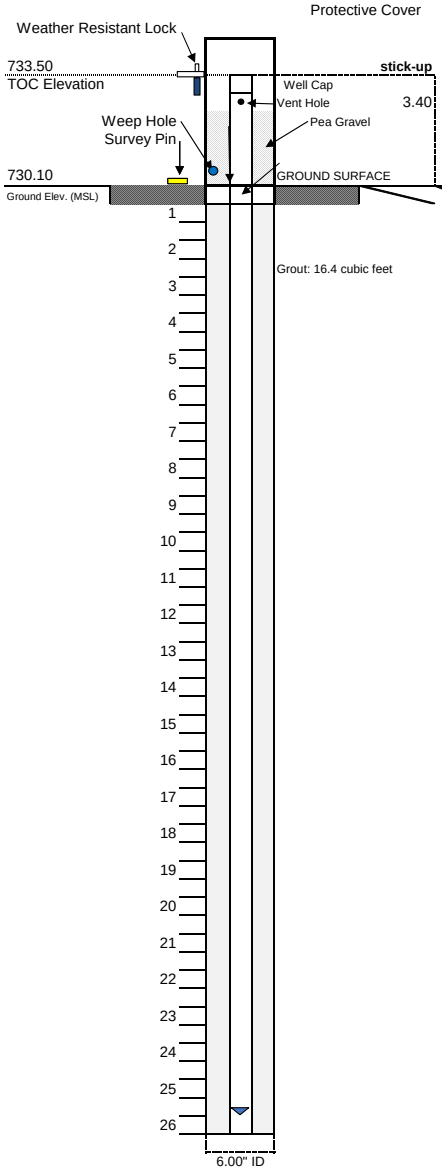
TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
MSL - Mean Sea Level
BGS - Below Ground Surface

ATLANTIC COAST CONSULTING, INC.

YAMW-7

BORING ID

PROJECT:	Plant Yates	**PROJECT NO.:**	I054-110
TOTAL DEPTH:	122.34 ft. BTOC	**SITE LOCATION:**	Newnan, Georgia
DATE BEGIN:	14-Nov-2019	**DRILLER:**	Isaac Young
DATE COMPLETE:	15-Nov-2019	**RIG TYPE:**	T-300 Rotosonic
INSTALLED BY:	Cascade	**METHOD:**	Rotosonic
SUPERVISED BY:	Ryan Walker		
WATER 1ST ENCOUNTERED:	33' BGS		
WATER AFTER 48 HOURS:	39.77' BTOC		



Northing: 1261041.911
Easting: 2071085.725

SURFACE COMPLETION:
4"x4" Aluminum Protective Casing
4'x4'x4" Concrete Pad
Weather Resistant Lock
Survey Pin

SOIL DESCRIPTION

0-10' No recovery

10-19' Silty sand-reddish brown to pale brown, dry, soft, some hard pieces of gravel (9/9)

19-29' As above except moist 19-24'
23-24' very micaceous (10/10)

Core Photos

MATERIALS:

GROUT:		Bentonite Grout
MANUFACTURER:		AquaGuard
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER:		Pel-Plug
FILTER PACK SAND:		20/30 Mesh
MANUFACTURER:		Filter Media
WELL SCREEN:		Sch. 40 - 2" PVC
MANUFACTURER:		Campbell Monoflex
SLOT SIZE:		0.010-Inch Slot
WELL CASING:		Sch. 40 - 2" PVC
MANUFACTURER:		Campbell Monoflex

Soil Descriptions from Unified Soil Classification System

BTOC - Below Top of Casing
ID - Inside Diameter; OD - Outside Diameter
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ATLANTIC COAST CONSULTING, INC.

YAMW-7

BORING ID

PROJECT:	Plant Yates	**PROJECT NO.:**	I054-110
TOTAL DEPTH:	122.34 ft. BTOC	**SITE LOCATION:**	Newnan, Georgia
DATE BEGIN:	14-Nov-2019	**DRILLER:**	Isaac Young
DATE COMPLETE:	15-Nov-2019	**RIG TYPE:**	T-300 Rotosonic
INSTALLED BY:	Cascade	**METHOD:**	Rotosonic
SUPERVISED BY:	Ryan Walker		
WATER 1ST ENCOUNTERED:	33' BGS		
WATER AFTER 48 HOURS:	39.77' BTOC		

Core Photos

Elevation MSL	Depth BGS	
	28	
	29	29-39' As above from 29-34'. Color change at 35' to gray. Hard rock starting at 35'. Gneiss/schist-some iron staining and manganese oxide staining present (7/10)
	30	
	31	
	32	
	33	
	34	
	35	
	36	
	37	
	38	
	39	39-45' Very hard rock. Gneiss banding-no shist. No fractures/no iron staining present (6/6)
	40	
	41	
	42	
	43	
	44	
	45	45-49' As above (4/4)
	46	
	47	
	48	
	49	49-59' As above except slightly less competent -fractures and a little iron staining present (6/10)
	50	
	51	
	52	

6.00" OD

MATERIALS:

GROUT:	Bentonite Grout
MANUFACTURER:	AquaGuard
BENTONITE SEAL:	3/8" Bentonite Pellets
MANUFACTURER:	Pel-Plug
FILTER PACK SAND:	20/30 Mesh
MANUFACTURER:	Filter Media
WELL SCREEN:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line
SLOT SIZE:	0.010-Inch Slot
WELL CASING:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line

TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
MSL - Mean Sea Level
BGS - Below Ground Surface

ATLANTIC COAST CONSULTING, INC.

YAMW-7

BORING ID

PROJECT:	Plant Yates	**PROJECT NO.:**	I054-110
TOTAL DEPTH:	122.34 ft. BTOC	**SITE LOCATION:**	Newnan, Georgia
DATE BEGIN:	14-Nov-2019	**DRILLER:**	Isaac Young
DATE COMPLETE:	15-Nov-2019	**RIG TYPE:**	T-300 Rotosonic
INSTALLED BY:	Cascade	**METHOD:**	Rotosonic
SUPERVISED BY:	Ryan Walker		
WATER 1ST ENCOUNTERED:	33' BGS		
WATER AFTER 48 HOURS:	39.77' BTOC		

Core Photos

Elevation MSL	Depth BGS	
	54	
	55	
	56	
	57	
	58	
	59	59-69' As above. Very little iron staining present (7/10)
	60	
	61	
	62	
	63	
	64	
	65	
	66	
	67	
	68	
	69	69-79' As above. No iron staining. Extremely hard and quartz-rich rock More schist than above (8/10)
	70	
	71	
	72	
	73	
	74	
	75	
	76	
	77	
	78	

6.00" OD

MATERIALS:

GROUT:	Bentonite Grout
MANUFACTURER:	AquaGuard
BENTONITE SEAL:	3/8" Bentonite Pellets
MANUFACTURER:	Pel-Plug
FILTER PACK SAND:	20/30 Mesh
MANUFACTURER:	Filter Media
WELL SCREEN:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line
SLOT SIZE:	0.010-Inch Slot
WELL CASING:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line

TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
MSL - Mean Sea Level
BGS - Below Ground Surface

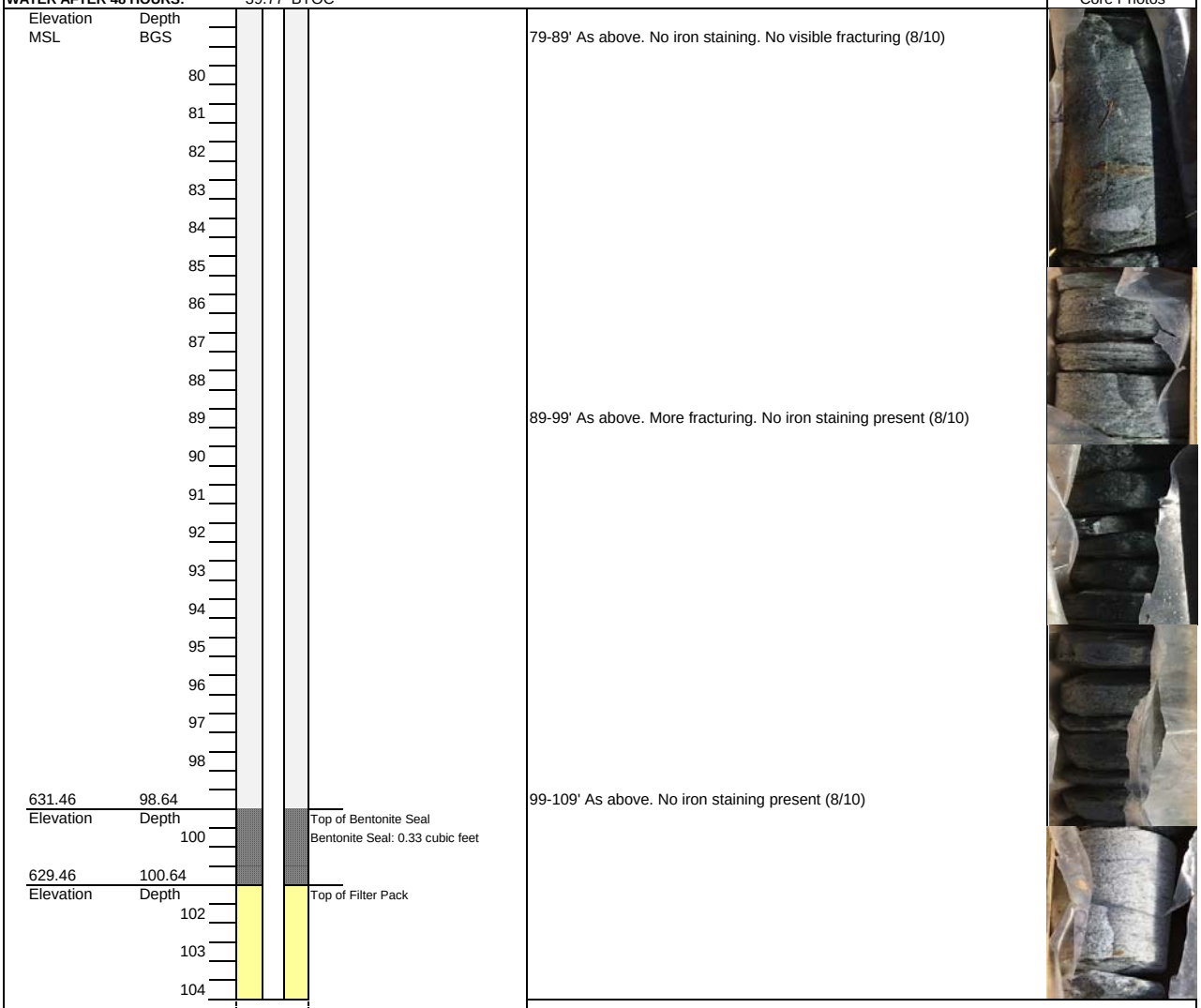
ATLANTIC COAST CONSULTING, INC.

YAMW-7

BORING ID

PROJECT:	Plant Yates	**PROJECT NO.:**	I054-110
TOTAL DEPTH:	122.34 ft. BTOC	**SITE LOCATION:**	Newnan, Georgia
DATE BEGIN:	14-Nov-2019	**DRILLER:**	Isaac Young
DATE COMPLETE:	15-Nov-2019	**RIG TYPE:**	T-300 Rotosonic
INSTALLED BY:	Cascade	**METHOD:**	Rotosonic
SUPERVISED BY:	Ryan Walker		
WATER 1ST ENCOUNTERED:	33' BGS		
WATER AFTER 48 HOURS:	39.77' BTOC		

Core Photos



79-89' As above. No iron staining. No visible fracturing (8/10)

89-99' As above. More fracturing. No iron staining present (8/10)

99-109' As above. No iron staining present (8/10)

MATERIALS:

GROUT:	Bentonite Grout
MANUFACTURER:	AquaGuard
BENTONITE SEAL:	3/8" Bentonite Pellets
MANUFACTURER:	Pel-Plug
FILTER PACK SAND:	20/30 Mesh
MANUFACTURER:	Filter Media
WELL SCREEN:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line
SLOT SIZE:	0.010-Inch Slot
WELL CASING:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line

TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
MSL - Mean Sea Level
BGS - Below Ground Surface

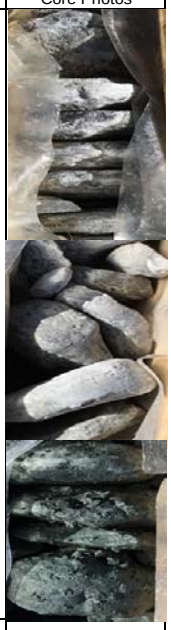
ATLANTIC COAST CONSULTING, INC.

YAMW-7

BORING ID

PROJECT:	Plant Yates	**PROJECT NO.:**	I054-110
TOTAL DEPTH:	122.34 ft. BTOC	**SITE LOCATION:**	Newnan, Georgia
DATE BEGIN:	14-Nov-2019	**DRILLER:**	Isaac Young
DATE COMPLETE:	15-Nov-2019	**RIG TYPE:**	T-300 Rotosonic
INSTALLED BY:	Cascade	**METHOD:**	Rotosonic
SUPERVISED BY:	Ryan Walker		
WATER 1ST ENCOUNTERED:	33' BGS		
WATER AFTER 48 HOURS:	39.77' BTOC		

Core Photos



Elevation MSL	Depth BGS	
	106	
	107	Filter Pack: 3.0 cubic feet
	108	
621.46	108.64	Top of Screen
Elevation	Depth	
	110	
	111	
	112	
	113	
	114	
	115	
	116	
	117	
	118	
611.16	118.64	Bottom of Screen
Elevation	Depth	Silt Trap (0.3')
	120	
	121	
	122	
	123	
	124	
	125	
	126	
	127	
	128	
	129	
	130	

6.00" OD

109-119' As above. Some iron staining and slight fracturing present. (8/10)

Total well depth 118.94' BGS

MATERIALS:

GROUT:	Bentonite Grout
MANUFACTURER:	AquaGuard
BENTONITE SEAL:	3/8" Bentonite Pellets
MANUFACTURER:	Pel-Plug
FILTER PACK SAND:	20/30 Mesh
MANUFACTURER:	Filter Media
WELL SCREEN:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line
SLOT SIZE:	0.010-Inch Slot
WELL CASING:	Sch. 40 - 2" PVC
MANUFACTURER:	Silver-Line

TOC - Top of Casing
ID - Inside Diameter; OD - Outside Diameter
MSL - Mean Sea Level
BGS - Below Ground Surface

ATTACHMENT B

Well Development Forms

AECOM GROUNDWATER DEVELOPMENT LOG

SITE NAME:	Georgia Power Company Plant Yates	SITE LOCATION:	708 Dyer Road Newnan, GA
WELL NO:	PZ-44		
FIELD TECHNICIAN:	Charles Watson	DATE:	7/19/11

PURGING DATA

WELL DIAMETER (inches): 2	WELL SCREEN INTERVAL DEPTH: 78.8 feet to 88.8 feet	STATIC DEPTH TO WATER (feet): 45.25	PURGE PUMP TYPE OR BAILER: Reclaimer

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY

1 WELL VOLUME = (89.16 feet − 45.25 feet) X 0.65 liters/foot ~ 28.54 liters 3x ~ 85.62 L

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOLUME = PUMP VOLUME + (TOTAL LENGTH OF TUBING X TUBING CAPACITY) + FLOW THROUGH CELL VOLUME

1 EQUIPMENT VOLUME = 1.0 liters + (100 feet X 0.04 liters/foot) + 0.5 liters ~ 5.5 liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 89	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 89	PURGING INITIATED AT: 811	PURGING ENDED AT: 1210	TOTAL VOLUME PURGED (liters): 50.6
WATER QUALITY INSTRUMENT(S): In-Situ SmarTroll / LaMotte 2020we		SERIAL NO(S): 463068 / 2009-1416		

FIELD DATA TABLE

PUMP SETTING / PSI	TIME	VOLUME PURGED (liters)	TOTAL VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	TURBIDITY (NTUs)	pH (standard units)	SPECIFIC COND. (µS/cm)	OXYGEN REDUCTION POTENTIAL (mV)	DISSOLVED OXYGEN (mg/L)	TEMP. (°C)
103/40	817	6.0	6.0	0.50	50.5	11.5	6.22	319.9	116.8	6.57	22.31
* 103/35	827	4.0	10.0	0.40	55.2	9.68	6.04	436.7	39.8	3.61	20.12
103/35	837	4.0	14.0	0.40	58.25	11.2	6.05	433.8	26.6	3.64	21.25
* 103/35	847	3.0	17.0	0.30	61.25	17.3	6.07	435.7	19.8	4.13	21.28
103/35	857	3.0	20.0	0.30	64.6	36.3	6.13	390.5	25.7	4.59	21.50
105/35	907	3.0	23.0	0.30	65.95	24.3	6.13	387	27.0	4.64	21.73
* 105/35	917	3.0	26.0	0.30	68.65	38.7	6.16	371.3	29.1	4.90	21.61
105/35	927	3.0	29.0	0.3	70.7	34.7	6.16	404.2	28.2	4.82	21.65
105/40	937	2.0	31.0	0.2	72.22	23.6	6.15	418.1	24.8	4.75	22.12
105/40	947	2.0	33.0	0.2	74.8	46.7	6.19	405.7	27.7	5.26	21.37
105/40	957	1.4	34.4	0.14	77.4	36.0	6.19	400.6	27.9	5.16	21.28
105/40	1007	1.4	35.8	0.14	79.7	25.1	6.15	413.4	16.2	4.71	20.76
105/40	1017	1.4	37.2	0.14	81.35	13.5	6.15	415.2	12.7	4.66	21.28
105/40	1027	1.4	38.6	0.14	82.60	8.98	6.11	431.2	10.5	4.43	21.62
105/40	1037	1.4	40.0	0.14	83.71	5.11	6.16	407.4	15.0	4.42	22.18
105/40	1047	1.4	41.4	0.14	84.1	3.65	6.24	383.0	20.9	4.44	22.86
105/40	1057	1.4	42.8	0.14	83.9	3.29	6.28	368.7	26.1	4.82	21.82
105/40	1107	1.4	44.2	0.14	83.85	4.20	6.29	342.1	30.0	4.47	25.24

☒ CONTINUED ON REVERSE SIDE

WELL CAPACITY (L Per Ft): **0.75"** = 0.10; **1"** = 0.20; **1.25"** = 0.30; **2"** = 0.65; **3"** = 1.45; **4"** = 2.50; **5"** = 3.90; **6"** = 5.60; **8"** = 9.75; **10"** = 15.40; **12"** = 21.80
TUBING CAPACITY (L Per Ft): **1/16"** = 0.001 ; **0.17"** = 0.005 ; ¼ " = 0.01 ; **⅜"** = 0.022 ; ½ " = 0.04 ; **⅝"** = 0.06 ; ¾ " = 0.09 ; **⅞"** = 0.12 ; **1"** = 0.16

NOTES:

Surge: 827, 847, 917

CHEMICAL PARAMETER STABILIZATION CRITERIA (THREE CONSECUTIVE READINGS **AFTER DEPTH TO WATER HAS STABILIZED**)

Required:
Turbidity: <5 NTU, or stable (±10%)
pH: ± 0.1 SU
Specific Conductance: ± 5% (µS/cm)

Record Only:
Dissolved Oxygen: ± 10%
Oxygen Reduction Potential (mV)
Temperature (°C)

DEVELOPMENT LOG (continued)

SITE NAME:	Georgia Power Company Plant Yates	SITE LOCATION:	708 Dyer Road Newnan, GA
WELL NO:	PZ-44	DATE:	7/19/16

PUMP SETTING / PSI	TIME	VOLUME PURGED (liters)	TOTAL VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	TURBIDITY (NTUs)	pH (standard units)	SPECIFIC COND. (µS/cm)	OXYGEN REDUCTION POTENTIAL (mV)	DISSOLVED OXYGEN (mg/L)	TEMP. (°C)
105/40	1117	1.4	43.6	0.14	84.3	4.86	6.24	343.4	32.2	4.12	23.93
105/40	1127	1.4	45.0	0.14	84.5	3.31	6.16	371.1	28.7	3.32	24.10
105/40	1137	1.4	46.4	0.14	85.5	3.57	6.27	374.1	32.3	3.87	23.90
105/40	1147	1.4	47.8	0.14	86.2	3.21	6.30	372.7	34.8	4.41	23.43
105/40	1157	1.4	49.2	0.14	86.3	2.74	6.33	346.1	35.3	5.07	23.98
105/40	1207	1.4	50.6	0.14	86.5	4.68	6.31	320	36.6	5.26	24.37
	1210	well purged dry									
☐	CONTINUED ON ADDITIONAL SHEETS										

CHEMICAL PARAMETER STABILIZATION CRITERIA (THREE CONSECUTIVE READINGS **AFTER DEPTH TO WATER HAS STABILIZED**)

Required:
Turbidity: <5 NTU, or stable (±10%)
pH: ± 0.1 SU
Specific Conductance: ± 5% (µS/cm)

Record Only:
Dissolved Oxygen: ± 10%
Oxygen Reduction Potential (mV)
Temperature (°C)

FINAL DEPTH TO WATER:	89.16	DEPTH TO BOTTOM:	89.16

COMMENTS:

AECOM WELL DEVELOPMENT LOG

SITE NAME:	Georgia Power Company Plant Yates	SITE LOCATION:	708 Dyer Road Newnan, GA
WELL NO:	P2-45		
FIELD TECHNICIAN:	R. Hilliard	DATE:	7/15/16

PURGING DATA

WELL DIAMETER (inches): 2	WELL SCREEN INTERVAL DEPTH: 63.6 feet to 73.6 feet	STATIC DEPTH TO WATER (feet): 22.32	PURGE PUMP TYPE OR BAILER: GEOTECH RECLAIMER

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY

10x ~ 336

1 WELL VOLUME = (73.92 feet − 22.32 feet) X 0.65 liters/foot ~ 33.6 liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOLUME = PUMP VOLUME + (TOTAL LENGTH OF TUBING X TUBING CAPACITY) + FLOW THROUGH CELL VOLUME

1 EQUIPMENT VOLUME = 0.3 liters + (90 feet X 0.04 liters/foot) + 0.5 liters ~ 4.5 liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 75.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	DEVELOPMENT INITIATED AT: 0741	DEVELOPMENT ENDED AT:	TOTAL VOLUME REMOVED (liters):
WATER QUALITY INSTRUMENT(S):	In-Situ SmarTroll	SERIAL NO(S):	465016	
	LaMotte 2020we		2279-2612	

FIELD DATA TABLE

PUMP SETTING / PSI	TIME	VOLUME PURGED (liters)	TOTAL VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	TURBIDITY (NTUs)	pH (standard units)	SPECIFIC COND. (µS/cm)	OXYGEN REDUCTION POTENTIAL (mV)	DISSOLVED OXYGEN (mg/L)	TEMP. (°C)
103/50	0757	18	18	1.8	48.8	216	8.02	164.4	-360.5	0.59	18.3
103/50	0801	18	36	1.8	61.81	667	7.42	310.0	-325.9	0.81	18.2
103/50	0811	13.8	49.8	1.1	61.83	164	7.30	417.7	-307.2	1.16	18.3
103/45	0821	11	60.8	1.1	60.13	281	7.25	485.0	-341.9	0.80	18.3
103/45	0831	11	71.8	1.1	57.37	101.3	7.23	501.6	-320.0	0.57	18.4
103/45	0841	11	82.8	1.1	54.44	633	7.22	481.0	-348.2	0.42	18.7
103/47	0857	14	96.8	1.4	54.38	1648	7.22	456.6	-309.7	0.88	18.8
103/47	0907	14	110.8	1.4	54.85	148	7.20	510.5	-292.9	0.52	18.6
103/47	0911	14	124.8	1.4	55.15	94.0	7.18	518.1	-305.0	0.43	18.5
103/47	0921	14	1388	1.4	55.13	39.9	7.18	521.0	-270.1	0.67	18.4
103/47	0931	14	152.8	1.4	54.88	37.4	7.15	523.8	-277.5	0.57	18.4
103/47	0941	14	1616.8	1.4	56.28	112	7.05	498.4	-298.9	0.59	18.6
103/47	0957	7	173.8	1.4	45.7	47.3	7.11	522.6	-258.1	0.54	19.3
103/49	1001	15	188.8	1.5	53.38	21.3	7.06	545.4	-260.7	0.65	18.5
103/49 *	1011	15	203.8	1.5	56.8	135	7.05	536.7	-258.1	0.62	18.5 *
103/49	1021	15	218.8	1.5	57.13	35.7	7.08	549.3	-241.1	0.98	18.4
103/49	1031	15	233.8	1.5	57.25	54.5	7.08	560.0	-247.3	0.58	18.5

☒ CONTINUED ON REVERSE SIDE

WELL CAPACITY (L Per Ft): **0.75"** = 0.10; **1"** = 0.20; **1.25"** = 0.30; **2"** = 0.65; **3"** = 1.45; **4"** = 2.50; **5"** = 3.90; **6"** = 5.60; **8"** = 9.75; **10"** = 15.40; **12"** = 21.80
TUBING CAPACITY (L Per Ft): **1/16"** = 0.001 ; **0.17"** = 0.005 ; ¼ " = 0.01 ; **⅜"** = 0.022 ; ½ " = 0.04 ; **⅝"** = 0.06 ; ¾ " = 0.09 ; **⅞"** = 0.12 ; **1"** = 0.16

NOTES: 0738 - Surge screened interval before starting. 0813 - Surge.
0746 - Surge. Highly turbid, grey. 0833 - Surge.
0754 - Surge. 0841 - Inc. flow
0803 - Surge. 0843 - Surge to 1.4 LPM
0805 - Decrease flow to 1.1 LPM. 0903 - Surge.
0927 - Surge.
0937 - Surge.
0953 - Surge.
1005 - Surge.
1008 - Accidentally hit finish. Restarted at 1011. Took Line readings
1024 - Surge.

CHEMICAL PARAMETER STABILIZATION CRITERIA (THREE CONSECUTIVE READINGS AFTER DEPTH TO WATER HAS STABILIZED)

Required:
Turbidity: <10 NTU, or stable (±10%)
pH: ± 0.1 SU
Specific Conductance: ± 5% (µS/cm)

Record Only:
Oxygen Reduction Potential (mV)
Temperature (°C)
Dissolved Oxygen (mg/L)

AECOM WELL DEVELOPMENT LOG (continued)

SITE NAME:	Georgia Power Company Plant Scherer	SITE LOCATION:	10986 Highway 87 Juliette, GA
WELL NO:	PZ-45		
FIELD TECHNICIAN:	R. Hilliard	DATE:	7/15/16

FIELD DATA TABLE (continued)

PUMP SETTING / PSI	TIME	VOLUME PURGED (liters)	TOTAL VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	TURBIDITY (NTUs)	pH (standard units)	SPECIFIC COND. (µS/cm)	OXYGEN REDUCTION POTENTIAL (mV)	DISSOLVED OXYGEN (mg/L)	TEMP. (°C)
103/49	1041	15	248.8	1.5	58.00	79.2	7.03	598.4	-246.9	0.66	18.5
103/49	1057	15	263.8	1.5	59.03	39.5	7.05	622.1	-240.0	0.72	18.7
103/49	1101	15	278.8	1.5	57.58	43.6	7.07	596.0	-230.8	0.64	18.8
103/49	1111	15	293.8	1.5	56.91	25.6	7.11	577	-213.3	0.65	18.9
103/49	1121	15	308.8	1.5	56.85	9.85	7.08	623.6	-217.1	0.66	18.9
103/49	1131	15	323.8	1.5	56.73	9.68	7.09	628.2	-211.1	1.07	18.7
103/49	1141	15	338.8	1.5	56.70	6.08	7.09	629.6	-211.8	0.68	18.7
103/49	1157	15	353.8	1.5	56.80	4.43	7.10	631.1	-213.3	0.67	18.8
103/49	1201	15	368.8	1.5	56.82	4.71	7.10	619.6	-205.4	0.72	18.7

☐ CONTINUED ON ADDITIONAL SHEETS

NOTES:

1035 - Surge.
1055 - Surge.

Well Development Complete ☒ YES ☐ NO

Total Volume Removed: 370 L

Final Pumping Rate: 1.5 LPM

Total Drawdown: 34.5'

CHEMICAL PARAMETER STABILIZATION CRITERIA (THREE CONSECUTIVE READINGS **AFTER DEPTH TO WATER HAS STABILIZED**)

Required:
Turbidity: <10 NTU, or stable (±10%)
pH: ± 0.1 SU
Specific Conductance: ± 5% (µS/cm)

Record Only:
Oxygen Reduction Potential (mV)
Temperature (°C)
Dissolved Oxygen (mg/L)

AECOM WELL DEVELOPMENT LOG

SITE NAME:	Georgia Power Company Plant Yates	SITE LOCATION:	708 Dyer Road Newnan, GA
WELL NO:	PZ-46		
FIELD TECHNICIAN:	R. Hilliard	DATE:	7/14/16

PURGING DATA

WELL DIAMETER (inches): 2	WELL SCREEN INTERVAL DEPTH: 74.7 feet to 84.7 feet	STATIC DEPTH TO WATER (feet): 47.11	PURGE PUMP TYPE OR BAILER: GEOTECH RECLAIMER

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY 10x ~ 246

1 WELL VOLUME = (85.02 feet – 47.11 feet) X 0.65 liters/foot ~ 24.6 liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOLUME = PUMP VOLUME + (TOTAL LENGTH OF TUBING X TUBING CAPACITY) + FLOW THROUGH CELL VOLUME

1 EQUIPMENT VOLUME = 0.3 liters + (190 feet X 0.04 liters/foot) + 0.5 liters ~ 4.8 liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 84.7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 84.7	DEVELOPMENT INITIATED AT: 0900	DEVELOPMENT ENDED AT: 1340	TOTAL VOLUME REMOVED (liters): 404
WATER QUALITY INSTRUMENT(S):	In-Situ SmarTroll LaMotte 2020we	SERIAL NO(S):	465016 2279-2412	

FIELD DATA TABLE

PUMP SETTING / PSI	TIME	VOLUME PURGED (liters)	TOTAL VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	TURBIDITY (NTUs)	pH (standard units)	SPECIFIC COND. (µS/cm)	OXYGEN REDUCTION POTENTIAL (mV)	DISSOLVED OXYGEN (mg/L)	TEMP. (°C)
105/45	0910	7	7	1.4	52.25	172	7.15	348.6	-281.5	2.82	21.9
105/45	0920	15	22	1.5	51.90	604	6.64	532.2	-269.9	3.10	20.2
105/45	0930	15	37	1.5	54.30	115	6.48	747.5	-216.2	6.93	20.3
105/45	0940	15	52	1.5	59.50	117	6.62	278.5	-141.0	8.85	20.5
105/45	0950	15	67	1.5	55.20	120	6.46	859.1	-103.1	10.31	20.1
105/45	1000	15	82	1.5	61.10	104	6.47	895.0	-107.8	9.93	20.2
105/45	1010	15	97	1.5	61.60	54.3	6.38	980.1	-116.6	8.80	20.4
105/45	1020	15	112	1.5	60.50	79	6.35	955.4	-120.6	7.73	21.1
105/45	1030	15	127	1.5	61.30	59.8	6.43	986.9	-93.2	9.86	20.5
105/45	1040	15	142	1.5	61.75	88.4	6.33	1060.8	-129.1	8.88	21.0
105/45	1050	15	157	1.5	63.80	63.8	6.25	1131.3	-147.0	8.12	20.1
105/45	1100	15	172	1.5	66.50	84.5	6.30	1135.5	-107.8	6.86	20.2
105/45	1110	15	187	1.5	67.64	11.8	6.04	1223.0	-240.7	1.87	20.0
105/45	1120	15	202	1.5	69.00	34.0	6.04	1226.6	-234.3	1.98	20.0
105/45	1130	15	217	1.5	69.33	13.5	6.01	1263.8	-250.7	1.13	20.1
105/45	1140	15	232	1.5	69.85	9.66	6.01	1273.2	-239.1	1.16	20.0
105/45	1150	15	247	1.5	67.90	49.6	6.63	1192.1	6.70	8.89	20.3

☒ CONTINUED ON REVERSE SIDE

WELL CAPACITY (L Per Ft): **0.75"** = 0.10; **1"** = 0.20; **1.25"** = 0.30; **2"** = 0.65; **3"** = 1.45; **4"** = 2.50; **5"** = 3.90; **6"** = 5.60; **8"** = 9.75; **10"** = 15.40; **12"** = 21.80
TUBING CAPACITY (L Per Ft): **1/16"** = 0.001 ; **0.17"** = 0.005 ; **¼"** = 0.01 ; **⅜"** = 0.022 ; **½"** = 0.04 ; **⅝"** = 0.06 ; **¾"** = 0.09 ; **⅞"** = 0.12 ; **1"** = 0.16

NOTES:

~5' stick-up. No surface completion yet.
0858 - Surge before starting.
0914 - Surge.
0933 - Surge.
0945 - Surge
0952 - Surge.
1012 - Surge.
1032 - Surge.
1051 - Surge.
1112 - Surge.
1102 - Remove air from RDO sensor overlapping cups
1132 - Surge.
1137 - Check valve stickers, backflow surge tackers blowing surge air.

CHEMICAL PARAMETER STABILIZATION CRITERIA (THREE CONSECUTIVE READINGS **AFTER DEPTH TO WATER HAS STABILIZED**)

Required:
Turbidity: <10 NTU, or stable (±10%)
pH: ± 0.1 SU
Specific Conductance: ± 5% (µS/cm)

Record Only:
Oxygen Reduction Potential (mV)
Temperature (°C)
Dissolved Oxygen (mg/L)

AECOM WELL DEVELOPMENT LOG (continued)

SITE NAME:	Georgia Power Company Plant Scherer	SITE LOCATION:	10986 Highway 87 Juliette, GA
WELL NO:	PZ-46		
FIELD TECHNICIAN:	R. Hilliard	DATE:	7/14/16

FIELD DATA TABLE (continued)

PUMP SETTING / PSI	TIME	VOLUME PURGED (liters)	TOTAL VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	TURBIDITY (NTUs)	pH (standard units)	SPECIFIC COND. (µS/cm)	OXYGEN REDUCTION POTENTIAL (mV)	DISSOLVED OXYGEN (mg/L)	TEMP. (°C)
105/45	1200	15	262	1.5	65.30	56	6.51	1145.6	-14.7	10.80	20.4
105/45	1210	10	272	1.5	62.85	31.3	6.46	1202.9	-25.8	11.57	20.8
105/45	1220	12	284	1.5	65.05	55.4	6.33	1241.0	-24.6	10.44	20.4
105/45	1230	15	299	1.5	63.80	14.9	6.24	1261.7	-74.8	7.91	21.5
105/45	1240	15	314	1.5	65.0	7.22	6.28	1279.3	-56.4	9.56	20.5
105/45	1250	15	329	1.5	65.20	5.99	6.20	1302.5	-96.6	7.70	20.9
105/45	1300	15	344	1.5	66.10	8.16	6.16	1322.7	-150.4	7.77	20.6
105/45	1310	15	359	1.5	65.35	12.0	6.12	1319.7	-151.4	5.02	20.7
105/45	1320	15	374	1.5	69.20	2.02	6.02	1338.8	-217.1	1.80	19.5
105/45	1330	15	389	1.5	69.00	1.11	5.98	1359.0	-256.9	0.73	20.4
105/45	1340	15	404	1.5	69.20	0.63	5.98	1359.8	-244.9	0.72	20.2

☐ CONTINUED ON ADDITIONAL SHEETS

NOTES:

Well Development Complete ☒ YES ☐ NO

Total Volume Removed: 404 L

Final Pumping Rate: 1.5 LPM

Total Drawdown: 265" / 22.1'

1155 - Check valve sticking at top preventing pump from discharging. Surge to shake loose.

1205 - Surge to free up check ball

1215 - "

1225 - "

1235 - "

1245 - "

1255 - "

CHEMICAL PARAMETER STABILIZATION CRITERIA (THREE CONSECUTIVE READINGS **AFTER DEPTH TO WATER HAS STABILIZED**)

Required:
Turbidity: <10 NTU, or stable (±10%)
pH: ± 0.1 SU
Specific Conductance: ± 5% (µS/cm)

Record Only:
Oxygen Reduction Potential (mV)
Temperature (°C)
Dissolved Oxygen (mg/L)

AECOM GROUNDWATER DEVELOPMENT LOG

SITE NAME:	Georgia Power Company Plant Yates	SITE LOCATION:	708 Dyer Road Newnan, GA
WELL NO:	PZ-47		
FIELD TECHNICIAN:	Charles Watson	DATE:	7/15/16

PURGING DATA

WELL DIAMETER (inches): 2	WELL SCREEN INTERVAL DEPTH: 48.6 feet to 58.6 feet	STATIC DEPTH TO WATER (feet): 24.81	PURGE PUMP TYPE OR BAILER: Reclaimer

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY

1 WELL VOLUME = (58.95 feet − 24.81 feet) X 0.65 liters/foot ~ 22.19 liters 3x ~ 66.57 L

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOLUME = PUMP VOLUME + (TOTAL LENGTH OF TUBING X TUBING CAPACITY) + FLOW THROUGH CELL VOLUME

1 EQUIPMENT VOLUME = 0.4 liters + (70 feet X 0.04 liters/foot) + 0.6 liters ~ 4.0 liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 58.9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 55	PURGING INITIATED AT: 806	PURGING ENDED AT: 1152	TOTAL VOLUME PURGED (liters): 310
WATER QUALITY INSTRUMENT(S): In-Situ SmarTroll / LaMotte 2020we		SERIAL NO(S): 463068 / 7009-1416		

FIELD DATA TABLE

PUMP SETTING / PSI	TIME	VOLUME PURGED (liters)	TOTAL VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	TURBIDITY (NTUs)	pH (standard units)	SPECIFIC COND. (µS/cm)	OXYGEN REDUCTION POTENTIAL (mV)	DISSOLVED OXYGEN (mg/L)	TEMP. (°C)
160/35	830	4.0	4.0	1.2	28.55	1085	6.13	453.8	−178.5	5.11	18.48
156/35	840	12.0	16.0	1.2	37.8	1325	5.92	431.5	−197.5	2.29	18.30
156/35	850	12.0	28.0	1.2	36.4	50.9	5.68	432.0	−156.6	1.82	18.35
* 156/35	900	12.0	40.0	1.2	36.85	16.7	5.72	434.1	−170.2	1.75	18.46
|	910	12.0	52.0	1.2	39.5	166	5.74	427.3	−152	1.57	18.35
|	920	12.0	64.0	1.2	39.75	51	5.68	426.6	−128.6	1.76	18.26
* |	930	12	76	1.2	39.40	16.1	5.66	427.8	−112.6	1.88	18.24
|	940	12	88	1.2	39.89	173	5.68	413.5	−116.2	1.83	18.38
|	950	12	100	1.2	39.89	48.6	5.63	462.6	−82.1	2.01	18.35
* 156/35	1000	12	112	1.2	39.60	20.4	5.61	463.0	−68.7	2.12	18.42
157/40	1010	15	127	1.5	39.00	89	5.61	455.6	−74.2	2.15	18.46
159/40	1020	21	148	2.1	40.25	46.4	5.60	458	−42.8	2.41	18.23
* 159/35	1030	18	166	1.8	42.1	19.6	5.62	459.6	−46.2	2.24	18.26
|	1040	18	184	1.8	41.88	54.2	5.58	450.9	−40.4	2.28	18.26
* |	1050	18	202	1.8	41.60	16	5.59	454.8	−27.1	2.26	18.34
|	1100	18	220	1.8	43.10	132	5.59	448.4	−46.6	2.35	18.6
|	1110	18	238	1.8	42.94	33.2	5.59	453.5	−16.1	2.31	18.51
159/35	1120	18	256	1.8	42.65	11.45	5.59	451.9	−10.2	2.28	18.61

CONTINUED ON REVERSE SIDE

WELL CAPACITY (L Per Ft): **0.75"** = 0.10; **1"** = 0.20; **1.25"** = 0.30; **2"** = 0.65; **3"** = 1.45; **4"** = 2.50; **5"** = 3.90; **6"** = 5.60; **8"** = 9.75; **10"** = 15.40; **12"** = 21.80
TUBING CAPACITY (L Per Ft): **1/16"** = 0.001 ; **0.17"** = 0.005 ; ¼ " = 0.01 ; ⅜" = 0.022 ; ½ " = 0.04 ; ⅝" = 0.06 ; ¾ " = 0.09 ; ⅞" = 0.12 ; **1"** = 0.16

NOTES: pump clogged @ 810 pulled & cleaned restart @ 828

Surge 808, 900, 930, 1000, 1030, 1050

CHEMICAL PARAMETER STABILIZATION CRITERIA (THREE CONSECUTIVE READINGS **AFTER DEPTH TO WATER HAS STABILIZED**)

Required:
Turbidity: <5 NTU, or stable (±10%)
pH: ± 0.1 SU
Specific Conductance: ± 5% (µS/cm)

Record Only:
Dissolved Oxygen: ± 10%
Oxygen Reduction Potential (mV)
Temperature (°C)

DEVELOPMENT LOG (continued)

SITE NAME:	Georgia Power Company Plant Yates	SITE LOCATION:	708 Dyer Road Newnan, GA
WELL NO:	P2-47	DATE:	7/15/16

PUMP SETTING / PSI	TIME	VOLUME PURGED (liters)	TOTAL VOLUME PURGED (liters)	PURGE RATE (L/min)	DEPTH TO WATER (feet)	TURBIDITY (NTUs)	pH (standard units)	SPECIFIC COND. (µS/cm)	OXYGEN REDUCTION POTENTIAL (mV)	DISSOLVED OXYGEN (mg/L)	TEMP. (°C)
154/35	1130	18	274	1.8	42.7	6.90	5.60	450.8	-5.8	2.33	18.39
	1140	18	292	1.8	42.55	5.46	5.59	448	-1.0	2.28	18.49
	1150	18	310	1.8	42.7	4.45	5.59	452.6	3.50	2.34	18.50

☐ CONTINUED ON ADDITIONAL SHEETS

CHEMICAL PARAMETER STABILIZATION CRITERIA (THREE CONSECUTIVE READINGS **AFTER DEPTH TO WATER HAS STABILIZED**)

Required:
Turbidity: <5 NTU, or stable (±10%)
pH: ± 0.1 SU
Specific Conductance: ± 5% (µS/cm)

Record Only:
Dissolved Oxygen: ± 10%
Oxygen Reduction Potential (mV)
Temperature (°C)

FINAL DEPTH TO WATER:	42.7	**DEPTH TO BOTTOM:**	58.95

COMMENTS:

Atlantic Coast Consulting, Inc.
Well Development Field Record

Job Name: Plant Yates Drilling | Job No. I054-110 | Well No. YAMW-6

Developed By: Jordan Berisford | Date of Installation: 11/18/2019 | Sheet 1 of 1

Started Dev. 11-20-19 / 1100 (Date / Time) | Completed Dev. 11-20-19 / 1445 (Date / Time)

W.L. Before Dev. 35.74 / 11-20-19 / 1045 (BGS / Date / Time) | W.L. After Dev. 38.10 / 11-20-19 / 1445 (BGS / Date / Time)

Well Depth Before Dev.: 69.01 BGS | Well Depth After Dev.: 69.01 BGS

Water Column (H): 33.27 Ft. | Well Dia.: 2 In. | Well Volume: 5.32 Gal.

Screen Length: 10 Ft.

Date / Time	Volume Removed (Gal.)	Field Parameters: Specific Cond. (umhos/cm)	Temperature (^{o}C)	pH (S.U.)	Turbidity (NTU)	Remarks
11-20-2019/1415	51.4	844	20.25	6.9	5.22	
11-20-2019/1420	52.7	854	20.31	6.89	4.39	
11-20-2019/1425	54	860	20.2	6.87	2.93	
11-20-2019/1430	55.3	869	20.11	6.86	1.5	
11-20-2019/1435	56.6	872	20.24	6.87	1.28	
11-20-2019 1440	57.9	880	20.3	6.87	1.42	
11-20-2019/1445	59.2	883	20.29	6.87	1.33	
		Total Volume Removed (gal): 59.2				

Development Method: Surged Pump Q= 0.26 gpm

WL/TD on electronic log all listed as BGS

Notes: H = well depth (BTOC) - W.L. (BTOC)

Well volume in pipe:

2" diameter well: 0.16 X H = volume in gallons

4" diameter well: 0.66 X H = voume in gallons

Atlantic Coast Consulting, Inc.
Well Development Field Record

Job Name: Plant Yates Drilling | Job No. I054-110 | Well No. YAMW-7

Developed By: Ryan Walker | Date of Installation: 11/13/2019 | Sheet 1 of 1

Started Dev. 12-3-19 / 0900 (Date / Time) | Completed Dev. 12-3-19 / 1633 (Date / Time)

W.L. Before Dev. 39.77 / 12-3-19 / 0820 (TOC / Date / Time) | W.L. After Dev. 112.6 / 12-3-19 / 1633 (TOC / Date / Time)

Well Depth Before Dev.: 122.34 TOC | Well Depth After Dev.: 122.34 TOC

Water Column (H): 82.57 Ft. | Well Dia.: 2 In. | Well Volume: 13.2 Gal.

Screen Length: 10 Ft.

Date / Time	Volume Removed (Gal.)	Field Parameters: Specific Cond. (umhos/cm)	Temperature (^{o}C)	pH (S.U.)	Turbidity (NTU)	Remarks
12-3-2019/0900	0					Begin development
12-3-2019/1513	100	1,387	20.52	7.28	19.9	
12-3-2019/1518	101.25	1,372	20.38	7.30	9.86	
12/3/2019/1523	102.5	1,379	20.51	7.29	9.10	
12-3-2019/1528	103.75	1,381	20.34	7.27	10.6	
12-3-2019/1533	105	1,384	20.29	7.27	9.76	
12-3-2019/1538	106.25	1,382	20.38	7.27	8.30	
12-3-2019/1543	107.5	1,387	18.65	7.26	11.8	
12-3-2019/1548	108.75	1,379	19.40	7.27	13.3	
12-3-2019/1553	110	1,384	19.9	7.27	10.1	
12-3-2019/1558	111.25	1,384	19.91	7.28	8.42	
12-3-2019/1603	112.5	1,385	20.08	7.27	10.6	
12-3-2019/1608	113.75	1,384	20.22	7.27	9.15	
12-3-2019/1613	115	1,380	20.21	7.28	8.97	
12-3-2019/1618	116.25	1,387	20.36	7.27	7.41	
12-3-2019/1623	117.5	1,368	20.06	7.30	6.37	
12-3-2019/1628	118.75	1,384	19.94	7.28	6.11	
12-3-2019/1633	120	1,381	20.17	7.27	4.69	
		Total Volume Removed (gal): 120				

Development Method: Surged Pump Q= 0.5 gpm

Pre-development on 12/3/2019, surged pump periodically during pre-development

WL/TD on electronic log all listed as TOC

Notes: H = well depth (BTOC) - W.L. (BTOC)

Well volume in pipe:

2" diameter well: 0.16 X H = volume in gallons

4" diameter well: 0.66 X H = voume in gallons

ATLANTIC COAST CONSULTING, INC.

ATTACHMENT C

Well Survey Documents

PLANT YATES PIEZOMETER LOCATIONS **JULY 26, 2016**

LOCATION EQUIPMENT - LEICA GS14 ANTENNA AND CS15 SENSOR & TCRP 1201 TOTAL STATION POSITIONAL TOLLERANCE 0.10'H:V

FIELD WORK BY FRANK KENNEY & RUSTY BULLARD, E&CS CIVIL FIELD SERVICES

PIEZOMETER WELL ID	LATITUDE DD	LONGITUDE DD	NAD 83 NORTHING	NAD 83 EASTING	ELEVATION TOP OF PK NAIL	NAVD 88 ELEVATION TOP OF PVC	ELEVATION OF HIGH SIDE GROUND	SURVEYOR'S POINT#
PZ 35	33.4579020	-84.8971231	1258593.89	2073806.07	741.02	743.74	740.92	5
PZ 36	33.4576812	-84.8972361	1258513.81	2073771.04	736.97	739.53	736.72	6
PZ 37	33.4520878	-84.8941431	1256471.98	2074700.15	757.85	760.53	757.83	13
PZ 38	33.4510840	-84.8949677	1256108.50	2074446.06	796.98	799.45	796.88	14
PZ 39	33.4499999	-84.8968623	1255718.09	2073865.43	815.33	817.99	815.23	15
PZ 40	33.4501972	-84.8982860	1255792.92	2073431.66	813.32	815.63	813.22	16
PZ 41	33.4521642	-84.8988180	1256509.78	2073274.44	801.14	803.83	800.81	17
PZ 42	33.4531871	-84.8986554	1256881.62	2073326.65	795.23	797.75	795.13	18
PZ 43	33.4550127	-84.8990856	1257546.80	2073200.13	742.53	744.99	745.33	3
PZ 44	33.4668672	-84.9056831	1261874.46	2071218.56	755.59	758.27	755.39	10
PZ 45	33.4662963	-84.9066839	1261668.89	2070911.89	716.64	719.30	716.34	11
PZ 46	33.4645469	-84.9062643	1261031.44	2071035.31	744.62	747.23	744.32	9
PZ 47	33.4683527	-84.9037300	1262410.75	2071818.00	755.55	758.04	755.35	12
PZ 48	33.4614195	-84.8947879	1259868.78	2074527.26	777.32	779.88	777.12	7
PZ 49	33.4600615	-84.8953998	1259375.98	2074337.19	780.09	782.72	779.89	8

Yates Plant

Piezometers

Georgia West Zone - NAD83

6/4/2014

Piez #	North	East	Elev.
PZ-1D TOP PIPE	1256868.183	2070105.870	837.134
PZ-1S TOP PIPE	1256872.753	2070102.305	836.739
PZ-1I TOP PIPE	1256876.951	2070099.142	836.477
PZ-2I TOP PIPE	1256144.518	2070791.420	866.150
PZ-3S TOP OF PIPE	1256411.555	2072022.649	796.205
PZ-3I TOP OF PIPE	1256405.795	2072025.183	796.333
PZ-3D TOP OF PIPE	1256400.444	2072027.212	796.700
PZ-4I TOP PIPE	1254436.485	2075456.340	784.180
PZ-4S TOP PIPE	1254442.757	2075454.763	784.535
PZ-5D TOP PIPE	1254397.344	2076224.102	784.526
PZ-5I TOP PIPE	1254400.691	2076219.160	784.535
PZ-5S TOP PIPE	1254404.501	2076214.291	784.642
PZ-6I TOP OF PIPE	1260490.852	2074789.826	782.576
PZ-6S TOP OF PIPE	1260485.631	2074785.699	782.280
PZ-6D TOP OF PIPE	1260481.001	2074782.008	781.933
PZ-7S TOP OF PIPE	1262715.668	2072535.447	747.876
PZ-7I TOP PIPE	1262713.795	2072529.536	747.997
PZ-8I TOP PIPE	1262284.593	2072745.740	747.814
PZ-8S TOP PIPE	1262287.369	2072739.491	747.579
PZ-9S TOP OF PIPE	1262003.292	2070721.595	711.896
PZ-9I TOP OF PIPE	1261995.566	2070721.123	712.044
PZ-10S TOP PIPE	1260802.289	2070553.323	700.348
PZ-10I TOP PIPE	1260809.739	2070552.828	700.266
PZ-13S TOP PIPE	1257849.008	2069810.458	807.892
PZ-13I TOP PIPE	1257849.186	2069817.291	807.721
PZ-14I TOP OF PIPE	1257827.415	2072543.169	749.112
PZ-14S TOP OF PIPE	1257829.835	2072537.686	748.766
PZ-16S TOP OF PIPE	1261575.593	2073874.323	809.362
PZ-16I TOP OF PIPE	1261572.170	2073879.691	809.355

PLANT YATES WELL LOCATION DECEMBER 4, 2019

NAD 83 GEORGIA WEST ZONE

FIELD WORK BY STEVE CULBERSON, T&PS-CIVIL FIELD SERVICES

WELL ID	LATITUDE DD	LONGITUDE DD	NAD 83 NORTHING	NAD 83 EASTING	ELEVATION TOP OF PK NAIL	ELEVATION TOP OF CASING	ELEVATION OF GROUND
PZ-51	33.4551466	-84.8991476	1257595.67	2073181.55	741.07	744.14	741.00
YAMW-2	33.4529055	-84.8999724	1256781.99	2072924.24	777.78	781.00	777.70
YAMW-3	33.4532792	-84.8985983	1256915.01	2073344.31	792.97	796.04	792.90
YAMW-4	33.4522276	-84.8987944	1256532.78	2073281.79	802.57	805.57	802.50
YAMW-5	33.4511702	-84.8948326	1256139.57	2074487.49	785.77	788.79	785.70
YAMW-6	33.4643604	-84.9066366	1260964.38	2070921.28	729.85	732.73	729.80
YAMW-7	33.4645766	-84.9060992	1261041.91	2071085.73	730.10	733.50	730.00

APPENDIX C

LABORATORY ANALYTICAL AND FIELD SAMPLING REPORTS

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

December 11, 2019

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

RE: Project: Plant Yates-Pond 1
Pace Project No.: 2622246

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on August 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the report issued on 8/29/2019. The report has been revised to correct the project-required RLs per consultant request. No other changes have been made to this report.

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

Sincerely,

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

Enclosures

cc: Betsy McDaniel, Atlantic Coast Consulting
Chris Parker, Atlantic Coast Consulting
Evan Perry, Atlantic Coast Consulting
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta

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

CERTIFICATIONS

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

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 Yates-Pond 1
Pace Project No.: 2622246

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622246001	**YGWA-47**	Water	08/20/19 10:30	08/21/19 16:50
2622246002	**YGWC-45**	Water	08/20/19 11:35	08/21/19 16:50
2622246003	**YGWC-44**	Water	08/20/19 13:45	08/21/19 16:50
2622246004	**FB-1-8-20-19**	Water	08/20/19 13:30	08/21/19 16:50
2622246005	**YGWC-46**	Water	08/21/19 09:45	08/21/19 16:50
2622246006	**EB-1-8-21-19**	Water	08/21/19 10:00	08/21/19 16:50
2622246007	**Dup-1**	Water	08/21/19 00:00	08/21/19 16:50

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

SAMPLE ANALYTE COUNT

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2622246001	**YGWA-47**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622246002	**YGWC-45**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622246003	**YGWC-44**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622246004	**FB-1-8-20-19**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622246005	**YGWC-46**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622246006	**EB-1-8-21-19**	EPA 6020B	CSW	12
		EPA 7470A	DRB	1
		EPA 300.0	MWB	1
2622246007	**Dup-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 Yates-Pond 1
Pace Project No.: 2622246

Sample: YGWA-47 **Lab ID: 2622246001** Collected: 08/20/19 10:30 Received: 08/21/19 16:50 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	08/23/19 14:17	08/26/19 17:07	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00035	1	08/23/19 14:17	08/26/19 17:07	7440-38-2	
Barium	**0.024**	mg/L	0.010	0.00049	1	08/23/19 14:17	08/26/19 17:07	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/23/19 14:17	08/26/19 17:07	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/23/19 14:17	08/26/19 17:07	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/23/19 14:17	08/26/19 17:07	7440-47-3	
Cobalt	**0.00092J**	mg/L	0.0050	0.00030	1	08/23/19 14:17	08/26/19 17:07	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/23/19 14:17	08/26/19 17:07	7439-92-1	
Lithium	**0.0036J**	mg/L	0.030	0.00078	1	08/23/19 14:17	08/26/19 17:07	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/23/19 14:17	08/26/19 17:07	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/23/19 14:17	08/26/19 17:07	7782-49-2	
Thallium	**0.000058J**	mg/L	0.0010	0.000052	1	08/23/19 14:17	08/26/19 17:07	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 10:54	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		08/28/19 21:18	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 Yates-Pond 1
Pace Project No.: 2622246

Sample: YGWC-45 **Lab ID: 2622246002** Collected: 08/20/19 11:35 Received: 08/21/19 16:50 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	08/23/19 14:17	08/26/19 17:12	7440-36-0	
Arsenic	**0.00078J**	mg/L	0.0050	0.00035	1	08/23/19 14:17	08/26/19 17:12	7440-38-2	
Barium	**0.057**	mg/L	0.010	0.00049	1	08/23/19 14:17	08/26/19 17:12	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/23/19 14:17	08/26/19 17:12	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/23/19 14:17	08/26/19 17:12	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/23/19 14:17	08/26/19 17:12	7440-47-3	
Cobalt	**0.00071J**	mg/L	0.0050	0.00030	1	08/23/19 14:17	08/26/19 17:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/23/19 14:17	08/26/19 17:12	7439-92-1	
Lithium	**0.012J**	mg/L	0.030	0.00078	1	08/23/19 14:17	08/26/19 17:12	7439-93-2	
Molybdenum	**0.0011J**	mg/L	0.010	0.00095	1	08/23/19 14:17	08/26/19 17:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/23/19 14:17	08/26/19 17:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/23/19 14:17	08/26/19 17:12	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 11:04	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		08/28/19 22:26	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
110 Technology Parkway
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(770)734-4200

ANALYTICAL RESULTS

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

Sample: YGWC-44 **Lab ID: 2622246003** Collected: 08/20/19 13:45 Received: 08/21/19 16:50 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	08/23/19 14:17	08/26/19 17:18	7440-36-0	
Arsenic	**0.00097J**	mg/L	0.0050	0.00035	1	08/23/19 14:17	08/26/19 17:18	7440-38-2	
Barium	**0.10**	mg/L	0.010	0.00049	1	08/23/19 14:17	08/26/19 17:18	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/23/19 14:17	08/26/19 17:18	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/23/19 14:17	08/26/19 17:18	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/23/19 14:17	08/26/19 17:18	7440-47-3	
Cobalt	**0.0020J**	mg/L	0.0050	0.00030	1	08/23/19 14:17	08/26/19 17:18	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/23/19 14:17	08/26/19 17:18	7439-92-1	
Lithium	**0.013J**	mg/L	0.030	0.00078	1	08/23/19 14:17	08/26/19 17:18	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/23/19 14:17	08/26/19 17:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/23/19 14:17	08/26/19 17:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/23/19 14:17	08/26/19 17:18	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 11:06	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		08/28/19 22:48	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

Sample: FB-1-8-20-19 **Lab ID: 2622246004** Collected: 08/20/19 13:30 Received: 08/21/19 16:50 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	08/23/19 14:17	08/26/19 17:24	7440-36-0	
Arsenic	**0.00063J**	mg/L	0.0050	0.00035	1	08/23/19 14:17	08/26/19 17:24	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	08/23/19 14:17	08/26/19 17:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/23/19 14:17	08/26/19 17:24	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/23/19 14:17	08/26/19 17:24	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/23/19 14:17	08/26/19 17:24	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/23/19 14:17	08/26/19 17:24	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/23/19 14:17	08/26/19 17:24	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/23/19 14:17	08/26/19 17:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/23/19 14:17	08/26/19 17:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/23/19 14:17	08/26/19 17:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/23/19 14:17	08/26/19 17:24	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 11:08	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		08/28/19 23:11	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

Sample: YGWC-46 **Lab ID: 2622246005** Collected: 08/21/19 09:45 Received: 08/21/19 16:50 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	08/23/19 14:17	08/26/19 17:30	7440-36-0	
Arsenic	**0.00074J**	mg/L	0.0050	0.00035	1	08/23/19 14:17	08/26/19 17:30	7440-38-2	
Barium	**0.023**	mg/L	0.010	0.00049	1	08/23/19 14:17	08/26/19 17:30	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/23/19 14:17	08/26/19 17:30	7440-41-7	
Cadmium	**0.00012J**	mg/L	0.0025	0.00011	1	08/23/19 14:17	08/26/19 17:30	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/23/19 14:17	08/26/19 17:30	7440-47-3	
Cobalt	**0.027**	mg/L	0.0050	0.00030	1	08/23/19 14:17	08/26/19 17:30	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/23/19 14:17	08/26/19 17:30	7439-92-1	
Lithium	**0.0076J**	mg/L	0.030	0.00078	1	08/23/19 14:17	08/26/19 17:30	7439-93-2	
Molybdenum	**0.0012J**	mg/L	0.010	0.00095	1	08/23/19 14:17	08/26/19 17:30	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/23/19 14:17	08/26/19 17:30	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/23/19 14:17	08/26/19 17:30	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 11:15	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		08/28/19 23:34	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

Sample: EB-1-8-21-19 **Lab ID: 2622246006** Collected: 08/21/19 10:00 Received: 08/21/19 16:50 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	08/23/19 14:17	08/26/19 17:35	7440-36-0	
Arsenic	**0.00063J**	mg/L	0.0050	0.00035	1	08/23/19 14:17	08/26/19 17:35	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	08/23/19 14:17	08/26/19 17:35	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/23/19 14:17	08/26/19 17:35	7440-41-7	
Cadmium	ND	mg/L	0.0025	0.00011	1	08/23/19 14:17	08/26/19 17:35	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/23/19 14:17	08/26/19 17:35	7440-47-3	
Cobalt	ND	mg/L	0.0050	0.00030	1	08/23/19 14:17	08/26/19 17:35	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/23/19 14:17	08/26/19 17:35	7439-92-1	
Lithium	ND	mg/L	0.030	0.00078	1	08/23/19 14:17	08/26/19 17:35	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	08/23/19 14:17	08/26/19 17:35	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/23/19 14:17	08/26/19 17:35	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/23/19 14:17	08/26/19 17:35	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 11:18	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		08/28/19 23:56	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

Sample: Dup-1 **Lab ID: 2622246007** Collected: 08/21/19 00:00 Received: 08/21/19 16:50 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	08/23/19 14:17	08/26/19 17:41	7440-36-0	
Arsenic	**0.00061J**	mg/L	0.0050	0.00035	1	08/23/19 14:17	08/26/19 17:41	7440-38-2	
Barium	**0.025**	mg/L	0.010	0.00049	1	08/23/19 14:17	08/26/19 17:41	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000074	1	08/23/19 14:17	08/26/19 17:41	7440-41-7	
Cadmium	**0.00011J**	mg/L	0.0025	0.00011	1	08/23/19 14:17	08/26/19 17:41	7440-43-9	
Chromium	ND	mg/L	0.010	0.00039	1	08/23/19 14:17	08/26/19 17:41	7440-47-3	
Cobalt	**0.028**	mg/L	0.0050	0.00030	1	08/23/19 14:17	08/26/19 17:41	7440-48-4	
Lead	ND	mg/L	0.0050	0.000046	1	08/23/19 14:17	08/26/19 17:41	7439-92-1	
Lithium	**0.0080J**	mg/L	0.030	0.00078	1	08/23/19 14:17	08/26/19 17:41	7439-93-2	
Molybdenum	**0.0013J**	mg/L	0.010	0.00095	1	08/23/19 14:17	08/26/19 17:41	7439-98-7	
Selenium	ND	mg/L	0.010	0.0013	1	08/23/19 14:17	08/26/19 17:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000052	1	08/23/19 14:17	08/26/19 17:41	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.00014	1	08/26/19 14:21	08/27/19 11:20	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Fluoride	ND	mg/L	0.30	0.029	1		08/29/19 00:19	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 Yates-Pond 1
Pace Project No.: 2622246

QC Batch: 34231 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Associated Lab Samples: 2622246001, 2622246002, 2622246003, 2622246004, 2622246005, 2622246006, 2622246007

METHOD BLANK: 154028 Matrix: Water
Associated Lab Samples: 2622246001, 2622246002, 2622246003, 2622246004, 2622246005, 2622246006, 2622246007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.00014	08/27/19 10:49	

LABORATORY CONTROL SAMPLE: 154029

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 154030 154031

Parameter	Units	2622246001 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	0.0026	0.0025	103	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

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QUALITY CONTROL DATA

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

QC Batch: 34176 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2622246001, 2622246002, 2622246003, 2622246004, 2622246005, 2622246006, 2622246007

METHOD BLANK: 153777 Matrix: Water
Associated Lab Samples: 2622246001, 2622246002, 2622246003, 2622246004, 2622246005, 2622246006, 2622246007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00027	08/26/19 16:54	
Arsenic	mg/L	ND	0.0050	0.00035	08/26/19 16:54	
Barium	mg/L	ND	0.010	0.00049	08/26/19 16:54	
Beryllium	mg/L	ND	0.0030	0.000074	08/26/19 16:54	
Cadmium	mg/L	ND	0.0025	0.00011	08/26/19 16:54	
Chromium	mg/L	ND	0.010	0.00039	08/26/19 16:54	
Cobalt	mg/L	ND	0.0050	0.00030	08/26/19 16:54	
Lead	mg/L	ND	0.0050	0.000046	08/26/19 16:54	
Lithium	mg/L	ND	0.030	0.00078	08/26/19 16:54	
Molybdenum	mg/L	ND	0.010	0.00095	08/26/19 16:54	
Selenium	mg/L	ND	0.010	0.0013	08/26/19 16:54	
Thallium	mg/L	ND	0.0010	0.000052	08/26/19 16:54	

LABORATORY CONTROL SAMPLE: 153778

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 153779 153780

Parameter	Units	2622250005 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	101	75-125	1	20	
Arsenic	mg/L	0.00059J	0.1	0.1	0.098	0.098	97	98	75-125	1	20	
Barium	mg/L	0.020	0.1	0.1	0.12	0.12	95	96	75-125	1	20	
Beryllium	mg/L	ND	0.1	0.1	0.096	0.096	96	96	75-125	0	20	
Cadmium	mg/L	ND	0.1	0.1	0.098	0.10	98	100	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 153779 153780

Parameter	Units	2622250005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/L	0.00051J	0.1	0.1	0.10	0.10	101	100	75-125	1	20	
Cobalt	mg/L	0.0010J	0.1	0.1	0.10	0.10	100	99	75-125	0	20	
Lead	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	0	20	
Lithium	mg/L	0.00094J	0.1	0.1	0.096	0.096	95	95	75-125	0	20	
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	101	102	75-125	1	20	
Selenium	mg/L	0.0030J	0.1	0.1	0.098	0.10	95	97	75-125	2	20	
Thallium	mg/L	ND	0.1	0.1	0.096	0.097	96	97	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

QC Batch: 34413 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2622246001, 2622246002, 2622246003, 2622246004, 2622246005, 2622246006, 2622246007

METHOD BLANK: 154817 Matrix: Water
Associated Lab Samples: 2622246001, 2622246002, 2622246003, 2622246004, 2622246005, 2622246006, 2622246007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	ND	0.30	0.029	08/28/19 20:32	

LABORATORY CONTROL SAMPLE: 154818

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 154819 154820

Parameter	Units	2622246001 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	10	10	9.9	9.8	99	98	90-110	1	15	

MATRIX SPIKE SAMPLE: 154821

Parameter	Units	2622246002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	ND	10	9.7	97	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

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QUALIFIERS

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

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110 Technology Parkway
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Yates-Pond 1
Pace Project No.: 2622246

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622246001	**YGWA-47**	EPA 3005A	34176	EPA 6020B	34193
2622246002	**YGWC-45**	EPA 3005A	34176	EPA 6020B	34193
2622246003	**YGWC-44**	EPA 3005A	34176	EPA 6020B	34193
2622246004	**FB-1-8-20-19**	EPA 3005A	34176	EPA 6020B	34193
2622246005	**YGWC-46**	EPA 3005A	34176	EPA 6020B	34193
2622246006	**EB-1-8-21-19**	EPA 3005A	34176	EPA 6020B	34193
2622246007	**Dup-1**	EPA 3005A	34176	EPA 6020B	34193
2622246001	**YGWA-47**	EPA 7470A	34231	EPA 7470A	34309
2622246002	**YGWC-45**	EPA 7470A	34231	EPA 7470A	34309
2622246003	**YGWC-44**	EPA 7470A	34231	EPA 7470A	34309
2622246004	**FB-1-8-20-19**	EPA 7470A	34231	EPA 7470A	34309
2622246005	**YGWC-46**	EPA 7470A	34231	EPA 7470A	34309
2622246006	**EB-1-8-21-19**	EPA 7470A	34231	EPA 7470A	34309
2622246007	**Dup-1**	EPA 7470A	34231	EPA 7470A	34309
2622246001	**YGWA-47**	EPA 300.0	34413		
2622246002	**YGWC-45**	EPA 300.0	34413		
2622246003	**YGWC-44**	EPA 300.0	34413		
2622246004	**FB-1-8-20-19**	EPA 300.0	34413		
2622246005	**YGWC-46**	EPA 300.0	34413		
2622246006	**EB-1-8-21-19**	EPA 300.0	34413		
2622246007	**Dup-1**	EPA 300.0	34413		

CHAIN OF CUSTODY RECORD

Pace Analytical®

Pace Analytical Services, Inc.
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
(770) 734-4200 : FAX (770) 734-4201

CLIENT NAME: Georgia Power

CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:
241 Ralph McGill Blvd SE B10185
Atlanta, GA 30308
404-506-7239

REPORT TO: Joju Abraham | CC:

REQUESTED COMPLETION DATE: | PO #:

PROJECT NAME/STATE: Plant Yates - Pond 1

PROJECT #:

ANALYSIS REQUESTED

							Metals App. IV (EPA 6020/7470)	Flouride	Radium 226 & 228 (SW-846 9315/9320)	LAB ID NUMBER	REMARKS/ADDITIONAL INFORMATION
					CONTAINER TYPE:		P	P	P		
					PRESERVATION:		3	7	3		
Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAB	SAMPLE IDENTIFICATION	# of CONTAINERS					
8-20-19	1030	GW		X	YGWA-47	4	✓	✓	✓		
8-20-19	1135	GW		X	YGWC-45	4	✓	✓	✓		
8-20-19	1345	GW		X	YGWC-44	6	✓	✓	✓		extra Rad here
8-20-19	1330	W		X	FB-1-8-20-19	4	✓	✓	✓		
8-21-19	0945	GW		X	YGWC-46	4	✓	✓	✓		
8-21-19	1000	W		X	EB-1-8-21-19	4	✓	✓	✓		
—	—	GW		X	Dup-1	4	✓	✓	✓		

WO#: 2622246
2622246

CONTAINER TYPE:
- P - PLASTIC
- A - AMBER GLASS
- G - CLEAR GLASS
- V - VOA VIAL
- S - STERILE
- O - OTHER

PRESERVATION:
- 1 - HCl, ≤6°C
- 2 - H_2SO_4, ≤6°C
- 3 - HNO_3
- 4 - NaOH, ≤6°C
- 5 - NaOH/ZnAc, ≤6°C
- 6 - $Na_2S_2O_3$, ≤6°C
- 7 - ≤6°C not frozen

*MATRIX CODES:
- DW - DRINKING WATER
- WW - WASTEWATER
- GW - GROUNDWATER
- SW - SURFACE WATER
- ST - STORM WATER
- W - WATER
- S - SOIL
- SL - SLUDGE
- SD - SOLID
- A - AIR
- L - LIQUID
- P - PRODUCT

SAMPLED BY AND TITLE: J Bcmbud AEC | DATE/TIME: See above
RELINQUISHED BY: [signature] | DATE/TIME: 8-21-19 1650
RECEIVED BY: | DATE/TIME:
RELINQUISHED BY: | DATE/TIME:
RECEIVED BY LAB: M Zahman | DATE/TIME: 08/21/19 1650
SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER (CLIENT circled) OTHER FS
pH Checked: (Yes circled) No NA | Ice: (Yes circled) No NA | Temperature: Min: 2.0 Max: | Custody Seal: (Intact circled) Broken Not Present | # of Coolers | Cooler ID:

FOR LAB USE ONLY
LAB #:
Entered into LIMS:
Tracking #:

APP IV

Yates Phase- Pond 1 - Blank COCs

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #: _____

WO#: 2622246

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

PM: BM **Due Date: 08/28/19**

CLIENT: GAPower-CCR

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

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

Thermometer Used 83 **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.0 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C **Comments:**

Date and Initials of person examining contents: 8/21/19 MR

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 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

September 16, 2019

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

RE: Project: Plant Yates-Pond 1
Pace Project No.: 2622248

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on August 21, 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: Chris Parker, Atlantic Coast Consulting
Evan Perry, Atlantic Coast Consulting
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
Peachtree Corners, GA 30092
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CERTIFICATIONS

Project: Plant Yates-Pond 1
Pace Project No.: 2622248

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 Yates-Pond 1
Pace Project No.: 2622248

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2622248001	**YGWA-47**	Water	08/20/19 10:30	08/21/19 16:50
2622248002	**YGWC-45**	Water	08/20/19 11:35	08/21/19 16:50
2622248003	**YGWC-44**	Water	08/20/19 13:45	08/21/19 16:50
2622248004	**FB-1-8-20-19**	Water	08/20/19 13:30	08/21/19 16:50
2622248005	**YGWC-46**	Water	08/21/19 09:45	08/21/19 16:50
2622248006	**EB-1-8-21-19**	Water	08/21/19 10:00	08/21/19 16:50
2622248007	**Dup-1**	Water	08/21/19 00:00	08/21/19 16:50

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SAMPLE ANALYTE COUNT

Project: Plant Yates-Pond 1
Pace Project No.: 2622248

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2622248001	**YGWA-47**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622248002	**YGWC-45**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622248003	**YGWC-44**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622248004	**FB-1-8-20-19**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622248005	**YGWC-46**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622248006	**EB-1-8-21-19**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2622248007	**Dup-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Yates-Pond 1
Pace Project No.: 2622248

Sample: YGWA-47 **Lab ID: 2622248001** Collected: 08/20/19 10:30 Received: 08/21/19 16:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.884 ± 0.360 (0.298) C:91% T:NA**	pCi/L	09/05/19 11:25	13982-63-3	
Radium-228	EPA 9320	**1.56 ± 0.588 (0.902) C:79% T:73%**	pCi/L	09/12/19 10:29	15262-20-1	
Total Radium	Total Radium Calculation	**2.44 ± 0.948 (1.20)**	pCi/L	09/16/19 11:22	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 Yates-Pond 1
Pace Project No.: 2622248

Sample: YGWC-45 **Lab ID: 2622248002** Collected: 08/20/19 11:35 Received: 08/21/19 16:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.869 ± 0.372 (0.404) C:93% T:NA**	pCi/L	09/05/19 08:30	13982-63-3	
Radium-228	EPA 9320	**1.36 ± 0.515 (0.785) C:78% T:81%**	pCi/L	09/12/19 10:29	15262-20-1	
Total Radium	Total Radium Calculation	**2.23 ± 0.887 (1.19)**	pCi/L	09/16/19 11:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Yates-Pond 1
Pace Project No.: 2622248

Sample: YGWC-44 **Lab ID: 2622248003** Collected: 08/20/19 13:45 Received: 08/21/19 16:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.727 ± 0.353 (0.413) C:84% T:NA**	pCi/L	09/05/19 08:30	13982-63-3	
Radium-228	EPA 9320	**0.984 ± 0.482 (0.852) C:77% T:82%**	pCi/L	09/12/19 10:29	15262-20-1	
Total Radium	Total Radium Calculation	**1.71 ± 0.835 (1.27)**	pCi/L	09/16/19 11:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(770)734-4200

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Yates-Pond 1
Pace Project No.: 2622248

Sample: FB-1-8-20-19 **Lab ID: 2622248004** Collected: 08/20/19 13:30 Received: 08/21/19 16:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.436 ± 0.271 (0.382) C:90% T:NA**	pCi/L	09/05/19 08:30	13982-63-3	
Radium-228	EPA 9320	**0.611 ± 0.435 (0.853) C:77% T:81%**	pCi/L	09/12/19 10:29	15262-20-1	
Total Radium	Total Radium Calculation	**1.05 ± 0.706 (1.24)**	pCi/L	09/16/19 11:22	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 Yates-Pond 1
Pace Project No.: 2622248

Sample: YGWC-46 **Lab ID: 2622248005** Collected: 08/21/19 09:45 Received: 08/21/19 16:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.719 ± 0.340 (0.388) C:89% T:NA**	pCi/L	09/05/19 08:30	13982-63-3	
Radium-228	EPA 9320	**0.590 ± 0.412 (0.801) C:77% T:86%**	pCi/L	09/12/19 10:29	15262-20-1	
Total Radium	Total Radium Calculation	**1.31 ± 0.752 (1.19)**	pCi/L	09/16/19 11:22	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 Yates-Pond 1
Pace Project No.: 2622248

Sample: EB-1-8-21-19 **Lab ID: 2622248006** Collected: 08/21/19 10:00 Received: 08/21/19 16:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.405 ± 0.280 (0.468) C:98% T:NA**	pCi/L	09/05/19 08:30	13982-63-3	
Radium-228	EPA 9320	**0.339 ± 0.436 (0.932) C:80% T:90%**	pCi/L	09/12/19 10:38	15262-20-1	
Total Radium	Total Radium Calculation	**0.744 ± 0.716 (1.40)**	pCi/L	09/16/19 11:22	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Yates-Pond 1
Pace Project No.: 2622248

Sample: Dup-1 **Lab ID: 2622248007** Collected: 08/21/19 00:00 Received: 08/21/19 16:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.567 ± 0.325 (0.473) C:91% T:NA**	pCi/L	09/05/19 08:30	13982-63-3	
Radium-228	EPA 9320	**1.01 ± 0.528 (0.974) C:79% T:85%**	pCi/L	09/12/19 10:38	15262-20-1	
Total Radium	Total Radium Calculation	**1.58 ± 0.853 (1.45)**	pCi/L	09/16/19 11:22	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 Yates-Pond 1
Pace Project No.: 2622248

QC Batch: 359489 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2622248001, 2622248002, 2622248003, 2622248004, 2622248005, 2622248006, 2622248007

METHOD BLANK: 1745578 Matrix: Water
Associated Lab Samples: 2622248001, 2622248002, 2622248003, 2622248004, 2622248005, 2622248006, 2622248007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.402 ± 0.246 (0.327) C:100% T:NA	pCi/L	09/05/19 08:30	

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 Yates-Pond 1
Pace Project No.: 2622248

QC Batch: 358698 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2622248001, 2622248002, 2622248003, 2622248004, 2622248005, 2622248006, 2622248007

METHOD BLANK: 1741705 Matrix: Water
Associated Lab Samples: 2622248001, 2622248002, 2622248003, 2622248004, 2622248005, 2622248006, 2622248007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.944 ± 0.396 (0.631) C:81% T:90%	pCi/L	09/12/19 10:29	

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 Yates-Pond 1
Pace Project No.: 2622248

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 Yates-Pond 1
Pace Project No.: 2622248

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2622248001	**YGWA-47**	EPA 9315	359489		
2622248002	**YGWC-45**	EPA 9315	359489		
2622248003	**YGWC-44**	EPA 9315	359489		
2622248004	**FB-1-8-20-19**	EPA 9315	359489		
2622248005	**YGWC-46**	EPA 9315	359489		
2622248006	**EB-1-8-21-19**	EPA 9315	359489		
2622248007	**Dup-1**	EPA 9315	359489		
2622248001	**YGWA-47**	EPA 9320	358698		
2622248002	**YGWC-45**	EPA 9320	358698		
2622248003	**YGWC-44**	EPA 9320	358698		
2622248004	**FB-1-8-20-19**	EPA 9320	358698		
2622248005	**YGWC-46**	EPA 9320	358698		
2622248006	**EB-1-8-21-19**	EPA 9320	358698		
2622248007	**Dup-1**	EPA 9320	358698		
2622248001	**YGWA-47**	Total Radium Calculation	361426		
2622248002	**YGWC-45**	Total Radium Calculation	361426		
2622248003	**YGWC-44**	Total Radium Calculation	361426		
2622248004	**FB-1-8-20-19**	Total Radium Calculation	361426		
2622248005	**YGWC-46**	Total Radium Calculation	361426		
2622248006	**EB-1-8-21-19**	Total Radium Calculation	361426		
2622248007	**Dup-1**	Total Radium Calculation	361426		

CHAIN OF CUSTODY RECORD

Pace Analytical®

Pace Analytical Services, Inc.
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
(770) 734-4200 : FAX (770) 734-4201

CLIENT NAME: Georgia Power

CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:
241 Ralph McGill Blvd SE B10185
Atlanta, GA 30308
404-506-7239

REPORT TO: Joju Abraham | CC:

REQUESTED COMPLETION DATE: | PO #:

PROJECT NAME/STATE: Plant Yates - Pond 1

PROJECT #:

ANALYSIS REQUESTED

Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAB	SAMPLE IDENTIFICATION	# of CONTAINERS	Metals App. IV (EPA 6020/7470) (P, 3)	Flouride (P, 7)	Radium 226 & 228 (SW-846 9315/9320) (P, 3)	REMARKS/ADDITIONAL INFORMATION
8-20-19	1030	GW		X	YGWA-47	4	✓	✓	✓	
8-20-19	1135	GW		X	YGWC-45	4	✓	✓	✓	
8-20-19	1345	GW		X	YGWC-44	~~4~~ 6	✓	✓	✓	extra Rad here
8-20-19	1330	W		X	FB-1-8-20-19	4	✓	✓	✓	
8-21-19	0945	GW		X	YGWC-46	4	✓	✓	✓	
8-21-19	1000	W		X	EB-1-8-21-19	4	✓	✓	✓	
—	—	GW		X	Dup-1	4	✓	✓	✓	

CONTAINER TYPE
- P - PLASTIC
- A - AMBER GLASS
- G - CLEAR GLASS
- V - VOA VIAL
- S - STERILE
- O - OTHER

PRESERVATION
- 1 - HCl, ≤6°C
- 2 - H_2SO_4, ≤6°C
- 3 - HNO_3
- 4 - NaOH, ≤6°C
- 5 - NaOH/ZnAc, ≤6°C
- 6 - $Na_2S_2O_3$, ≤6°C
- 7 - ≤6°C not frozen

*MATRIX CODES:
- DW - DRINKING WATER
- WW - WASTEWATER
- GW - GROUNDWATER
- SW - SURFACE WATER
- ST - STORM WATER
- W - WATER
- S - SOIL
- SL - SLUDGE
- SD - SOLID
- A - AIR
- L - LIQUID
- P - PRODUCT

LAB ID NUMBER

WO#: 2622248
2622248

SAMPLED BY AND TITLE: [signature] ACC | DATE/TIME: See above
RELINQUISHED BY: [signature] | DATE/TIME: 8-21-19 1650
RECEIVED BY: | DATE/TIME:
RELINQUISHED BY: | DATE/TIME:
RECEIVED BY LAB: [signature] | DATE/TIME: 08/21/19 1650

SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER (CLIENT) OTHER FS
pH checked: (Yes) No NA | Ice: (Yes) No NA | Temperature: Min: 2.0 Max: | Custody Seal: (Intact) Broken Not Present | # of Coolers | Cooler ID:

FOR LAB USE ONLY
LAB #:
Entered into LIMS:
Tracking #:

APP IV

Yates Phase- Pond 1 - Blank COCs

Sample Condition Upon Receipt

Pace Analytical

Client Name: GA Power Project #

WO#: 2622248

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

Tracking #:

PM: BM Due Date: 09/19/19

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no CLIENT: GAPower-CCR

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

Thermometer Used 83 Type of Ice: ☑ Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 2.0 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 3/21/19 MR

Temp should be above freezing to 6°C 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.
-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)

LEVEL 2A LABORATORY DATA VALIDATIONS

Plant Yates Ash Pond-1

Scan Event

August 2019

Georgia Power Company – Plant Yates Ash Pond-1

Quality Control Review of Analytical Data – August 2019

This narrative presents results of the Quality Control (QC) data review performed on analytical data submitted by Pace Analytical Services, Atlanta and Pittsburgh for groundwater samples collected at Plant Yates AP-1 between August 20, 2019 and August 21, 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 of this Appendix. SDG 2622246 was revised by the laboratory to correct the reporting limits (RLs) to meet project requirements.

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 detected 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 (USEPA Method 300.0), Solids in Water (Standard Methods 2540C), Radium-226 (USEPA 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)[1] and the National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017)[2]. The review included an assessment of the results for completeness, precision (laboratory duplicate recoveries and matrix spike/matrix spike duplicate recoveries), accuracy (laboratory control samples and matrix spike samples), and blank contamination (field, equipment, and laboratory blanks). Sample receipt conditions, holding times, and chains of custody (COCs) were reviewed. Where there was a discrepancy between the QC criteria in the guidelines and the QC criterion established in the analytical methodology, method-specific criteria or professional judgment were used.

DATA QUALITY OBJECTIVES

Laboratory Precision: Laboratory goals for precision were met, with the exception of Radum-226 on YGWC-44 (2622248003) as described in the qualifications section below.

Field Precision: Field goals for precision were met.

Accuracy: Laboratory goals for accuracy were met.

Detection Limits: Project goals for detection limits were met.

Completeness: There were no rejected analytical results for this event, resulting in a completion of 100%.

Holding Times: 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 low 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 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

ND: 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. The applied qualifications may not have been required for all samples collected at the site. A summary of sample qualifications can be found in Table 2 of this Appendix.

- Sample YGWC-44 (2622248003) was qualified as estimated (J) for Radium-226 as the laboratory relative percent difference (RPD) exceeded QC criteria (78.31% above limit of 25).

- Radium-226 data for YGWA-47 (2622248001) was qualified as non-detect (ND) due to the analyte being 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.

Atlantic Coast Consulting, Inc. reviewed the laboratory data from the Plant Yates Ash Pond-1 sampled between August 20, 2019 and August 21, 2019 in accordance with the analytical methods, the laboratory-specified QC criteria, and the guidelines. As described above, the results were acceptable for project use.

REFERENCES

[1]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

[2]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

Georgia Power Company – Plant Yates Ash Pond-1

Sample Summary Table – August 2019

						Analyses			
SDG	Field Identification	Collection Date	Lab Identification	Matrix	QC Samples	Metals (6020B, 7470A)	Anions (300.0)	TDS (SM 2540C)	Radium-226/-228 (9315, 9320)
22246	YGWA-47	8/20/2019	2622246001	GW		X	X	X	
22248	YGWA-47	8/20/2019	2622248001	GW					X
22246	YGWC-45	8/20/2019	2622246002	GW		X	X	X	
22248	YGWC-45	8/20/2019	2622248002	GW					X
22246	YGWC-44	8/20/2019	2622246003	GW		X	X	X	
22248	YGWC-44	8/20/2019	2622248003	GW					X
22246	FB-1-8-20-19	8/20/2019	2622246004	WQ	FB	X	X	X	
22248	FB-1-8-20-19	8/20/2019	2622248004	WQ	FB				X
22246	YGWC-46	8/21/2019	2622246005	GW		X	X	X	
22248	YGWC-46	8/21/2019	2622248005	GW					X
22246	EB-1-8-21-19	8/21/2019	2622246006	WQ	EB	X	X	X	
22248	EB-1-8-21-19	8/21/2019	2622248006	WQ	EB				X
22246	DUP-1	8/21/2019	2622246007	GW	FD (YGWC-46)	X	X	X	
22248	DUP-1	8/21/2019	2622248007	GW	FD (YGWC-46)				X

Abbreviations:
EB – Equipment Blank
FB – Field Blank
FD – Field Duplicate
GW – Groundwater
QC – Quality Control
TDS – Total Dissolved Solids
WQ – Water Quality Control

TABLE 2

Georgia Power Company – Plant Yates Ash Pond-1

Qualifier Summary Table – August 2019

SDG	Field Identification	Constituent	New RL	New MDL or MDC	Qualifier	Reason
22248	YGWA-47	Radium-226		0.298	ND	Blank detection
22248	YGWC-44	Radium-226			J	RPD exceeds laboratory goal

Abbreviations:
MDC – Minimum Detectable Concentration
MS/MSD – Matrix Spike / Matrix Spike Duplicate
MDL – Method Detection Limit
RL – Reporting Limit
RPD – Relative Percent Difference
SDG – Sample Delivery Group

Qualifiers:
J – Estimated Result
ND – Non-Detect Result

Product Name: Low-Flow System

Date: 2019-08-20 10:31:08

Project Information:		Pump Information:	
Operator Name	J Berisford	Pump Model/Type	QED Bladder
Company Name	Atlantic Coast Consulting	Tubing Type	poly
Project Name	Phase II-Pond 1	Tubing Diameter	.375 in
Site Name	Plant Yates	Tubing Length	59 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	54 ft

Well Information:		Pumping Information:	
Well ID	YGWA-47	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	1.7664 L
Well Total Depth	59.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	4.2 in
Depth to Water	33.85 ft	Total Volume Pumped	5.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	10:10:07	900.02	20.72	5.61	227.58	2.01	34.20	3.94	53.98
Last 5	10:15:07	1200.03	20.67	5.60	224.71	1.77	34.20	3.81	52.73
Last 5	10:20:07	1500.02	20.74	5.60	223.04	1.66	34.20	3.72	52.25
Last 5	10:25:07	1800.02	20.92	5.59	222.43	1.81	34.20	3.67	52.16
Last 5	10:30:07	2100.02	21.35	5.58	223.74	1.55	34.20	3.66	51.94
Variance 0			0.07	-0.00	-1.68			-0.09	-0.48
Variance 1			0.18	-0.01	-0.61			-0.05	-0.09
Variance 2			0.44	-0.01	1.31			-0.01	-0.22

Notes

Sunny, Sample time-1030

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-20 13:46:25

Project Information:		Pump Information:	
Operator Name	J Berisford	Pump Model/Type	QED Bladder
Company Name	Atlantic Coast Consulting	Tubing Type	poly
Project Name	Phase II-Pond 1	Tubing Diameter	.375 in
Site Name	Plant Yates	Tubing Length	90 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	85 ft

Well Information:		Pumping Information:	
Well ID	YGWC-44	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	2.439678 L
Well Total Depth	90 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	14.4 in
Depth to Water	49.6 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			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	13:25:15	1800.02	26.81	5.79	470.54	1.74	50.80	0.32	-37.78
Last 5	13:30:15	2100.02	26.96	5.79	474.37	2.39	50.80	0.28	-36.04
Last 5	13:35:15	2400.02	27.84	5.78	471.96	1.11	50.80	0.25	-34.26
Last 5	13:40:15	2700.02	28.01	5.78	470.71	1.28	50.80	0.24	-32.12
Last 5	13:45:15	3000.02	27.51	5.78	466.92	1.52	50.80	0.23	-29.82
Variance 0			0.87	-0.00	-2.40			-0.03	1.78
Variance 1			0.17	-0.00	-1.25			-0.01	2.14
Variance 2			-0.50	0.00	-3.79			-0.01	2.30

Notes

Sunny, Sample time-1345, FB-1-8-20-19 here at 1330

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-20 11:38:52

Project Information:		Pump Information:	
Operator Name	J Berisford	Pump Model/Type	QED Bladder
Company Name	Atlantic Coast Consulting	Tubing Type	poly
Project Name	Phase II-Pond 1	Tubing Diameter	.375 in
Site Name	Plant Yates	Tubing Length	74 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	69 ft

Well Information:		Pumping Information:	
Well ID	YGWC-45	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	2.09218 L
Well Total Depth	74 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	8.5 in
Depth to Water	22.79 ft	Total Volume Pumped	5.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	11:15:04	900.02	25.14	6.40	582.64	2.22	23.50	0.68	2.55
Last 5	11:20:04	1200.02	24.91	6.35	583.02	1.90	23.50	0.43	6.52
Last 5	11:25:04	1500.02	25.45	6.39	584.25	2.00	23.50	0.34	8.36
Last 5	11:30:04	1800.02	25.65	6.44	585.27	1.77	23.50	0.32	8.82
Last 5	11:35:04	2100.02	25.70	6.48	585.12	1.57	23.50	0.28	7.74
Variance 0			0.54	0.04	1.23			-0.08	1.84
Variance 1			0.20	0.05	1.02			-0.02	0.47
Variance 2			0.05	0.04	-0.15			-0.04	-1.08

Notes

Sunny, Sample time- 1135

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-21 09:45:54

Project Information:		Pump Information:	
Operator Name	J Berisford	Pump Model/Type	QED Bladder
Company Name	Atlantic Coast Consulting	Tubing Type	poly
Project Name	Phase II-Pond 1	Tubing Diameter	.375 in
Site Name	Plant Yates	Tubing Length	83 ft
Latitude	0° 0' 0"		
Longitude	0° 0' 0"		
Sonde SN	501336		
Turbidity Make/Model	HACH 2100Q	Pump placement from TOC	78 ft

Well Information:		Pumping Information:	
Well ID	YGWC-46	Final Pumping Rate	180 mL/min
Well diameter	2 in	Total System Volume	2.287648 L
Well Total Depth	83. ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	7.8 in
Depth to Water	48.03 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			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	09:20:01	600.03	21.67	5.86	996.88	0.57	48.80	0.72	55.68
Last 5	09:25:01	900.03	21.58	5.83	1002.81	0.77	48.90	0.59	58.49
Last 5	09:30:01	1200.03	21.85	5.82	1010.20	0.92	48.90	0.49	59.04
Last 5	09:35:01	1500.03	21.88	5.82	1018.80	0.57	48.90	0.33	59.61
Last 5	09:45:03	2102.02	22.30	5.82	1018.89	0.44	48.90	0.25	59.60
Variance 0			0.27	-0.00	7.39			-0.10	0.55
Variance 1			0.03	-0.01	8.60			-0.16	0.57
Variance 2			0.42	-0.00	0.09			-0.07	-0.01

Notes

Sunny, Sample time 0945, DUP-1 here

Grab Samples

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

December 11, 2019

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

RE: Project: Plant Yates Pond 1
Pace Project No.: 2624140

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 09, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This revised report replaces the report issued on 10/16/2019. The report has been revised to include Appendix IV Metals data which were omitted in the original report. No other changes have been made to this report.

This revised report replaces the revised report issued on 10/25/2019. The report has been revised to correct sample IDs per consultant request. No other changes have been made to this report.

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

Sincerely,

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

Enclosures

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

cc: Betsy McDaniel, Atlantic Coast Consulting
Chris Parker, Atlantic Coast Consulting
Evan Perry, Atlantic Coast Consulting
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta

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

CERTIFICATIONS

Project: Plant Yates Pond 1
Pace Project No.: 2624140

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 Yates Pond 1
Pace Project No.: 2624140

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624140001	**YGWA-47**	Water	10/08/19 12:34	10/09/19 17:00
2624140002	**YGWC-44**	Water	10/08/19 14:07	10/09/19 17:00
2624140003	**YGWC-45**	Water	10/09/19 10:23	10/09/19 17:00
2624140004	**EB-1 10-9-19**	Water	10/09/19 10:40	10/09/19 17:00
2624140005	**FB-1 10-9-19**	Water	10/08/19 13:40	10/09/19 17:00
2624140006	**YGWC-46**	Water	10/09/19 12:22	10/09/19 17:00
2624140007	**DUP-1**	Water	10/09/19 00:00	10/09/19 17:00

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

SAMPLE ANALYTE COUNT

Project: Plant Yates Pond 1
Pace Project No.: 2624140

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2624140001	**YGWA-47**	EPA 6020B	CSW	9
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624140002	**YGWC-44**	EPA 6020B	CSW	9
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624140003	**YGWC-45**	EPA 6020B	CSW	9
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624140004	**EB-1 10-9-19**	EPA 6020B	CSW	9
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624140005	**FB-1 10-9-19**	EPA 6020B	CSW	9
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624140006	**YGWC-46**	EPA 6020B	CSW	9
		SM 2540C	ALW	1
		EPA 300.0	MWB	3
2624140007	**DUP-1**	EPA 6020B	CSW	9
		SM 2540C	ALW	1
		EPA 300.0	MWB	3

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ANALYTICAL RESULTS

Project: Plant Yates Pond 1
Pace Project No.: 2624140

Sample: YGWA-47 **Lab ID: 2624140001** Collected: 10/08/19 12:34 Received: 10/09/19 17:00 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								
Arsenic	ND	mg/L	0.0050	0.00035	1	10/10/19 17:50	10/14/19 18:20	7440-38-2	
Barium	**0.025**	mg/L	0.010	0.00049	1	10/10/19 17:50	10/14/19 18:20	7440-39-3	
Boron	**0.012J**	mg/L	0.040	0.0049	1	10/10/19 17:50	10/14/19 18:20	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/10/19 17:50	10/14/19 18:20	7440-43-9	
Calcium	**9.7**	mg/L	0.10	0.011	1	10/10/19 17:50	10/14/19 18:20	7440-70-2	M6
Cobalt	**0.0014J**	mg/L	0.0050	0.00030	1	10/10/19 17:50	10/14/19 18:20	7440-48-4	
Lithium	**0.0036J**	mg/L	0.030	0.00078	1	10/10/19 17:50	10/14/19 18:20	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/10/19 17:50	10/14/19 18:20	7439-98-7	
Thallium	**0.000084J**	mg/L	0.0010	0.000052	1	10/10/19 17:50	10/14/19 18:20	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**172**	mg/L	10.0	10.0	1		10/11/19 11:28		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**4.4**	mg/L	1.0	0.024	1		10/12/19 08:27	16887-00-6	B
Fluoride	**0.034J**	mg/L	0.30	0.029	1		10/12/19 08:27	16984-48-8	
Sulfate	**52.3**	mg/L	10.0	0.17	10		10/14/19 19:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates Pond 1
Pace Project No.: 2624140

Sample: YGWC-44 **Lab ID: 2624140002** Collected: 10/08/19 14:07 Received: 10/09/19 17:00 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								
Arsenic	ND	mg/L	0.0050	0.00035	1	10/10/19 17:50	10/14/19 19:12	7440-38-2	
Barium	**0.098**	mg/L	0.010	0.00049	1	10/10/19 17:50	10/14/19 19:12	7440-39-3	
Boron	**0.58**	mg/L	0.040	0.0049	1	10/10/19 17:50	10/14/19 19:12	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/10/19 17:50	10/14/19 19:12	7440-43-9	
Calcium	**28.1**	mg/L	5.0	0.55	50	10/10/19 17:50	10/14/19 19:17	7440-70-2	
Cobalt	**0.0017J**	mg/L	0.0050	0.00030	1	10/10/19 17:50	10/14/19 19:12	7440-48-4	
Lithium	**0.012J**	mg/L	0.030	0.00078	1	10/10/19 17:50	10/14/19 19:12	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/10/19 17:50	10/14/19 19:12	7439-98-7	
Thallium	ND	mg/L	0.0010	0.000052	1	10/10/19 17:50	10/14/19 19:12	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**324**	mg/L	10.0	10.0	1		10/11/19 11:28		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**14.8**	mg/L	1.0	0.024	1		10/12/19 08:49	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/12/19 08:49	16984-48-8	
Sulfate	**142**	mg/L	10.0	0.17	10		10/15/19 02:39	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates Pond 1
Pace Project No.: 2624140

Sample: YGWC-45 **Lab ID: 2624140003** Collected: 10/09/19 10:23 Received: 10/09/19 17:00 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								
Arsenic	ND	mg/L	0.0050	0.00035	1	10/10/19 17:50	10/14/19 19:23	7440-38-2	
Barium	**0.058**	mg/L	0.010	0.00049	1	10/10/19 17:50	10/14/19 19:23	7440-39-3	
Boron	**0.35**	mg/L	0.040	0.0049	1	10/10/19 17:50	10/14/19 19:23	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/10/19 17:50	10/14/19 19:23	7440-43-9	
Calcium	**47.9**	mg/L	5.0	0.55	50	10/10/19 17:50	10/14/19 19:29	7440-70-2	
Cobalt	**0.00070J**	mg/L	0.0050	0.00030	1	10/10/19 17:50	10/14/19 19:23	7440-48-4	
Lithium	**0.012J**	mg/L	0.030	0.00078	1	10/10/19 17:50	10/14/19 19:23	7439-93-2	
Molybdenum	**0.0012J**	mg/L	0.010	0.00095	1	10/10/19 17:50	10/14/19 19:23	7439-98-7	
Thallium	ND	mg/L	0.0010	0.000052	1	10/10/19 17:50	10/14/19 19:23	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**432**	mg/L	10.0	10.0	1		10/14/19 11:51		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**5.1**	mg/L	1.0	0.024	1		10/12/19 10:18	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/12/19 10:18	16984-48-8	
Sulfate	**183**	mg/L	10.0	0.17	10		10/15/19 02:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates Pond 1
Pace Project No.: 2624140

Sample: EB-1 10-9-19 **Lab ID: 2624140004** Collected: 10/09/19 10:40 Received: 10/09/19 17:00 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								
Arsenic	ND	mg/L	0.0050	0.00035	1	10/10/19 17:50	10/14/19 19:35	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	10/10/19 17:50	10/14/19 19:35	7440-39-3	
Boron	ND	mg/L	0.040	0.0049	1	10/10/19 17:50	10/14/19 19:35	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/10/19 17:50	10/14/19 19:35	7440-43-9	
Calcium	**0.13**	mg/L	0.10	0.011	1	10/10/19 17:50	10/14/19 19:35	7440-70-2	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/10/19 17:50	10/14/19 19:35	7440-48-4	
Lithium	ND	mg/L	0.030	0.00078	1	10/10/19 17:50	10/14/19 19:35	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/10/19 17:50	10/14/19 19:35	7439-98-7	
Thallium	ND	mg/L	0.0010	0.000052	1	10/10/19 17:50	10/14/19 19:35	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**18.0**	mg/L	10.0	10.0	1		10/14/19 11:52		D6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**0.030J**	mg/L	1.0	0.024	1		10/12/19 10:40	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		10/12/19 10:40	16984-48-8	
Sulfate	**0.10J**	mg/L	1.0	0.017	1		10/12/19 10:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates Pond 1
Pace Project No.: 2624140

Sample: FB-1 10-9-19 **Lab ID: 2624140005** Collected: 10/08/19 13:40 Received: 10/09/19 17:00 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								
Arsenic	ND	mg/L	0.0050	0.00035	1	10/10/19 17:50	10/14/19 19:40	7440-38-2	
Barium	ND	mg/L	0.010	0.00049	1	10/10/19 17:50	10/14/19 19:40	7440-39-3	
Boron	ND	mg/L	0.040	0.0049	1	10/10/19 17:50	10/14/19 19:40	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/10/19 17:50	10/14/19 19:40	7440-43-9	
Calcium	ND	mg/L	0.10	0.011	1	10/10/19 17:50	10/14/19 19:40	7440-70-2	
Cobalt	ND	mg/L	0.0050	0.00030	1	10/10/19 17:50	10/14/19 19:40	7440-48-4	
Lithium	ND	mg/L	0.030	0.00078	1	10/10/19 17:50	10/14/19 19:40	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.00095	1	10/10/19 17:50	10/14/19 19:40	7439-98-7	
Thallium	ND	mg/L	0.0010	0.000052	1	10/10/19 17:50	10/14/19 19:40	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		10/11/19 11:28		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	ND	mg/L	1.0	0.024	1		10/12/19 11:25	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		10/12/19 11:25	16984-48-8	
Sulfate	**0.020J**	mg/L	1.0	0.017	1		10/12/19 11:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates Pond 1
Pace Project No.: 2624140

Sample: YGWC-46 **Lab ID: 2624140006** Collected: 10/09/19 12:22 Received: 10/09/19 17:00 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								
Arsenic	ND	mg/L	0.0050	0.00035	1	10/10/19 17:50	10/14/19 19:46	7440-38-2	
Barium	**0.024**	mg/L	0.010	0.00049	1	10/10/19 17:50	10/14/19 19:46	7440-39-3	
Boron	**1.1**	mg/L	0.040	0.0049	1	10/10/19 17:50	10/14/19 19:46	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/10/19 17:50	10/14/19 19:46	7440-43-9	
Calcium	**64.2**	mg/L	5.0	0.55	50	10/10/19 17:50	10/14/19 19:52	7440-70-2	
Cobalt	**0.024**	mg/L	0.0050	0.00030	1	10/10/19 17:50	10/14/19 19:46	7440-48-4	
Lithium	**0.0078J**	mg/L	0.030	0.00078	1	10/10/19 17:50	10/14/19 19:46	7439-93-2	
Molybdenum	**0.0013J**	mg/L	0.010	0.00095	1	10/10/19 17:50	10/14/19 19:46	7439-98-7	
Thallium	ND	mg/L	0.0010	0.000052	1	10/10/19 17:50	10/14/19 19:46	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**809**	mg/L	10.0	10.0	1		10/14/19 11:52		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**25.0**	mg/L	1.0	0.024	1		10/15/19 04:02	16887-00-6	
Fluoride	**0.12J**	mg/L	0.30	0.029	1		10/15/19 04:02	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/15/19 04:02	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Plant Yates Pond 1
Pace Project No.: 2624140

Sample: DUP-1 **Lab ID: 2624140007** Collected: 10/09/19 00:00 Received: 10/09/19 17:00 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								
Arsenic	**0.00041J**	mg/L	0.0050	0.00035	1	10/10/19 17:50	10/14/19 19:58	7440-38-2	
Barium	**0.024**	mg/L	0.010	0.00049	1	10/10/19 17:50	10/14/19 19:58	7440-39-3	
Boron	**1.1**	mg/L	0.040	0.0049	1	10/10/19 17:50	10/14/19 19:58	7440-42-8	
Cadmium	ND	mg/L	0.0025	0.00011	1	10/10/19 17:50	10/14/19 19:58	7440-43-9	
Calcium	**62.2**	mg/L	5.0	0.55	50	10/10/19 17:50	10/14/19 20:03	7440-70-2	
Cobalt	**0.024**	mg/L	0.0050	0.00030	1	10/10/19 17:50	10/14/19 19:58	7440-48-4	
Lithium	**0.0076J**	mg/L	0.030	0.00078	1	10/10/19 17:50	10/14/19 19:58	7439-93-2	
Molybdenum	**0.0013J**	mg/L	0.010	0.00095	1	10/10/19 17:50	10/14/19 19:58	7439-98-7	
Thallium	ND	mg/L	0.0010	0.000052	1	10/10/19 17:50	10/14/19 19:58	7440-28-0	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**798**	mg/L	10.0	10.0	1		10/14/19 11:52		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**24.9**	mg/L	1.0	0.024	1		10/15/19 04:22	16887-00-6	
Fluoride	**0.11J**	mg/L	0.30	0.029	1		10/15/19 04:22	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		10/15/19 04:22	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates Pond 1
Pace Project No.: 2624140

QC Batch: 36815 Analysis Method: EPA 6020B
QC Batch Method: EPA 3005A Analysis Description: 6020B MET
Associated Lab Samples: 2624140001, 2624140002, 2624140003, 2624140004, 2624140005, 2624140006, 2624140007

METHOD BLANK: 166313 Matrix: Water
Associated Lab Samples: 2624140001, 2624140002, 2624140003, 2624140004, 2624140005, 2624140006, 2624140007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0050	0.00035	10/14/19 18:02	
Barium	mg/L	ND	0.010	0.00049	10/14/19 18:02	
Boron	mg/L	ND	0.040	0.0049	10/14/19 18:02	
Cadmium	mg/L	ND	0.0025	0.00011	10/14/19 18:02	
Calcium	mg/L	ND	0.10	0.011	10/14/19 18:02	
Cobalt	mg/L	ND	0.0050	0.00030	10/14/19 18:02	
Molybdenum	mg/L	ND	0.010	0.00095	10/14/19 18:02	
Thallium	mg/L	ND	0.0010	0.000052	10/14/19 18:02	

LABORATORY CONTROL SAMPLE: 166314

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.1	0.097	97	80-120	
Barium	mg/L	0.1	0.098	98	80-120	
Boron	mg/L	1	0.95	95	80-120	
Cadmium	mg/L	0.1	0.10	100	80-120	
Calcium	mg/L	1	0.97	97	80-120	
Cobalt	mg/L	0.1	0.098	98	80-120	
Molybdenum	mg/L	0.1	0.10	101	80-120	
Thallium	mg/L	0.1	0.10	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166315 166316

Parameter	Units	2624140001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.012J	1	1	0.92	0.93	91	92	75-125	1	20	
Calcium	mg/L	9.7	1	1	9.8	9.3	11	-46	75-125	6	20	M6

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates Pond 1
Pace Project No.: 2624140

QC Batch: 36858 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624140001, 2624140002, 2624140005

LABORATORY CONTROL SAMPLE: 166584

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	411	103	84-108	

SAMPLE DUPLICATE: 166585

Parameter	Units	2624021007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	7930	8140	3	10	

SAMPLE DUPLICATE: 166586

Parameter	Units	2624140002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	324	337	4	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

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QUALITY CONTROL DATA

Project: Plant Yates Pond 1
Pace Project No.: 2624140

QC Batch: 36914 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 2624140003, 2624140004, 2624140006, 2624140007

LABORATORY CONTROL SAMPLE: 166870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	366	92	84-108	

SAMPLE DUPLICATE: 166871

Parameter	Units	2624187005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	526	532	1	10	

SAMPLE DUPLICATE: 166872

Parameter	Units	2624140004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	18.0	13.0	32	10	D6

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Plant Yates Pond 1
Pace Project No.: 2624140

QC Batch: 36855 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 2624140001, 2624140002, 2624140003, 2624140004, 2624140005, 2624140006, 2624140007

METHOD BLANK: 166564 Matrix: Water
Associated Lab Samples: 2624140001, 2624140002, 2624140003, 2624140004, 2624140005, 2624140006, 2624140007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.44J	1.0	0.024	10/12/19 04:46	
Fluoride	mg/L	ND	0.30	0.029	10/12/19 04:46	
Sulfate	mg/L	ND	1.0	0.017	10/12/19 04:46	

LABORATORY CONTROL SAMPLE: 166565

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 166566 166567

Parameter	Units	2624117001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	35.5	10	10	39.4	39.9	38	44	90-110	1	15	M1

MATRIX SPIKE SAMPLE: 166568

Parameter	Units	2624140004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	0.030J	10	10.0	100	90-110	
Fluoride	mg/L	ND	10	10.2	102	90-110	
Sulfate	mg/L	0.10J	10	10.1	100	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 Yates Pond 1
Pace Project No.: 2624140

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.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant Yates Pond 1
Pace Project No.: 2624140

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624140001	**YGWA-47**	EPA 3005A	36815	EPA 6020B	36833
2624140002	**YGWC-44**	EPA 3005A	36815	EPA 6020B	36833
2624140003	**YGWC-45**	EPA 3005A	36815	EPA 6020B	36833
2624140004	**EB-1 10-9-19**	EPA 3005A	36815	EPA 6020B	36833
2624140005	**FB-1 10-9-19**	EPA 3005A	36815	EPA 6020B	36833
2624140006	**YGWC-46**	EPA 3005A	36815	EPA 6020B	36833
2624140007	**DUP-1**	EPA 3005A	36815	EPA 6020B	36833
2624140001	**YGWA-47**	SM 2540C	36858		
2624140002	**YGWC-44**	SM 2540C	36858		
2624140003	**YGWC-45**	SM 2540C	36914		
2624140004	**EB-1 10-9-19**	SM 2540C	36914		
2624140005	**FB-1 10-9-19**	SM 2540C	36858		
2624140006	**YGWC-46**	SM 2540C	36914		
2624140007	**DUP-1**	SM 2540C	36914		
2624140001	**YGWA-47**	EPA 300.0	36855		
2624140002	**YGWC-44**	EPA 300.0	36855		
2624140003	**YGWC-45**	EPA 300.0	36855		
2624140004	**EB-1 10-9-19**	EPA 300.0	36855		
2624140005	**FB-1 10-9-19**	EPA 300.0	36855		
2624140006	**YGWC-46**	EPA 300.0	36855		
2624140007	**DUP-1**	EPA 300.0	36855		

CHAIN OF CUSTODY RECORD

Pace Analytical®

Pace Analytical Services, Inc.
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
(770) 734-4200 : FAX (770) 734-4201

CLIENT NAME: Georgia Power

CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:
241 Ralph McGill Blvd SE B10185
Atlanta, GA 30308
404-506-7239

REPORT TO: Joju Abraham

REQUESTED COMPLETION DATE:

PO #:

PROJECT NAME/STATE: Plant Yates - Pond 1

PROJECT #:

ANALYSIS REQUESTED

Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAB	SAMPLE IDENTIFICATION	# of CONTAINERS		Metals App. III Boron, Calcium	Cl, F, SO_4 & TDS (EPA 300.0 & SM 2540C)		Detected App IV: Radium 226 & 228 (SW-846 9315/9320)	Detected App IV Metals: (See list below)					LAB ID NUMBER
CONTAINER TYPE:								P	P		P	P					
PRESERVATION:								3	7		3	3					
10-8-19	1234	GW		✓	YGWA-47	4		✓	✓		✓	✓					1
10-8-19	1407	GW		✓	YGWC-44	4		✓	✓		✓	✓					2
10-9-19	1023	GW		✓	YGWC-45	4		✓	✓		✓	✓					3
10-9-19	1040	W		✓	EB-1 10-9-19	4		✓	✓		✓	✓					4
10-8-19	1340	W		✓	FB-1 10-8-19	4		✓	✓		✓	✓					5
10-9-19	1222	GW		✓	YGWC-46	4		✓	✓		✓	✓					6
10-9-19	—	GW		✓	Dup-1	4		✓	✓		✓	✓					7

CONTAINER TYPE	PRESERVATION
P - PLASTIC	1 - HCl, ≤6°C
A - AMBER GLASS	2 - H_2SO_4, ≤6°C
G - CLEAR GLASS	3 - HNO_3
V - VOA VIAL	4 - NaOH, ≤6°C
S - STERILE	5 - NaOH/ZnAc, ≤6°C
O - OTHER	6 - $Na_2S_2O_3$, ≤6°C
	7 - ≤6°C not frozen

*MATRIX CODES:

DW -	DRINKING WATER	S -	SOIL
WW -	WASTEWATER	SL -	SLUDGE
GW -	GROUNDWATER	SD -	SOLID
SW -	SURFACE WATER	A -	AIR
ST -	STORM WATER	L -	LIQUID
W -	WATER	P -	PRODUCT

REMARKS/ADDITIONAL INFORMATION

SAMPLED BY AND TITLE: Taylor Goble
DATE/TIME: See above
RELINQUISHED BY: Taylor Goble
DATE/TIME: 10-9-19 1700

RECEIVED BY:
DATE/TIME:
RELINQUISHED BY:
DATE/TIME:

RECEIVED BY LAB:
DATE/TIME: 10/9/19 1700

pH checked: Yes No NA
Ice: Yes No NA
Temperature: Min: 1.8°C Max:

SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER
Custody Seal: Intact Broken Not Present
# of Coolers:
Cooler ID:

FOR LAB USE ONLY
LAB #:
Entered Into LIMS:

WO# : 2624140

2624140

Detected App IV Metals: Arsenic, Barium, Cadmium, Cobalt, Lithium, Molybdenum, Thallium

Pace Analytical

Sample Condition Upon Receipt

WO# : 2624140

Client Name: Georgia Power

PM: BM Due Date: 10/16/19

CLIENT: GAPower-CCR

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

Tracking #: _____

Proj. Due Date:
Proj. Name:

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

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

Thermometer Used 214 Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 1.8C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/9/19 CDH

Temp should be above freezing to 6°C

		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.
-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

November 12, 2019

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

RE: Project: Plant Yates Pond 1
Pace Project No.: 2624141

Dear Joju Abraham:
Enclosed are the analytical results for sample(s) received by the laboratory on October 09, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report was revised 11/12/19 to correct a sample ID error made by the lab.

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: Chris Parker, Atlantic Coast Consulting
Evan Perry, Atlantic Coast Consulting
Lauren Petty, Southern Company Services, Inc.
Rebecca Thornton, Pace Analytical Atlanta

Pace Analytical Services, LLC
110 Technology Parkway
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CERTIFICATIONS

Project: Plant Yates Pond 1
Pace Project No.: 2624141

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
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SAMPLE SUMMARY

Project: Plant Yates Pond 1
Pace Project No.: 2624141

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2624141001	**YGWA-47**	Water	10/08/19 12:34	10/09/19 17:00
2624141002	**YGWC-44**	Water	10/08/19 14:07	10/09/19 17:00
2624141003	**YGWC-45**	Water	10/09/19 10:23	10/09/19 17:00
2624141004	**EB-1 10-9-19**	Water	10/09/19 10:40	10/09/19 17:00
2624141005	**FB-1 10-9-19**	Water	10/08/19 13:40	10/09/19 17:00
2624141006	**YGWC-46**	Water	10/09/19 12:22	10/09/19 17:00
2624141007	**DUP-1**	Water	10/09/19 00:00	10/09/19 17:00

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SAMPLE ANALYTE COUNT

Project: Plant Yates Pond 1
Pace Project No.: 2624141

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2624141001	**YGWA-47**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624141002	**YGWC-44**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624141003	**YGWC-45**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624141004	**EB-1 10-9-19**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624141005	**FB-1 10-9-19**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624141006	**YGWC-46**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2624141007	**DUP-1**	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Yates Pond 1
Pace Project No.: 2624141

Sample: YGWA-47 **Lab ID: 2624141001** Collected: 10/08/19 12:34 Received: 10/09/19 17:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.710 ± 0.267 (0.231) C:91% T:NA**	pCi/L	11/04/19 08:50	13982-63-3	
Radium-228	EPA 9320	**1.01 ± 0.471 (0.786) C:69% T:82%**	pCi/L	11/04/19 12:59	15262-20-1	
Total Radium	Total Radium Calculation	**1.72 ± 0.738 (1.02)**	pCi/L	11/07/19 09:47	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Peachtree Corners, GA 30092
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Yates Pond 1
Pace Project No.: 2624141

Sample: YGWC-44 **Lab ID: 2624141002** Collected: 10/08/19 14:07 Received: 10/09/19 17:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.731 ± 0.276 (0.193) C:88% T:NA**	pCi/L	11/04/19 08:51	13982-63-3	
Radium-228	EPA 9320	**0.0381 ± 0.406 (0.934) C:70% T:78%**	pCi/L	11/04/19 13:02	15262-20-1	
Total Radium	Total Radium Calculation	**0.769 ± 0.682 (1.13)**	pCi/L	11/07/19 09:47	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Yates Pond 1
Pace Project No.: 2624141

Sample: YGWC-45 **Lab ID: 2624141003** Collected: 10/09/19 10:23 Received: 10/09/19 17:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**1.43 ± 0.403 (0.253) C:96% T:NA**	pCi/L	11/04/19 08:52	13982-63-3	
Radium-228	EPA 9320	**0.178 ± 0.584 (1.31) C:70% T:76%**	pCi/L	11/04/19 13:08	15262-20-1	
Total Radium	Total Radium Calculation	**1.61 ± 0.987 (1.56)**	pCi/L	11/07/19 09:47	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Yates Pond 1
Pace Project No.: 2624141

Sample: EB-1 10-9-19 **Lab ID: 2624141004** Collected: 10/09/19 10:40 Received: 10/09/19 17:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.398 ± 0.203 (0.228) C:86% T:NA**	pCi/L	11/04/19 08:54	13982-63-3	
Radium-228	EPA 9320	**0.336 ± 0.460 (0.987) C:66% T:91%**	pCi/L	11/04/19 13:08	15262-20-1	
Total Radium	Total Radium Calculation	**0.734 ± 0.663 (1.22)**	pCi/L	11/07/19 09:47	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Yates Pond 1
Pace Project No.: 2624141

Sample: FB-1 10-9-19 **Lab ID: 2624141005** Collected: 10/08/19 13:40 Received: 10/09/19 17:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.440 ± 0.203 (0.197) C:96% T:NA**	pCi/L	11/04/19 08:54	13982-63-3	
Radium-228	EPA 9320	**0.401 ± 0.477 (1.01) C:69% T:87%**	pCi/L	11/04/19 13:08	15262-20-1	
Total Radium	Total Radium Calculation	**0.841 ± 0.680 (1.21)**	pCi/L	11/07/19 09:47	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Yates Pond 1
Pace Project No.: 2624141

Sample: YGWC-46 **Lab ID: 2624141006** Collected: 10/09/19 12:22 Received: 10/09/19 17:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.480 ± 0.214 (0.226) C:97% T:NA**	pCi/L	11/04/19 08:55	13982-63-3	
Radium-228	EPA 9320	**0.412 ± 0.534 (1.14) C:72% T:87%**	pCi/L	11/04/19 13:08	15262-20-1	
Total Radium	Total Radium Calculation	**0.892 ± 0.748 (1.37)**	pCi/L	11/07/19 09:47	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Yates Pond 1
Pace Project No.: 2624141

Sample: DUP-1 **Lab ID: 2624141007** Collected: 10/09/19 00:00 Received: 10/09/19 17:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	**0.610 ± 0.327 (0.436) C:86% T:NA**	pCi/L	11/06/19 08:02	13982-63-3	
Radium-228	EPA 9320	**0.219 ± 0.367 (0.798) C:79% T:85%**	pCi/L	11/06/19 17:17	15262-20-1	
Total Radium	Total Radium Calculation	**0.829 ± 0.694 (1.23)**	pCi/L	11/08/19 13:51	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Yates Pond 1
Pace Project No.: 2624141

QC Batch: 366971 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2624141001, 2624141002, 2624141003, 2624141004, 2624141005, 2624141006

METHOD BLANK: 1780043 Matrix: Water
Associated Lab Samples: 2624141001, 2624141002, 2624141003, 2624141004, 2624141005, 2624141006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.325 ± 0.327 (0.672) C:75% T:91%	pCi/L	11/04/19 13:01	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Yates Pond 1
Pace Project No.: 2624141

QC Batch: 366969 Analysis Method: EPA 9315
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium
Associated Lab Samples: 2624141001, 2624141002, 2624141003, 2624141004, 2624141005, 2624141006

METHOD BLANK: 1780037 Matrix: Water
Associated Lab Samples: 2624141001, 2624141002, 2624141003, 2624141004, 2624141005, 2624141006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.340 ± 0.211 (0.351) C:96% T:NA	pCi/L	11/04/19 08:33	

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 Yates Pond 1
Pace Project No.: 2624141

QC Batch: 368259
QC Batch Method: EPA 9315
Analysis Method: EPA 9315
Analysis Description: 9315 Total Radium
Associated Lab Samples: 2624141007

METHOD BLANK: 1786863
Matrix: Water
Associated Lab Samples: 2624141007

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 Yates Pond 1
Pace Project No.: 2624141

QC Batch: 368258 Analysis Method: EPA 9320
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228
Associated Lab Samples: 2624141007

METHOD BLANK: 1786861 Matrix: Water
Associated Lab Samples: 2624141007

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 Yates Pond 1
Pace Project No.: 2624141

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 Yates Pond 1
Pace Project No.: 2624141

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2624141001	**YGWA-47**	EPA 9315	366969		
2624141002	**YGWC-44**	EPA 9315	366969		
2624141003	**YGWC-45**	EPA 9315	366969		
2624141004	**EB-1 10-9-19**	EPA 9315	366969		
2624141005	**FB-1 10-9-19**	EPA 9315	366969		
2624141006	**YGWC-46**	EPA 9315	366969		
2624141007	**DUP-1**	EPA 9315	368259		
2624141001	**YGWA-47**	EPA 9320	366971		
2624141002	**YGWC-44**	EPA 9320	366971		
2624141003	**YGWC-45**	EPA 9320	366971		
2624141004	**EB-1 10-9-19**	EPA 9320	366971		
2624141005	**FB-1 10-9-19**	EPA 9320	366971		
2624141006	**YGWC-46**	EPA 9320	366971		
2624141007	**DUP-1**	EPA 9320	368258		
2624141001	**YGWA-47**	Total Radium Calculation	369812		
2624141002	**YGWC-44**	Total Radium Calculation	369812		
2624141003	**YGWC-45**	Total Radium Calculation	369812		
2624141004	**EB-1 10-9-19**	Total Radium Calculation	369812		
2624141005	**FB-1 10-9-19**	Total Radium Calculation	369812		
2624141006	**YGWC-46**	Total Radium Calculation	369812		
2624141007	**DUP-1**	Total Radium Calculation	370118		

CHAIN OF CUSTODY RECORD

Pace Analytical®

Pace Analytical Services, Inc.
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
(770) 734-4200 : FAX (770) 734-4201

CLIENT NAME: Georgia Power

CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:
241 Ralph McGill Blvd SE B10185
Atlanta, GA 30308
404-506-7239

REPORT TO: Joju Abraham

REQUESTED COMPLETION DATE:

PO #:

PROJECT NAME/STATE: Plant Yates - Pond 1

PROJECT #:

ANALYSIS REQUESTED

Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAB	SAMPLE IDENTIFICATION	# of CONTAINERS	Metals App. III Boron, Calcium	Cl, F, SO4 & TDS (EPA 300.0 & SM 2540C)	Detected App IV: Radium 226 & 228 (SW-846 9315/9320)	Detected App IV Metals: (See list below)	LAB ID NUMBER
CONTAINER TYPE:							P	P	P	P	
PRESERVATION:							3	7	3	3	
10-8-19	1234	GW		✓	YGWA-47	4	✓	✓	✓	✓	1
10-8-19	1407	GW		✓	YGWC-44	4	✓	✓	✓	✓	2
10-9-19	1023	GW		✓	YGWC-45	4	✓	✓	✓	✓	3
10-9-19	1040	W		✓	EB-1 10-9-19	4	✓	✓	✓	✓	4
10-8-19	1340	W		✓	FB-1 10-8-19	4	✓	✓	✓	✓	5
10-9-19	1222	GW		✓	YGWC-46	4	✓	✓	✓	✓	6
10-9-19	—	GW		✓	Dup-1	4	✓	✓	✓	✓	7

CONTAINER TYPE	PRESERVATION
P - PLASTIC	1 - HCl, ≤6°C
A - AMBER GLASS	2 - H_2SO_4, ≤6°C
G - CLEAR GLASS	3 - HNO_3
V - VOA VIAL	4 - NaOH, ≤6°C
S - STERILE	5 - NaOH/ZnAc, ≤6°C
O - OTHER	6 - $Na_2S_2O_3$, ≤6°C
	7 - ≤6°C not frozen

*MATRIX CODES:

DW - DRINKING WATER	S - SOIL
WW - WASTEWATER	SL - SLUDGE
GW - GROUNDWATER	SD - SOLID
SW - SURFACE WATER	A - AIR
ST - STORM WATER	L - LIQUID
W - WATER	P - PRODUCT

REMARKS/ADDITIONAL INFORMATION

SAMPLED BY AND TITLE: Taylor Goble
DATE/TIME: See above
RELINQUISHED BY: Taylor Goble
DATE/TIME: 10-9-19/1700

RECEIVED BY:
DATE/TIME:
RELINQUISHED BY:
DATE/TIME:

RECEIVED BY LAB:
DATE/TIME: 10/9/19 1700
SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS

pH checked: Yes No NA
Ice: Yes No NA
Temperature: Min: 1.8°C Max:
Custody Seal: Intact Broken Not Present
# of Coolers:
Cooler ID:

FOR LAB USE ONLY
LAB #:
Entered into LIMS:
Tracking #:

WO#: 2624141

Detected App IV Metals: Arsenic, Barium, Cadmium, Cobalt, Lithium, Molybdenum, Thallium

2624141

Pace Analytical

Sample Condition Upon Receipt

Client Name: Georgia Power

WO# : 2624141

PM: BM Due Date: 11/06/19

CLIENT: GAPower-CCR

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

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 on ice, cooling process has begun

Cooler Temperature 1.8°C Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 10/9/19 CDH

Temp should be above freezing to 6°C

		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.
-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)

LEVEL 2A LABORATORY DATA VALIDATIONS

Plant Yates Ash Pond-1

2nd Semi-Annual Event

October 2019

Georgia Power Company – Plant Yates Ash Pond-1

Quality Control Review of Analytical Data – October 2019

This narrative presents results of the Quality Control (QC) data review performed on analytical data submitted by Pace Analytical Services, Atlanta and Pittsburgh for groundwater samples collected at Plant Yates AP-1 between October 8, 2019 and October 9, 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 of this Appendix. SDG 2624140 was revised by the laboratory to add target analytes that were missing from the original report. SDGs 2624140 and 2624141 were revised by the laboratory to correct sample identifications.

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 detected 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 (USEPA Method 300.0), Solids in Water (Standard Methods 2540C), Radium-226 (USEPA 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)[1] and the National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017)[2]. The review included an assessment of the results for completeness, precision (laboratory duplicate recoveries and matrix spike/matrix spike duplicate recoveries), accuracy (laboratory control samples and matrix spike samples), and blank contamination (field, equipment, and laboratory blanks). Sample receipt conditions, holding times, and chains of custody (COCs) were reviewed. Where there was a discrepancy between the QC criteria in the guidelines and the QC criterion established in the analytical methodology, method-specific criteria or professional judgment were used.

DATA QUALITY OBJECTIVES

Laboratory Precision: Laboratory goals for precision were met, with the exception of Radum-226 on DUP-1 (2624142007) as described in the qualifications section below. Additionally, Radium-226 in SDG 2624141 yielded a relative percent difference (RPD) for the laboratory control sample/laboratory control sample duplicate that exceeded the QC criteria (54.43% above limit of 36). This batch was passed on the individual recoveries, and no batch qualification was necessary for Radium-226.

Field Precision: Field goals for precision were met.

Accuracy: Laboratory goals for accuracy were met, with the exception of Calcium in SDG 2624140 as described in the qualifications section below.

Detection Limits: Project goals for detection limits were met.

Completeness: There were no rejected analytical results for this event, resulting in a completion of 100%.

Holding Times: 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 low 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 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

ND: 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. The applied qualifications may not have been required for all samples collected at the site. A summary of sample qualifications can be found in Table 2 of this Appendix.

- Sample YGWA-47 (2624140001) was qualified as estimated (J) for Calcium as the associated matrix spike and matrix spike duplicate recoveries were outside the QC criteria. The sample received 50-times dilution, which yielded spike recoveries that could not be evaluated.

- Sample DUP-1 (2624141007) was qualified as estimated (J) for Radium-226 as the laboratory RPD exceeded QC criteria (41.19% above limit of 25).

- The Chloride result for sample YGWA-47 (2624140001) was qualified as estimated (J) due to the analyte being detected at a concentration between the method detection limit (MDL) and reporting limit (RL) in an associated blank sample and an order of magnitude above the RL in the sample. As shown in Table 2, the MDL was raised as part of the qualification process.

- Certain radium results in SDGs 2624140 and 2624141 were qualified as non-detect (ND) due to the analyte being 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.

Atlantic Coast Consulting, Inc. reviewed the laboratory data from the Plant Yates Ash Pond-1 sampled between October 8, 2019 and October 9, 2019 in accordance with the analytical methods, the laboratory-specified QC criteria, and the guidelines. As described above, the results were acceptable for project use.

REFERENCES

[1]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

[2]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

Georgia Power Company – Plant Yates Ash Pond-1

Sample Summary Table – October 2019

						Analyses			
SDG	Field Identification	Collection Date	Lab Identification	Matrix	QC Samples	Metals (6020B, 7470A)	Anions (300.0)	TDS (SM 2540C)	Radium-226/-228 (9315, 9320)
24140	YGWA-47	10/8/2019	2624140001	GW		X	X	X	
24141	YGWA-47	10/8/2019	2624141001	GW					X
24140	YGWC-44	10/8/2019	2624140002	GW		X	X	X	
24141	YGWC-44	10/8/2019	2624141002	GW					X
24140	YGWC-45	10/9/2019	2624140003	GW		X	X	X	
24141	YGWC-45	10/9/2019	2624141003	GW					X
24140	EB-1 10-9-19	10/9/2019	2624140004	WQ	EB	X	X	X	
24141	EB-1 10-9-19	10/9/2019	2624141004	WQ	EB				X
24140	FB-1 10-9-19	10/8/2019	2624140005	WQ	FB	X	X	X	
24141	FB-1 10-9-19	10/8/2019	2624141005	WQ	FB				X
24140	YGWC-46	10/9/2019	2624140006	GW		X	X	X	
24141	YGWC-46	10/9/2019	2624141006	GW					X
24140	DUP-1	10/9/2019	2624140007	GW	FD (YGWC-46)	X	X	X	
24141	DUP-1	10/9/2019	2624141007	GW	FD (YGWC-46)				X

Abbreviations:
EB – Equipment Blank
FB – Field Blank
FD – Field Duplicate
GW – Groundwater
QC – Quality Control
TDS – Total Dissolved Solids
WQ – Water Quality Control

TABLE 2

Georgia Power Company – Plant Yates Ash Pond-1

Qualifier Summary Table – October 2019

SDG	Field Identification	Constituent	New RL	New MDL or MDC	Qualifier	Reason
24140	YGWA-47	Calcium			J	MS/MSD outside QC criteria
24140	YGWA-47	Chloride		0.445	J	Blank detection above MDL and sample detection above RL
24141	YGWA-47	Radium-226		0.231	ND	Blank detection
24141	YGWC-44	Radium-226		0.193	ND	Blank detection
24141	YGWC-45	Radium-226		0.253	ND	Blank detection
24141	YGWC-46	Radium-226		0.226	ND	Blank detection
24241	DUP-1	Radium-226			J	RPD exceeds laboratory goal

Abbreviations:
MDC – Minimum Detectable Concentration
MS/MSD – Matrix Spike / Matrix Spike Duplicate
MDL – Method Detection Limit
RL – Reporting Limit
RPD – Relative Percent Difference
SDG – Sample Delivery Group

Qualifiers:
J – Estimated Result
ND – Non-Detect Result

Product Name: Low-Flow System

Date: 2019-10-08 12:35:36

Project Information:		Pump Information:	
Operator Name	Taylor Goble	Pump Model/Type	Bladder Pump
Company Name	ACC	Tubing Type	Poly
Project Name	Pond 1	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	60 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	613229		
Turbidity Make/Model	HACH	Pump placement from TOC	55 ft

Well Information:		Pumping Information:	
Well ID	YGWA-47	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.6691639 L
Well Total Depth	59.50 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	10 in
Depth to Water	35.63 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			+/- 1	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 25
Last 5	12:14:21	600.02	19.86	6.05	219.40	1.55	36.18	4.23	116.51
Last 5	12:19:21	899.93	19.32	5.77	219.40	1.39	36.24	3.86	100.65
Last 5	12:24:21	1199.93	19.11	5.68	219.16	1.22	36.29	3.70	92.73
Last 5	12:29:21	1499.93	19.04	5.65	220.37	1.28	36.34	3.68	88.31
Last 5	12:34:21	1799.93	18.99	5.59	221.35	1.22	36.40	3.66	86.92
Variance 0			-0.22	-0.09	-0.24			-0.16	-7.92
Variance 1			-0.06	-0.03	1.21			-0.02	-4.42
Variance 2			-0.06	-0.06	0.98			-0.02	-1.39

Notes

Sampled at 1234. Rainy 78 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-08 14:08:37

Project Information:		Pump Information:	
Operator Name	Taylor Goble	Pump Model/Type	Bladder Pump
Company Name	ACC	Tubing Type	Poly
Project Name	Pond 1	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	90 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	613229		
Turbidity Make/Model	HACH	Pump placement from TOC	85 ft

Well Information:		Pumping Information:	
Well ID	YGWC-44	Final Pumping Rate	100 mL/min
Well diameter	2 in	Total System Volume	0.9587458 L
Well Total Depth	90.00 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	14 in
Depth to Water	50.68 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			+/- 1	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 25
Last 5	13:47:06	1200.02	25.19	5.90	471.27	0.77	51.61	1.42	-48.16
Last 5	13:52:08	1502.02	25.55	5.86	471.93	1.23	51.75	0.96	-34.23
Last 5	13:57:09	1803.02	25.87	5.84	473.11	0.98	51.82	0.79	-19.63
Last 5	14:02:09	2103.02	26.33	5.83	472.37	1.54	51.90	0.73	-7.60
Last 5	14:07:09	2403.05	25.78	5.84	470.04	2.01	52.01	0.69	0.99
Variance 0			0.32	-0.02	1.18			-0.17	14.60
Variance 1			0.46	-0.01	-0.74			-0.05	12.03
Variance 2			-0.55	0.00	-2.33			-0.04	8.59

Notes

Sampled at 1407. Sunny 79 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 10:24:28

Project Information:		Pump Information:	
Operator Name	Taylor Goble	Pump Model/Type	Bladder Pump
Company Name	ACC	Tubing Type	Poly
Project Name	Pond 1	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	70 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	613229		
Turbidity Make/Model	HACH	Pump placement from TOC	65 ft

Well Information:		Pumping Information:	
Well ID	YGWC-45	Final Pumping Rate	150 mL/min
Well diameter	2 in	Total System Volume	0.7656912 L
Well Total Depth	74.00 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	13 in
Depth to Water	22.94 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			+/- 1	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 25
Last 5	10:03:30	900.02	19.35	6.57	566.71	3.15	23.78	1.40	22.12
Last 5	10:08:30	1200.02	19.32	6.48	569.07	2.26	23.84	1.24	26.34
Last 5	10:13:31	1501.02	19.29	6.49	570.56	2.17	23.92	1.22	24.53
Last 5	10:18:31	1801.02	19.32	6.52	572.40	1.88	24.00	1.08	21.00
Last 5	10:23:31	2100.95	19.29	6.55	573.15	1.72	24.10	1.10	17.15
Variance 0			-0.03	0.01	1.48			-0.03	-1.81
Variance 1			0.03	0.03	1.85			-0.14	-3.53
Variance 2			-0.03	0.03	0.75			0.02	-3.86

Notes

Sampled at 1023. Cloudy 70 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 12:23:44

Project Information:		Pump Information:	
Operator Name	Taylor Goble	Pump Model/Type	Bladder Pump
Company Name	ACC	Tubing Type	Poly
Project Name	Pond 1	Tubing Diameter	.25 in
Site Name	Plant Yates	Tubing Length	84 ft
Latitude	0º 0' 0"		
Longitude	0º 0' 0"		
Sonde SN	613229		
Turbidity Make/Model	HACH	Pump placement from TOC	79 ft

Well Information:		Pumping Information:	
Well ID	YGWC-46	Final Pumping Rate	180 mL/min
Well diameter	2 in	Total System Volume	0.9008295 L
Well Total Depth	83.60 ft	Calculated Sample Rate	300 sec
Screen Length	10 ft	Stabilization Drawdown	14 in
Depth to Water	48.29 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			+/- 1	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 25
Last 5	12:02:26	901.02	20.84	6.13	1006.14	1.07	48.98	0.96	-11.05
Last 5	12:07:26	1201.02	20.76	6.02	1006.34	1.55	49.11	0.69	2.93
Last 5	12:12:26	1501.02	20.79	5.98	1005.72	1.28	49.20	0.61	8.50
Last 5	12:17:27	1802.02	20.80	5.97	1006.92	1.11	49.31	0.58	10.97
Last 5	12:22:27	2102.02	20.79	5.96	1006.30	1.23	49.44	0.49	11.96
Variance 0			0.03	-0.04	-0.62			-0.08	5.57
Variance 1			0.00	-0.02	1.19			-0.03	2.47
Variance 2			-0.00	-0.01	-0.62			-0.09	0.99

Notes

Sampled at 1222. Cloudy 75 degrees. Duplicate 1 here

Grab Samples

APPENDIX B

STATISTICAL ANALYSES

AP-1 100% ND

Date: 12/3/2019 2:27 PM

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Cadmium (mg/L)

YGWC-44, YGWC-45

Molybdenum (mg/L)

YGWA-47

Thallium (mg/L)

YGWC-44, YGWC-45, YGWC-46

Interwell Prediction Limit Significant Results

Plant Yates Client: Southern Company Data: Yates Ash Pond 1 Printed 12/3/2019, 2:31 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**YGWC-44**	**0.01752**	**n/a**	**10/8/2019**	**0.58**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Boron (mg/L)	**YGWC-45**	**0.01752**	**n/a**	**10/9/2019**	**0.35**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Boron (mg/L)	**YGWC-46**	**0.01752**	**n/a**	**10/9/2019**	**1.1**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**YGWC-44**	**22.04**	**n/a**	**10/8/2019**	**28.1**	**Yes**	**10**	**10**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**YGWC-45**	**22.04**	**n/a**	**10/9/2019**	**47.9**	**Yes**	**10**	**10**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**YGWC-46**	**22.04**	**n/a**	**10/9/2019**	**64.2**	**Yes**	**10**	**10**	**No**	**0.002505**	**Param Inter 1 of 2**
Chloride (mg/L)	**YGWC-44**	**6.986**	**n/a**	**10/8/2019**	**14.8**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Chloride (mg/L)	**YGWC-46**	**6.986**	**n/a**	**10/9/2019**	**25**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
pH (S.U.)	**YGWC-45**	**5.847**	**5.345**	**10/9/2019**	**6.55**	**Yes**	**10**	**0**	**No**	**0.001253**	**Param Inter 1 of 2**
pH (S.U.)	**YGWC-46**	**5.847**	**5.345**	**10/9/2019**	**5.96**	**Yes**	**10**	**0**	**No**	**0.001253**	**Param Inter 1 of 2**
Sulfate (mg/L)	**YGWC-45**	**181.3**	**n/a**	**10/9/2019**	**183**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Total Dissolved Solids (mg/L)	**YGWC-44**	**319**	**n/a**	**10/8/2019**	**324**	**Yes**	**10**	**0**	**n/a**	**0.01337**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	**YGWC-45**	**319**	**n/a**	**10/9/2019**	**432**	**Yes**	**10**	**0**	**n/a**	**0.01337**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	**YGWC-46**	**319**	**n/a**	**10/9/2019**	**809**	**Yes**	**10**	**0**	**n/a**	**0.01337**	**NP Inter (normality) 1 of 2**

Interwell Prediction Limit All Results

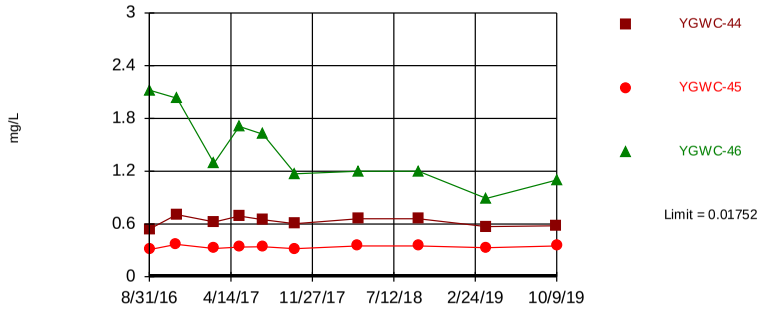
Plant Yates Client: Southern Company Data: Yates Ash Pond 1 Printed 12/3/2019, 2:31 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	**YGWC-44**	**0.01752**	**n/a**	**10/8/2019**	**0.58**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Boron (mg/L)	**YGWC-45**	**0.01752**	**n/a**	**10/9/2019**	**0.35**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Boron (mg/L)	**YGWC-46**	**0.01752**	**n/a**	**10/9/2019**	**1.1**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**YGWC-44**	**22.04**	**n/a**	**10/8/2019**	**28.1**	**Yes**	**10**	**10**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**YGWC-45**	**22.04**	**n/a**	**10/9/2019**	**47.9**	**Yes**	**10**	**10**	**No**	**0.002505**	**Param Inter 1 of 2**
Calcium (mg/L)	**YGWC-46**	**22.04**	**n/a**	**10/9/2019**	**64.2**	**Yes**	**10**	**10**	**No**	**0.002505**	**Param Inter 1 of 2**
Chloride (mg/L)	**YGWC-44**	**6.986**	**n/a**	**10/8/2019**	**14.8**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Chloride (mg/L)	YGWC-45	6.986	n/a	10/9/2019	5.1	No	10	0	No	0.002505	Param Inter 1 of 2
Chloride (mg/L)	**YGWC-46**	**6.986**	**n/a**	**10/9/2019**	**25**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Fluoride (mg/L)	YGWC-44	0.1893	n/a	10/8/2019	0.3ND	No	11	36.36	sqrt(x)	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	YGWC-45	0.1893	n/a	10/9/2019	0.3ND	No	11	36.36	sqrt(x)	0.002505	Param Inter 1 of 2
Fluoride (mg/L)	YGWC-46	0.1893	n/a	10/9/2019	0.12	No	11	36.36	sqrt(x)	0.002505	Param Inter 1 of 2
pH (S.U.)	YGWC-44	5.847	5.345	10/8/2019	5.84	No	10	0	No	0.001253	Param Inter 1 of 2
pH (S.U.)	**YGWC-45**	**5.847**	**5.345**	**10/9/2019**	**6.55**	**Yes**	**10**	**0**	**No**	**0.001253**	**Param Inter 1 of 2**
pH (S.U.)	**YGWC-46**	**5.847**	**5.345**	**10/9/2019**	**5.96**	**Yes**	**10**	**0**	**No**	**0.001253**	**Param Inter 1 of 2**
Sulfate (mg/L)	YGWC-44	181.3	n/a	10/8/2019	142	No	10	0	No	0.002505	Param Inter 1 of 2
Sulfate (mg/L)	**YGWC-45**	**181.3**	**n/a**	**10/9/2019**	**183**	**Yes**	**10**	**0**	**No**	**0.002505**	**Param Inter 1 of 2**
Sulfate (mg/L)	YGWC-46	181.3	n/a	10/9/2019	0.5ND	No	10	0	No	0.002505	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	**YGWC-44**	**319**	**n/a**	**10/8/2019**	**324**	**Yes**	**10**	**0**	**n/a**	**0.01337**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	**YGWC-45**	**319**	**n/a**	**10/9/2019**	**432**	**Yes**	**10**	**0**	**n/a**	**0.01337**	**NP Inter (normality) 1 of 2**
Total Dissolved Solids (mg/L)	**YGWC-46**	**319**	**n/a**	**10/9/2019**	**809**	**Yes**	**10**	**0**	**n/a**	**0.01337**	**NP Inter (normality) 1 of 2**

Exceeds Limit: YGWC-44, YGWC-45, YGWC-46

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.01373, Std. Dev.=0.001713, n=10. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8511, critical = 0.781. Kappa = 2.214 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Boron Analysis Run 12/3/2019 2:28 PM View: AP-1 Interwell PL

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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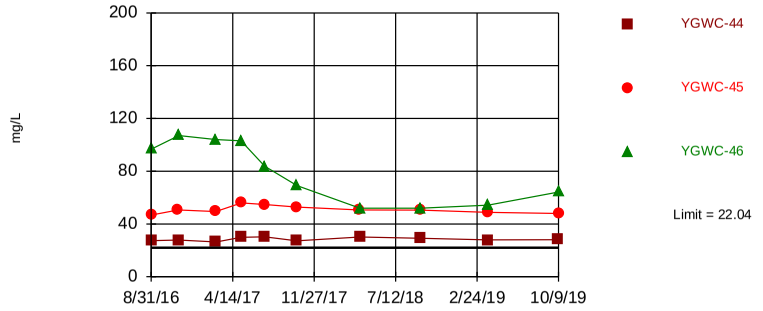
Exceeds Limit: YGWC-44, YGWC-45, YGWC-46

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=14.07, Std. Dev.=3.599, n=10, 10% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9355, critical = 0.781. Kappa = 2.214 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Calcium Analysis Run 12/3/2019 2:28 PM View: AP-1 Interwell PL

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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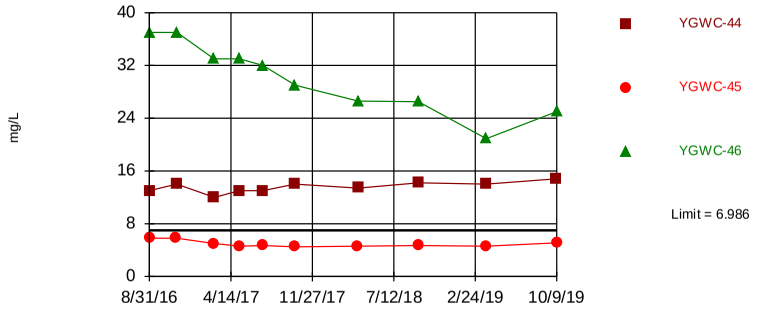
Exceeds Limit: YGWC-44, YGWC-46

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=5.21, Std. Dev.=0.802, n=10. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9443, critical = 0.781. Kappa = 2.214 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Chloride Analysis Run 12/3/2019 2:28 PM View: AP-1 Interwell PL

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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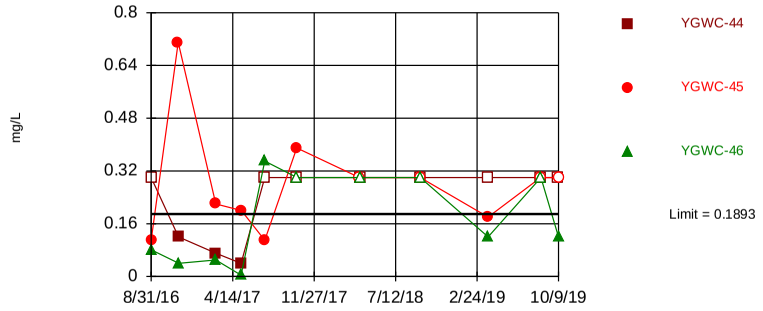
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.2649, Std. Dev.=0.07893, n=11, 36.36% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8326, critical = 0.792. Kappa = 2.155 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

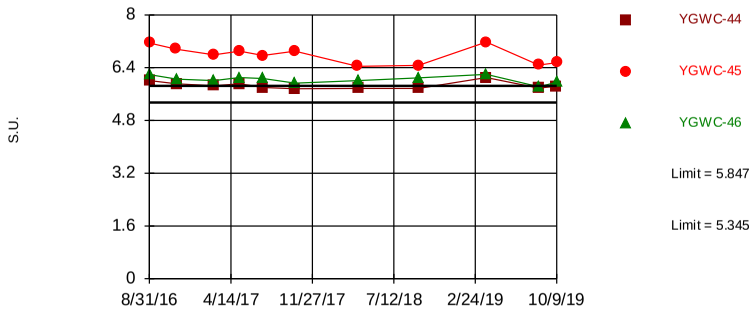
Constituent: Fluoride Analysis Run 12/3/2019 2:28 PM View: AP-1 Interwell PL

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Exceeds Limits: YGWC-45, YGWC-46

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=5.596, Std. Dev.=0.1132, n=10. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8289, critical = 0.781. Kappa = 2.214 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001253. Comparing 3 points to limit.

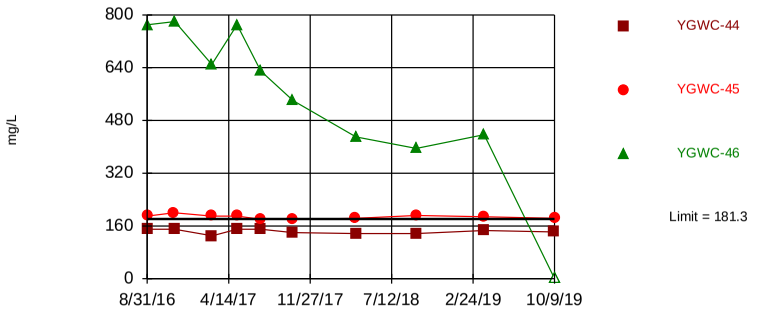
Constituent: pH Analysis Run 12/3/2019 2:28 PM View: AP-1 Interwell PL
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Hollow symbols indicate censored values.

Exceeds Limit: YGWC-45

Prediction Limit

Interwell Parametric



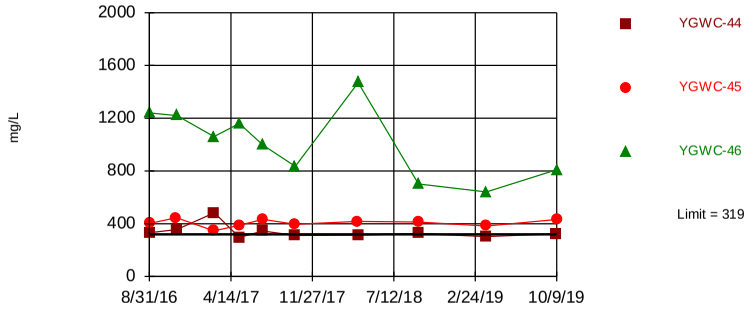
Background Data Summary: Mean=103.5, Std. Dev.=35.14, n=10. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.966, critical = 0.781. Kappa = 2.214 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.002505. Comparing 3 points to limit.

Constituent: Sulfate Analysis Run 12/3/2019 2:28 PM View: AP-1 Interwell PL
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Exceeds Limit: YGWC-44, YGWC-45, YGWC-46

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 10 background values. Annual per-constituent alpha = 0.07757. Individual comparison alpha = 0.01337 (1 of 2). Comparing 3 points to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Total Dissolved Solids Analysis Run 12/3/2019 2:28 PM View: AP-1 Interwell PL
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 12/3/2019 2:31 PM View: AP-1 Interwell PL

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)	YGWC-44	YGWC-45	YGWC-46
8/30/2016	0.0166 (J)			
8/31/2016		0.541	0.308	
9/1/2016				2.12
11/14/2016	0.0166 (J)		0.368	
11/15/2016		0.706		
11/16/2016				2.03
2/24/2017	0.0145 (J)			
2/27/2017			0.321	1.29
2/28/2017		0.623		
5/8/2017	0.0141 (J)	0.69		1.71
5/9/2017			0.338	
7/11/2017	0.0131 (J)			
7/13/2017		0.649	0.34	1.62
10/10/2017	0.0124 (J)	0.603	0.319	
10/11/2017				1.17
4/2/2018	0.013 (J)			
4/3/2018			0.35	
4/4/2018		0.66		1.2
9/19/2018	0.012 (J)	0.66	0.35	1.2
3/27/2019	0.013 (J)	0.57	0.33	0.89
10/8/2019	0.012 (J)	0.58		
10/9/2019			0.35	1.1

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 12/3/2019 2:31 PM View: AP-1 Interwell PL

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)	YGWC-44	YGWC-45	YGWC-46
8/30/2016	20.9			
8/31/2016		27.3	46.7	
9/1/2016				96.8
11/14/2016	18.6		50.6	
11/15/2016		27.8		
11/16/2016				107
2/24/2017	16.1			
2/27/2017			49.4	104
2/28/2017		26.4		
5/8/2017	14.6	29.9		103
5/9/2017			56	
7/11/2017	14.3			
7/13/2017		30.2	54.8	83.7
10/10/2017	12.1	27.2	52.8	
10/11/2017				69
4/2/2018	<25			
4/3/2018			50.6	
4/4/2018		30.1		51.9
9/19/2018	11.1 (J)	29.2	50.5	51.9
3/27/2019	10.8 (J)	27.9	48.8	54.2
10/8/2019	9.7	28.1		
10/9/2019			47.9	64.2

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 12/3/2019 2:31 PM View: AP-1 Interwell PL

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)	YGWC-44	YGWC-45	YGWC-46
8/30/2016	5.2			
8/31/2016		13	5.8	
9/1/2016				37
11/14/2016	6.4		5.8	
11/15/2016		14		
11/16/2016				37
2/24/2017	5.5			
2/27/2017			5	33
2/28/2017		12		
5/8/2017	5.8	13		33
5/9/2017			4.6	
7/11/2017	5.8			
7/13/2017		13	4.7	32
10/10/2017	5.9	14	4.5	
10/11/2017				29
4/2/2018	4.8			
4/3/2018			4.6	
4/4/2018		13.4		26.6
9/19/2018	4	14.2	4.7	26.5
3/27/2019	4.3	14	4.6	20.9
10/8/2019	4.4	14.8		
10/9/2019			5.1	25

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 12/3/2019 2:31 PM View: AP-1 Interwell PL

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)	YGWC-44	YGWC-45	YGWC-46
8/30/2016	0.09 (J)			
8/31/2016		<0.3	0.11 (J)	
9/1/2016				0.08 (J)
11/14/2016	0.18 (J)		0.71	
11/15/2016		0.12 (J)		
11/16/2016				0.04 (J)
2/24/2017	0.05 (J)			
2/27/2017			0.22 (J)	0.05 (J)
2/28/2017		0.07 (J)		
5/8/2017	0.03 (J)	0.04 (J)		0.004 (J)
5/9/2017			0.2 (J)	
7/11/2017	0.07 (J)			
7/13/2017		<0.3	0.11 (J)	0.35
10/10/2017	<0.3	<0.3	0.39	
10/11/2017				<0.3
4/2/2018	<0.3			
4/3/2018			<0.3	
4/4/2018		<0.3		<0.3
9/19/2018	<0.3	<0.3	<0.3	<0.3
3/27/2019	0.081 (J)	<0.3	0.18 (J)	0.12 (J)
8/20/2019	<0.3	<0.3	<0.3	
8/21/2019				<0.3
10/8/2019	0.034 (J)	<0.3		
10/9/2019			<0.3	0.12 (J)

Prediction Limit

Constituent: pH (S.U.) Analysis Run 12/3/2019 2:31 PM View: AP-1 Interwell PL

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)	YGWC-44	YGWC-45	YGWC-46
8/30/2016	5.75			
8/31/2016		6.01	7.15	
9/1/2016				6.19
11/14/2016	5.59		6.96	
11/15/2016		5.91		
11/16/2016				6.05
2/24/2017	5.49			
2/27/2017			6.79	6.01
2/28/2017		5.85		
5/8/2017	5.58	5.91		6.1
5/9/2017			6.9	
7/11/2017	5.58			
7/13/2017		5.8	6.77	6.07
10/10/2017	5.49	5.76	6.9	
10/11/2017				5.93
4/2/2018	6.3 (o)			
4/3/2018			6.44	
4/4/2018		5.77		6.01
9/19/2018	5.48	5.77	6.47	6.09
3/27/2019	5.83	6.1	7.18	6.2
8/20/2019	5.58	5.78	6.48	
8/21/2019				5.82
10/8/2019	5.59	5.84		
10/9/2019			6.55	5.96

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 12/3/2019 2:31 PM View: AP-1 Interwell PL

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)	YGWC-44	YGWC-45	YGWC-46
8/30/2016	160			
8/31/2016		150	190	
9/1/2016				770
11/14/2016	150		200	
11/15/2016		150		
11/16/2016				780
2/24/2017	120			
2/27/2017			190	650
2/28/2017		130		
5/8/2017	120	150		770
5/9/2017			190	
7/11/2017	110			
7/13/2017		150	180	630
10/10/2017	93	140	180	
10/11/2017				540
4/2/2018	88.8			
4/3/2018			183	
4/4/2018		137		430
9/19/2018	75	137	192	395
3/27/2019	65.9	146	188	437
10/8/2019	52.3	142		
10/9/2019			183	<1

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 12/3/2019 2:31 PM View: AP-1 Interwell PL

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)	YGWC-45	YGWC-44	YGWC-46
8/30/2016	319			
8/31/2016		402	332	
9/1/2016				1240
11/14/2016	280	445		
11/15/2016			356	
11/16/2016				1220
2/24/2017	162			
2/27/2017		346		1060
2/28/2017			483	
5/8/2017	194		296	1160
5/9/2017		388		
7/11/2017	193			
7/13/2017		433	345	996
10/10/2017	175	396	311	
10/11/2017				835
4/2/2018	192			
4/3/2018		418		
4/4/2018			313	1470
9/19/2018	186	413	326	702
3/27/2019	170	383	302	641
10/8/2019	172		324	
10/9/2019		432		809

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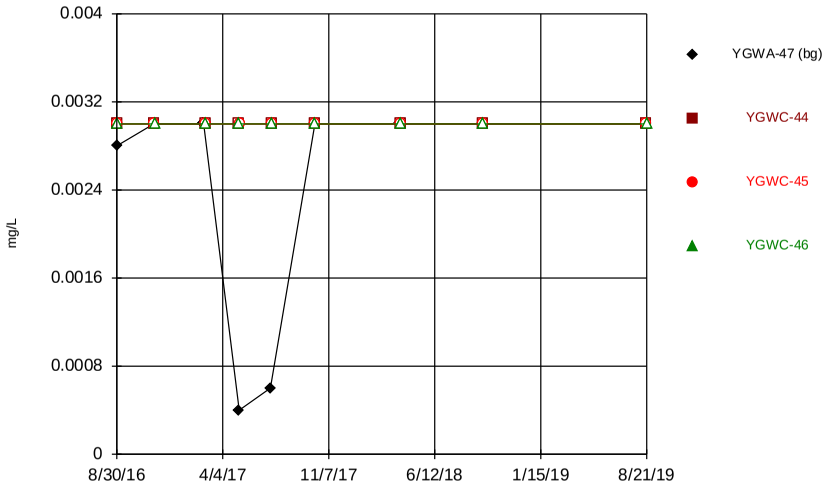
Hollow symbols indicate censored values.

Time Series



Constituent: Antimony Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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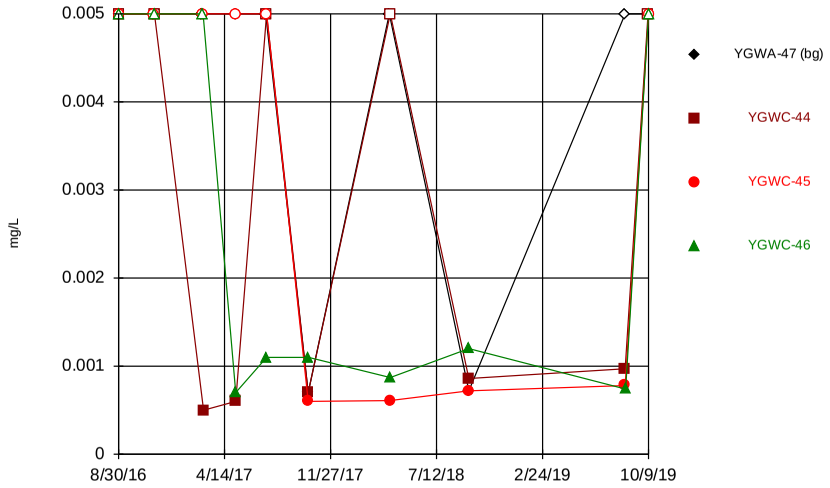
Hollow symbols indicate censored values.

Time Series



Constituent: Arsenic Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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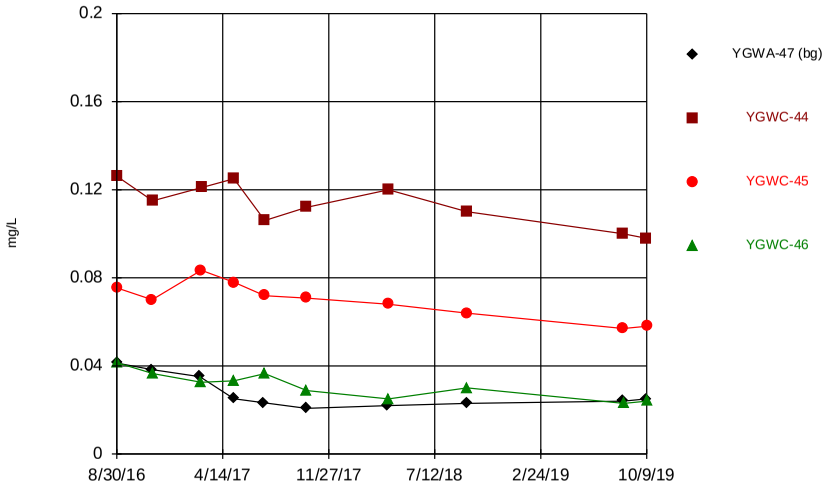
Time Series



Constituent: Barium Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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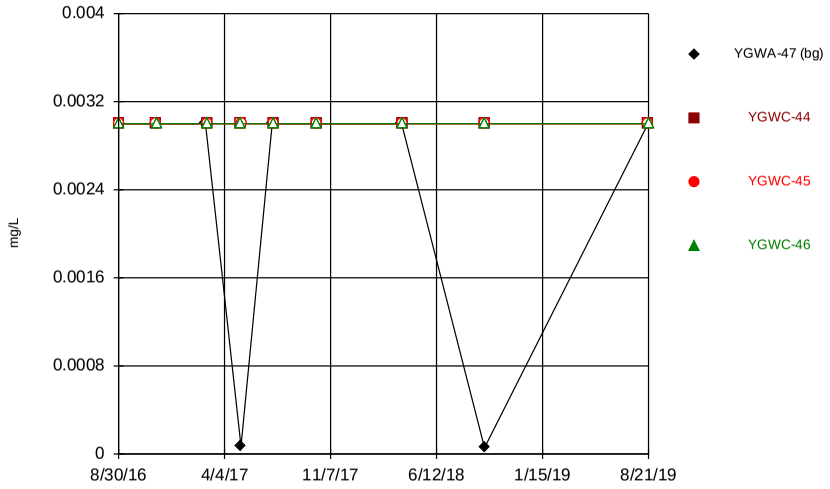
Time Series



Constituent: Beryllium Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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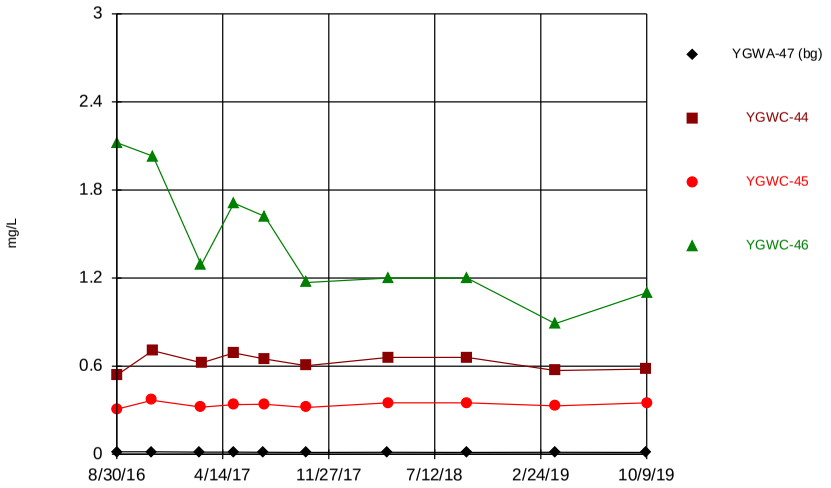
Time Series



Constituent: Boron Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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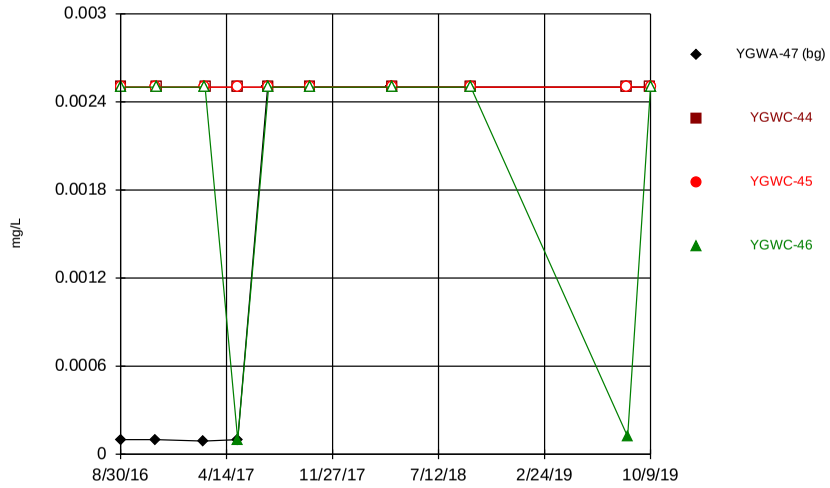
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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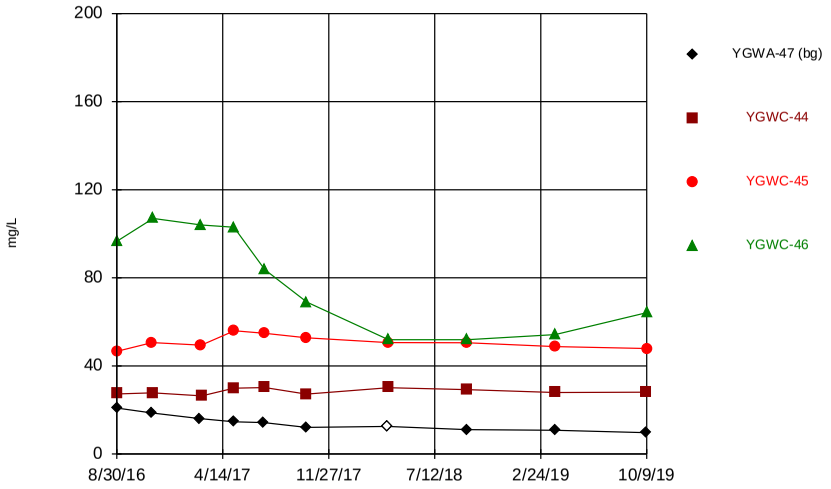
Hollow symbols indicate censored values.

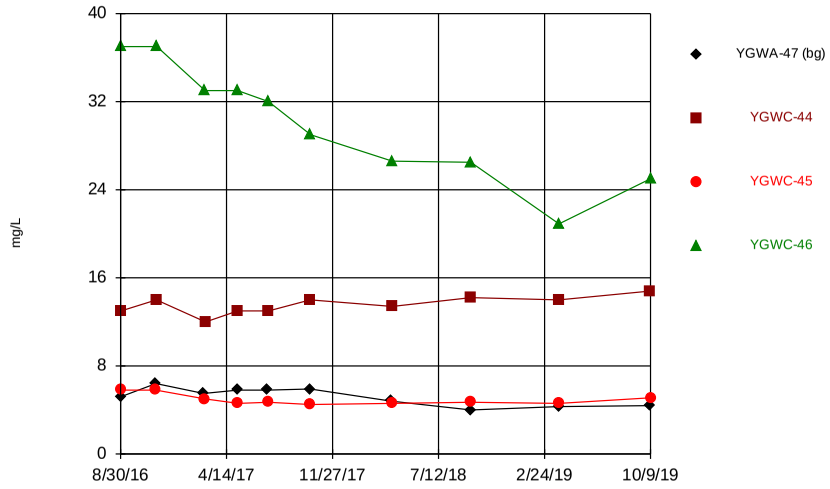
Time Series



Constituent: Calcium Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Sanitas™ v.9.6.24 Sanitas software licensed to ACC. UG

Time Series



Constituent: Chloride Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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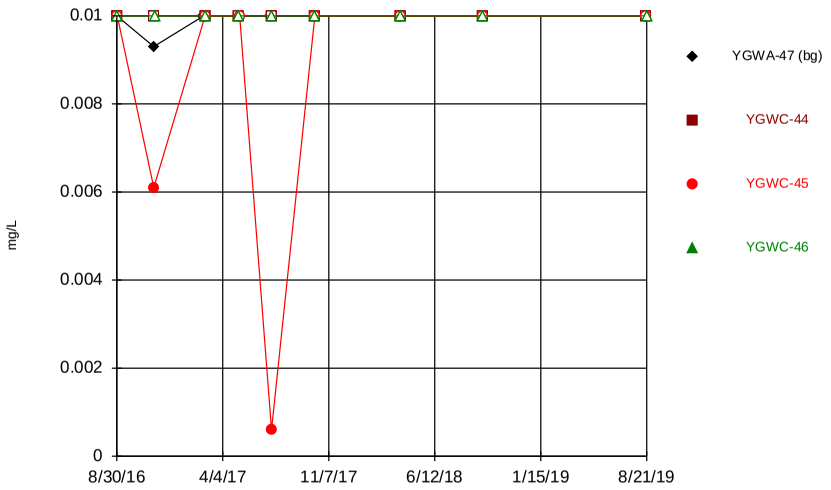
Time Series



Constituent: Chromium Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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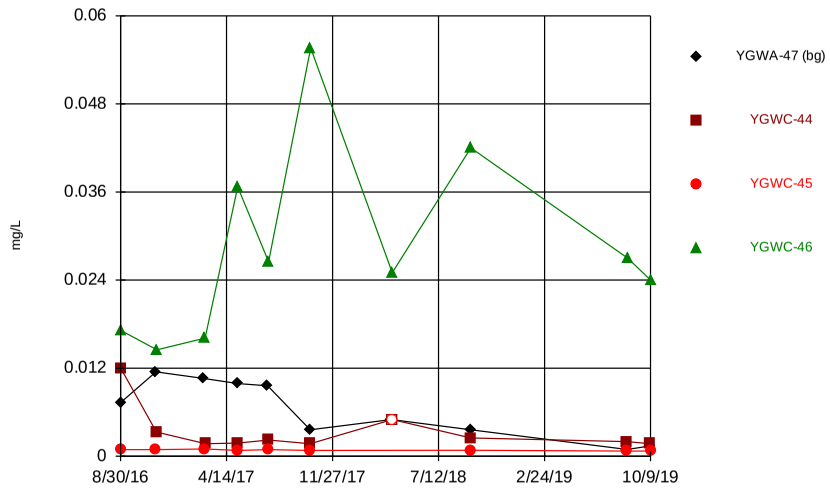
Time Series



Constituent: Cobalt Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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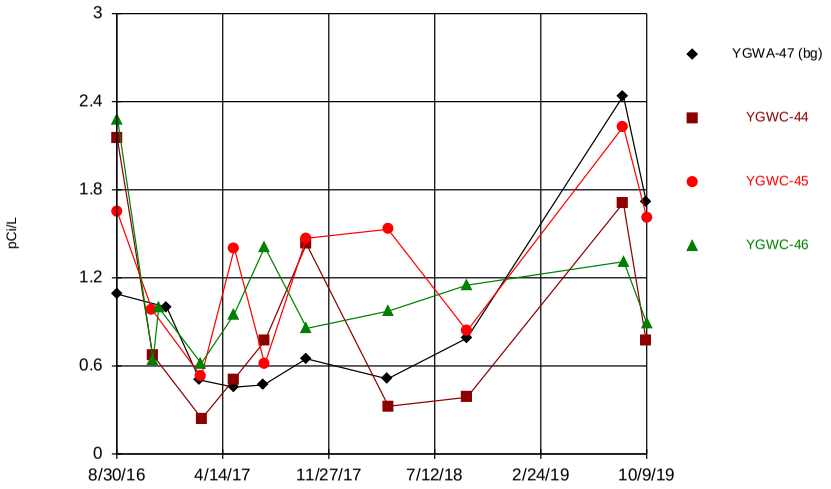
Time Series



Constituent: Combined Radium 226 + 228 Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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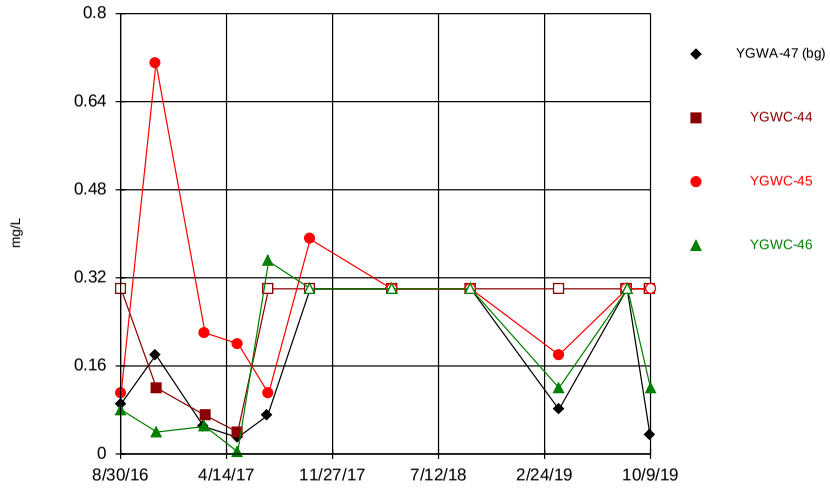
Hollow symbols indicate censored values.

Time Series



Constituent: Fluoride Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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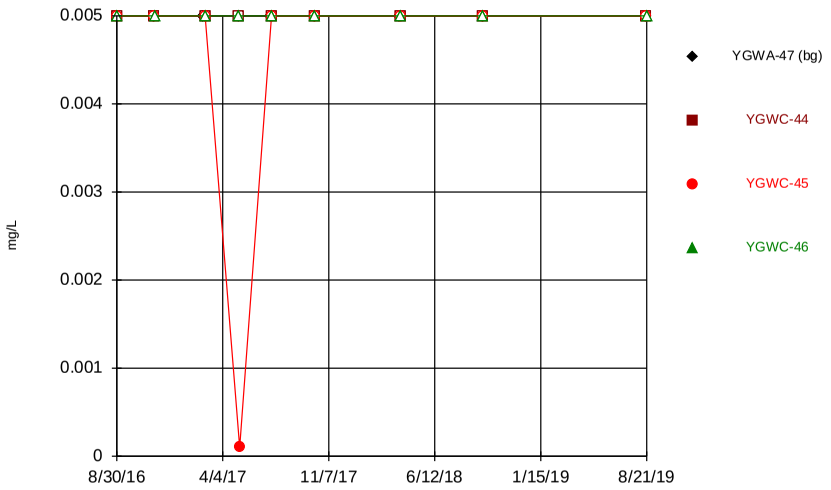
Hollow symbols indicate censored values.

Time Series



Constituent: Lead Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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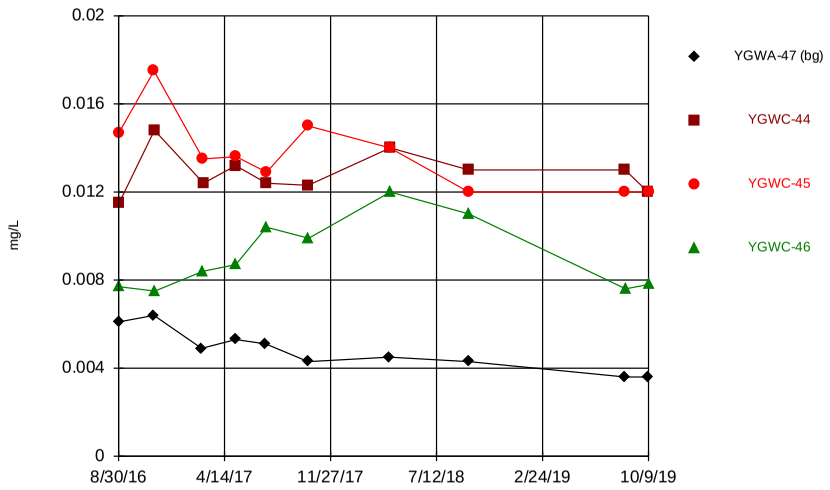
Time Series



Constituent: Lithium Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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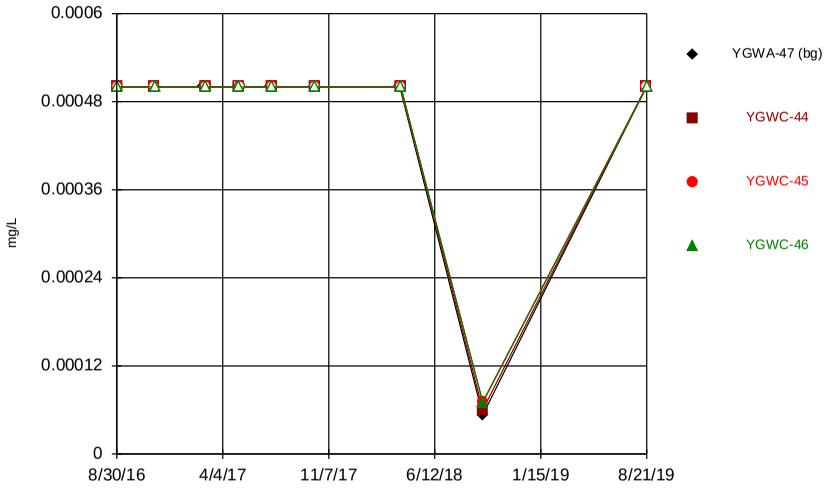
Time Series



Constituent: Mercury Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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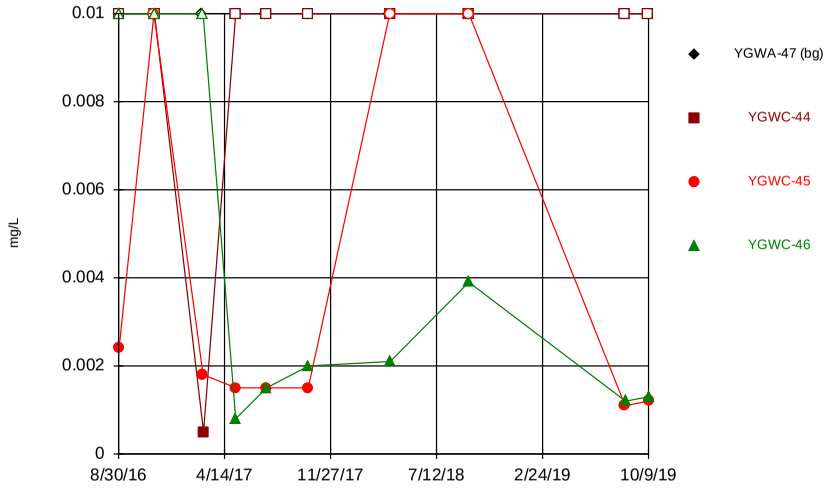
Hollow symbols indicate censored values.

Time Series



Constituent: Molybdenum Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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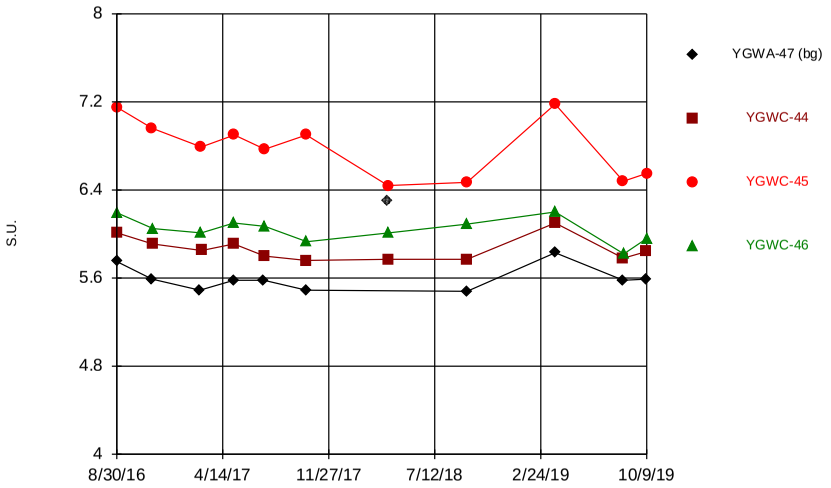
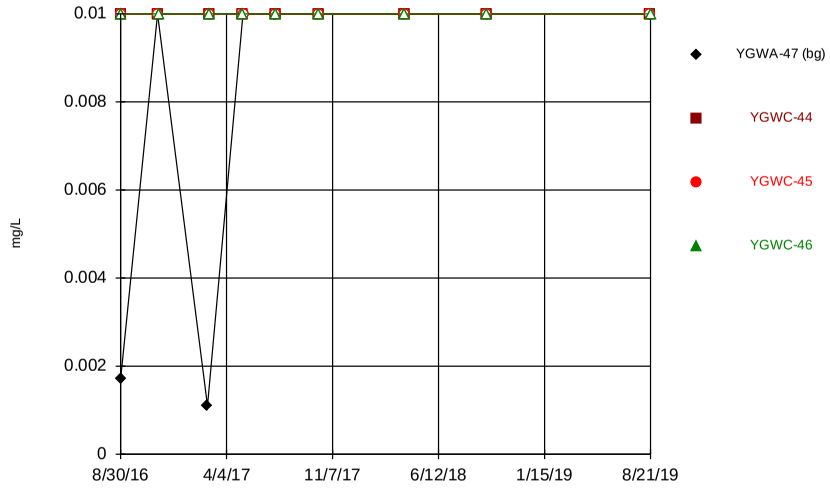
Time Series



Constituent: pH Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Sanitas™ v.9.6.24 Sanitas software licensed to ACC. UG
Hollow symbols indicate censored values.

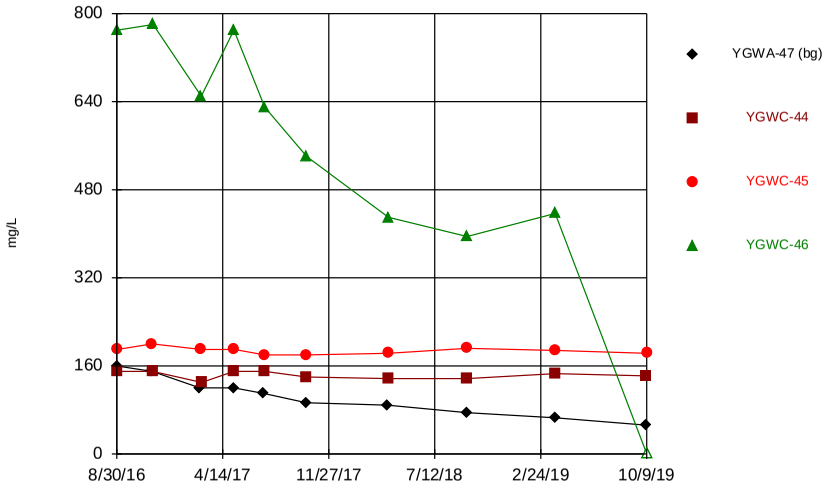
Time Series



Constituent: Selenium Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Sanitas™ v.9.6.24 Sanitas software licensed to ACC. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Sulfate Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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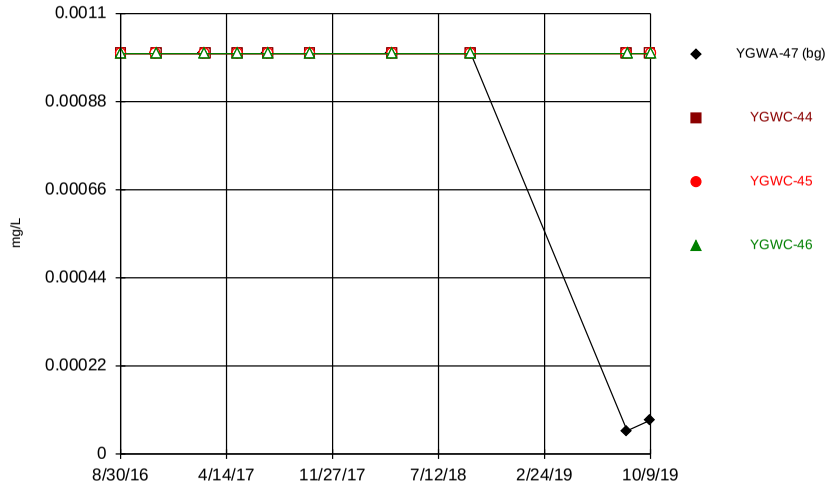
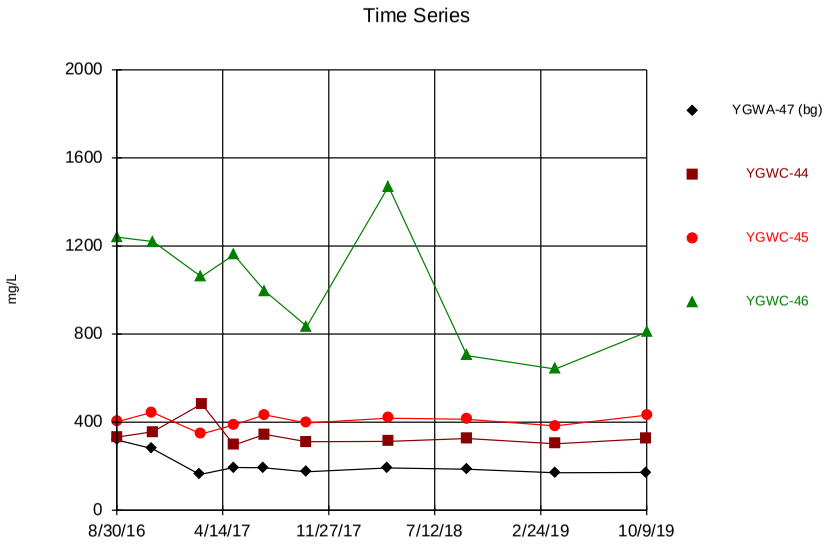
Hollow symbols indicate censored values.

Time Series



Constituent: Thallium Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1



Constituent: Total Dissolved Solids Analysis Run 12/18/2019 3:13 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Trend Test

Plant Yates Client: Southern Company Data: Yates Ash Pond 1 Printed 2/11/2020, 5:44 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**YGWA-47 (bg)**	**-0.00...**	**-36**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	**YGWC-46**	**-0.4284**	**-34**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	**YGWA-47 (bg)**	**-3.191**	**-43**	**-30**	**Yes**	**10**	**10**	**n/a**	**n/a**	**0.01**	**NP**
Chloride (mg/L)	**YGWC-46**	**-5.794**	**-41**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	**YGWA-47 (bg)**	**-32.92**	**-44**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**

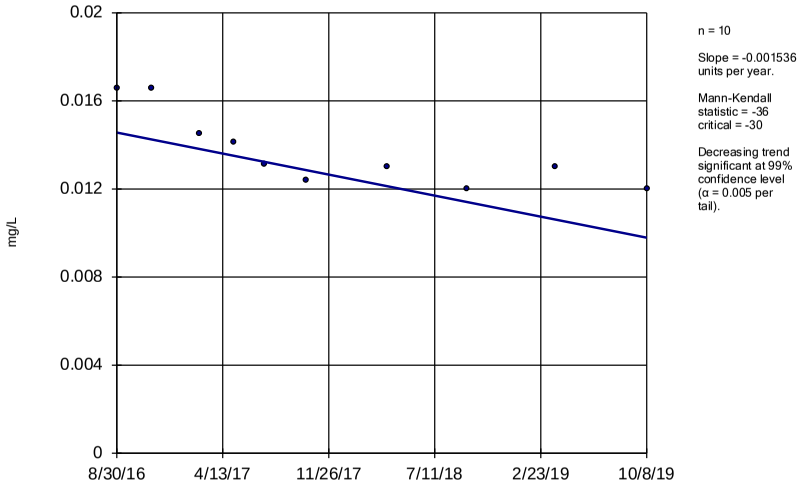
Trend Test

Plant Yates Client: Southern Company Data: Yates Ash Pond 1 Printed 2/11/2020, 5:44 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	**YGWA-47 (bg)**	**-0.00...**	**-36**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Boron (mg/L)	YGWC-44	-0.0226	-8	-30	No	10	0	n/a	n/a	0.01	NP
Boron (mg/L)	YGWC-45	0.00843	12	30	No	10	0	n/a	n/a	0.01	NP
Boron (mg/L)	**YGWC-46**	**-0.4284**	**-34**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	**YGWA-47 (bg)**	**-3.191**	**-43**	**-30**	**Yes**	**10**	**10**	**n/a**	**n/a**	**0.01**	**NP**
Calcium (mg/L)	YGWC-44	0.2577	9	30	No	10	0	n/a	n/a	0.01	NP
Calcium (mg/L)	YGWC-45	-0.7613	-10	-30	No	10	0	n/a	n/a	0.01	NP
Calcium (mg/L)	YGWC-46	-18.2	-28	-30	No	10	0	n/a	n/a	0.01	NP
Chloride (mg/L)	YGWA-47 (bg)	-0.5787	-18	-30	No	10	0	n/a	n/a	0.01	NP
Chloride (mg/L)	YGWC-44	0.5703	25	30	No	10	0	n/a	n/a	0.01	NP
Chloride (mg/L)	**YGWC-46**	**-5.794**	**-41**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
pH (S.U.)	YGWA-47 (bg)	0	-4	-30	No	10	0	n/a	n/a	0.01	NP
pH (S.U.)	YGWC-45	-0.1736	-20	-34	No	11	0	n/a	n/a	0.01	NP
pH (S.U.)	YGWC-46	-0.04908	-14	-34	No	11	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	**YGWA-47 (bg)**	**-32.92**	**-44**	**-30**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.01**	**NP**
Sulfate (mg/L)	YGWC-45	-2.253	-12	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	YGWA-47 (bg)	-13.31	-25	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	YGWC-44	-11.25	-13	-30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	YGWC-45	5.36	1	30	No	10	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	YGWC-46	-201.8	-27	-30	No	10	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

YGWA-47 (bg)



n = 10

Slope = -0.001536 units per year.

Mann-Kendall statistic = -36
critical = -30

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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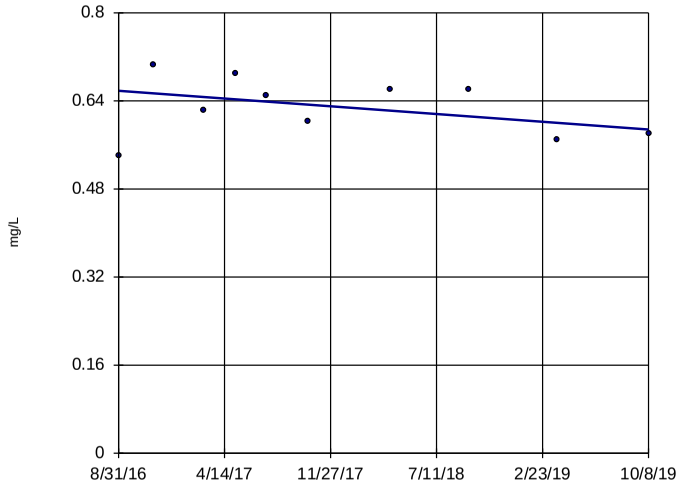
Sen's Slope Estimator

YGWC-44



n = 10

Slope = -0.0226 units per year.

Mann-Kendall statistic = -8
critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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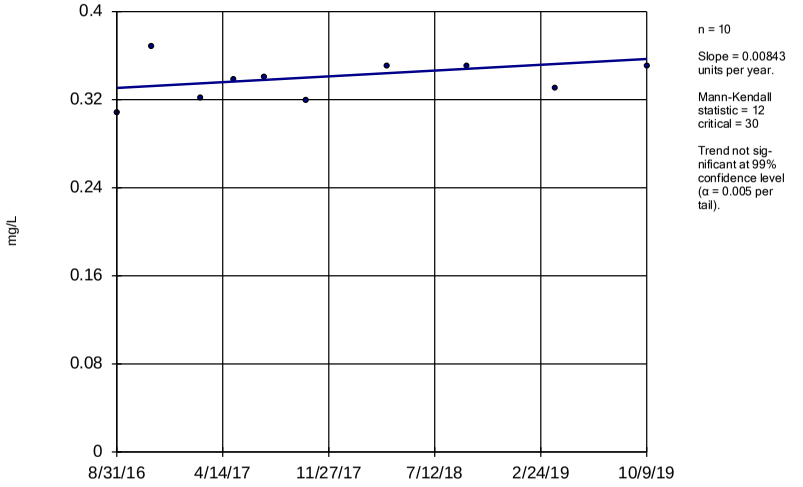
Sen's Slope Estimator

YGWC-45



n = 10

Slope = 0.00843 units per year.

Mann-Kendall statistic = 12
critical = 30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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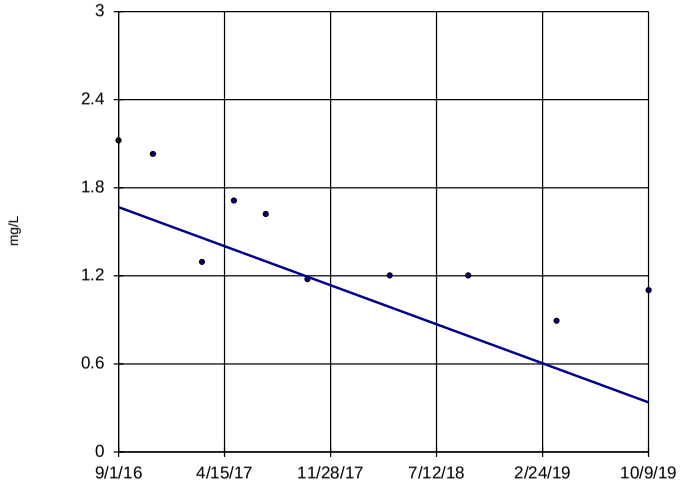
Sen's Slope Estimator

YGWC-46



n = 10

Slope = -0.4284 units per year.

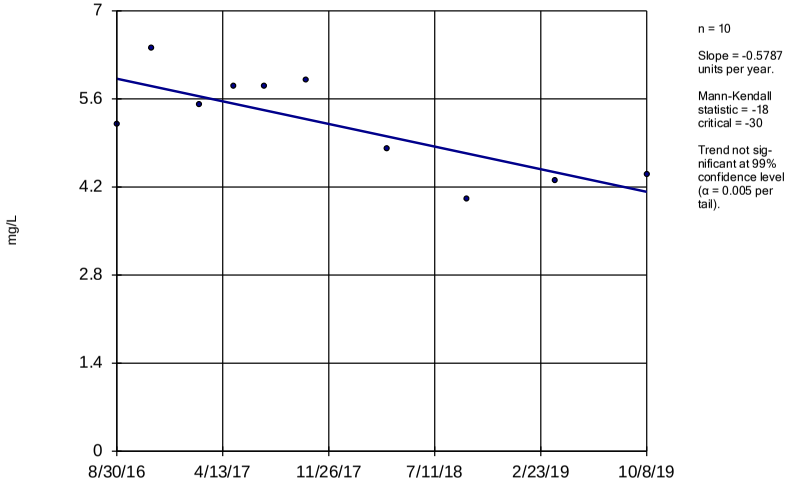
Mann-Kendall statistic = -34
critical = -30

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Boron Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Sen's Slope Estimator

YGWA-47 (bg)



n = 10

Slope = -0.5787 units per year.

Mann-Kendall statistic = -18
critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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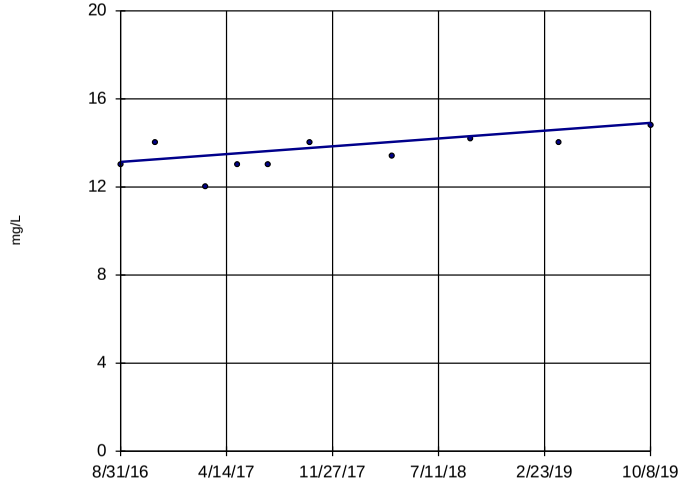
Sen's Slope Estimator

YGWC-44



n = 10

Slope = 0.5703 units per year.

Mann-Kendall statistic = 25
critical = 30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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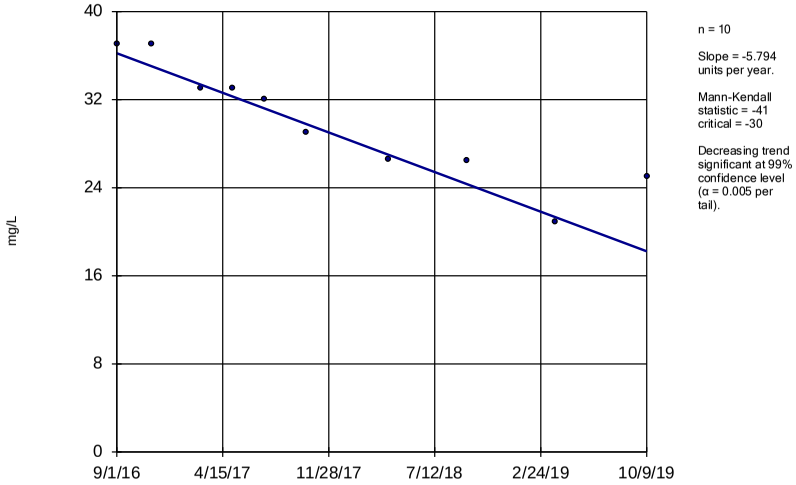
Sen's Slope Estimator

YGWC-46



n = 10

Slope = -5.794 units per year.

Mann-Kendall statistic = -41
critical = -30

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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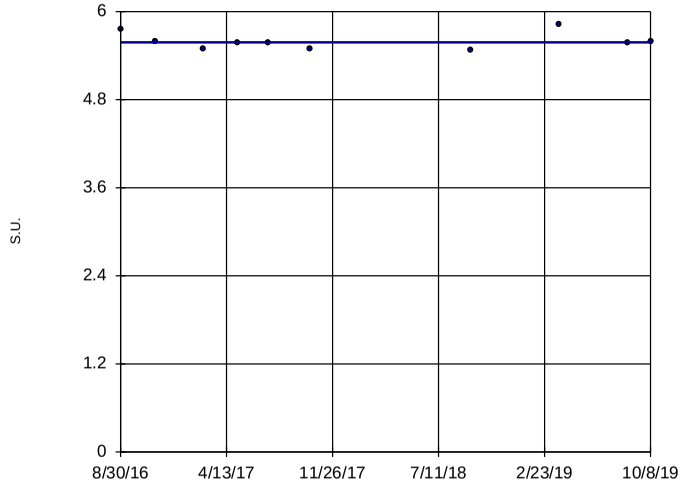
Sen's Slope Estimator

YGWA-47 (bg)



n = 10

Slope = 0 units per year.

Mann-Kendall statistic = -4
critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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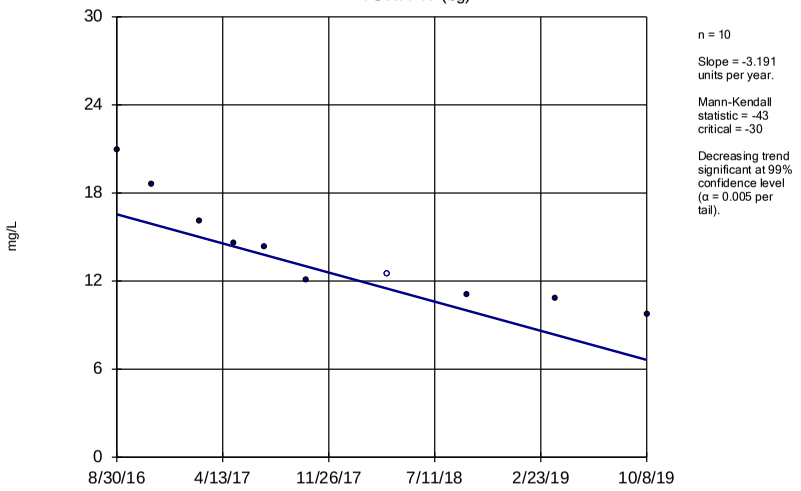
Hollow symbols indicate censored values.

Sen's Slope Estimator

YGWA-47 (bg)



n = 10

Slope = -3.191 units per year.

Mann-Kendall statistic = -43
critical = -30

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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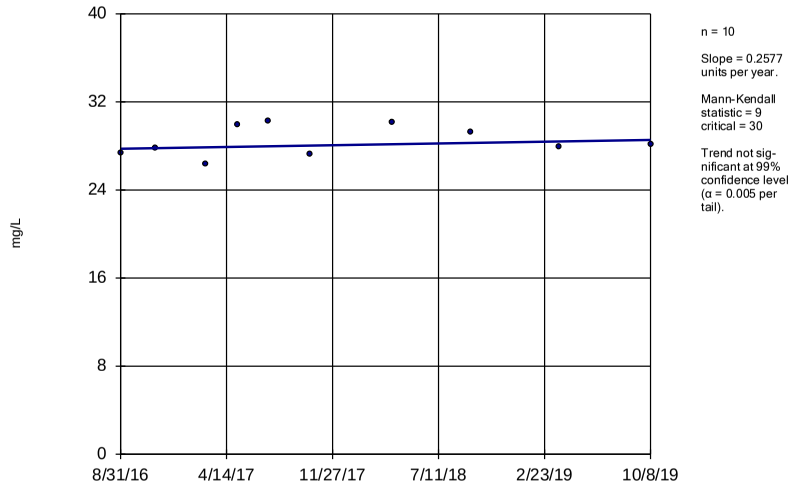
Sen's Slope Estimator

YGWC-44



n = 10

Slope = 0.2577 units per year.

Mann-Kendall statistic = 9
critical = 30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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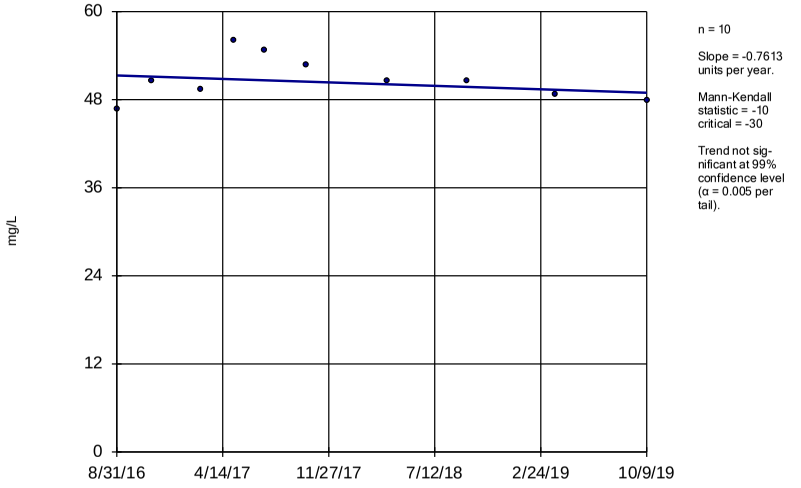
Sen's Slope Estimator

YGWC-45



n = 10

Slope = -0.7613 units per year.

Mann-Kendall statistic = -10
critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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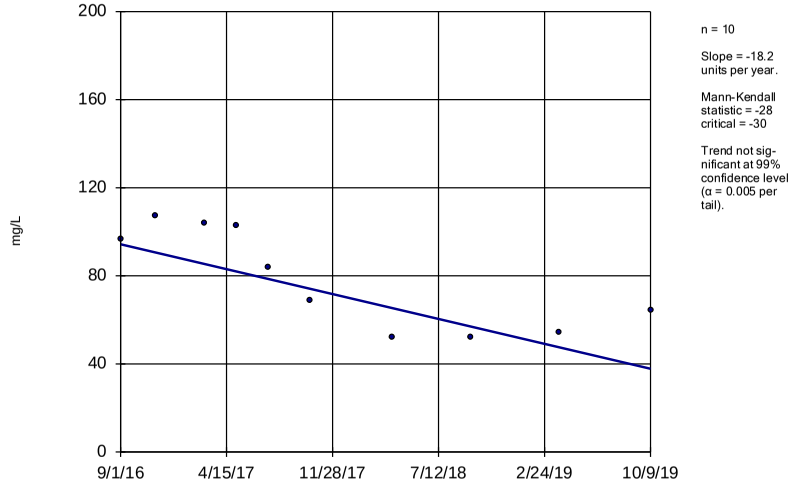
Sen's Slope Estimator

YGWC-46



n = 10

Slope = -18.2 units per year.

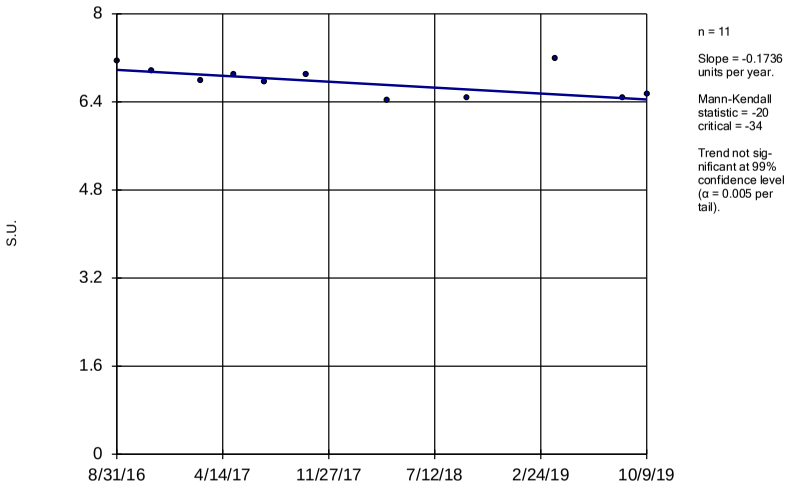
Mann-Kendall statistic = -28
critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Calcium Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Sen's Slope Estimator

YGWC-45



n = 11

Slope = -0.1736 units per year.

Mann-Kendall statistic = -20
critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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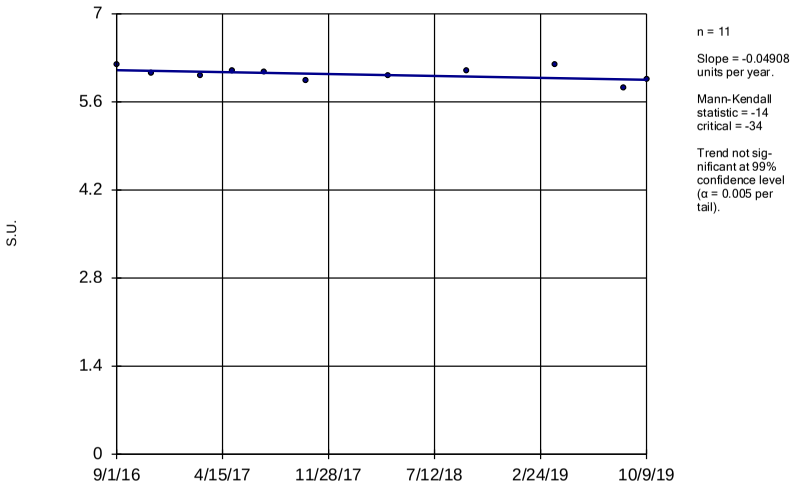
Sen's Slope Estimator

YGWC-46



n = 11

Slope = -0.04908 units per year.

Mann-Kendall statistic = -14
critical = -34

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 2/11/2020 5:40 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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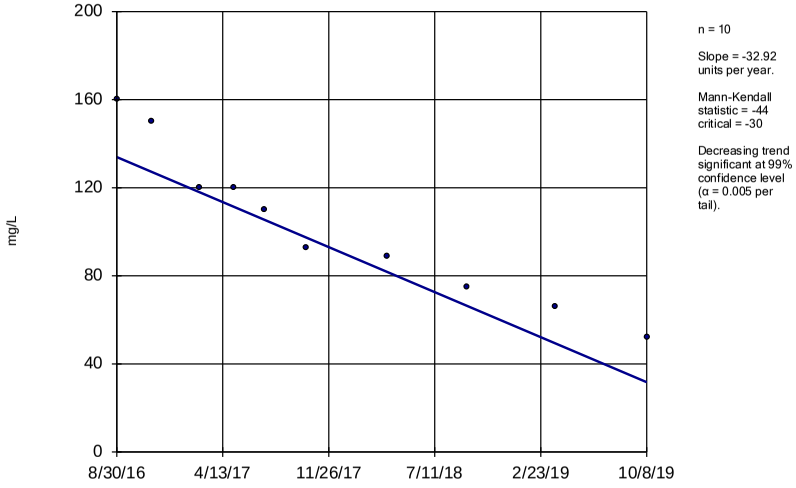
Sen's Slope Estimator

YGWA-47 (bg)



n = 10

Slope = -32.92 units per year.

Mann-Kendall statistic = -44
critical = -30

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 2/11/2020 5:41 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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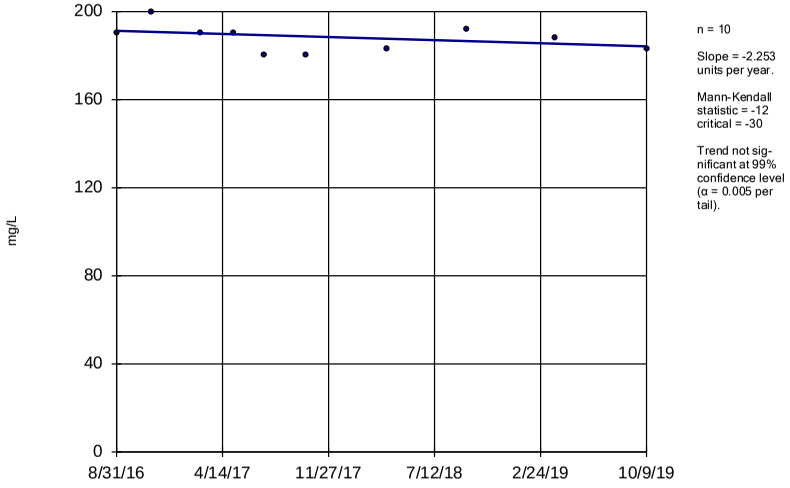
Sen's Slope Estimator

YGWC-45



n = 10

Slope = -2.253 units per year.

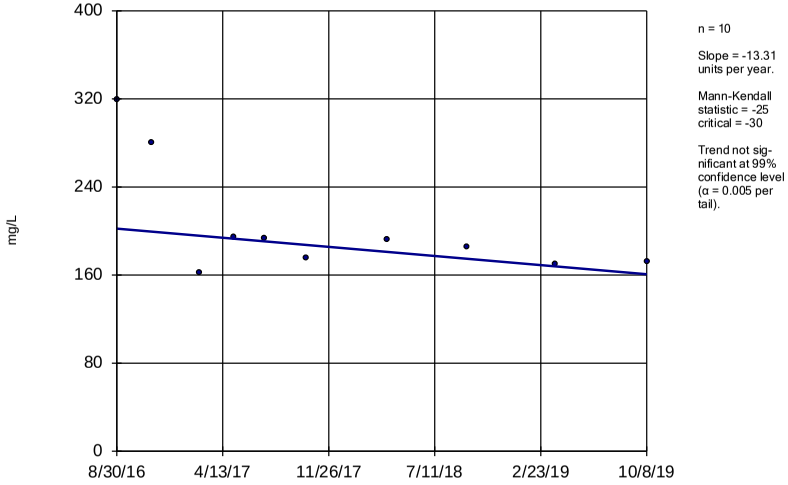
Mann-Kendall statistic = -12
critical = -30

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 2/11/2020 5:41 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Sen's Slope Estimator

YGWA-47 (bg)



Constituent: Total Dissolved Solids Analysis Run 2/11/2020 5:41 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

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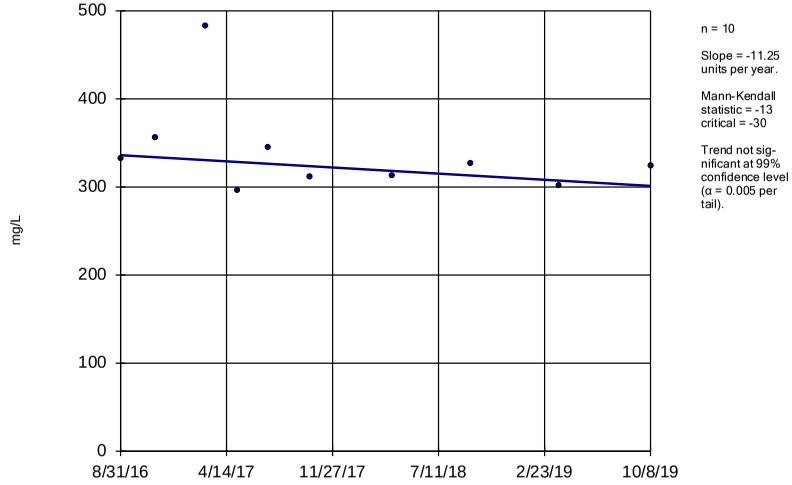
Sen's Slope Estimator

YGWC-44

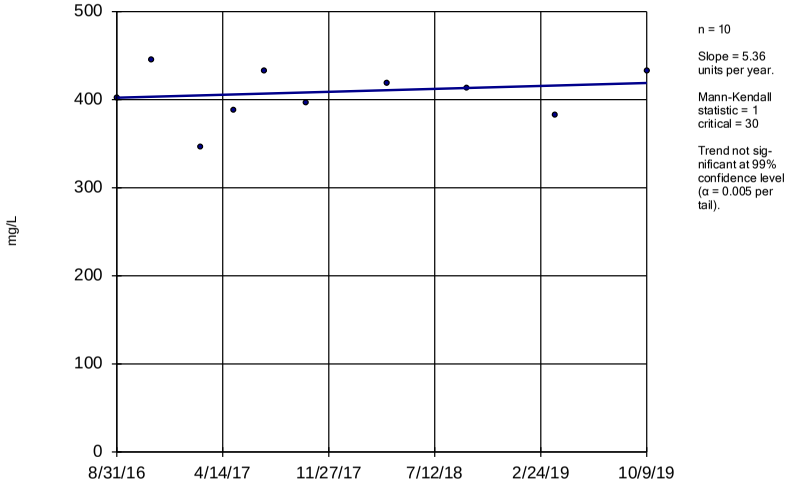


Constituent: Total Dissolved Solids Analysis Run 2/11/2020 5:41 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Sanitas™ v.9.6.25 Sanitas software licensed to ACC. UG

Sen's Slope Estimator

YGWC-45

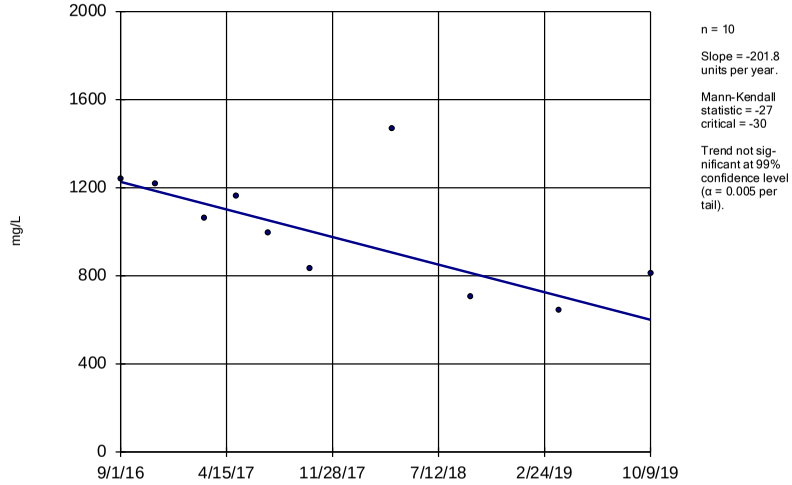


Constituent: Total Dissolved Solids Analysis Run 2/11/2020 5:41 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Sanitas™ v.9.6.25 Sanitas software licensed to ACC. UG

Sen's Slope Estimator

YGWC-46



Constituent: Total Dissolved Solids Analysis Run 2/11/2020 5:41 PM View: AP-1 Time Series
Plant Yates Client: Southern Company Data: Yates Ash Pond 1

Sen's Slope Estimator

Constituent: Boron (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)
8/30/2016	0.0166 (J)
11/14/2016	0.0166 (J)
2/24/2017	0.0145 (J)
5/8/2017	0.0141 (J)
7/11/2017	0.0131 (J)
10/10/2017	0.0124 (J)
4/2/2018	0.013 (J)
9/19/2018	0.012 (J)
3/27/2019	0.013 (J)
10/8/2019	0.012 (J)

Sen's Slope Estimator

Constituent: Boron (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-44
8/31/2016	0.541
11/15/2016	0.706
2/28/2017	0.623
5/8/2017	0.69
7/13/2017	0.649
10/10/2017	0.603
4/4/2018	0.66
9/19/2018	0.66
3/27/2019	0.57
10/8/2019	0.58

Sen's Slope Estimator

Constituent: Boron (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-45
8/31/2016	0.308
11/14/2016	0.368
2/27/2017	0.321
5/9/2017	0.338
7/13/2017	0.34
10/10/2017	0.319
4/3/2018	0.35
9/19/2018	0.35
3/27/2019	0.33
10/9/2019	0.35

Sen's Slope Estimator

Constituent: Boron (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-46
9/1/2016	2.12
11/16/2016	2.03
2/27/2017	1.29
5/8/2017	1.71
7/13/2017	1.62
10/11/2017	1.17
4/4/2018	1.2
9/19/2018	1.2
3/27/2019	0.89
10/9/2019	1.1

Sen's Slope Estimator

Constituent: Calcium (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)
8/30/2016	20.9
11/14/2016	18.6
2/24/2017	16.1
5/8/2017	14.6
7/11/2017	14.3
10/10/2017	12.1
4/2/2018	<25
9/19/2018	11.1 (J)
3/27/2019	10.8 (J)
10/8/2019	9.7

Sen's Slope Estimator

Constituent: Calcium (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-44
8/31/2016	27.3
11/15/2016	27.8
2/28/2017	26.4
5/8/2017	29.9
7/13/2017	30.2
10/10/2017	27.2
4/4/2018	30.1
9/19/2018	29.2
3/27/2019	27.9
10/8/2019	28.1

Sen's Slope Estimator

Constituent: Calcium (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-45
8/31/2016	46.7
11/14/2016	50.6
2/27/2017	49.4
5/9/2017	56
7/13/2017	54.8
10/10/2017	52.8
4/3/2018	50.6
9/19/2018	50.5
3/27/2019	48.8
10/9/2019	47.9

Sen's Slope Estimator

Constituent: Calcium (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-46
9/1/2016	96.8
11/16/2016	107
2/27/2017	104
5/8/2017	103
7/13/2017	83.7
10/11/2017	69
4/4/2018	51.9
9/19/2018	51.9
3/27/2019	54.2
10/9/2019	64.2

Sen's Slope Estimator

Constituent: Chloride (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)
8/30/2016	5.2
11/14/2016	6.4
2/24/2017	5.5
5/8/2017	5.8
7/11/2017	5.8
10/10/2017	5.9
4/2/2018	4.8
9/19/2018	4
3/27/2019	4.3
10/8/2019	4.4

Sen's Slope Estimator

Constituent: Chloride (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-44
8/31/2016	13
11/15/2016	14
2/28/2017	12
5/8/2017	13
7/13/2017	13
10/10/2017	14
4/4/2018	13.4
9/19/2018	14.2
3/27/2019	14
10/8/2019	14.8

Sen's Slope Estimator

Constituent: Chloride (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-46
9/1/2016	37
11/16/2016	37
2/27/2017	33
5/8/2017	33
7/13/2017	32
10/11/2017	29
4/4/2018	26.6
9/19/2018	26.5
3/27/2019	20.9
10/9/2019	25

Sen's Slope Estimator

Constituent: pH (S.U.) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)
8/30/2016	5.75
11/14/2016	5.59
2/24/2017	5.49
5/8/2017	5.58
7/11/2017	5.58
10/10/2017	5.49
4/2/2018	6.3 (o)
9/19/2018	5.48
3/27/2019	5.83
8/20/2019	5.58
10/8/2019	5.59

Sen's Slope Estimator

Constituent: pH (S.U.) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-45
8/31/2016	7.15
11/14/2016	6.96
2/27/2017	6.79
5/9/2017	6.9
7/13/2017	6.77
10/10/2017	6.9
4/3/2018	6.44
9/19/2018	6.47
3/27/2019	7.18
8/20/2019	6.48
10/9/2019	6.55

Sen's Slope Estimator

Constituent: pH (S.U.) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-46
9/1/2016	6.19
11/16/2016	6.05
2/27/2017	6.01
5/8/2017	6.1
7/13/2017	6.07
10/11/2017	5.93
4/4/2018	6.01
9/19/2018	6.09
3/27/2019	6.2
8/21/2019	5.82
10/9/2019	5.96

Sen's Slope Estimator

Constituent: Sulfate (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)
8/30/2016	160
11/14/2016	150
2/24/2017	120
5/8/2017	120
7/11/2017	110
10/10/2017	93
4/2/2018	88.8
9/19/2018	75
3/27/2019	65.9
10/8/2019	52.3

Sen's Slope Estimator

Constituent: Sulfate (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-45
8/31/2016	190
11/14/2016	200
2/27/2017	190
5/9/2017	190
7/13/2017	180
10/10/2017	180
4/3/2018	183
9/19/2018	192
3/27/2019	188
10/9/2019	183

Sen's Slope Estimator

Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWA-47 (bg)
8/30/2016	319
11/14/2016	280
2/24/2017	162
5/8/2017	194
7/11/2017	193
10/10/2017	175
4/2/2018	192
9/19/2018	186
3/27/2019	170
10/8/2019	172

Sen's Slope Estimator

Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-44
8/31/2016	332
11/15/2016	356
2/28/2017	483
5/8/2017	296
7/13/2017	345
10/10/2017	311
4/4/2018	313
9/19/2018	326
3/27/2019	302
10/8/2019	324

Sen's Slope Estimator

Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-45
8/31/2016	402
11/14/2016	445
2/27/2017	346
5/9/2017	388
7/13/2017	433
10/10/2017	396
4/3/2018	418
9/19/2018	413
3/27/2019	383
10/9/2019	432

Sen's Slope Estimator

Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/11/2020 5:44 PM View: AP-1 Time Series

Plant Yates Client: Southern Company Data: Yates Ash Pond 1

	YGWC-46
9/1/2016	1240
11/16/2016	1220
2/27/2017	1060
5/8/2017	1160
7/13/2017	996
10/11/2017	835
4/4/2018	1470
9/19/2018	702
3/27/2019	641
10/9/2019	809

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