

Georgia Power Company
FORMER PLANT ARKWRIGHT
AP-3 LANDFILL AND MONOFILL
PERMIT #: 011-025D(LI)
Bibb County

2019 SEMIANNUAL GROUNDWATER
MONITORING AND CORRECTIVE ACTION REPORT



PROFESSIONAL CERTIFICATION

This *2019 Semiannual Groundwater Monitoring Report*, Georgia Power Company – Former Plant Arkwright – AP-3 Landfill and Monofill has been prepared in compliance with the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-11 and 391-3-4-14 by a qualified groundwater scientist or engineer with Atlantic Coast Consulting, Inc. (ACC).

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1.0 INTRODUCTION

In accordance with the Georgia Environmental Protection Division (GA EPD) Rules of Solid Waste Management 391-3-4-.10(6)(a)-(c) and 391-3-4-.14, Atlantic Coast Consulting, Inc. (ACC) has prepared this *2019 Semiannual Groundwater Monitoring Report* to document groundwater monitoring activities conducted at Georgia Power Company's (GPC) Former Plant Arkwright – AP-3 Landfill and Monofill (Site). 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.

Groundwater monitoring and reporting for Plant Arkwright AP-3 are performed in accordance with the monitoring requirements of §§ 257.90 through 257.95 as referenced in the Georgia EPD Rule 391-3-4-.10(6)(a)-(c), and in accordance with EPD Rule 391-3-4-.14. This report documents the activities completed during the second half of 2019. Two monitoring events were conducted during this monitoring period: (1) an initial assessment monitoring event in August 2019 as a result of statistical exceedances of Appendix III parameters during the first detection monitoring event, and (2) a subsequent assessment event conducted in October 2019 for Appendix I and II metals required by the existing state permit, and Appendix IV parameters detected during the August 2019 monitoring event.

1.1 Site Description and Background

The Site is located in Bibb County, Georgia, approximately 6 miles northwest of the city of Macon and 2 miles east of the city of Arkwright. The CCR unit area comprises approximately 65 acres. The disposal facility closed in 2008, in accordance with the applicable Georgia Rules and Regulations at the time and then started post-closure care. Figure 1, Site Location Map, depicts the site location relative to the surrounding area.

Plant Arkwright was retired in 2002 and decommissioned in 2003. AP-3 Landfill was initially constructed as a surface impoundment prior to 1958 but did not receive CCR until the 1970s. The CCR unit was closed in 2010 in accordance with the solid waste landfill regulations specified by GA EPD 391-3-4, in effect at the time of its closure. Closure construction of AP-3 Landfill and Monofill was utilizing a geosynthetic clay liner (GCL) overlain by 18 inches of cover soil. A closure certificate was issued by GA EPD for the Site on August 19, 2010. The Closure Certificate initiated the post-closure care period for the CCR unit.

AP-3 Landfill and Monofill are exempt from the requirements in 40 CFR Part 257 Subpart D - Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments in accordance with § 257.50(d) and (e), which states that the subpart does not apply to CCR landfills that have ceased receiving CCR prior to October 19, 2015. These CCR units are subject to the requirements of relevant portions of Georgia EPD 391-3-4-.10 and 391-3-4-.14. The CCR unit referred to as AP-3 Landfill and Monofill and is defined as an Inactive CCR Landfill per Georgia Solid Waste Management Rule 391-3-4-.10(2)(a)(3).

Semiannual groundwater monitoring at AP-3 Landfill and Monofill is performed for an approved list of analytes with the post-closure care period requirements of GA EPD Permit #: 011-025D(LI). A minor modification approved on August 9, 2017 includes the Appendix III and IV sample parameters to the groundwater monitoring plan. To meet the requirements of GA EPD rule 391-

3-4-10, a permit application package for the Site was submitted to GA EPD in November 2018 and is currently under review by EPD.

1.2 Regional Geology and Hydrogeologic Setting

The Site is located in northern Bibb County in the Washington Slope District of the Piedmont Physiographic Province. The topography of this portion of the Piedmont consists of rolling hills with a maximum elevation approximately 700 feet above sea level at the northern margin located to the south of Atlanta and Athens to approximately 300 feet above sea level at its southern limit (slightly south of the site). Streams have adjusted course following the structure of underlying crystalline rocks eastward toward the Ocmulgee River. Ultimately, all area surface water flow is directed toward the Ocmulgee River. Owing to the variety of rocks underlying the Piedmont, the soils differ from place to place, but in general they are deep red and reasonably fertile. Regionally, igneous and metamorphic rocks are exposed in the extreme northern part of Bibb County, where the Site is located. Many of these rocks are granitic, being true granite, biotite- granite gneiss, or a granite component in a diorite injection complex. All these rocks are highly weathered and where exposed are generally soft and friable (LeGrand, 1962). The site area is generally composed of fine to medium sandy silt to silty sand underlain by silty sand saprolite. Borings performed in the earlier site investigations indicate extremely weathered quartz-feldspathic gneiss, hornblende gneiss and schist.

1.2.1 Site Geologic and Hydrogeologic Setting

The general geology beneath AP-3 Landfill and Monofill consists of clays, silty and sandy clays, silty sands, sandy silts, and minor gravel at depth, underlain by silty sand saprolite and bedrock. Historic borings indicate that bedrock occurs at depths ranging from approximately 27 feet to 62 feet below grade, and consists of weathered quartzofeldspathic gneiss, hornblende gneiss, and schist. Boring logs also indicate a relatively thin zone of partially weathered rock (PWR) above consolidated bedrock, the thickness of which can range from 1 to 4 feet in the southern and eastern portions of the site, and up to 14 feet in the northeastern portion of the site. Slug testing data from the site reflect a range of hydraulic conductivities from 10^{-3} to 10^{-4} centimeters per second. Groundwater level monitoring data from the site show stable water level trends and the potentiometric maps reflect groundwater flowing to the southeast and south across AP-3.

1.3 Groundwater Monitoring Well Network and CCR Unit Description

As noted above, AP-3 Landfill and Monofill closed in 2010. A groundwater monitoring plan was approved on January 27, 2010. The GA EPD approved detection groundwater monitoring network includes 13 monitoring wells: upgradient wells GWA-3, GWA-5, GWA-12, GWA-13, and GWA-14, and downgradient wells GWC-7, GWC-8, GWC-9, GWC-10, GWC-15, GWC-16, GWC-17, and GWC-18. 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). Figure 2, Well Location Map, shows the monitoring well locations. Groundwater monitoring wells are designed to monitor the uppermost water-bearing zone. The existing groundwater monitoring network was included in the 2008 Design and Operation Plans approved by GA EPD in 2010.

2.0 GROUNDWATER MONITORING ACTIVITIES

The following describes monitoring-related activities performed during the first and second assessment monitoring events during the second half of the 2019 calendar year. Groundwater sampling was performed in accordance with § 257.93. Samples were collected from each of the monitoring wells in the monitoring system (Table 1A).

Based on results of the March 2019 sampling event, assessment monitoring was initiated under EPD Rule under 391-3-4-.10(6) at the site. Table 2, Groundwater Sampling Event Summary, presents a summary of groundwater sampling events completed at the Site during the second half of 2019. Groundwater events were conducted at the Site during August 2019 and October 2019. During the initial assessment event in August 2019, groundwater samples were collected and analyzed for the full suite of Appendix IV constituents to meet the requirements of § 257.95(b). During the subsequent semiannual assessment monitoring event in October 2019 groundwater samples were collected for (1) Appendix III constituents, (2) the Appendix IV constituents detected during the August event, and (3) the state-specific list of Appendix I metals specified in the permit

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.

In November 2019, three piezometers (AMW-3, AMW-4, and AMW-6) were installed to further characterize groundwater conditions in the vicinity of monitoring wells GWC-8 and GWC-17. Installation details for these piezometers are provided in Appendix A, Well Installation Report. The number, spacing, and depths of the groundwater monitoring wells were selected by a qualified groundwater scientist based on the characterization of site-specific hydrogeologic conditions.

2.2 Initial Assessment Monitoring

Based on results presented in the *2019 First Semiannual Groundwater Monitoring Report*, GPC has initiated an assessment monitoring program. A notice of assessment monitoring was placed in the operation record on November 13, 2019. Monitoring wells were sampled for Appendix IV parameters in August 2019. Monitoring wells were sampled for Appendix III and Appendix IV parameters detected in the August 2019 initial assessment monitoring event during the October 2019 semiannual assessment monitoring event.

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 groundwater monitoring well network at the Site. Groundwater elevations recorded during the monitoring events are summarized in Table 4A and 4B, Summary of Groundwater Elevations – August 2019 and October 2019, respectively. Groundwater elevation data was used to develop Figure 3, October 2019 Water Table Contour Map. The general direction of groundwater flow across the

site is towards the southeast and south. The groundwater flow pattern observed during the October 2019 monitoring event is consistent with historical patterns.

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

Equation

$$v = \frac{K (dh/dl)}{P_e} \quad \text{where:} \quad \begin{array}{l} v = \text{ground water velocity} \\ K = \text{hydraulic conductivity} \\ dh/dl = \text{hydraulic gradient} \\ P_e = \text{effective porosity} \end{array}$$

Groundwater flow velocities were calculated for the Site based on hydraulic gradients, average permeability 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 5, Groundwater Flow Velocity Calculations. The calculated flow velocity is 0.12 feet per day or 42.7 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. All non-disposable equipment was decontaminated before use and between well locations.

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
- $\pm 5\%$ for specific conductance
- $\pm 10\%$ for dissolved oxygen (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 TestAmerica Laboratories, Inc. (TestAmerica) of Pittsburgh, Pennsylvania, and St. Louis, Missouri following chain-of-custody protocol. Stabilization logs for each well during each monitoring event are included in Appendix B, Laboratory Analytical and Field Summary Reports.

3.3 Laboratory Analyses

Groundwater samples collected in October 2019 for the semiannual monitoring event were analyzed for the state permit list of Appendix I metals, 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 include beryllium, cadmium, and mercury and were not analyzed during the subsequent semiannual event in accordance with 257.95(d)(1). Analytical methods used for groundwater monitoring parameters are provided in laboratory reports in Appendix B. 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 TestAmerica. TestAmerica is accredited by the National Environmental Laboratory Accreditation Program (NELAP) and maintains a NELAP certification for all parameters analyzed for this project. In addition, TestAmerica 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 (QA/QC) samples are collected at a rate of one QA/QC sample per every 10 groundwater assessment samples. Equipment blanks (where non-dedicated sampling equipment is used) and duplicate samples were collected during each sampling event. QA/QC sample data were evaluated during data validation and are 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 GA EPD-approved groundwater monitoring network and following the appropriate method. The statistical method used at the site was developed by Groundwater Stats Consulting, LLC (GSC), 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).

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 October 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

All screened historical background data through August 2018 were used to construct statistical limits for the EPD permit-required metals. 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.

4.1.1 Appendix III Constituents

Statistical tests used to evaluate the groundwater monitoring data consist of interwell prediction limits combined with a 1-of-2 verification resample plan for Appendix III parameters. Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent, and the most recent sample from each downgradient well is compared to the same limit for each parameter. If the most recent sample exceeds its background statistical limit, an initial statistically significant increase (SSI) is identified. A summary of the statistical methodology used at the Site for routine groundwater monitoring is provided in Table 7, Summary of Statistical Methods.

4.1.2 Appendix I Metals

Statistical tests used to evaluate the groundwater monitoring data consist of interwell prediction limits combined with a 1-of-2 verification resample plan for all required metals. The current permit also requires monitoring of chloride and sulfate; however, these two analytes are also included in Appendix III and are therefore analyzed as described in Section 4.1.1. Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent, and the most recent sample from each downgradient well is compared to the same limit for each parameter. If the most recent sample exceeds its statistical limit, an initial statistically significant increase (SSI) is identified. Table 7 includes a summary of the metals included in the EPD permit and the statistical method.

4.2 Appendix III Statistical Analyses Results

Analytical data from the October 2019 monitoring event at AP-2DAS was statistically analyzed in accordance with the statistical methods. Resampling to confirm SSIs was not performed; therefore, initial SSIs are treated as verified. Wells and analytes with all data below the reporting limit do not require statistical analysis. A summary of wells exhibiting 100% non-detects is included in Appendix C, Statistical Analyses. The statistical analysis and comparison to prediction limits are included as Appendix C.

Based on review of the Appendix III statistical analyses presented in Appendix C, the following summarizes parameters exhibiting SSIs:

- Boron: GWC-8, GWC-18
- pH: GWC-16, GWC-17

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 Statistical Analyses Results

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 Semiannual Groundwater Monitoring Report, due August 1, 2020.

4.4 Appendix I Statistical Analyses Results

Analytes required by the existing state permit were analyzed during this event. Wells and analytes with all data below the reporting limit do not require statistical analysis. Concentrations of target metals were within their interwell prediction limits during this sampling event. A summary of wells exhibiting 100% non-detects is included in Appendix C.

5.0 MONITORING PROGRAM STATUS

In accordance with 40 CFR § 257.94(e), an assessment monitoring program was initiated in 2019 for AP-3. Similar SSIs of Appendix III constituents were detected in the October 2019 semiannual event. Pursuant to §257.94(e)(1), GPC will continue assessment monitoring.

6.0 CONCLUSIONS AND FUTURE ACTIONS

Statistical evaluations of the groundwater monitoring data for Plant Arkwright AP-3 identified SSIs of Appendix III groundwater monitoring constituents. GPC has initiated assessment monitoring pursuant to §257.95. During the next semiannual reporting period of 2020, GPC will establish groundwater protection standards for Appendix IV constituents and complete statistical analysis in accordance with § 257.95 and report the results in the Annual Groundwater Monitoring and Corrective Action Report, due August 1, 2020.

7.0 REFERENCES

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TABLES

Table 1A
Monitoring Network Well Summary

Well	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
GWA-3	12/9/1992	42.30	346.31	32.30	356.31	Upgradient
GWA-5	1/10/1994	33.10	343.35	23.10	353.35	Upgradient
GWA-12	12/18/2008	32.31	340.25	22.31	350.25	Upgradient
GWA-13	12/18/2008	43.54	328.27	33.54	338.27	Upgradient
GWA-14	2/9/2009	58.18	329.98	48.18	339.98	Upgradient
GWC-7	12/11/2003	48.27	303.98	38.27	313.98	Downgradient
GWC-8	12/10/2003	43.22	312.48	33.22	322.48	Downgradient
GWC-9	12/10/2003	37.97	329.41	27.97	339.41	Downgradient
GWC-10	12/9/2003	38.32	329.76	28.32	339.76	Downgradient
GWC-15	12/18/2008	42.56	333.34	32.56	343.34	Downgradient
GWC-16	12/18/2008	34.52	330.69	24.52	340.69	Downgradient
GWC-17	12/18/2008	33.93	334.59	23.93	344.59	Downgradient
GWC-18	12/18/2008	50.78	304.21	40.78	314.21	Downgradient

Notes:

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

Table 1B
Monitoring Non-Network Well Summary

Well	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
AMW-3	11/25/2019	68.61	286.74	57.00	298.35	Downgradient
AMW-4	11/25/2019	57.70	309.91	47.21	320.40	Downgradient
AMW-5	11/25/2019	32.37	304.97	22.87	314.47	Downgradient

Notes:

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

Table 2
Groundwater Sampling Event Summary

Well	Hydraulic Location	Aug. 19-21, 2019	Oct. 7-9, 2019
Purpose of Sampling Event		Initial Assessment	Second Semiannual
GWA-3	Upgradient	Scan	A-01
GWA-5	Upgradient	Scan	A-01
GWA-12	Upgradient	Scan	A-01
GWA-13	Upgradient	Scan	A-01
GWA-14	Upgradient	Scan	A-01
GWC-7	Downgradient	Scan	A-01
GWC-8	Downgradient	Scan	A-01
GWC-9	Downgradient	Scan	A-01
GWC-10	Downgradient	Scan	A-01
GWC-15	Downgradient	Scan	A-01
GWC-16	Downgradient	Scan	A-01
GWC-17	Downgradient	Scan	A-01
GWC-18	Downgradient	Scan	A-01

Notes:

1. Scan = Initial Assessment Sampling. All Appendix IV.
2. D-XX = Assessment Event Number (Appendix III and Detected Appendix IV).

Table 3
Summary of Groundwater Monitoring Parameters

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

Table 4A
Summary of Groundwater Elevations
August 2019

Well ID	TOC Elevation (ft MSL)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)
GWA-3	388.61	36.02	352.59
GWA-5	376.45	23.89	352.56
GWA-12	372.56	16.64	355.92
GWA-13	371.81	24.94	346.87
GWA-14	388.16	43.12	345.04
GWC-7	352.25	24.90	327.35
GWC-8	355.70	25.97	329.73
GWC-9	367.38	22.39	344.99
GWC-10	368.08	22.77	345.31
GWC-15	375.90	29.31	346.59
GWC-16	365.21	21.34	343.87
GWC-17	368.52	22.63	345.89
GWC-18	354.99	28.41	326.58

Notes:

1. Groundwater elevations are recorded in feet above mean sea level (ft MSL).
2. ft BTOC indicates feet below top of casing.
3. Depths to water measured August 19, 2019.

Table 4B
Summary of Groundwater Elevations
October 2019

Well ID	TOC Elevation (ft MSL)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)
GWA-3	388.61	36.30	352.31
GWA-5	376.45	24.16	352.29
GWA-12	372.56	17.02	355.54
GWA-13	371.81	26.27	345.54
GWA-14	388.16	44.70	343.46
GWC-7	352.25	26.80	325.45
GWC-8	355.70	26.64	329.06
GWC-9	367.38	23.06	344.32
GWC-10	368.08	25.53	342.55
GWC-15	375.90	30.65	345.25
GWC-16	365.21	23.02	342.19
GWC-17	368.52	23.15	345.37
GWC-18	354.99	29.68	325.31

Notes:

1. Groundwater elevations are recorded in feet above mean sea level (ft MSL).
2. ft BTOC indicates feet below top of casing.
3. Depths to water measured October 7, 2019.

Table 5
Groundwater Flow Velocity Calculations
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 =	7.7E-04 2.18	cm/sec ft/day	See note 1.
dh/dl =	26.98/2517 0.011	ft/ft unitless	Hydraulic gradient from GWA-5 to GWC-18
P _e =	0.20	unitless	See note 1.

Calculation

$$v = 0.12 \text{ ft/day}$$

$$v = 42.7 \text{ ft/yr}$$

Notes

(1) Plant Arkwright Ash Ponds 2 and 3 Ash Monofill Site Acceptability Report (SCS, 2005).

Table 6A
Summary of Groundwater Analytical Data
August 2019

Substance		Well ID							
		ARGWA-3	ARGWA-5	ARGWA-12	ARGWA-13	ARGWA-14	ARGWC-7	ARGWC-8	ARGWC-9
		8/20/2019	8/20/2019	8/20/2019	8/19/2019	8/21/2019	8/21/2019	8/21/2019	8/21/2019
Appendix IV	Antimony	ND	ND	ND	ND	ND (0.00064 J)	ND	ND	ND
	Arsenic	ND (0.00045 J)	ND (0.00058 J)	ND (0.00046 J)	ND (0.00045 J)	0.0013	ND	ND (0.00036 J)	ND
	Barium	0.020	0.029	0.075	0.035	0.031	0.041	0.052	0.045
	Beryllium	ND (0.00025 J)	ND (0.00035 J)	ND	ND	ND	ND	ND	ND
	Cadmium	ND (0.00014 J)	ND	ND	ND	ND (0.00015 J)	ND	ND	ND
	Chromium	0.0039	0.0032	0.0026	ND (0.0016 J)	ND	0.0046	ND (0.0015 J)	0.0097
	Cobalt	ND (0.00018 J)	ND (0.00012 J)	ND (0.00019 J)	ND (0.00029 J)	ND (0.00022 J)	ND (0.000086 J)	ND (0.00021 J)	ND
	Fluoride	ND (0.053 J)	ND (0.047 J)	ND (0.049 J)	ND	0.35	ND	ND (0.12 J)	ND (0.030 J)
	Lead	ND (0.00014 J)	ND (0.00014 J)	ND	ND	ND (0.00019 J)	ND	ND	ND
	Lithium	ND	ND	0.0053	0.0058	ND	ND (0.0034 J)	ND	ND
	Mercury	ND	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	ND	ND	ND	ND	ND (0.0020 J)	ND	0.051	ND
	Radium	0.352 U	-0.0925 U	0.759	0.204 U	0.0663 U	0.0805 U	0.125 U	0.0554 U
Selenium	ND	ND	ND	0.034	ND	ND	ND	ND	
Thallium	ND (0.00020 J)	ND (0.00023 J)	ND	ND	ND	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 analytical method detection limit (MDL).
3. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.
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 6A
Summary of Groundwater Analytical Data
August 2019**

Substance	Well ID					
	ARGWC-10	ARGWC-15	ARGWC-16	ARGWC-17	ARGWC-18	
	8/21/2019	8/21/2019	8/20/2019	8/21/2019	8/21/2019	
Appendix IV	Antimony	ND	ND	ND	ND	ND
	Arsenic	ND (0.00040 J)	ND (0.00036 J)	ND	ND (0.00044 J)	ND (0.00033 J)
	Barium	0.035	0.033	0.046	0.050	0.036
	Beryllium	ND	ND	ND	ND (0.00025 J)	ND
	Cadmium	ND	ND	ND	ND (0.00013 J)	ND
	Chromium	0.0073	ND (0.0017 J)	0.0025	ND	ND
	Cobalt	ND (0.00017 J)	ND (0.00048 J)	ND (0.00016 J)	0.018	0.0012
	Fluoride	ND (0.047 J)	ND (0.10 J)	ND (0.033 J)	ND (0.031 J)	ND (0.079 J)
	Lead	ND	ND	ND	ND	ND
	Lithium	ND	ND	ND	ND	ND (0.0036 J)
	Mercury	ND	ND	ND	ND	ND
	Molybdenum	ND	ND (0.0017 J)	ND	ND	ND
	Radium	0.352 U	0.491	0.227 U	-0.0366 U	0.693
	Selenium	ND	ND	ND	ND	ND
Thallium	ND	ND	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 analytical method detection limit (MDL).
3. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.
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	Well ID								
	ARGWA-3	ARGWA-5	ARGWA-12	ARGWA-13	ARGWA-14	ARGWC-7	ARGWC-8	ARGWC-9	
	10/8/2019	10/8/2019	10/8/2019	10/8/2019	10/7/2019	10/9/2019	10/9/2019	10/9/2019	
APPENDIX III	Boron	ND	ND	ND	0.68	ND	ND (0.076 J)	1.2	ND
	Calcium	6.0	5.9	13	190	36	11	53	5.7
	Chloride	2.6	5.7	64	6.7	4.0	4.6	5.7	5.2
	Fluoride	ND (0.056 J)	ND (0.050 J)	ND (0.27 J)	ND (0.033 J)	ND (0.12 J)	ND (0.032 J)	ND (0.085 J)	ND (0.038 J)
	Sulfate	ND (0.70 J)	ND (0.70 J)	55	950	12	42	63	1.5
	TDS	66	68	130	1500	230	130	290	75
APPENDIX IV	Antimony	ND	ND	ND	ND	ND	ND	ND	ND (0.00048 J)
	Arsenic	ND	ND	ND	ND	ND (0.00045 J)	0.0015	0.0014	0.0011
	Barium	0.020	0.030	0.078	0.042	0.033	0.046	0.049	0.041
	Beryllium	ND	ND (0.00041 J)	ND	ND	ND	ND (0.00041 J)	ND (0.00047 J)	ND (0.00037 J)
	Cadmium	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	0.0031	ND	ND	ND	ND	0.0042	ND (0.0017 J)	0.0084
	Cobalt	ND	ND	ND	ND (0.00011 J)	ND	ND (0.00034 J)	ND (0.00041 J)	ND (0.00021 J)
	Lead	0.0010	ND (0.00016 J)	ND	ND (0.00013 J)	ND	ND	ND (0.00019 J)	ND (0.00016 J)
	Lithium	ND (0.0047 J)	0.0055	0.0078	0.0099	0.0070	0.0083	0.0077	0.0061
	Molybdenum	ND	ND	ND	ND	ND (0.00067 J)	ND	0.049	ND
	Radium	0.419 U	0.348 U	0.760	0.398 U	0.447 U	0.552	-0.164 U	-0.238 U
	Selenium	ND	ND	ND	0.030	ND	ND	ND	ND
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	
*	Silver	ND (0.00019 J)	ND (0.00030 J)	ND	ND (0.00047 J)	ND (0.00022 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 analytical method detection limit (MDL).
 3. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.
 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.
- * Appendix I parameter included to meet EPD Rule 391-3-4-.14 requirements that is not included in the Appendix IV parameter list.

Table 6B
Summary of Groundwater Analytical Data
October 2019

Substance		Well ID				
		ARGWC-10	ARGWC-15	ARGWC-16	ARGWC-17	ARGWC-18
		10/9/2019	10/8/2019	10/9/2019	10/9/2019	10/9/2019
APPENDIX III	Boron	ND	ND	ND (0.065 J)	ND	2.1
	Calcium	7.7	24	39	10	49
	Chloride	3.8	9.4	4.7	3.3	6.7
	Fluoride	ND (0.053 J)	ND (0.33 J)	ND (0.031 J)	ND (0.030 J)	ND (0.068 J)
	Sulfate	ND (0.59 J)	31	210	57	180
	TDS	92	130	350	120	420
APPENDIX IV	Antimony	ND	ND	ND	ND	ND
	Arsenic	0.0019	ND	0.0010	0.0015	0.0016
	Barium	0.031	0.031	0.057	0.049	0.039
	Beryllium	ND	ND	ND (0.00027 J)	ND (0.00076 J)	ND (0.00034 J)
	Cadmium	ND	ND	ND	ND (0.00018 J)	ND
	Chromium	0.0060	ND	0.0027	0.0021	ND
	Cobalt	ND (0.00019 J)	ND (0.00019 J)	ND (0.00026 J)	0.017	0.00099
	Lead	ND	ND	ND	ND	ND
	Lithium	0.0055	ND (0.0040 J)	0.0076	0.0071	0.013
	Molybdenum	ND	ND (0.0011 J)	ND	ND	ND
	Radium	-0.380 U	0.421 U	-0.0245 U	0.118 U	0.0684 U
	Selenium	ND	ND	ND (0.0018 J)	ND	ND
	Thallium	ND	ND	ND	ND	ND
*	Silver	ND	ND (0.00018 J)	ND	ND	ND

Notes:

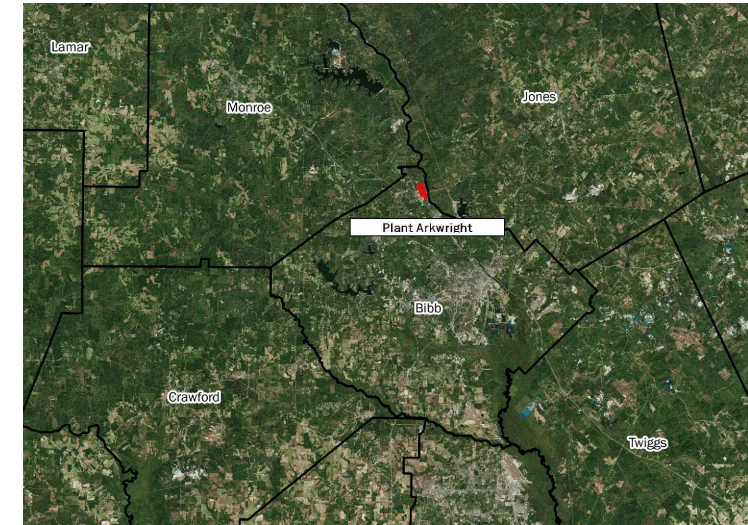
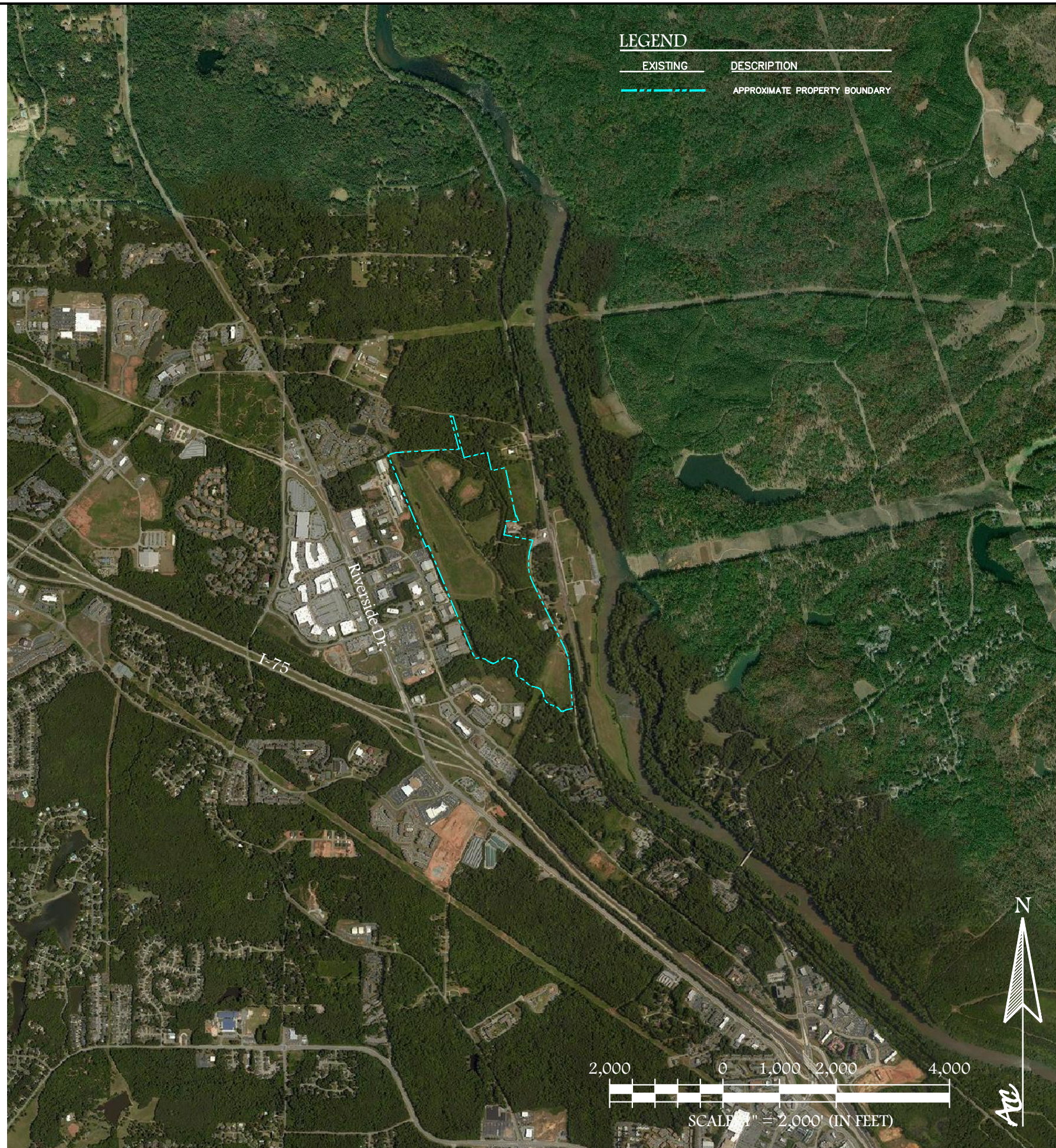
1. Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
 2. ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL).
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 6. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.
- * Appendix I parameter included to meet EPD Rule 391-3-4-.14 requirements that is not included in the Appendix IV parameter list.

**Table 7
Statistical Method Summary**

Statistical Method Summary		
Monitoring Well Network	Upgradient Wells	GWA-19 and GWA-20
	Downgradient Wells	GWC-21
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
EPD Permit Metals	Appendix I (Detection Monitoring)	Arsenic, Barium, Cadmium, Lead, Selenium, and Silver
	Appendix II (Assessment Monitoring)	Arsenic, Barium, Cadmium, Lead, Selenium, and Silver
Statistical Methodology	Data Screening Proposed Background	Evaluate outliers, trends, and seasonality when sufficient data are available
	Statistical Limits	Interwell Statistical Limits

FIGURES

P:\Industrial\054 - Southern Company\110 - Groundwater Consulting Services 2018 - 2021\Plant Arkwright\2 - Semi-Annual GWMRs\1st 2019 Plant Arkwright GWMRs\DWG\Plant Arkwright GWMRs\1st 2019 Plant Arkwright Map.dwg 2019-07-25 MATT MALONE



LOCATION IN THE STATE OF GEORGIA - NOT TO SCALE



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PROJECT:
PLANT ARKWRIGHT

5001 ARKWRIGHT ROAD
MACON, GEORGIA

REVISIONS

NO.	DESCRIPTION

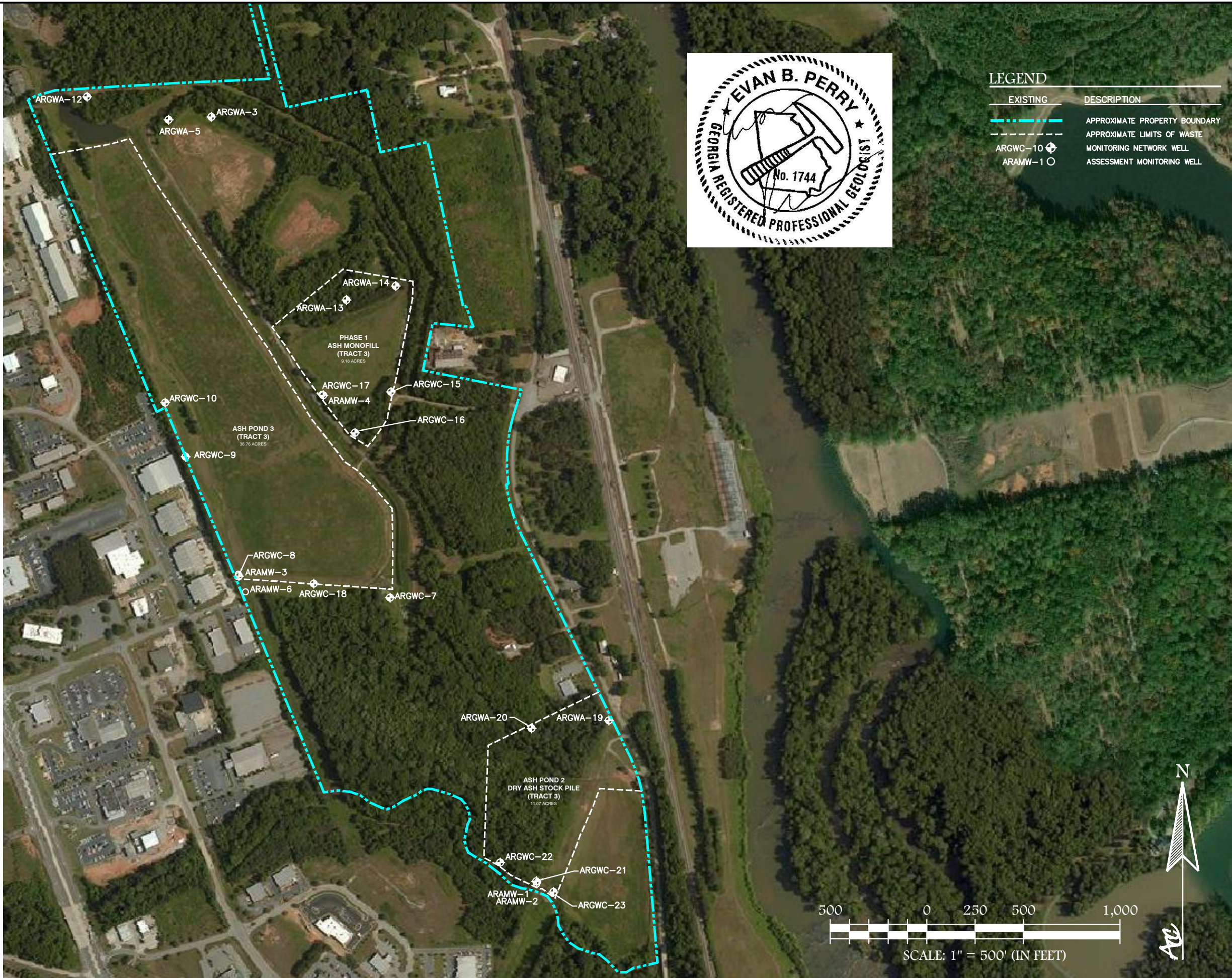
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I054-110
February 2020

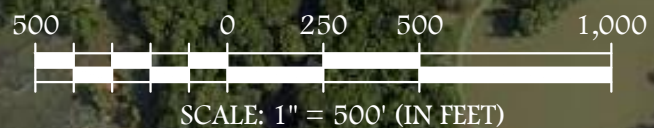
**SITE LOCATION
MAP**

FIGURE **1**

\\ATLANTA\Projects\Industrial\054-Southern Company\110-Groundwater Consulting Services\Plant Arkwright\2-CW Sampling And Reporting\2019\2nd 2019 Plant Arkwright GWRs\DWG\Plant Arkwright October 2019 Map.dwg 2020-02-07 EVAN PERRY



EXISTING	DESCRIPTION
	APPROXIMATE PROPERTY BOUNDARY
	APPROXIMATE LIMITS OF WASTE
	MONITORING NETWORK WELL
	ASSESSMENT MONITORING WELL



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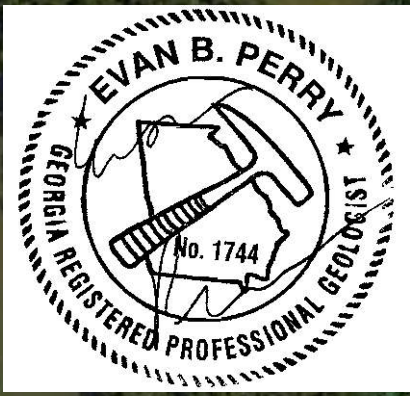
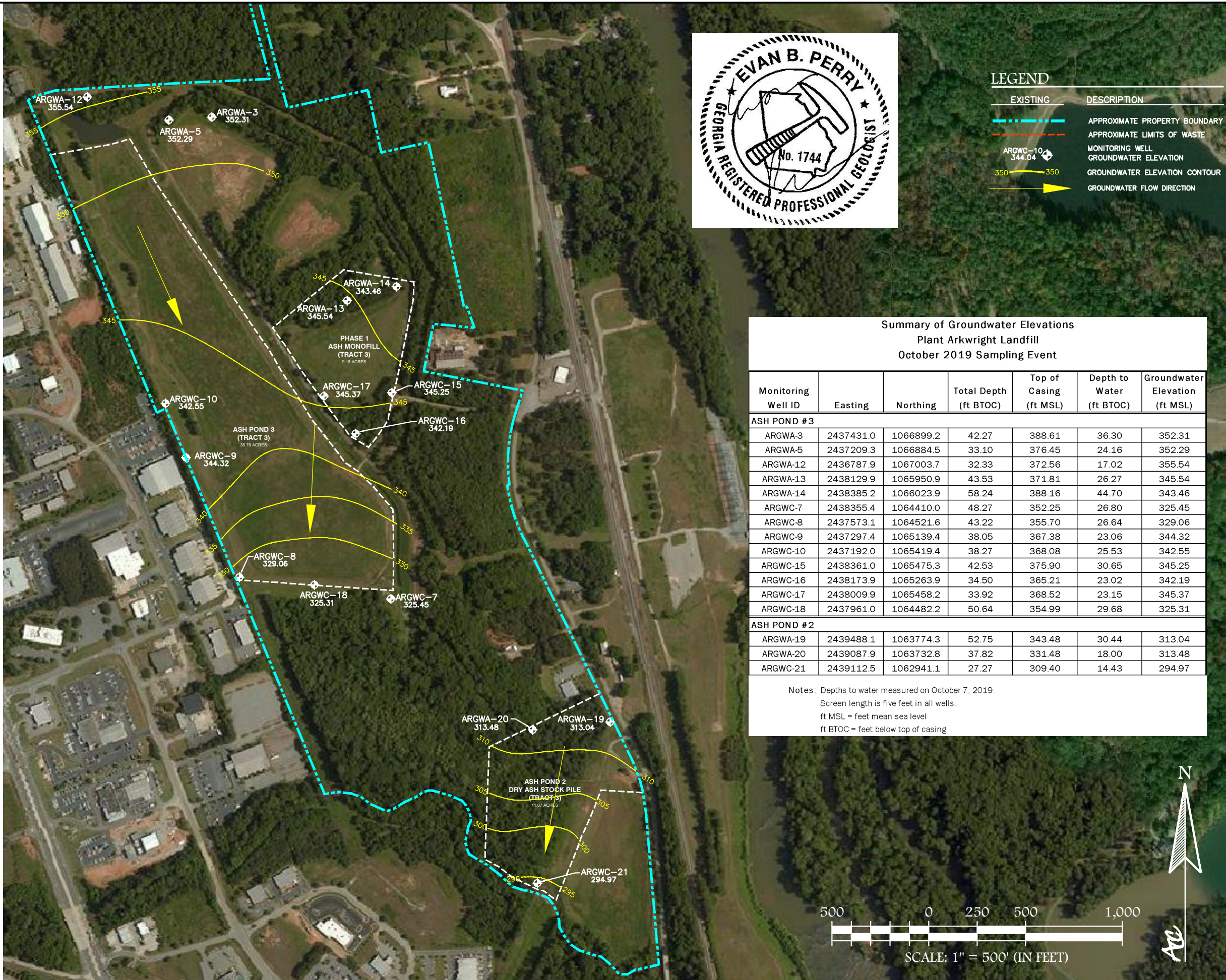
Drawn by: **MM** Checked by: **EP**

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 January 2020

WELL LOCATION MAP

FIGURE **2**

\\ATLANTA\Projects\Industrial\054-Southern Company\110-Groundwater Consulting Services\Plant Arkwright\2-GW Sampling And Reporting\2019\2nd 2019 Plant Arkwright GWRFs\DWG\Plant Arkwright October 2019 Map.dwg 2020-02-07 EVAN PERRY



EXISTING	DESCRIPTION
	APPROXIMATE PROPERTY BOUNDARY
	APPROXIMATE LIMITS OF WASTE
	MONITORING WELL GROUNDWATER ELEVATION
	GROUNDWATER ELEVATION CONTOUR
	GROUNDWATER FLOW DIRECTION

**Summary of Groundwater Elevations
Plant Arkwright Landfill
October 2019 Sampling Event**

Monitoring Well ID	Easting	Northing	Total Depth (ft BTOC)	Top of Casing (ft MSL)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)
ASH POND #3						
ARGWA-3	2437431.0	1066899.2	42.27	388.61	36.30	352.31
ARGWA-5	2437209.3	1066884.5	33.10	376.45	24.16	352.29
ARGWA-12	2436787.9	1067003.7	32.33	372.56	17.02	355.54
ARGWA-13	2438129.9	1065950.9	43.53	371.81	26.27	345.54
ARGWA-14	2438385.2	1066023.9	58.24	388.16	44.70	343.46
ARGWC-7	2438355.4	1064410.0	48.27	352.25	26.80	325.45
ARGWC-8	2437573.1	1064521.6	43.22	355.70	26.64	329.06
ARGWC-9	2437297.4	1065139.4	38.05	367.38	23.06	344.32
ARGWC-10	2437192.0	1065419.4	38.27	368.08	25.53	342.55
ARGWC-15	2438361.0	1065475.3	42.53	375.90	30.65	345.25
ARGWC-16	2438173.9	1065263.9	34.50	365.21	23.02	342.19
ARGWC-17	2438009.9	1065458.2	33.92	368.52	23.15	345.37
ARGWC-18	2437961.0	1064482.2	50.64	354.99	29.68	325.31
ASH POND #2						
ARGWA-19	2439488.1	1063774.3	52.75	343.48	30.44	313.04
ARGWA-20	2439087.9	1063732.8	37.82	331.48	18.00	313.48
ARGWC-21	2439112.5	1062941.1	27.27	309.40	14.43	294.97

Notes: Depths to water measured on October 7, 2019.
Screen length is five feet in all wells.
ft MSL = feet mean sea level
ft BTOC = feet below top of casing

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5001 ARKWRIGHT ROAD
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REVISIONS

Drawn by: MM Checked by: EP

PROJECT NUMBER:
1054-110
January 2020

**OCTOBER 2019
WATER TABLE
CONTOUR MAP**

FIGURE **3**

APPENDICES

APPENDIX A

Well Installation Report

**Georgia Power Company
Former Plant Arkwright
Ash Pond No.3 and Monofill
PERMIT #: 011-025D(LI)
Bibb County**

**Groundwater Monitoring Well
Installation Report**



**ATLANTIC COAST
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Cover Sheet

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Figure 1 – Well Location Map

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Table 1 – Summary of Well Construction and Location Data

Appendices

Appendix A – Driller Bond Certificate
Appendix B – Boring and Well Construction Logs
Appendix C – Filter Pack Grain Size Curve
Appendix D – Well Development Forms
Appendix E – Survey Data

Professional Geologist Certification

I, Evan B. Perry, certify that I am a qualified groundwater scientist as demonstrated by a Georgia state registered professional geologist certification. I have sufficient training and experience in groundwater hydrology and related fields to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. I further certify that the data in this report have been prepared by me or a subordinate working under my direction.

Evan B. Perry, P.
Georgia P.G. Registration No. 1744174



1.0 Introduction

Georgia Power Company (GPC) –former Plant Arkwright is located in Bibb County near Macon on Arkwright Road. Plant Arkwright was retired in 2002 and decommissioned in 2003. The CCR unit AP-3 Landfill and Monofill was closed in 2010 in accordance with the solid waste regulations in effect at the time of its closure. A closure certificate was issued by the Georgia Environmental Protection Division (GA EPD) for AP-3 Landfill and Monofill on August 19, 2010. The site operates during the post closure care period under EPD solid waste handling permit number 011-025D(LI). Figure 1, Well Location Map, depicts the location of the location of the monitoring and assessment wells.

This report is prepared document details regarding the design, installation, and development of monitoring well ARAMW-3, ARAMW-4, and ARAMW-6 installed at GPC Plant Arkwright, Ash AP-3. Locations ARMW-3 and ARAMW-6 are intended to assess groundwater conditions vertically and hydraulically, respectively at ARGWC-8. Location ARAMW-4 is intended to assess ground conditions vertically at ARGWC-17.

2.0 Drilling and Well Installation

Installation details and descriptions of procedures are provided in the following sections.

2.1 Drilling Method

Groundwater monitoring wells were installed by Cascade Environmental, LP (Cascade) using rotasonic drilling techniques. Cascade has current surety bond on file with the Georgia Water Well Standards Advisory Council. A copy of Cascade’s bond is included in Appendix A, Driller Bond Certificate.

Drilling equipment was steam-cleaned before the start of drilling and between each boring. Borings for groundwater wells were drilled with a 6-inch outer diameter core barrel. Groundwater wells were extended to depths deep enough to provide a sufficient water column for sampling efforts targeted within the uppermost aquifer at the site. Boring and well construction logs are included in Appendix B, Boring and Well Construction Logs.

2.2 Screened Interval

The wells are screened in unconsolidated silty sand with gravel as shown in the boring and well installation logs provided as Appendix B. The wells are constructed with 10 feet lengths of screen.

2.3 Well Casing and Screens

The wells are constructed of 2-inch diameter, American Society for Testing and Materials (ASTM)-rated, flush-threaded, Schedule 40 PVC casing flush-threaded to pre-packed dual-wall slotted PVC screens. The casing and pre-packed screen 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. Solvent or glue was not used to construct the wells. Casing and screen sections are flush-threaded. Wells were constructed in accordance with accepted industry standards and followed guidelines within the Manual for Groundwater Monitoring (GA EPD, 1991).

2.4 Well Intake Design

The wells are 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. The well is screened using 0.010-inch slotted PVC pre-packed dual-wall well screen. The pre-packed dual-wall well screen combines 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

During groundwater well construction, filter sand was slowly washed with potable water into the annular space surrounding the well screen to approximately two feet above the screened interval. Filter sand is approximately 20/30 grade silica sand from Standard Sand and Silica Co. A grain size curve for the filter pack is provided in Appendix C, Filter Pack Grain Size Curve.

Filter pack material was placed within the pre-packed dual-wall well screens and in the annular space between the outside of the pre-pack 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 screen. 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 the well construction log provided in Appendix B.

2.6 Annular Seal

Two to four feet of hydrated sodium bentonite overlies the filter pack. A high solid bentonite grout slurry was placed into the annular space from the bottom to the top with tremie pipe. A cement apron 4-feet by 4-feet by 4-inches was poured around the wells. The pads are mounded slightly outward to direct surface drainage away from the well.

2.7 Cap and Protective Casing

The well risers are fitted with a locking cap and a lockable cover. A one-quarter inch vent hole in the PVC riser pipe provides an avenue for the escape of gas. The protective cap guards the casing from damage and the locking cap serves as a security device to prevent well tampering. Bollards were installed around the corners of the wells to protect the wells from damage as necessary.

Wells are clearly marked with signage with the proper designation. A weep hole was drilled in the outer protective casing near the bottom above the concrete pad. Pea gravel was placed inside the protective casing between the riser pipe and the outer casing.

3.0 Well Development

The monitoring wells were developed using a combination of surging and pumping to (1) restore the natural hydraulic conductivity of the formation, and (2) to remove fine-grained sediment to ensure low-turbidity groundwater samples. The well was alternately surged and purged until

visually clear of particulates. Turbidity, pH, temperature, and conductivity measurements were made to ensure that each well was fully developed. All equipment and tubing placed in the well was decontaminated or new. Development forms are included in Appendix D, Well Development Forms.

4.0 Survey

The horizontal and vertical location of the newly installed monitoring locations was surveyed by Southern Company Civil Field Services T&PS. under the direction of a Georgia Registered Land Surveyor (RLS). The horizontal location and vertical elevation of the wells were surveyed to the nearest, 0.01-foot. The elevations were measured on a survey pin embedded in the concrete pad, ground surface, and the top of PVC well casing. The survey for the new monitoring wells was completed On December 13, 2019. Elevations are referenced to mean sea level (MSL) in feet; depth is referenced from TOC in feet. Well coordinates are provided in Table 1. A site map depicting the surveyed locations is included in Figure 1; a survey data sheet sealed by a Georgia RLS is included in Appendix E, Survey Data. The well locations shown on Figure 1 have been referenced in the recent Groundwater Monitoring Plan.

5.0 General References

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

TABLE



Table 1
Summary of Well Installation Dates, Coordinates, Elevation Screen Interval and Purpose

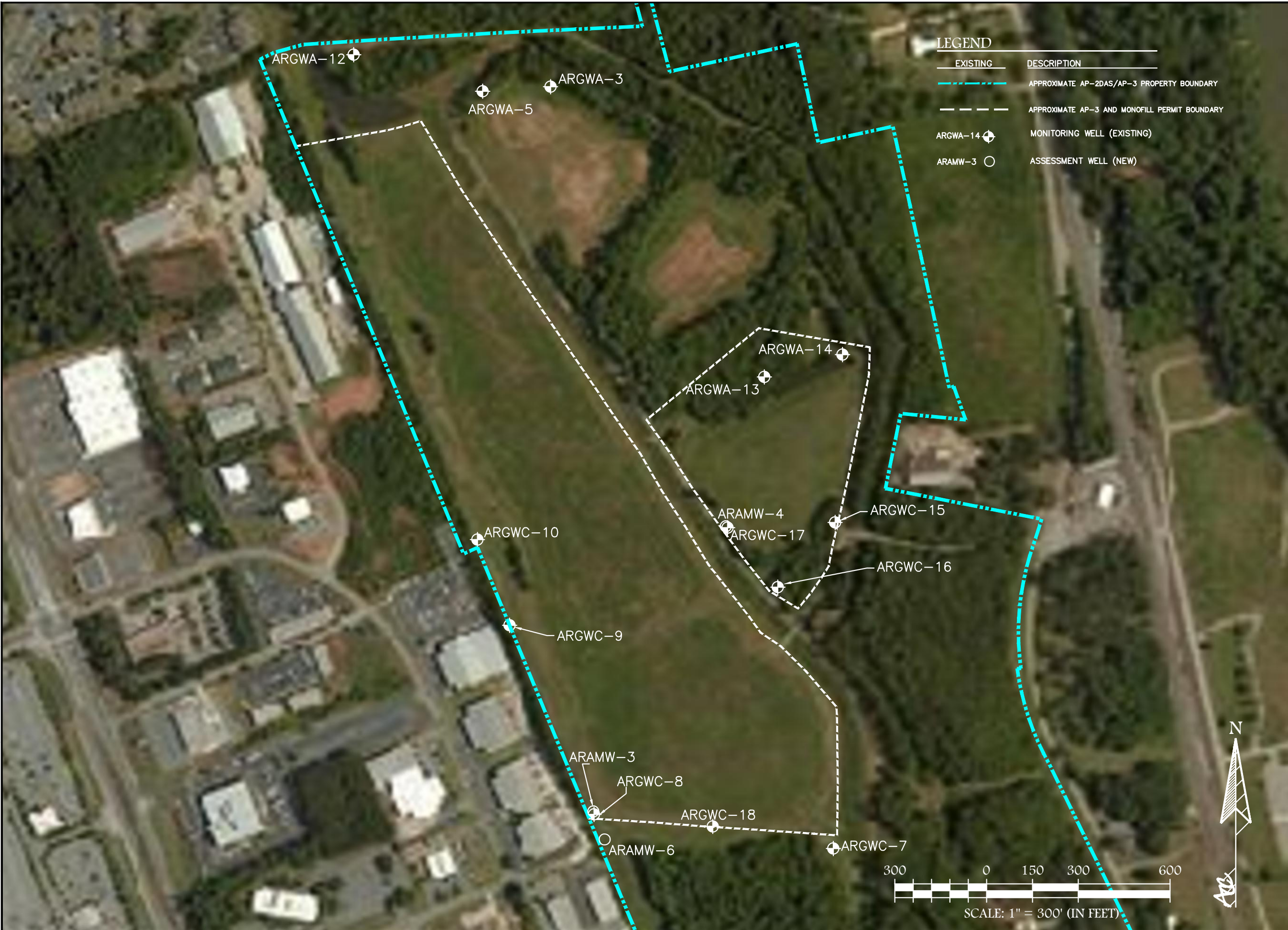
Well	Installation Date (mm/dd/yyyy)	Northing	Easting	Ground Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Total Depth (ft BTOC)	Purpose
ARAMW-3	11/25/2019	1,064,531.31	2,437,570.76	352.35	355.35	297.04	287.04	68.61	Vertical assessment of ARGWC-8
ARAMW-4	11/25/2019	1,065,462.99	2,438,003.90	364.40	367.61	320.21	310.21	57.70	Vertical assessment of ARGWC-17
ARAMW-6	11/25/2019	1,064,439.75	2,437,607.88	334.47	337.34	315.27	305.27	32.37	Horizontal assessment of ARGWC-8

Notes:

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

FIGURE

\\ATLANTA\Projects\Industrial\054-Southern Company\110-Groundwater Consulting Services\Plant Arkwright\2019-11 Arkwright Well Instal\DWG\Plant Arkwright AP-3 Assessment Well Locations.dwg 2020-02-07 EVAN PERRY



LEGEND

EXISTING	DESCRIPTION
	APPROXIMATE AP-2DAS/AP-3 PROPERTY BOUNDARY
	APPROXIMATE AP-3 AND MONOFILL PERMIT BOUNDARY
	ARGWA-14 MONITORING WELL (EXISTING)
	ARAMW-3 ASSESSMENT WELL (NEW)



ATLANTIC COAST CONSULTING, INC.
 1150 Northmeadow Pkwy.
 Suite 100
 Roswell, GA 30076
 770.594.5998
 www.atlcc.net

PROJECT:
PLANT ARKWRIGHT

5001 ARKWRIGHT ROAD
 MACON, GEORGIA

REVISIONS

Drawn by: RW Checked by: MM

PROJECT NUMBER:
1054-110
 February 2020

NEW WELL LOCATION MAP

FIGURE 1

APPENDICES

APPENDIX A

Driller Bond Certificate

COPY

CONTINUATION
CERTIFICATE

Atlantic Specialty Insurance Company

, Surety upon

a certain Bond No. **800031223**

dated effective June 30, 2017
(MONTH-DAY-YEAR)

on behalf of Michael C. Rice and Cascade Drilling, L.P., any and all employees, officers and partners
(PRINCIPAL)

and in favor of State of Georgia
(OBLIGEE)

does hereby continue said bond in force for the further period

beginning on June 30, 2019
(MONTH-DAY-YEAR)

and ending on June 30, 2021
(MONTH-DAY-YEAR)

Amount of bond Thirty Thousand and Zero/100 (\$30,000.00)

Description of bond Water Well Contractor Performance Bond

Premium: \$1,200.00

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

Signed and dated on May 9, 2019
(MONTH-DAY-YEAR)
Atlantic Specialty Insurance Company

By _____
Attorney-in-Fact Elizabeth R. Hahn

Parker, Smith & Feek, Inc.
Agent

2233 112th Ave NE Bellevue, WA 98004
Address of Agent

(425) 709-3600
Telephone Number of Agent

Power of Attorney

KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Plymouth, Minnesota, does hereby constitute and appoint: **Deanna M. French, Susan B. Larson, Elizabeth R. Hahn, Jana M. Roy, Scott McGilvray, Mindee L. Rankin, Ronald J. Lange, John R. Claeys, Roger Kaltenbach, Guy Armfield, Scott Fisher, Andrew P. Larsen, Nicholas Fredrickson**, each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof; provided that no bond or undertaking executed under this authority shall exceed in amount the sum of: **sixty million dollars (\$60,000,000)** and the execution of such bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company as if they had been fully signed by an authorized officer of the Company and sealed with the Company seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the

Resolved: That the President, any Senior Vice President or Vice-President (each an "Authorized Officer") may execute for and in behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and affix the seal of the Company thereto; and that the Authorized Officer may appoint and authorize an Attorney-in-Fact to execute on behalf of the Company any and all such instruments and to affix the Company seal thereto; and that the Authorized Officer may at any time remove any such Attorney-in-Fact and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority to execute for and in the name and on behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed and sealed by an Authorized Officer and, further, the Attorney-in-Fact is hereby authorized to verify any affidavit required to be attached to bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

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

IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed this twenty-sixth day of October, 2017.

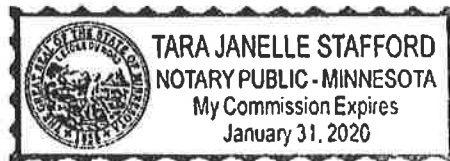
STATE OF MINNESOTA
HENNEPIN COUNTY



By

Paul J. Brehm, Senior Vice President

On this twenty-sixth day of October, 2017, before me personally came Paul J. Brehm, Senior Vice President of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, that he is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer was duly affixed and subscribed to the said instrument by the authority and at the direction of the Company.



Notary Public

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

Signed and sealed. Dated 9 day of May, 2019

This Power of Attorney expires
October 1, 2019



Christopher V. Jerry, Secretary

APPENDIX B

BORING AND WELL CONSTRUCTION LOGS

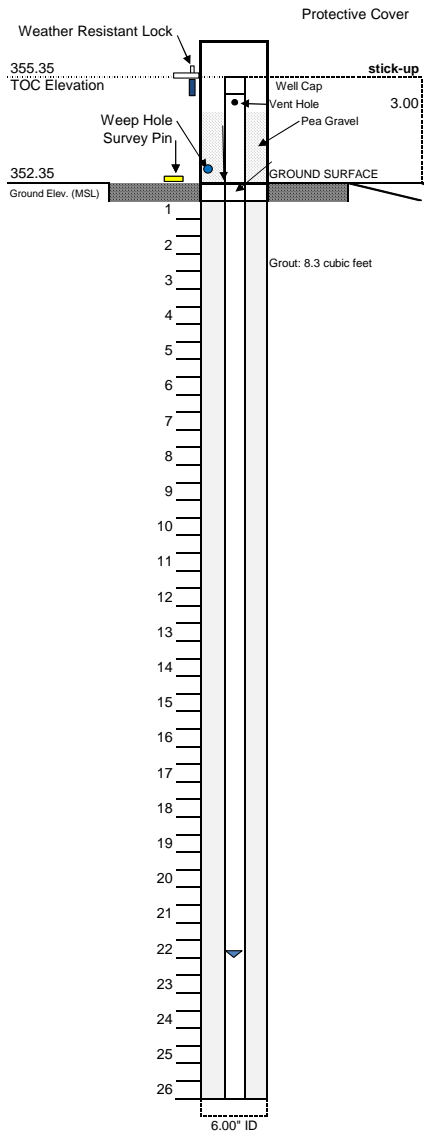


ATLANTIC COAST CONSULTING, INC.

ARAMW-3

BORING ID

PROJECT: Plant Arkwright	PROJECT NO.: I054-110
TOTAL DEPTH: 68.61 ft. BTOC	SITE LOCATION: Macon, Georgia
DATE BEGIN: 25-Nov-2019	DRILLER: Chris Ruffer
DATE COMPLETE: 25-Nov-2019	RIG TYPE: T-300 Rotosonic
INSTALLED BY: Cascade	METHOD: Rotosonic
SUPERVISED BY: Jordan Berisford	
WATER 1ST ENCOUNTERED: 23' BGS	
WATER AFTER 48 HOURS: 25.32' BTOC	



Northing: 1064531.307
Easting: 2437570.755

SURFACE COMPLETION:

4"x4" Aluminum Protective Casing
4"x4"x4" Concrete Pad
Weather Resistant Lock
Survey Pin

SOIL DESCRIPTION

0-5' Top soil (CL). Reddish brown clay, medium plasticity, dry, mica present (15-20%), soft. Hand augered

5-10' As above, increase in mica present (30%). Color change -8' to brown low-medium plasticity (ML) silt. Soft

10-15' Color change at 12' to a light brown (ML) silt, mica (40%). Saprolite, Black and tan striations present. Cohesive, low plasticity, soft to very soft.

15-20' As above

20-25' Silt with sand (ML) saprolite, soil striations present. Some weathered rock with sand (fine to coarse) present. Non cohesive/non plastic. Mica present (45%). Some black and white mottling.

25-30' As above, saprolite

Core Photos



MATERIALS:

GROUT:		Bentonite Grout
MANUFACTURER:		AquaGuard
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER:		Pei-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



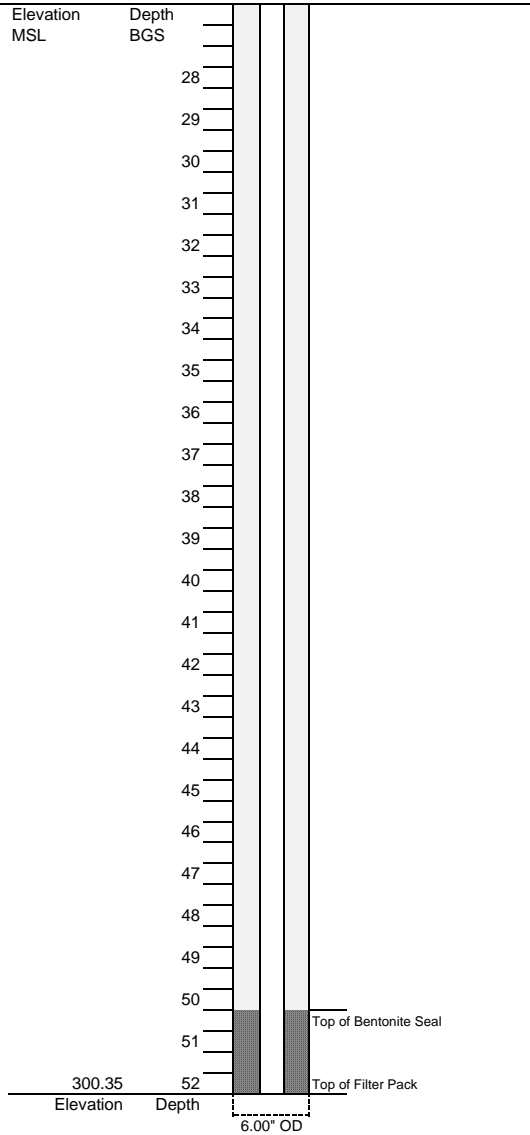
ATLANTIC COAST CONSULTING, INC.

ARAMW-3

BORING ID

PROJECT:	Plant Arkwright	PROJECT NO.:	I054-110
TOTAL DEPTH:	68.61 ft. BTOC	SITE LOCATION:	Macon, Georgia
DATE BEGIN:	25-Nov-2019	DRILLER:	Chris Ruffer
DATE COMPLETE:	25-Nov-2019	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Jordan Berisford		
WATER 1ST ENCOUNTERED:	23' BGS		
WATER AFTER 48 HOURS:	25.32' BTOC		

Core Photos



30-35' As above, saprolite

35-40' As above, saprolite

40-45' As above, weathered rock

45-50' Color change to light brown, black and white mottling
At 48' change to a gray weathered rock with a silty sand (SM) with gravel pieces present.

50-55' Fractured rock



MATERIALS:

GROUT:		Bentonite Grout
MANUFACTURER:		AquaGuard
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER:		PeI-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.

ARAMW-3

BORING ID

PROJECT: Plant Arkwright

PROJECT NO.: 1054-110

TOTAL DEPTH: 68.61 ft. BTOC

SITE LOCATION: Macon, Georgia

DATE BEGIN: 25-Nov-2019

DRILLER: Chris Ruffer

DATE COMPLETE: 25-Nov-2019

RIG TYPE: T-300 Rotosonic

INSTALLED BY: Cascade

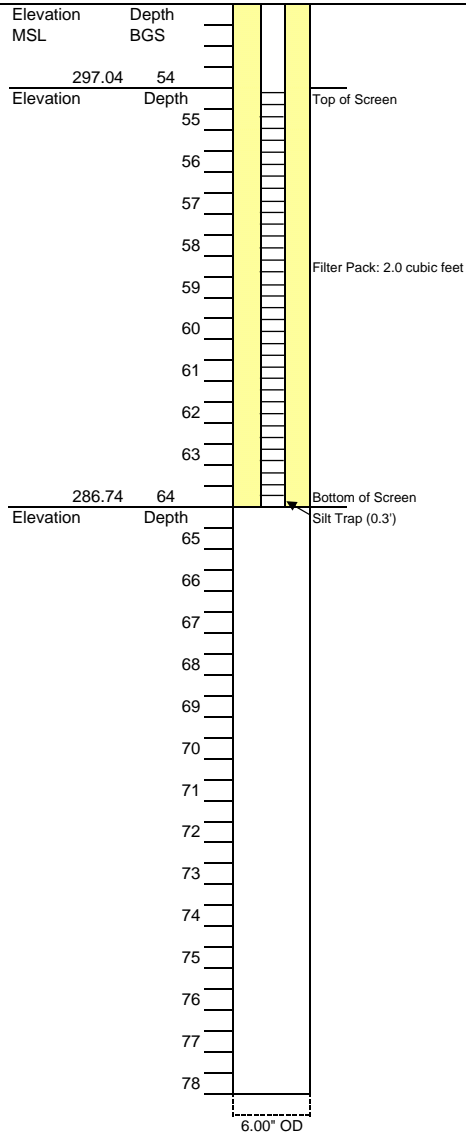
METHOD: Rotosonic

SUPERVISED BY: Jordan Berisford

WATER 1ST ENCOUNTERED: 23' BGS

WATER AFTER 48 HOURS: 25.32' BTOC

Core Photos



55-60' Dark gray weathered rock with a silty sand with gravel pieces present (SM)

60-64' Weathered gneiss/schist with iron staining. Gneiss becomes more competent and fracturing disappears starting at 62'.

Total well depth 64.0' 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



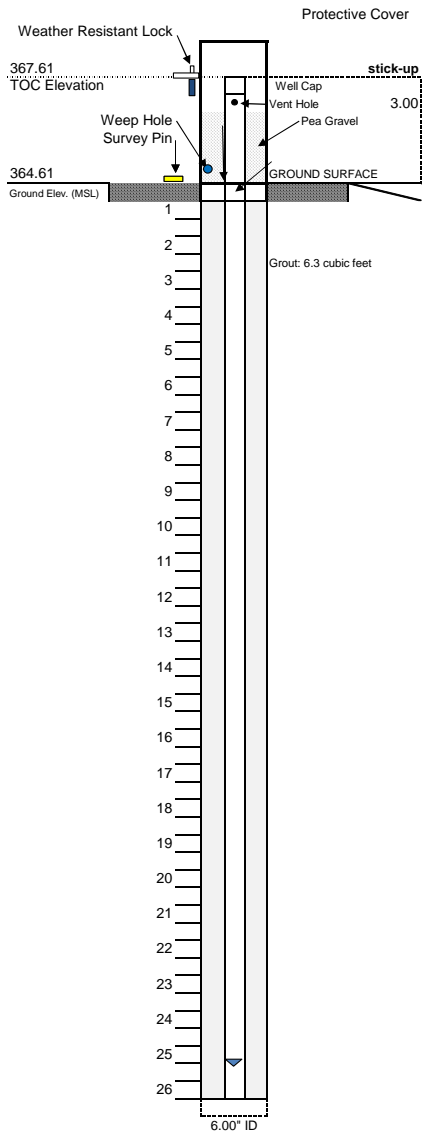
ATLANTIC COAST CONSULTING, INC.

ARAMW-4

BORING ID

PROJECT:	Plant Arkwright	PROJECT NO.:	I054-110
TOTAL DEPTH:	57.70 ft. BTOC	SITE LOCATION:	Macon, Georgia
DATE BEGIN:	21-Nov-2019	DRILLER:	Chris Ruffer
DATE COMPLETE:	21-Nov-2019	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Jordan Berisford		
WATER 1ST ENCOUNTERED:	25' BGS		
WATER AFTER 48 HOURS:	22.46' BTOC		

Northing: 1065462.99
Easting: 2438003.898



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

SOIL DESCRIPTION

0-5' Light brown top soil (CL), some organics present. Mica present, dry, soft, medium plasticity, cohesive, mica (15-20%). Hand augered

5-10' As above (CL)

10-15' As above (CL), increase in mica (40%)

15-20' As above (CL), saprolite. Some black striations present in soil structure.

17' Light gray to tan saprolite, mica present (40%), trace fine gravel (quartz), sub angular/sub rounded, silt with sand (ML)

20-25' Silt with sand (ML), light brown in color with mica/biotite flakes present (40%). Low plasticity, moist, non-cohesive

25-28' As above with a color change to yellowish tan (ML)

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

MSL - Mean Sea Level

BGS - Below Ground Surface



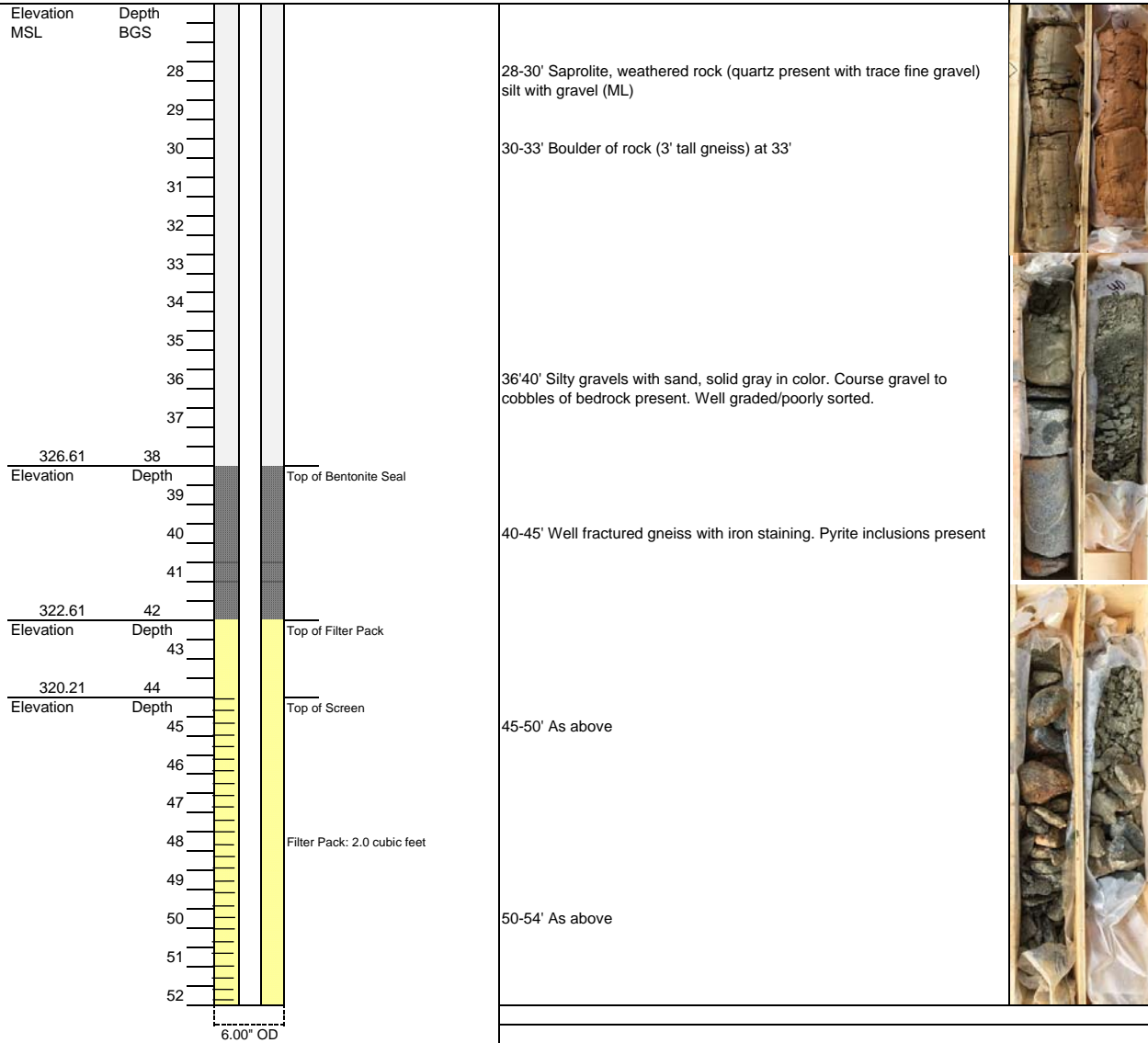
ATLANTIC COAST CONSULTING, INC.

ARAMW-4

BORING ID

PROJECT:	Plant Arkwright	PROJECT NO.:	I054-110
TOTAL DEPTH:	57.70 ft. BTOC	SITE LOCATION:	Macon, Georgia
DATE BEGIN:	21-Nov-2019	DRILLER:	Chris Ruffer
DATE COMPLETE:	21-Nov-2019	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Jordan Berisford		
WATER 1ST ENCOUNTERED:	25' BGS		
WATER AFTER 48 HOURS:	22.46' BTOC		

Core Photos



MATERIALS:

- | | | |
|-------------------|--|------------------------|
| GROUT: | | Bentonite Grout |
| MANUFACTURER: | | AquaGuard |
| BENTONITE SEAL: | | 3/8" Bentonite Pellets |
| MANUFACTURER: | | PeI-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.

ARAMW-4

BORING ID

PROJECT: Plant Arkwright

PROJECT NO.: I054-110

TOTAL DEPTH: 57.70 ft. BTOC

SITE LOCATION: Macon, Georgia

DATE BEGIN: 21-Nov-2019

DRILLER: Chris Ruffer

DATE COMPLETE: 21-Nov-2019

RIG TYPE: T-300 Rotosonic

INSTALLED BY: Cascade

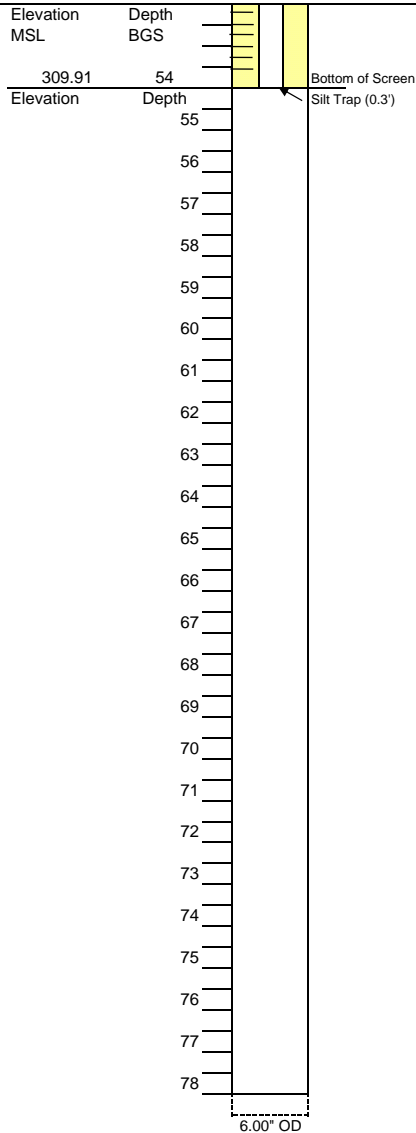
METHOD: Rotosonic

SUPERVISED BY: Jordan Berisford

WATER 1ST ENCOUNTERED: 25' BGS

WATER AFTER 48 HOURS: 22.46' BTOC

Core Photos



Total well depth 54.0' BGS



MATERIALS:

GROUT:		Bentonite Grout
MANUFACTURER:		AquaGuard
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER:		PeI-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



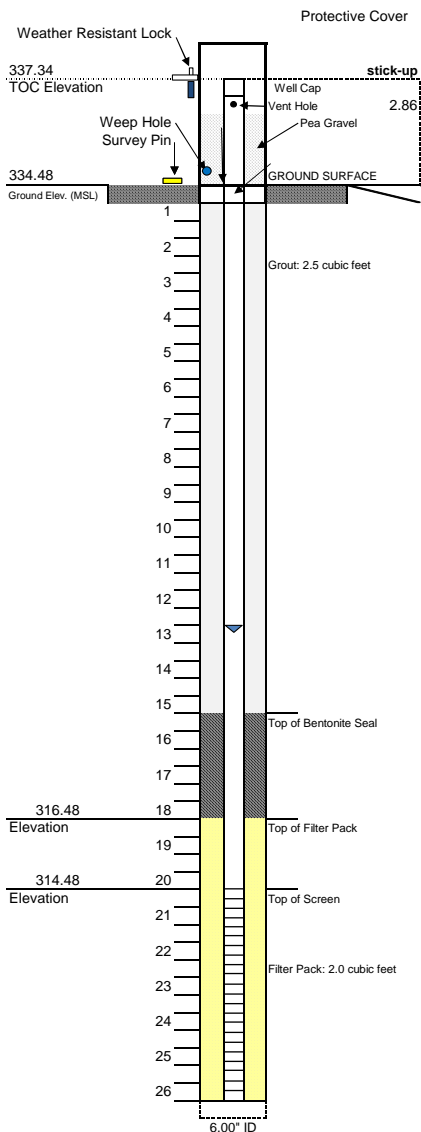
ATLANTIC COAST CONSULTING, INC.

ARAMW-6

BORING ID

PROJECT:	Plant Arkwright	PROJECT NO.:	I054-110
TOTAL DEPTH:	32.37 ft. BTOC	SITE LOCATION:	Macon, Georgia
DATE BEGIN:	25-Nov-2019	DRILLER:	Isaac Young
DATE COMPLETE:	25-Nov-2019	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Taylor Goble		
WATER 1ST ENCOUNTERED:	10.70' BGS		
WATER AFTER 48 HOURS:	12.45' BTOC		

Northing: 1064439.75
Easting: 2437607.875



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

SOIL DESCRIPTION
0-5' Red silty clay (CL). Micaceous. Dry. Some organics present. Hand augered

5-10' As above. Transition to a light brown silty clay at ~8'. Hand augered

10-15' Light brown silty sand (SC) with white and black mottling. Moist

15-20' As above. Mottling disappears around 18'.

20-25' Mottled white and black silty sand (SC). Moist. Some large gravel pieces. High plasticity red clay lenses present.

25-30' As above except more clay present. Wet.

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
MSL - Mean Sea Level
BGS - Below Ground Surface



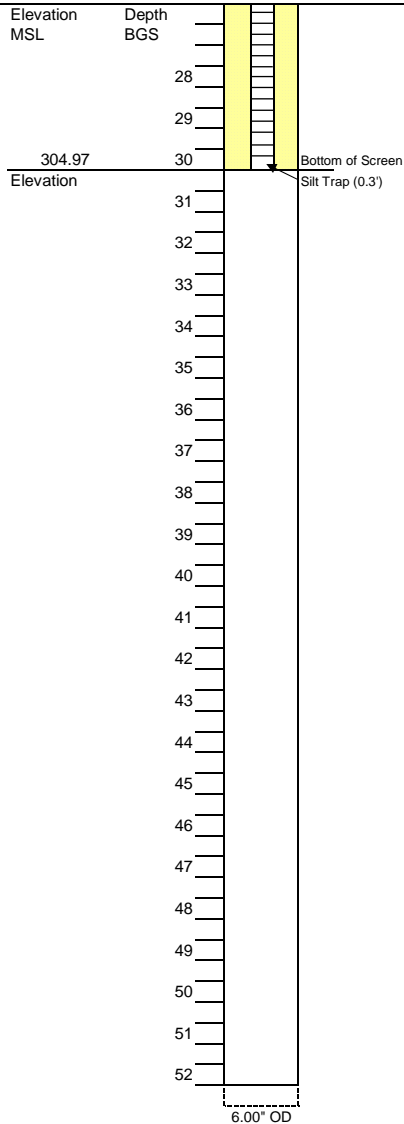
ATLANTIC COAST CONSULTING, INC.

ARAMW-6

BORING ID

PROJECT:	Plant Arkwright	PROJECT NO.:	I054-110
TOTAL DEPTH:	32.37 ft. BTOC	SITE LOCATION:	Macon, Georgia
DATE BEGIN:	25-Nov-2019	DRILLER:	Isaac Young
DATE COMPLETE:	25-Nov-2019	RIG TYPE:	T-300 Rotosonic
INSTALLED BY:	Cascade	METHOD:	Rotosonic
SUPERVISED BY:	Taylor Goble		
WATER 1ST ENCOUNTERED:	10.70' BGS		
WATER AFTER 48 HOURS:	12.45' BTOC		

Core Photos



Total well depth 30' BGS

MATERIALS:

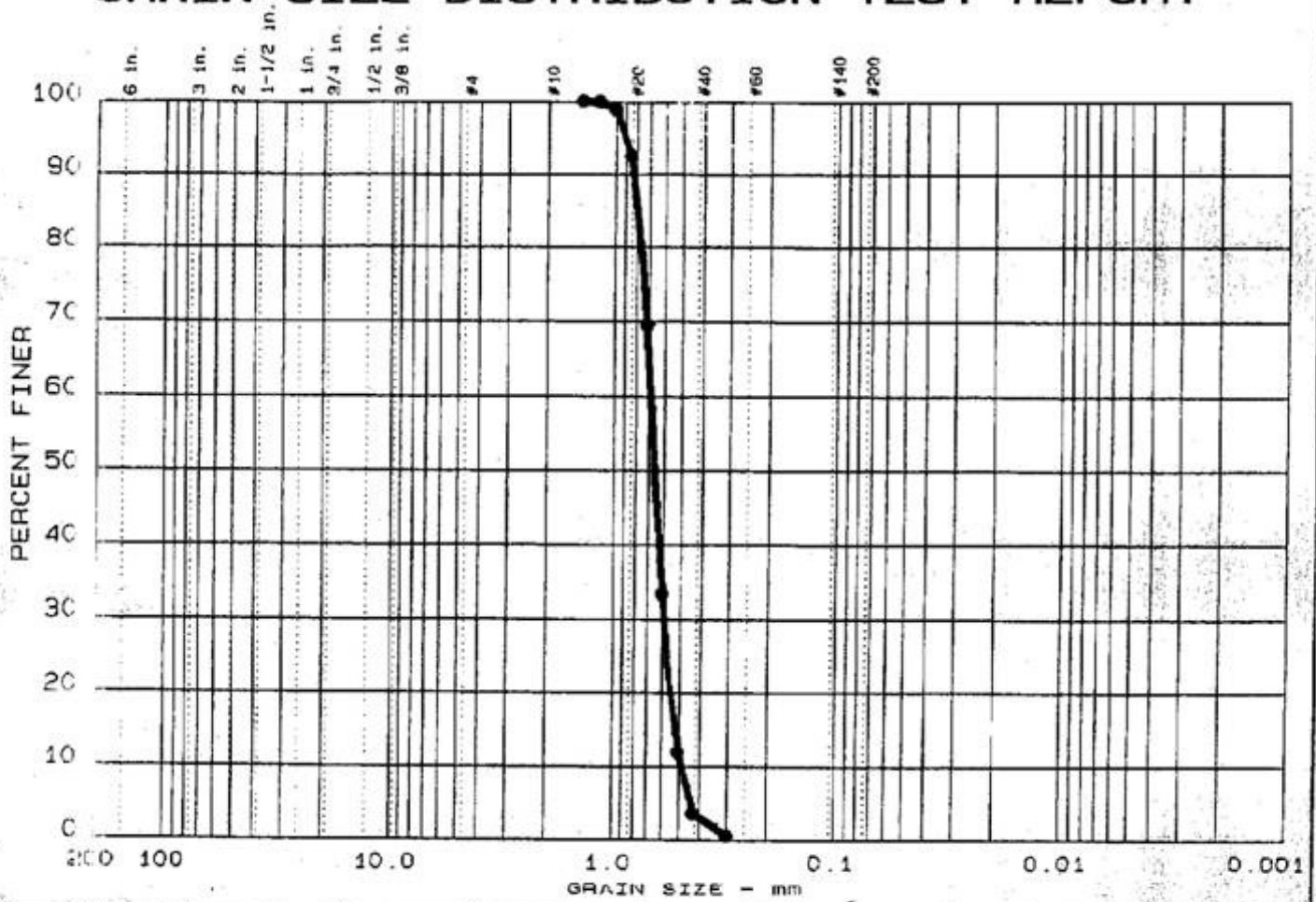
GROUT:		Bentonite Grout
MANUFACTURER:		AquaGuard
BENTONITE SEAL:		3/8" Bentonite Pellets
MANUFACTURER:		PeI-Plug
FILTER PACK SAND:		20/30 Mesh
MANUFACTURER:		Filter Media
WELL SCREEN:		Sch. 40 - 2" PVC
MANUFACTURER:		Silver-Line
SLOT SIZE:		0.010-Inch Slot
WELL CASING:		Sch. 40 - 2" PVC
MANUFACTURER: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

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

APPENDIX C

FILTER PACK GRAIN SIZE CURVE

GRAIN SIZE DISTRIBUTION TEST REPORT



#	V-75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	()	0.0	100.0		

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
ND	ND	0.78	0.68	0.65	0.588	0.5182	0.4814	1.06	1.4

MATERIAL DESCRIPTION ● WELL GRAVEL PACK #1	USCS ND	AASHTO ND
--	-------------------	---------------------

Project No.: 30774-2-5010-01
 Project SOUTHERN PRODUCTS & SILICA COMPANY
 ● Location: WELL GRAVEL PACK #1
 Date: 01-22-02

Remarks:
 ND=NOT DETERMINED

GRAIN SIZE DISTRIBUTION TEST REPORT
LAW ENGINEERING, INC.

Figure No. 01

APPENDIX D

WELL DEVELOPMENT FORMS

Atlantic Coast Consulting, Inc. Well Development Field Record

Job Name: <u>Plant Arkwright</u>	Job No. <u>I054-110 T8</u> Well No. <u>ARAMW-3</u>
Developed By: <u>O. Fuqea</u>	Date of Installation: <u>11/25/2019</u> Sheet <u>1</u> of <u>1</u>
Started Dev. <u>12-03-19 / 0820</u>	Completed Dev. <u>12-03-19 / 1035</u>
Date / Time	Date / Time
W.L. Before Dev. <u>25.32 / 12-03-19 / 0811</u>	W.L. After Dev. <u>49.20 / 12-03-19 / 1039</u>
BTOC / Date / Time	BTOC / Date / Time
Well Depth Before Dev.: <u>68.61</u> BTOC	Well Depth After Dev.: <u>68.9</u> BTOC
Water Column (H): <u>43.59</u> Ft. Well Dia.: <u>2</u> In.	Well Volume: <u>6.97</u> Gal.
Screen Length: <u>10</u> Ft.	

Date / Time	Volume Removed (Gal.)	Field Parameters				Remarks
		Specific Cond. (umhos/cm)	Temperature (oC)	pH (S.U.)	Turbidity (NTU)	
12/3/2019 0835	8.5	189.6	18.4	7.33	>1000	
12/3/2019 0840	10	225.1	18.5	6.99	577	
12/3/2019 0845	12	521.3	18.5	6.85	234	
12/3/2019 0850	15	631.3	18.54	6.86	280	
12/3/2019 0855	16	571.4	18.63	6.65	261	
12/3/2019 0900	17.5	536.9	18.7	6.57	202	
12/3/2019 0905	19	529.7	18.74	6.51	153	
12/3/2019 0910	21.5	493.7	18.78	6.46	99.1	
12/3/2019 0920	24	477.3	18.83	6.42	46.2	
12/3/2019 0925	26.5	448.3	18.82	6.39	36.5	
12/3/2019 0930	28.5	452.6	18.74	6.37	34.6	
12/3/2019 0940	30	445.5	18.78	6.35	18.4	
12/3/2019 0950	35.5	423.2	18.72	6.33	20.6	
12/3/2019 1000	38	423.2	18.78	6.31	13.8	
12/3/2019 1010	42	428.7	18.84	6.31	9.45	
12/3/2019 1020	47	420.1	18.87	6.29	8.61	
12/3/2019 1030	51	413.0	18.98	6.28	7.02	
12/3/2019 1035	53	420.2	18.81	6.29	4.90	Development complete
		Total Volume Removed (gal): 53				

Development Method: Surged Pump Q= 0.4 gpm

Surged with surge blockers and foot valve before starting development with submersible whale pump

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

Product Name: Low-Flow System

Date: 2019-09-17 14:01:09

Project Information:

Operator Name O. Fuquea
Company Name ACC
Project Name Arkwright
Site Name Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 369557
Turbidity Make/Model Hach 2100

Pump Information:

Pump Model/Type Whale
Tubing Type poly
Tubing Diameter .375 in
Tubing Length 72 ft

Pump placement from TOC 68 ft

Well Information:

Well ID ARAMW-3
Well diameter 2 in
Well Total Depth 68.61 ft
Screen Length 10 ft
Depth to Water 25.32 ft

Pumping Information:

Final Pumping Rate 0 mL/min
Total System Volume 1.653743 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 200.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 0.2	+/- 100
Last 5	13:34:43	6302.02	18.89	6.29	423.11	8.57	--	0.06	-393.13
Last 5	13:39:43	6602.03	18.87	6.29	420.12	8.61	--	0.06	-392.15
Last 5	13:44:43	6902.09	18.96	6.29	418.81	8.46	--	0.06	-388.62
Last 5	13:49:44	7203.04	18.98	6.28	413.00	7.02	--	0.06	-389.70
Last 5	13:54:44	7503.02	18.81	6.29	420.15	4.90	--	0.06	-383.05
Variance 0			0.09	-0.01	-1.31			-0.00	3.53
Variance 1			0.02	-0.01	-5.81			-0.00	-1.08
Variance 2			-0.17	0.01	7.15			0.00	6.65

Notes

Development start: 0820 end: 1035. WL: 25.32 end: 49.20. BTOC start: 68.61 end: 68.90.

Grab Samples

Atlantic Coast Consulting, Inc.

Well Development Field Record

Job Name:	Plant Arkwright	Job No.	I054-110 T8	Well No.	ARAMW-4
Developed By:	O. Fuquea	Date of Installation:	11/21/2019 Sheet <u>1</u> of <u>1</u>		
Started Dev.	12-02-19 / 1532	Completed Dev.	12-02-19 / 1640		
	Date / Time		Date / Time		
W.L. Before Dev.	22.46 / 12-02-19 / 1528	W.L. After Dev.	31.40 / 12-02-19 / 1645		
	BTOC / Date / Time		BTOC / Date / Time		
Well Depth Before Dev.:	57.7	BTOC	57.7		
Well Depth After Dev.:					
Water Column (H):	35.24	Ft.	Well Dia.:	2	In.
Well Volume:	5.6 Gal.				
Screen Length:	10	Ft.			

Date / Time	Volume Removed (Gal.)	Field Parameters				Remarks
		Specific Cond. (umhos/cm)	Temperature (oC)	pH (S.U.)	Turbidity (NTU)	
12-02-19 1545	9	1122.0	18.80	5.93	7.4	
12-02-19 1550	14	1128.5	18.70	5.88	6.93	
12-02-19 1555	18	1125.9	18.70	5.85	6.79	
12-02-19 1600	20.5	1131.8	18.74	5.82	2.92	Resurge with pump
12-02-19 1605	24	1129.5	18.62	5.81	6.97	
12-02-19 1610	27	1130.6	18.63	5.79	11.8	
12-02-19 1615	31	1130.6	18.65	5.78	3.2	
12-02-19 1620	33	1129.5	18.60	5.77	15.3	
12-02-19 1625	36	1129.6	18.60	5.76	1.0	
12-02-19 1630	40	1129.7	18.60	5.76	8.03	
12-02-19 1635	42	1130.0	18.59	5.75	5.27	
12-02-19 1640	47	1129.9	18.56	5.74	4.59	Development complete
		Total Volume Removed (gal): 47				

Development Method: Surged Pump Q= 0.7 gpm

Surged with surge blockers and foot valve before starting development with submersible whale pump

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 = volume in gallons

Product Name: Low-Flow System

Date: 2019-09-16 20:14:11

Project Information:

Operator Name O. Fuquea
Company Name ACC
Project Name Arkwright
Site Name Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 369557
Turbidity Make/Model Hach 2100

Pump Information:

Pump Model/Type Whale
Tubing Type poly
Tubing Diameter .375 in
Tubing Length 53 ft

Pump placement from TOC 57 ft

Well Information:

Well ID ARAMW-4
Well diameter 2 in
Well Total Depth 57.70 ft
Screen Length 10 ft
Depth to Water 22.46 ft

Pumping Information:

Final Pumping Rate 0 mL/min
Total System Volume 1.241088 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 177.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 0.2	+/- 100
Last 5	19:40:05	2400.02	18.60	5.77	1129.52	15.30	--	0.05	-402.53
Last 5	19:45:05	2700.02	18.60	5.76	1129.57	10.00	--	0.05	-393.01
Last 5	19:50:05	3000.02	18.61	5.76	1129.74	8.03	--	0.05	-384.08
Last 5	19:55:05	3300.02	18.59	5.75	1130.01	5.27	--	0.05	-374.85
Last 5	20:00:05	3600.02	18.56	5.74	1129.86	4.49	--	0.05	-385.82
Variance 0			0.01	-0.01	0.17			-0.00	8.93
Variance 1			-0.02	-0.01	0.27			-0.00	9.23
Variance 2			-0.03	-0.01	-0.15			-0.00	-10.97

Notes

Development started at 1532 end: 1640. WL: 22.46 end: 31.40. BTOC start: 57.70 end: 57.70

Grab Samples

Atlantic Coast Consulting, Inc. Well Development Field Record

Job Name: <u>Plant Arkwright</u>	Job No. <u>I054-110</u> Well No. <u>ARAMW-6</u>
Developed By: <u>O. Fuqea</u>	Date of Installation: <u>11/25/2019</u> Sheet <u>1</u> of <u>1</u>
Started Dev. <u>12-03-19 / 1046</u> Date / Time	Completed Dev. <u>12-03-19 / 1157</u> Date / Time
W.L. Before Dev. <u>12.45 / 12-03-19 / 1051</u> BTOC / Date / Time	W.L. After Dev. <u>25.62 / 12-03-19 / 1200</u> BTOC / Date / Time
Well Depth Before Dev.: <u>32.37</u> BTOC	Well Depth After Dev.: <u>32.37</u> BTOC
Water Column (H): <u>19.92</u> Ft.	Well Dia.: <u>2</u> In.
Screen Length: <u>10</u> Ft.	Well Volume: <u>3.2</u> Gal.

Date / Time	Volume Removed (Gal.)	Field Parameters				Remarks
		Specific Cond. (umhos/cm)	Temperature (oC)	pH (S.U.)	Turbidity (NTU)	
12-03-19 1107	9.5	320.3	19.94	6.51	549	
12-03-19 1112	12.5	308.4	20.00	6.43	83.7	
12-03-19 1117	14	302.1	20.03	6.39	34.9	
12-03-19 1122	16	299	20.08	6.37	29.2	
12-03-19 1127	19	298.7	20.01	6.36	21.3	
12-03-19 1132	21.5	299.3	20.02	6.35	13.5	
12-03-19 1137	24	299.7	19.94	6.34	11.7	
12-03-19 1142	26	300.2	19.98	6.33	27.3	
12-03-19 1147	29	300.6	19.98	6.32	17.2	
12-03-19 1152	31	301.1	22.00	6.32	12.2	
12-03-19 1157	34.5	301.6	19.11	6.31	4.16	Development complete
		Total Volume Removed (gal): 34.5				

Development Method: Surged Pump Q= 0.5 gpm
 Surged with surge blockers and foot valve before starting development with submersible whale pump

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

Product Name: Low-Flow System

Date: 2019-09-17 15:24:55

Project Information:

Operator Name O. Fuquea
Company Name ACC
Project Name Arkwright
Site Name Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 369557
Turbidity Make/Model Hach 2100

Pump Information:

Pump Model/Type Whale
Tubing Type poly
Tubing Diameter .375 in
Tubing Length 37 ft

Pump placement from TOC 32 ft

Well Information:

Well ID ARAMW-6
Well diameter 2 in
Well Total Depth 32.37 ft
Screen Length 10 ft
Depth to Water 12.45 ft

Pumping Information:

Final Pumping Rate 0 mL/min
Total System Volume 0.89359 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 130.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 100	+/- 100
Last 5	14:57:24	2100.02	19.94	6.34	299.67	11.70	--	3.66	35.45
Last 5	15:02:24	2400.02	19.98	6.33	300.19	27.30	--	3.31	27.68
Last 5	15:07:24	2700.03	19.98	6.32	300.56	17.20	--	3.15	24.02
Last 5	15:12:24	3000.03	20.03	6.32	301.14	12.20	--	3.08	22.03
Last 5	15:17:24	3300.02	19.94	6.31	301.61	4.16	--	3.08	21.06
Variance 0			0.00	-0.01	0.37			-0.16	-3.67
Variance 1			0.04	-0.01	0.58			-0.07	-1.99
Variance 2			-0.09	-0.00	0.47			0.00	-0.97

Notes

Development start: 1046 end:1200. WL start: 12.45 end: 25.62. BTOC start: 32.37 end 32.27.


Grab Samples

APPENDIX E

SURVEY DATA

ARKWRIGHT PIEZOMETER AND MONITORING WELLS 12-13-2019
 FIELD WORK 12-13-2019 BY FL BULLARD & FRANK KENNEY T&PS CIVIL FIELD SERVICES
 NAD 83 GEORGIA WEST ZONE, NAVD 1988, LAT-LONG, NORTHING & EASTING ARE FOR THE NAIL IN THE CONCRETE PAD

PIEZOMETER ID	LATITUDE DD	LONGITUDE DD	NAD 83 NORTHING	NAD 83 EASTING	ELEVATION TOP NAIL	ELEVATION TOP OF PVC	COMMENTS	ELEVATION GROUND
ARAMW1	32.9214266	83.7021468	1,062,937.14	2,439,119.67	305.69	308.67	AP2	305.59
ARAMW2	32.9213986	83.7021615	1,062,926.91	2,439,115.22	305.47	308.52	AP2	305.47
ARAMW3	32.9258269	83.7071719	1,064,531.31	2,437,570.76	352.38	355.35	AP3	352.35
ARAMW4	32.9283825	83.7057470	1,065,462.99	2,438,003.90	364.61	367.61	AP3	364.40
ARAMW6	32.9255748	83.7070522	1,064,439.75	2,437,607.88	334.48	337.34	AP3	334.47
ARPZ23	32.9212837	83.7018796	1,062,885.48	2,439,201.88	304.81	307.79	AP3	304.48
ARPZ22	32.9217073	83.7027774	1,063,038.40	2,438,925.73	307.31	310.18	AP3	307.13



[Signature] 12-20-2019

SURVEY DATA CERTIFICATION FOR SOUTHERN COMPANY TO DETERMINE NORTHING, EASTING AND VERTICAL ELEVATION OF THE NAIL AS LISTED ABOVE
 DATE OF FIELD SURVEY & INSPECTION 12-13-2019
 FIELD SURVEY POSITIONAL TOLERANCE = 0.5 FEET HORIZONTAL-NAD 83, 0.1 FEET VERTICAL-NA88
 EQUIPMENT USED TO RECORD DATA, LEICA (GPS) GS14 ANTENNA AND CS15 SENSOR

APPENDIX B

Laboratory Analytical and Field Sampling Reports

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-94593-1

Laboratory Sample Delivery Group: 1

Client Project/Site: CCR - Plant Arkwright Ash Pond 3

Sampling Event: PLANT ARKWRIGHT- AP-3

For:

Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

9/12/2019 4:27:46 PM

Veronica Bortot, Senior Project Manager

(412)963-2435

veronica.bortot@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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

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

PA Lab ID: 02-00416



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Case Narrative

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Job ID: 180-94593-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

**Job Narrative
180-94593-1**

Comments

No additional comments.

Receipt

The samples were received on 8/23/2019 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 1.0° C, 1.6° C, 1.9° C, 2.3° C and 2.4° C.

GC Semi VOA

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

Metals

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

- 1
- 2
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- 13

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Qualifiers

HPLC/IC

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

Metals

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

Glossary

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

Accreditation/Certification Summary

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
 SDG: 1

Laboratory: Eurofins TestAmerica, Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
Arkansas DEQ	State Program	88-0690	06-27-20
California	State	2891	04-30-20
California	State Program	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Connecticut	State Program	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Florida	NELAP	E871008	06-30-20
Illinois	NELAP	200005	06-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	01-31-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State Program	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-19
Kentucky (WW)	State Program	KY98043	12-31-19
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-19
Minnesota	NELAP	042-999-482	12-31-19
Nevada	State	PA00164	07-31-20
Nevada	State Program	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	03-31-20
New York	NELAP	11182	04-01-20
North Carolina (WW/SW)	State Program	434	12-31-19
North Dakota	State	R-227	04-30-20
North Dakota	State Program	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-30-19
Rhode Island	State Program	LAO00362	12-30-19
South Carolina	State Program	89014	04-30-20
Texas	NELAP	T104704528-15-2	03-31-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462015-4	05-31-20
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	460189	09-14-19
Virginia	NELAP	10043	09-14-19
West Virginia DEP	State	142	01-31-20
West Virginia DEP	State Program	142	01-31-20
Wisconsin	State	998027800	08-31-20
Wisconsin	State Program	998027800	08-31-20

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-94593-1	ARGWA-3	Water	08/20/19 12:44	08/23/19 08:40	
180-94593-2	ARGWA-5	Water	08/20/19 16:49	08/23/19 08:40	
180-94593-3	ARGWA-12	Ground Water	08/20/19 14:02	08/23/19 08:40	
180-94593-4	ARGWA-13	Water	08/19/19 16:59	08/23/19 08:40	
180-94593-5	ARGWA-14	Water	08/21/19 09:10	08/23/19 08:40	
180-94593-6	ARGWC-7	Water	08/21/19 09:40	08/23/19 08:40	
180-94593-7	ARGWC-8	Water	08/21/19 13:22	08/23/19 08:40	
180-94593-8	ARGWC-9	Water	08/21/19 11:33	08/23/19 08:40	
180-94593-9	ARGWC-10	Water	08/21/19 14:45	08/23/19 08:40	
180-94593-10	ARGWC-15	Water	08/21/19 11:30	08/23/19 08:40	
180-94593-11	ARGWC-16	Water	08/20/19 16:59	08/23/19 08:40	
180-94593-12	ARGWC-17	Water	08/21/19 13:55	08/23/19 08:40	
180-94593-13	ARGWC-18	Water	08/21/19 10:18	08/23/19 08:40	
180-94593-14	EB-1-8-21-19	Water	08/21/19 15:05	08/23/19 08:40	
180-94593-15	FB-1-8-21-19	Water	08/21/19 10:35	08/23/19 08:40	
180-94593-16	DUP-1	Water	08/20/19 00:00	08/23/19 08:40	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
EPA 7470A	Mercury (CVAA)	SW846	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058



Lab Chronicle

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
 SDG: 1

Client Sample ID: ARGWA-3

Lab Sample ID: 180-94593-1

Date Collected: 08/20/19 12:44

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 11:52	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:00	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289565	08/28/19 11:33	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:37	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: ARGWA-5

Lab Sample ID: 180-94593-2

Date Collected: 08/20/19 16:49

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 12:07	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:14	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289565	08/28/19 11:33	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:38	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: ARGWA-12

Lab Sample ID: 180-94593-3

Date Collected: 08/20/19 14:02

Matrix: Ground Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 12:22	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:17	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289565	08/28/19 11:33	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:39	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: ARGWA-13

Lab Sample ID: 180-94593-4

Date Collected: 08/19/19 16:59

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 12:37	CMR	TAL PIT
Instrument ID: CHICS2000										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
 SDG: 1

Client Sample ID: ARGWA-13

Lab Sample ID: 180-94593-4

Date Collected: 08/19/19 16:59

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:21	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289565	08/28/19 11:33	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:40	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: ARGWA-14

Lab Sample ID: 180-94593-5

Date Collected: 08/21/19 09:10

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 12:52	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:24	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289565	08/28/19 11:33	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:44	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: ARGWC-7

Lab Sample ID: 180-94593-6

Date Collected: 08/21/19 09:40

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 13:06	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:34	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289568	08/28/19 11:36	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 16:57	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: ARGWC-8

Lab Sample ID: 180-94593-7

Date Collected: 08/21/19 13:22

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 13:21	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:37	RSK	TAL PIT
Instrument ID: A										

Lab Chronicle

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
 SDG: 1

Client Sample ID: ARGWC-8

Lab Sample ID: 180-94593-7

Date Collected: 08/21/19 13:22

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			50 mL	50 mL	289568	08/28/19 11:36	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 16:58	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: ARGWC-9

Lab Sample ID: 180-94593-8

Date Collected: 08/21/19 11:33

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 14:06	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:41	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289568	08/28/19 11:36	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 16:59	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: ARGWC-10

Lab Sample ID: 180-94593-9

Date Collected: 08/21/19 14:45

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 14:51	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:44	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289568	08/28/19 11:36	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:00	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: ARGWC-15

Lab Sample ID: 180-94593-10

Date Collected: 08/21/19 11:30

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 15:06	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:48	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289568	08/28/19 11:36	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:01	KAK	TAL PIT
Instrument ID: HGZ										

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Lab Chronicle

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
 SDG: 1

Client Sample ID: ARGWC-16

Date Collected: 08/20/19 16:59

Date Received: 08/23/19 08:40

Lab Sample ID: 180-94593-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 15:21	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:51	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289568	08/28/19 11:36	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:01	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: ARGWC-17

Date Collected: 08/21/19 13:55

Date Received: 08/23/19 08:40

Lab Sample ID: 180-94593-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 15:36	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:54	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289568	08/28/19 11:36	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:02	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: ARGWC-18

Date Collected: 08/21/19 10:18

Date Received: 08/23/19 08:40

Lab Sample ID: 180-94593-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 15:51	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 18:58	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289568	08/28/19 11:36	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:06	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: EB-1-8-21-19

Date Collected: 08/21/19 15:05

Date Received: 08/23/19 08:40

Lab Sample ID: 180-94593-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 16:05	CMR	TAL PIT
Instrument ID: CHICS2000										

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Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Client Sample ID: EB-1-8-21-19

Lab Sample ID: 180-94593-14

Date Collected: 08/21/19 15:05

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 19:01	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289568	08/28/19 11:36	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:07	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: FB-1-8-21-19

Lab Sample ID: 180-94593-15

Date Collected: 08/21/19 10:35

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 16:20	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 19:05	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289568	08/28/19 11:36	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:08	KAK	TAL PIT
Instrument ID: HGZ										

Client Sample ID: DUP-1

Lab Sample ID: 180-94593-16

Date Collected: 08/20/19 00:00

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			290138	09/04/19 17:05	CMR	TAL PIT
Instrument ID: CHICS2000										
Total Recoverable	Prep	3005A			50 mL	50 mL	289413	08/27/19 10:33	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			290864	09/10/19 19:15	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	289568	08/28/19 11:36	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			289762	08/29/19 17:09	KAK	TAL PIT
Instrument ID: HGZ										

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Analyst References:

Lab: TAL PIT

Batch Type: Prep

KAK = Kayla Kalamasz

MM1 = Mary Beth Miller

Batch Type: Analysis

CMR = Carl Reagle

KAK = Kayla Kalamasz

RSK = Robert Kurtz

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Client Sample ID: ARGWA-3

Lab Sample ID: 180-94593-1

Date Collected: 08/20/19 12:44

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.053	J	0.20	0.026	mg/L			09/04/19 11:52	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00045	J	0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:00	1
Barium	0.020		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:00	1
Beryllium	0.00025	J	0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:00	1
Cadmium	0.00014	J	0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:00	1
Cobalt	0.00018	J	0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:00	1
Chromium	0.0039		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:00	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:00	1
Lead	0.00014	J	0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:00	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:00	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:00	1
Thallium	0.00020	J	0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:00	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:00	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:33	08/29/19 17:37	1

Client Sample ID: ARGWA-5

Lab Sample ID: 180-94593-2

Date Collected: 08/20/19 16:49

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.047	J	0.20	0.026	mg/L			09/04/19 12:07	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00058	J	0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:14	1
Barium	0.029		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:14	1
Beryllium	0.00035	J	0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:14	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:14	1
Cobalt	0.00012	J	0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:14	1
Chromium	0.0032		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:14	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:14	1
Lead	0.00014	J	0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:14	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:14	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:14	1
Thallium	0.00023	J	0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:14	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:14	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:33	08/29/19 17:38	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Client Sample ID: ARGWA-12

Lab Sample ID: 180-94593-3

Date Collected: 08/20/19 14:02

Matrix: Ground Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.049	J	0.20	0.026	mg/L			09/04/19 12:22	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00046	J	0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:17	1
Barium	0.075		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:17	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:17	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:17	1
Cobalt	0.00019	J	0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:17	1
Chromium	0.0026		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:17	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:17	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:17	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:17	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:17	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:17	1
Lithium	0.0053		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:17	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:33	08/29/19 17:39	1

Client Sample ID: ARGWA-13

Lab Sample ID: 180-94593-4

Date Collected: 08/19/19 16:59

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.20	0.026	mg/L			09/04/19 12:37	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00045	J	0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:21	1
Barium	0.035		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:21	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:21	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:21	1
Cobalt	0.00029	J	0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:21	1
Chromium	0.0016	J	0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:21	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:21	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:21	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:21	1
Selenium	0.034		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:21	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:21	1
Lithium	0.0058		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:21	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:33	08/29/19 17:40	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Client Sample ID: ARGWA-14

Lab Sample ID: 180-94593-5

Date Collected: 08/21/19 09:10

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.35		0.20	0.026	mg/L			09/04/19 12:52	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0013		0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:24	1
Barium	0.031		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:24	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:24	1
Cadmium	0.00015	J	0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:24	1
Cobalt	0.00022	J	0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:24	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:24	1
Molybdenum	0.0020	J	0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:24	1
Lead	0.00019	J	0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:24	1
Antimony	0.00064	J	0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:24	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:24	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:24	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:24	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:33	08/29/19 17:44	1

Client Sample ID: ARGWC-7

Lab Sample ID: 180-94593-6

Date Collected: 08/21/19 09:40

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.20	0.026	mg/L			09/04/19 13:06	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00032		0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:34	1
Barium	0.041		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:34	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:34	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:34	1
Cobalt	0.000086	J	0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:34	1
Chromium	0.0046		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:34	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:34	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:34	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:34	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:34	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:34	1
Lithium	0.0034	J	0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:34	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 16:57	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Client Sample ID: ARGWC-8

Lab Sample ID: 180-94593-7

Date Collected: 08/21/19 13:22

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.12	J	0.20	0.026	mg/L			09/04/19 13:21	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00036	J	0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:37	1
Barium	0.052		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:37	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:37	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:37	1
Cobalt	0.00021	J	0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:37	1
Chromium	0.0015	J	0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:37	1
Molybdenum	0.051		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:37	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:37	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:37	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:37	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:37	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:37	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 16:58	1

Client Sample ID: ARGWC-9

Lab Sample ID: 180-94593-8

Date Collected: 08/21/19 11:33

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.030	J	0.20	0.026	mg/L			09/04/19 14:06	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00032		0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:41	1
Barium	0.045		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:41	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:41	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:41	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:41	1
Chromium	0.0097		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:41	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:41	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:41	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:41	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:41	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:41	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:41	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 16:59	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Client Sample ID: ARGWC-10

Lab Sample ID: 180-94593-9

Date Collected: 08/21/19 14:45

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.047	J	0.20	0.026	mg/L			09/04/19 14:51	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00040	J	0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:44	1
Barium	0.035		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:44	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:44	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:44	1
Cobalt	0.00017	J	0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:44	1
Chromium	0.0073		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:44	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:44	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:44	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:44	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:44	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:44	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:44	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 17:00	1

Client Sample ID: ARGWC-15

Lab Sample ID: 180-94593-10

Date Collected: 08/21/19 11:30

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.10	J	0.20	0.026	mg/L			09/04/19 15:06	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00036	J	0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:48	1
Barium	0.033		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:48	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:48	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:48	1
Cobalt	0.00048	J	0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:48	1
Chromium	0.0017	J	0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:48	1
Molybdenum	0.0017	J	0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:48	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:48	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:48	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:48	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:48	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:48	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 17:01	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Client Sample ID: ARGWC-16

Lab Sample ID: 180-94593-11

Date Collected: 08/20/19 16:59

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.033	J	0.20	0.026	mg/L			09/04/19 15:21	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00032		0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:51	1
Barium	0.046		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:51	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:51	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:51	1
Cobalt	0.00016	J	0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:51	1
Chromium	0.0025		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:51	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:51	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:51	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:51	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:51	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:51	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:51	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 17:01	1

Client Sample ID: ARGWC-17

Lab Sample ID: 180-94593-12

Date Collected: 08/21/19 13:55

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.031	J	0.20	0.026	mg/L			09/04/19 15:36	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00044	J	0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:54	1
Barium	0.050		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:54	1
Beryllium	0.00025	J	0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:54	1
Cadmium	0.00013	J	0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:54	1
Cobalt	0.018		0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:54	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:54	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:54	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:54	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:54	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:54	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:54	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:54	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 17:02	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Client Sample ID: ARGWC-18

Lab Sample ID: 180-94593-13

Date Collected: 08/21/19 10:18

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.079	J	0.20	0.026	mg/L			09/04/19 15:51	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00033	J	0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 18:58	1
Barium	0.036		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 18:58	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 18:58	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:58	1
Cobalt	0.0012		0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 18:58	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 18:58	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 18:58	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 18:58	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 18:58	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 18:58	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 18:58	1
Lithium	0.0036	J	0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 18:58	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 17:06	1

Client Sample ID: EB-1-8-21-19

Lab Sample ID: 180-94593-14

Date Collected: 08/21/19 15:05

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.20	0.026	mg/L			09/04/19 16:05	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00036	J	0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 19:01	1
Barium	<0.0016		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 19:01	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 19:01	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 19:01	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 19:01	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 19:01	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 19:01	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 19:01	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 19:01	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 19:01	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 19:01	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 19:01	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 17:07	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Client Sample ID: FB-1-8-21-19

Lab Sample ID: 180-94593-15

Date Collected: 08/21/19 10:35

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.20	0.026	mg/L			09/04/19 16:20	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00032		0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 19:05	1
Barium	<0.0016		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 19:05	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 19:05	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 19:05	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 19:05	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 19:05	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 19:05	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 19:05	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 19:05	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 19:05	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 19:05	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 19:05	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 17:08	1

Client Sample ID: DUP-1

Lab Sample ID: 180-94593-16

Date Collected: 08/20/19 00:00

Matrix: Water

Date Received: 08/23/19 08:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.065	J	0.20	0.026	mg/L			09/04/19 17:05	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00039	J	0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 19:15	1
Barium	0.021		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 19:15	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 19:15	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 19:15	1
Cobalt	0.00013	J	0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 19:15	1
Chromium	0.0046		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 19:15	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 19:15	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 19:15	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 19:15	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 19:15	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 19:15	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 19:15	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 17:09	1

Eurofins TestAmerica, Pittsburgh

QC Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
SDG: 1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 180-290138/6
Matrix: Water
Analysis Batch: 290138

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.026		0.20	0.026	mg/L			09/04/19 11:07	1

Lab Sample ID: LCS 180-290138/5
Matrix: Water
Analysis Batch: 290138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.25	1.18		mg/L		94	90 - 110

Lab Sample ID: 180-94593-8 MS
Matrix: Water
Analysis Batch: 290138

Client Sample ID: ARGWC-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.030	J	1.25	1.22		mg/L		96	80 - 120

Lab Sample ID: 180-94593-8 MSD
Matrix: Water
Analysis Batch: 290138

Client Sample ID: ARGWC-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.030	J	1.25	1.21		mg/L		95	80 - 120	1	20

Method: EPA 6020 - Metals (ICP/MS)

Lab Sample ID: MB 180-289413/1-A
Matrix: Water
Analysis Batch: 290864

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 289413

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00032		0.0010	0.00032	mg/L		08/27/19 10:33	09/10/19 17:54	1
Barium	<0.0016		0.010	0.0016	mg/L		08/27/19 10:33	09/10/19 17:54	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		08/27/19 10:33	09/10/19 17:54	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 17:54	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		08/27/19 10:33	09/10/19 17:54	1
Chromium	<0.0015		0.0020	0.0015	mg/L		08/27/19 10:33	09/10/19 17:54	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		08/27/19 10:33	09/10/19 17:54	1
Lead	<0.00013		0.0010	0.00013	mg/L		08/27/19 10:33	09/10/19 17:54	1
Antimony	<0.00038		0.0020	0.00038	mg/L		08/27/19 10:33	09/10/19 17:54	1
Selenium	<0.0015		0.0050	0.0015	mg/L		08/27/19 10:33	09/10/19 17:54	1
Thallium	<0.00015		0.0010	0.00015	mg/L		08/27/19 10:33	09/10/19 17:54	1
Lithium	<0.0034		0.0050	0.0034	mg/L		08/27/19 10:33	09/10/19 17:54	1

Lab Sample ID: LCS 180-289413/2-A
Matrix: Water
Analysis Batch: 290864

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 289413

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	1.08		mg/L		108	80 - 120
Barium	1.00	0.999		mg/L		100	80 - 120

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QC Sample Results

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
 SDG: 1

Method: EPA 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-289413/2-A
Matrix: Water
Analysis Batch: 290864

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 289413

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	0.500	0.480		mg/L		96	80 - 120
Cadmium	0.500	0.521		mg/L		104	80 - 120
Cobalt	0.500	0.533		mg/L		107	80 - 120
Chromium	0.500	0.530		mg/L		106	80 - 120
Molybdenum	0.500	0.506		mg/L		101	80 - 120
Lead	0.500	0.520		mg/L		104	80 - 120
Antimony	0.250	0.261		mg/L		105	80 - 120
Selenium	1.00	1.00		mg/L		100	80 - 120
Thallium	1.00	1.07		mg/L		107	80 - 120
Lithium	0.500	0.460		mg/L		92	80 - 120

Lab Sample ID: 180-94593-1 MS
Matrix: Water
Analysis Batch: 290864

Client Sample ID: ARGWA-3
Prep Type: Total Recoverable
Prep Batch: 289413

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.00045	J	1.00	1.09		mg/L		109	75 - 125
Barium	0.020		1.00	1.03		mg/L		101	75 - 125
Beryllium	0.00025	J	0.500	0.496		mg/L		99	75 - 125
Cadmium	0.00014	J	0.500	0.532		mg/L		106	75 - 125
Cobalt	0.00018	J	0.500	0.548		mg/L		110	75 - 125
Chromium	0.0039		0.500	0.547		mg/L		109	75 - 125
Molybdenum	<0.00061		0.500	0.514		mg/L		103	75 - 125
Lead	0.00014	J	0.500	0.529		mg/L		106	75 - 125
Antimony	<0.00038		0.250	0.269		mg/L		107	75 - 125
Selenium	<0.0015		1.00	1.03		mg/L		103	75 - 125
Thallium	0.00020	J	1.00	1.08		mg/L		108	75 - 125
Lithium	<0.0034		0.500	0.473		mg/L		95	75 - 125

Lab Sample ID: 180-94593-1 MSD
Matrix: Water
Analysis Batch: 290864

Client Sample ID: ARGWA-3
Prep Type: Total Recoverable
Prep Batch: 289413

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	0.00045	J	1.00	1.12		mg/L		112	75 - 125	2	20
Barium	0.020		1.00	1.06		mg/L		104	75 - 125	2	20
Beryllium	0.00025	J	0.500	0.509		mg/L		102	75 - 125	2	20
Cadmium	0.00014	J	0.500	0.545		mg/L		109	75 - 125	2	20
Cobalt	0.00018	J	0.500	0.567		mg/L		113	75 - 125	3	20
Chromium	0.0039		0.500	0.557		mg/L		111	75 - 125	2	20
Molybdenum	<0.00061		0.500	0.527		mg/L		105	75 - 125	3	20
Lead	0.00014	J	0.500	0.531		mg/L		106	75 - 125	0	20
Antimony	<0.00038		0.250	0.271		mg/L		108	75 - 125	1	20
Selenium	<0.0015		1.00	1.04		mg/L		104	75 - 125	1	20
Thallium	0.00020	J	1.00	1.08		mg/L		108	75 - 125	0	20
Lithium	<0.0034		0.500	0.478		mg/L		96	75 - 125	1	20

QC Sample Results

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
 SDG: 1

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-289565/1-A
Matrix: Water
Analysis Batch: 289762

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 289565

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:33	08/29/19 17:21	1

Lab Sample ID: LCS 180-289565/2-A
Matrix: Water
Analysis Batch: 289762

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 289565

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00250	0.00248		mg/L		99	80 - 120

Lab Sample ID: 180-94593-5 MS
Matrix: Water
Analysis Batch: 289762

Client Sample ID: ARGWA-14
Prep Type: Total/NA
Prep Batch: 289565

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	<0.00010		0.00100	0.00112		mg/L		112	75 - 125

Lab Sample ID: 180-94593-5 MSD
Matrix: Water
Analysis Batch: 289762

Client Sample ID: ARGWA-14
Prep Type: Total/NA
Prep Batch: 289565

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	<0.00010		0.00100	0.000944		mg/L		94	75 - 125	17	20

Lab Sample ID: MB 180-289568/1-A
Matrix: Water
Analysis Batch: 289762

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 289568

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		08/28/19 11:36	08/29/19 16:55	1

Lab Sample ID: LCS 180-289568/2-A
Matrix: Water
Analysis Batch: 289762

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 289568

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00250	0.00249		mg/L		100	80 - 120

QC Association Summary

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
 SDG: 1

HPLC/IC

Analysis Batch: 290138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94593-1	ARGWA-3	Total/NA	Water	300.0	
180-94593-2	ARGWA-5	Total/NA	Water	300.0	
180-94593-3	ARGWA-12	Total/NA	Ground Water	300.0	
180-94593-4	ARGWA-13	Total/NA	Water	300.0	
180-94593-5	ARGWA-14	Total/NA	Water	300.0	
180-94593-6	ARGWC-7	Total/NA	Water	300.0	
180-94593-7	ARGWC-8	Total/NA	Water	300.0	
180-94593-8	ARGWC-9	Total/NA	Water	300.0	
180-94593-9	ARGWC-10	Total/NA	Water	300.0	
180-94593-10	ARGWC-15	Total/NA	Water	300.0	
180-94593-11	ARGWC-16	Total/NA	Water	300.0	
180-94593-12	ARGWC-17	Total/NA	Water	300.0	
180-94593-13	ARGWC-18	Total/NA	Water	300.0	
180-94593-14	EB-1-8-21-19	Total/NA	Water	300.0	
180-94593-15	FB-1-8-21-19	Total/NA	Water	300.0	
180-94593-16	DUP-1	Total/NA	Water	300.0	
MB 180-290138/6	Method Blank	Total/NA	Water	300.0	
LCS 180-290138/5	Lab Control Sample	Total/NA	Water	300.0	
180-94593-8 MS	ARGWC-9	Total/NA	Water	300.0	
180-94593-8 MSD	ARGWC-9	Total/NA	Water	300.0	

Metals

Prep Batch: 289413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94593-1	ARGWA-3	Total Recoverable	Water	3005A	
180-94593-2	ARGWA-5	Total Recoverable	Water	3005A	
180-94593-3	ARGWA-12	Total Recoverable	Ground Water	3005A	
180-94593-4	ARGWA-13	Total Recoverable	Water	3005A	
180-94593-5	ARGWA-14	Total Recoverable	Water	3005A	
180-94593-6	ARGWC-7	Total Recoverable	Water	3005A	
180-94593-7	ARGWC-8	Total Recoverable	Water	3005A	
180-94593-8	ARGWC-9	Total Recoverable	Water	3005A	
180-94593-9	ARGWC-10	Total Recoverable	Water	3005A	
180-94593-10	ARGWC-15	Total Recoverable	Water	3005A	
180-94593-11	ARGWC-16	Total Recoverable	Water	3005A	
180-94593-12	ARGWC-17	Total Recoverable	Water	3005A	
180-94593-13	ARGWC-18	Total Recoverable	Water	3005A	
180-94593-14	EB-1-8-21-19	Total Recoverable	Water	3005A	
180-94593-15	FB-1-8-21-19	Total Recoverable	Water	3005A	
180-94593-16	DUP-1	Total Recoverable	Water	3005A	
MB 180-289413/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-289413/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-94593-1 MS	ARGWA-3	Total Recoverable	Water	3005A	
180-94593-1 MSD	ARGWA-3	Total Recoverable	Water	3005A	

Prep Batch: 289565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94593-1	ARGWA-3	Total/NA	Water	7470A	
180-94593-2	ARGWA-5	Total/NA	Water	7470A	
180-94593-3	ARGWA-12	Total/NA	Ground Water	7470A	

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QC Association Summary

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
 SDG: 1

Metals (Continued)

Prep Batch: 289565 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94593-4	ARGWA-13	Total/NA	Water	7470A	
180-94593-5	ARGWA-14	Total/NA	Water	7470A	
MB 180-289565/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-289565/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-94593-5 MS	ARGWA-14	Total/NA	Water	7470A	
180-94593-5 MSD	ARGWA-14	Total/NA	Water	7470A	

Prep Batch: 289568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94593-6	ARGWC-7	Total/NA	Water	7470A	
180-94593-7	ARGWC-8	Total/NA	Water	7470A	
180-94593-8	ARGWC-9	Total/NA	Water	7470A	
180-94593-9	ARGWC-10	Total/NA	Water	7470A	
180-94593-10	ARGWC-15	Total/NA	Water	7470A	
180-94593-11	ARGWC-16	Total/NA	Water	7470A	
180-94593-12	ARGWC-17	Total/NA	Water	7470A	
180-94593-13	ARGWC-18	Total/NA	Water	7470A	
180-94593-14	EB-1-8-21-19	Total/NA	Water	7470A	
180-94593-15	FB-1-8-21-19	Total/NA	Water	7470A	
180-94593-16	DUP-1	Total/NA	Water	7470A	
MB 180-289568/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-289568/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 289762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94593-1	ARGWA-3	Total/NA	Water	EPA 7470A	289565
180-94593-2	ARGWA-5	Total/NA	Water	EPA 7470A	289565
180-94593-3	ARGWA-12	Total/NA	Ground Water	EPA 7470A	289565
180-94593-4	ARGWA-13	Total/NA	Water	EPA 7470A	289565
180-94593-5	ARGWA-14	Total/NA	Water	EPA 7470A	289565
180-94593-6	ARGWC-7	Total/NA	Water	EPA 7470A	289568
180-94593-7	ARGWC-8	Total/NA	Water	EPA 7470A	289568
180-94593-8	ARGWC-9	Total/NA	Water	EPA 7470A	289568
180-94593-9	ARGWC-10	Total/NA	Water	EPA 7470A	289568
180-94593-10	ARGWC-15	Total/NA	Water	EPA 7470A	289568
180-94593-11	ARGWC-16	Total/NA	Water	EPA 7470A	289568
180-94593-12	ARGWC-17	Total/NA	Water	EPA 7470A	289568
180-94593-13	ARGWC-18	Total/NA	Water	EPA 7470A	289568
180-94593-14	EB-1-8-21-19	Total/NA	Water	EPA 7470A	289568
180-94593-15	FB-1-8-21-19	Total/NA	Water	EPA 7470A	289568
180-94593-16	DUP-1	Total/NA	Water	EPA 7470A	289568
MB 180-289565/1-A	Method Blank	Total/NA	Water	EPA 7470A	289565
MB 180-289568/1-A	Method Blank	Total/NA	Water	EPA 7470A	289568
LCS 180-289565/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	289565
LCS 180-289568/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	289568
180-94593-5 MS	ARGWA-14	Total/NA	Water	EPA 7470A	289565
180-94593-5 MSD	ARGWA-14	Total/NA	Water	EPA 7470A	289565

Analysis Batch: 290864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94593-1	ARGWA-3	Total Recoverable	Water	EPA 6020	289413

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QC Association Summary

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-1
 SDG: 1

Metals (Continued)

Analysis Batch: 290864 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94593-2	ARGWA-5	Total Recoverable	Water	EPA 6020	289413
180-94593-3	ARGWA-12	Total Recoverable	Ground Water	EPA 6020	289413
180-94593-4	ARGWA-13	Total Recoverable	Water	EPA 6020	289413
180-94593-5	ARGWA-14	Total Recoverable	Water	EPA 6020	289413
180-94593-6	ARGWC-7	Total Recoverable	Water	EPA 6020	289413
180-94593-7	ARGWC-8	Total Recoverable	Water	EPA 6020	289413
180-94593-8	ARGWC-9	Total Recoverable	Water	EPA 6020	289413
180-94593-9	ARGWC-10	Total Recoverable	Water	EPA 6020	289413
180-94593-10	ARGWC-15	Total Recoverable	Water	EPA 6020	289413
180-94593-11	ARGWC-16	Total Recoverable	Water	EPA 6020	289413
180-94593-12	ARGWC-17	Total Recoverable	Water	EPA 6020	289413
180-94593-13	ARGWC-18	Total Recoverable	Water	EPA 6020	289413
180-94593-14	EB-1-8-21-19	Total Recoverable	Water	EPA 6020	289413
180-94593-15	FB-1-8-21-19	Total Recoverable	Water	EPA 6020	289413
180-94593-16	DUP-1	Total Recoverable	Water	EPA 6020	289413
MB 180-289413/1-A	Method Blank	Total Recoverable	Water	EPA 6020	289413
LCS 180-289413/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	289413
180-94593-1 MS	ARGWA-3	Total Recoverable	Water	EPA 6020	289413
180-94593-1 MSD	ARGWA-3	Total Recoverable	Water	EPA 6020	289413

Chain of Custody Record

Client Information Client Contact: <u>Roby Walker / T. Goble</u> Phone: <u>770-594-5998</u> Lab PM: <u>Veronica Bortot</u> E-Mail: <u>Veronica.Bortot@testamericainc.com</u>		Carrier Tracking No(s): COC No: <u>400-73521-29028.1</u> Page: Job #:	
Southern Company Address: <u>PO BOX 2641 GSC8</u> City: <u>Birmingham</u> State, Zip: <u>AL, 35291</u> Phone: <u>SCS10347656</u> Email: <u>JAbraham@southernco.com</u> Project Name: <u>CCR Plant Arkwright - Ash Pond 3</u> Site: <u>Georgia</u>		Analysis Requested Due Date Requested: TAT Requested (days): Matrix (W=water, S=solid, O=soil, BT=Tissue, A=Air) Sample Type (C=comp, G=grab) Preservation Code: Sample Date Sample Time Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Metals App. IV (EPA 6020/470) Fluoride (SW-846 9315/9320) Radium 226 & 228 (SW-846 9315/9320)	
Sample Identification <u>ARGWA-3</u> <u>ARGWA-5</u> <u>ARGWA-12</u> <u>ARGWA-13</u> <u>ARGWA-14</u> <u>ARGWC-7</u> <u>ARGWC-8</u> <u>ARGWC-9</u> <u>ARGWC-10</u>	Sample Date <u>8-20-19</u> <u>8-20-19</u> <u>8-20-19</u> <u>8-19-19</u> <u>8-21-19</u> <u>8-21-19</u> <u>8-21-19</u> <u>8-21-19</u> <u>8-21-19</u>	Sample Time <u>1244</u> <u>1649</u> <u>1402</u> <u>1659</u> <u>0910</u> <u>1322</u> <u>1133</u> <u>1445</u>	Matrix Water Water Water Water Water Water Water Water Water
Total Number of containers 3 3 3 3 3 4 3 3		Spet X X X X X X X X X	
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDA Z - other (specify) Other:			
Barcode: 180-94593 Chain of Custody			
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological			
Deliverable Requested: I, II, III, IV, Other (specify)			
Empty Kit Relinquished by:			
Relinquished by: <u>Taylor Jolly</u> Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u>		Date/Time: <u>8/22/19 1530</u> Date/Time: <u>8/22/19 1536</u> Date/Time: <u>8/22/19 1536</u>	
Company: ACC Company: ACC Company: 574		Date/Time: <u>8/22/19 1530</u> Date/Time: <u>8/22/19 1536</u> Date/Time: <u>8/22/19 1536</u>	
Special Instructions/QC Requirements:			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Method of Shipment:			
Cooler Temperature(s) °C and Other Remarks:			



Chain of Custody Record

Client Information Client Contact: Joju Abraham Company: Southern Company Address: PO BOX 2641 GSC8 City: Birmingham State, Zip: AL, 35291 Phone: Email: JAbraham@southernco.com Project Name: CCR Plant Arkwright - Ash Pond 3 Site: Georgia	Sampler: <u>Rubler / T. Goble</u> Lab PM: <u>Veronica Bortot</u> Phone: <u>770-594-5998</u> E-Mail: <u>Veronica.Bortot@testamericainc.com</u> Carrier Tracking No(s): Job #: COC No: 400-73521-29028.1 Page: Page Job #: Analysis Requested	Due Date Requested: TAT Requested (days): PO #: <u>SCS10347656</u> WO #: Project #: <u>40007712</u> SOW #: Matrix (W=water, S=solid, O=wastefl, BT=Tissue, A=Air) Sample Type (C=comp, G=grab) Sample Time Sample Date Matrix Preservation Code: Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Metals App. IV EPA 6020(7470) Fluoride Radium 226 & 228 (SW-846 9315/9320) N D Total Number of containers Special Instructions/Note: Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 L - EDA Z - other (specify) Other: Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements: Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)
Empty Kit Relinquished by: Relinquished by: <u>Tracy Goble</u> Date: <u>8-22-19/1520</u> Company: <u>ACC</u> Relinquished by: <u>Tracy Goble</u> Date: <u>8/22/19</u> Company: <u>ACC</u> Relinquished by: <u>Tracy Goble</u> Date: <u>8/22/19</u> Company: <u>ACC</u>		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements: Method of Shipment: Date: <u>8/22/19</u> Received by: <u>Tracy Goble</u> Date/Time: <u>8/22/19 15:30</u> Company: <u>ACC</u> Received by: <u>Tracy Goble</u> Date/Time: <u>8-23-19</u> Company: <u>ACC</u> Received by: <u>Tracy Goble</u> Date/Time: <u>8/23/19</u> Company: <u>ACC</u> Cooler Temperature(s) °C and Cooler Remarks: <u>870</u>





180-94593 Waybill

Part # 159469-434 R/T2 EXP 05/20



Environment Testing
TestAmerica

ORIGIN ID: MULA (678) 966-9991
GEORGE TAYLOR
EUROFINSTESTAMERICA, ATLANTA
6500 MCDONOUGH DRIVE
NORCROSS, GA 30093
UNITED STATES US

SHIP DATE: 22AUG19
ACTWGT: 59.60 LB
CAD: 859116/CAFE3211

BILL RECIPIENT

TO SAMPLE RECEIVING
TA PITTSBURGH
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 968-7068
REF: ACC



TRK# 1 of 5
0201 4651 0083 4424
MASTER

NA AGCA

FRI - 23 AUG 3:00
STANDARD OVERNIGHT

217
CF=13
#10
T.S.

SHL ACTA CAD: TEL: 22800
BILL RECIPIENT

787 966 9991
ERICA ATLANTA
DRIVE
30093
US

SAMPLE RECEIVING
TA PITTSBURGH

301 AL
RIDC PARK
PITTSBURGH PA 15238
(412) 968-7068
REF: ACC



4 of 5
MPS# 4651 0083 4457
4651 0083 4424

FRI - 23 AUG 3:00
STANDARD OVERNIGHT

NA AGCA

Mstr#

PA-US

Uncorrected temp
Thermometer ID
Initials
CF-010
T-TM-SP-300 effective 1/18/18



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13



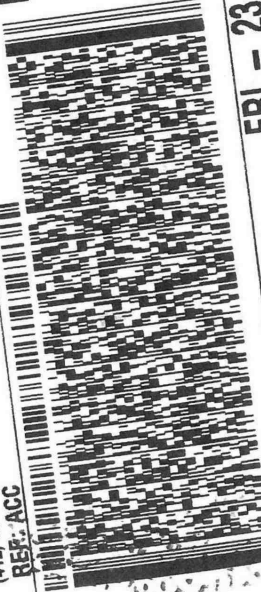
Environment Testing
TestAmerica

ORIGIN ID: MULA (678) 966-9991
GEORGE TAYLOR
EUROFINS TEST AMERICA, ATLANTA
6500 MCDONOUGH DRIVE
NORCROSS, GA 30093
UNITED STATES US

TO **SAMPLE RECEIVING**
TA PITTSBURGH
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238

(412) 968-7068
REF: ACC

SHIP DATE: 22AUG19
ACTWT: 59.60 LB
CAD: 859116/CAFE3211
BILL RECIPIENT



FRI - 23 AUG 3:00P
STANDARD OVERNIGHT

3 of 5
MPS# 4651 0083 4446
0263
Mstr# 4651 0083 4424

NA AGCA

15238
PIT

PA-US

Uncorrected temp
Thermometer ID

1.4 / 10

Initials

CF 10.3

PT-WI-SR-001 effective 11/8/18

Body Seal



1
2
3
4
5
6
7
8
9
10
11
12
13



PT-VI-SR-001 effective 11/8/18

CF-013 Initials

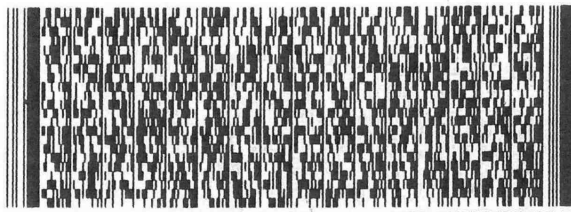
Uncorrected temp Thermometer ID

PA-US PIT 15238

NA AGCA

MPS# 4651 0083 4424 Mstr# 4651 0083 4424

FRI - 23 AUG 3:00P STANDARD OVERNIGHT 2 of 5



PO: N

REF: AGC (412) 968-7068 PITTSBURGH PA 15238

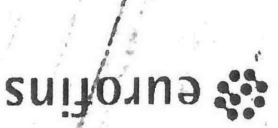
TA PITTSBURGH 301 ALPHA DRIVE RIDG PARK

SAMPLE RECEIVING

BILL RECIPIENT CAD: 859116/CAFE3211 ACTWGT: 59.60 LB SHIP DATE: 22AUG19

ORIGIN ID: NULA (678) 966-9991 GEORGE TAYLOR EUROFINSTAMERICA, ATLANTA 6500 McDONOUGH DRIVE NORCROSS, GA 30093 UNITED STATES US

CHI ATI 11: SU RO 10 NORCR US FROM: GEORG EUPD 650C



Enviro TestAm

Eurofins TestAmerica, Pittsburgh
 301 Alpha Drive RIDC Park
 Pittsburgh, PA 15238
 Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record




eurofins
 Environment Testing
 TestAmerica

Client Information (Sub Contract Lab)		Client Contact:	Phone:	Lab PM:	Borrol, Veronica	Carrier/Tracking No(s):	COC No:	
Shipping/Receiving:		Company:	TestAmerica Laboratories, Inc.	E-Mail:	veronica.borrol@testamericainc.com	State of Origin:	Georgia	
Address:		13715 Rider Trail North.	Due Date Requested:	9/5/2019	Accreditations Required (See note):		180-94593-1	
City:		Earth City	TAT Requested (days):	Analysis Requested				Page:
State, Zip:		MO, 63045	PO #:					Page 1 of 2
Phone:		314-298-8566(Tel) 314-298-8757(Fax)	WO #:					
Project Name:		CCR - Plant Arkwright Ash Pond 3	Project #:					
Site:		Georgia Power Site Sampling Data (GW)	SSOW#:					
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Soil, Oil, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Special Instructions/Note:
ARGWA-3 (180-94593-1)	8/20/19	12:44	Eastern	Water		X	X	9315_Ra226/PrecSep_21 Standard Target List
ARGWA-5 (180-94593-2)	8/20/19	16:49	Eastern	Water		X	X	9320_Ra228/PrecSep_0 Standard Target List
ARGWA-12 (180-94593-3)	8/20/19	14:02	Eastern	Water		X	X	Ra226Ra228_GFPC
ARGWA-13 (180-94593-4)	8/19/19	16:59	Eastern	Water		X	X	
ARGWA-14 (180-94593-5)	8/21/19	09:10	Eastern	Water		X	X	
ARGWC-7 (180-94593-6)	8/21/19	09:40	Eastern	Water		X	X	
ARGWC-8 (180-94593-7)	8/21/19	13:22	Eastern	Water		X	X	
ARGWC-9 (180-94593-8)	8/21/19	11:33	Eastern	Water		X	X	
ARGWC-10 (180-94593-9)	8/21/19	14:45	Eastern	Water		X	X	
Possible Hazard Identification		Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.						
Unconfirmed		Deliverable Requested: I, II, III, IV, Other (specify) _____						
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		Special Instructions/Client Requirements:		
Relinquished by: <i>[Signature]</i>		8/26/19	17:00	Company:	DT Michael Heem	Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		
Relinquished by:		Date/Time:	Company:	Received by:		Cooler Temperature(s) °C and Other Remarks:		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Received by:		Date/Time:		

Chain of Custody Record

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact:	Phone:	Bortol, Veronica	State of Origin:	Georgia	180-371861.2
Shipping/Receiving:	E-Mail:	veronica.bortol@testamericainc.com	Accreditations Required (See note):		Page: 2 of 2
Company:	TestAmerica Laboratories, Inc.				Page 2 of 2
Address:	13715 Rider Trail North,				Job #:
City:	Earth City	Due Date Requested:	9/5/2019		180-94593-1
State, Zip:	MO. 63045	TAT Requested (days):			
Phone:	314-298-8566 (Tel) 314-298-8757 (Fax)				
Email:		PO #:			
Project Name:	CCR - Plant Arkwright Ash Pond 3	WO #:			
Site:	Georgia Power Site Sampling Data (GW)	Project #:	18020201		
		SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=water/soil, BR=trace, AA=)	Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers	Special Instructions/Note:
					9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC			
ARGWC-15 (180-94593-10)	8/21/19	11:30	Water	Water	X	X	X		1	
ARGWC-16 (180-94593-11)	8/20/19	16:59	Water	Water	X	X	X		1	
ARGWC-17 (180-94593-12)	8/21/19	13:55	Water	Water	X	X	X		1	
ARGWC-18 (180-94593-13)	8/21/19	10:18	Water	Water	X	X	X		1	
EB-1-8-21-19 (180-94593-14)	8/21/19	15:05	Water	Water	X	X	X		1	
FB-1-8-21-19 (180-94593-15)	8/21/19	10:35	Water	Water	X	X	X		1	
DUP-1 (180-94593-16)	8/20/19		Water	Water	X	X	X		1	



180-94593-01 Chain of Custody

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody.

Possible Hazard Identification
 Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2

Empty Kit Relinquished by: _____ Date: _____

Relinquished by: _____ Date/Time: 8/21/19 1200 Company: EMMERSON

Relinquished by: _____ Date/Time: _____ Company: _____

Custody Seals Intact: Yes No Custody Seal No.: _____

Received by: _____ Date/Time: 8-27-19 09130 Company: TRS7

Cooler Temperature(s) °C and Other Remarks: _____

Method of Shipment: _____

Special Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Special Instructions/Note: _____

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-94593-1

SDG Number: 1

Login Number: 94593

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

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



ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-94593-2

Laboratory Sample Delivery Group: 1

Client Project/Site: CCR - Plant Arkwright Ash Pond 3

Sampling Event: PLANT ARKWRIGHT- AP-3

For:

Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

9/30/2019 4:42:45 PM

Veronica Bortot, Senior Project Manager

(412)963-2435

veronica.bortot@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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

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

PA Lab ID: 02-00416



Table of Contents

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Case Narrative

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
SDG: 1

Job ID: 180-94593-2

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-94593-2

Comments

No additional comments.

Receipt

The samples were received on 8/23/2019 8:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 1.0° C, 1.6° C, 1.9° C, 2.3° C and 2.4° C.

RAD

Method(s) 903.0, 9315: Radium-228 Prep Batch 160-441266

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

ARGWA-3 (180-94593-1), ARGWA-5 (180-94593-2), ARGWA-12 (180-94593-3), ARGWA-13 (180-94593-4), ARGWA-14 (180-94593-5), ARGWC-7 (180-94593-6), ARGWC-8 (180-94593-7), ARGWC-9 (180-94593-8), ARGWC-10 (180-94593-9), ARGWC-15 (180-94593-10), ARGWC-16 (180-94593-11), ARGWC-17 (180-94593-12), ARGWC-18 (180-94593-13), EB-1-8-21-19 (180-94593-14), FB-1-8-21-19 (180-94593-15), DUP-1 (180-94593-16), (LCS 160-441266/1-A), (MB 160-441266/23-A), (160-35448-B-1-A) and (160-35448-A-1-A DU)

Method(s) 904.0, 9320: Radium-228 Prep Batch 160-441285

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

ARGWA-3 (180-94593-1), ARGWA-5 (180-94593-2), ARGWA-12 (180-94593-3), ARGWA-13 (180-94593-4), ARGWA-14 (180-94593-5), ARGWC-7 (180-94593-6), ARGWC-8 (180-94593-7), ARGWC-9 (180-94593-8), ARGWC-10 (180-94593-9), ARGWC-15 (180-94593-10), ARGWC-16 (180-94593-11), ARGWC-17 (180-94593-12), ARGWC-18 (180-94593-13), EB-1-8-21-19 (180-94593-14), FB-1-8-21-19 (180-94593-15), DUP-1 (180-94593-16), (LCS 160-441285/1-A), (MB 160-441285/23-A), (160-35448-B-1-B) and (160-35448-A-1-B DU)

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

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
SDG: 1

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

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

Accreditation/Certification Summary

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Laboratory: Eurofins TestAmerica, Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
Arkansas DEQ	State Program	88-0690	06-27-20
California	State	2891	04-30-20
California	State Program	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Connecticut	State Program	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Florida	NELAP	E871008	06-30-20
Illinois	NELAP	200005	06-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	01-31-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State	162013	04-30-20
Kentucky (UST)	State Program	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-19
Kentucky (WW)	State Program	KY98043	12-31-19
Louisiana	NELAP	04041	06-30-20
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-19
Minnesota	NELAP	042-999-482	12-31-19
Nevada	State	PA00164	07-31-20
Nevada	State Program	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	03-31-20
New York	NELAP	11182	04-01-20
North Carolina (WW/SW)	State Program	434	12-31-19
North Dakota	State	R-227	04-30-20
North Dakota	State Program	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-30-19
Rhode Island	State Program	LAO00362	12-30-19
South Carolina	State Program	89014	04-30-20
Texas	NELAP	T104704528-15-2	03-31-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462015-4	05-31-20
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	460189	09-14-20
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	01-31-20
West Virginia DEP	State Program	142	01-31-20
Wisconsin	State	998027800	08-31-20
Wisconsin	State Program	998027800	08-31-20

Eurofins TestAmerica, Pittsburgh

Accreditation/Certification Summary

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Laboratory: Eurofins TestAmerica, St. Louis

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	DoD	L2305	04-06-22
ANAB	DOE	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-19
Arizona	State Program	AZ0813	12-08-19 *
California	State	2886	06-30-20
California	State Program	2886	06-30-20
Connecticut	State	PH-0241	03-31-21
Connecticut	State Program	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-20
Florida	NELAP	E87689	06-30-20
Hawaii	State Program	NA	06-30-20
HI - RadChem Recognition	State	n/a	06-30-20
Illinois	NELAP	200023	11-30-19
Illinois	NELAP	004553	11-30-19
Iowa	State Program	373	12-01-20
Kansas	NELAP	E-10236	10-31-19 *
Kentucky (DW)	State	KY90125	12-31-19
Kentucky (DW)	State Program	KY90125	12-31-19
Louisiana	NELAP	04080	06-30-20
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	NELAP	LA011	12-31-19
Louisiana (DW)	State	LA011	12-31-19
Maryland	State	310	09-30-20
Maryland	State Program	310	09-30-20
MI - RadChem Recognition	State	9005	06-30-20
Michigan	State Program	9005	06-30-20
Missouri	State	780	06-30-22
Missouri	State Program	780	06-30-20
Nevada	State	MO000542020-1	07-31-20
Nevada	State Program	MO000542018-1	07-31-20
New Jersey	NELAP	MO002	06-30-20
New Jersey	NELAP	MO002	06-30-20
New York	NELAP	11616	03-31-20
New York	NELAP	11616	04-01-20
North Dakota	State	R-207	06-30-20
North Dakota	State Program	R207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Oklahoma	State Program	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-20
Pennsylvania	NELAP	68-00540	02-28-20
South Carolina	State	85002001	06-30-20
South Carolina	State Program	85002001	06-30-20
Texas	NELAP	T104704193-19-14	07-31-20
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	Federal	058448	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20

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

Eurofins TestAmerica, Pittsburgh



Accreditation/Certification Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
SDG: 1

Laboratory: Eurofins TestAmerica, St. Louis (Continued)

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

Authority	Program	Identification Number	Expiration Date
USDA	Federal	P330-17-0028	02-02-20
USDA	US Federal Programs	P330-17-00028	02-02-20
Utah	NELAP	MO000542019-11	07-31-20
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	460230	06-14-20
Virginia	NELAP	10310	06-14-20
Washington	State Program	C592	08-30-19 *
West Virginia DEP	State Program	381	10-31-19 *

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

Eurofins TestAmerica, Pittsburgh

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
SDG: 1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-94593-1	ARGWA-3	Water	08/20/19 12:44	08/23/19 08:40	
180-94593-2	ARGWA-5	Water	08/20/19 16:49	08/23/19 08:40	
180-94593-3	ARGWA-12	Ground Water	08/20/19 14:02	08/23/19 08:40	
180-94593-4	ARGWA-13	Water	08/19/19 16:59	08/23/19 08:40	
180-94593-5	ARGWA-14	Water	08/21/19 09:10	08/23/19 08:40	
180-94593-6	ARGWC-7	Water	08/21/19 09:40	08/23/19 08:40	
180-94593-7	ARGWC-8	Water	08/21/19 13:22	08/23/19 08:40	
180-94593-8	ARGWC-9	Water	08/21/19 11:33	08/23/19 08:40	
180-94593-9	ARGWC-10	Water	08/21/19 14:45	08/23/19 08:40	
180-94593-10	ARGWC-15	Water	08/21/19 11:30	08/23/19 08:40	
180-94593-11	ARGWC-16	Water	08/20/19 16:59	08/23/19 08:40	
180-94593-12	ARGWC-17	Water	08/21/19 13:55	08/23/19 08:40	
180-94593-13	ARGWC-18	Water	08/21/19 10:18	08/23/19 08:40	
180-94593-14	EB-1-8-21-19	Water	08/21/19 15:05	08/23/19 08:40	
180-94593-15	FB-1-8-21-19	Water	08/21/19 10:35	08/23/19 08:40	
180-94593-16	DUP-1	Water	08/20/19 00:00	08/23/19 08:40	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
SDG: 1

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: ARGWA-3

Lab Sample ID: 180-94593-1

Date Collected: 08/20/19 12:44

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.82 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 14:44	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.82 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442963	09/16/19 09:47	JCB	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWA-5

Lab Sample ID: 180-94593-2

Date Collected: 08/20/19 16:49

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.69 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 14:44	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.69 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442963	09/16/19 09:47	JCB	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWA-12

Lab Sample ID: 180-94593-3

Date Collected: 08/20/19 14:02

Matrix: Ground Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.38 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 14:44	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.38 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442963	09/16/19 09:47	JCB	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWA-13

Lab Sample ID: 180-94593-4

Date Collected: 08/19/19 16:59

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.20 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 14:44	KLS	TAL SL
Instrument ID: GFPCBLUE										

Lab Chronicle

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: ARGWA-13

Lab Sample ID: 180-94593-4

Date Collected: 08/19/19 16:59

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			1000.20 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442963	09/16/19 09:47	JCB	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWA-14

Lab Sample ID: 180-94593-5

Date Collected: 08/21/19 09:10

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.82 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 14:47	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.82 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442963	09/16/19 09:47	JCB	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWC-7

Lab Sample ID: 180-94593-6

Date Collected: 08/21/19 09:40

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.11 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 14:47	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.11 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442963	09/16/19 09:47	JCB	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWC-8

Lab Sample ID: 180-94593-7

Date Collected: 08/21/19 13:22

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.58 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 14:47	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.58 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442963	09/16/19 09:47	JCB	TAL SL
Instrument ID: GFPCPURPLE										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: ARGWC-8

Lab Sample ID: 180-94593-7

Date Collected: 08/21/19 13:22

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL

Client Sample ID: ARGWC-9

Lab Sample ID: 180-94593-8

Date Collected: 08/21/19 11:33

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.23 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 14:47	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.23 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442963	09/16/19 09:47	JCB	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWC-10

Lab Sample ID: 180-94593-9

Date Collected: 08/21/19 14:45

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.61 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 14:47	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.61 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442963	09/16/19 09:47	JCB	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWC-15

Lab Sample ID: 180-94593-10

Date Collected: 08/21/19 11:30

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.88 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 14:48	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.88 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442955	09/16/19 09:49	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Lab Chronicle

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: ARGWC-16

Lab Sample ID: 180-94593-11

Date Collected: 08/20/19 16:59

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.07 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 14:48	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.07 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442955	09/16/19 09:49	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWC-17

Lab Sample ID: 180-94593-12

Date Collected: 08/21/19 13:55

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.35 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 17:01	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.35 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442955	09/16/19 09:49	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWC-18

Lab Sample ID: 180-94593-13

Date Collected: 08/21/19 10:18

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.27 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 17:02	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.27 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442955	09/16/19 09:50	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: EB-1-8-21-19

Lab Sample ID: 180-94593-14

Date Collected: 08/21/19 15:05

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.17 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 17:02	KLS	TAL SL
Instrument ID: GFPCBLUE										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: EB-1-8-21-19

Lab Sample ID: 180-94593-14

Date Collected: 08/21/19 15:05

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			1000.17 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442955	09/16/19 09:50	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: FB-1-8-21-19

Lab Sample ID: 180-94593-15

Date Collected: 08/21/19 10:35

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.30 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 17:02	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.30 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442955	09/16/19 09:50	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: DUP-1

Lab Sample ID: 180-94593-16

Date Collected: 08/20/19 00:00

Matrix: Water

Date Received: 08/23/19 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.64 mL	1.0 g	441266	08/29/19 09:07	KAW	TAL SL
Total/NA	Analysis	9315		1			443706	09/23/19 17:02	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.64 mL	1.0 g	441285	08/29/19 10:34	KAW	TAL SL
Total/NA	Analysis	9320		1			442955	09/16/19 09:50	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			444104	09/25/19 07:30	SMP	TAL SL
Instrument ID: NOEQUIP										

Laboratory References:

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: TAL SL

Batch Type: Prep

KAW = Kayla Walker

Batch Type: Analysis

JCB = Justin Banner

KLS = Kody Saulters

SMP = Siobhan Perry

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: ARGWA-3

Lab Sample ID: 180-94593-1

Date Collected: 08/20/19 12:44

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0449	U	0.0575	0.0576	1.00	0.136	pCi/L	08/29/19 09:07	09/23/19 14:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					08/29/19 09:07	09/23/19 14:44	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.397	U	0.267	0.270	1.00	0.414	pCi/L	08/29/19 10:34	09/16/19 09:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					08/29/19 10:34	09/16/19 09:47	1
Y Carrier	84.1		40 - 110					08/29/19 10:34	09/16/19 09:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.352	U	0.273	0.276	5.00	0.414	pCi/L		09/25/19 07:30	1

Client Sample ID: ARGWA-5

Lab Sample ID: 180-94593-2

Date Collected: 08/20/19 16:49

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00746	U	0.0624	0.0624	1.00	0.122	pCi/L	08/29/19 09:07	09/23/19 14:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					08/29/19 09:07	09/23/19 14:44	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0999	U	0.200	0.200	1.00	0.375	pCi/L	08/29/19 10:34	09/16/19 09:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					08/29/19 10:34	09/16/19 09:47	1
Y Carrier	86.4		40 - 110					08/29/19 10:34	09/16/19 09:47	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: ARGWA-5

Lab Sample ID: 180-94593-2

Date Collected: 08/20/19 16:49

Matrix: Water

Date Received: 08/23/19 08:40

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0925	U	0.210	0.210	5.00	0.375	pCi/L		09/25/19 07:30	1

Client Sample ID: ARGWA-12

Lab Sample ID: 180-94593-3

Date Collected: 08/20/19 14:02

Matrix: Ground Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0402	U	0.0702	0.0703	1.00	0.123	pCi/L	08/29/19 09:07	09/23/19 14:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		40 - 110					08/29/19 09:07	09/23/19 14:44	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.719		0.269	0.277	1.00	0.373	pCi/L	08/29/19 10:34	09/16/19 09:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		40 - 110					08/29/19 10:34	09/16/19 09:47	1
Y Carrier	88.6		40 - 110					08/29/19 10:34	09/16/19 09:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.759		0.278	0.286	5.00	0.373	pCi/L		09/25/19 07:30	1

Client Sample ID: ARGWA-13

Lab Sample ID: 180-94593-4

Date Collected: 08/19/19 16:59

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0463	U	0.0598	0.0600	1.00	0.138	pCi/L	08/29/19 09:07	09/23/19 14:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.3		40 - 110					08/29/19 09:07	09/23/19 14:44	1

Client Sample Results

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: ARGWA-13

Lab Sample ID: 180-94593-4

Date Collected: 08/19/19 16:59

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.251	U	0.211	0.212	1.00	0.335	pCi/L	08/29/19 10:34	09/16/19 09:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.3		40 - 110					08/29/19 10:34	09/16/19 09:47	1
Y Carrier	86.0		40 - 110					08/29/19 10:34	09/16/19 09:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.204	U	0.219	0.220	5.00	0.335	pCi/L		09/25/19 07:30	1

Client Sample ID: ARGWA-14

Lab Sample ID: 180-94593-5

Date Collected: 08/21/19 09:10

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0125	U	0.0608	0.0608	1.00	0.131	pCi/L	08/29/19 09:07	09/23/19 14:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.3		40 - 110					08/29/19 09:07	09/23/19 14:47	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0788	U	0.247	0.247	1.00	0.429	pCi/L	08/29/19 10:34	09/16/19 09:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.3		40 - 110					08/29/19 10:34	09/16/19 09:47	1
Y Carrier	86.7		40 - 110					08/29/19 10:34	09/16/19 09:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0663	U	0.254	0.254	5.00	0.429	pCi/L		09/25/19 07:30	1

Client Sample Results

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: ARGWC-7

Lab Sample ID: 180-94593-6

Date Collected: 08/21/19 09:40

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0173	U	0.0657	0.0657	1.00	0.125	pCi/L	08/29/19 09:07	09/23/19 14:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110					08/29/19 09:07	09/23/19 14:47	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0631	U	0.234	0.234	1.00	0.407	pCi/L	08/29/19 10:34	09/16/19 09:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		40 - 110					08/29/19 10:34	09/16/19 09:47	1
Y Carrier	87.1		40 - 110					08/29/19 10:34	09/16/19 09:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0805	U	0.243	0.243	5.00	0.407	pCi/L		09/25/19 07:30	1

Client Sample ID: ARGWC-8

Lab Sample ID: 180-94593-7

Date Collected: 08/21/19 13:22

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0195	U	0.0584	0.0585	1.00	0.111	pCi/L	08/29/19 09:07	09/23/19 14:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.2		40 - 110					08/29/19 09:07	09/23/19 14:47	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.105	U	0.206	0.206	1.00	0.353	pCi/L	08/29/19 10:34	09/16/19 09:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.2		40 - 110					08/29/19 10:34	09/16/19 09:47	1
Y Carrier	90.1		40 - 110					08/29/19 10:34	09/16/19 09:47	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
SDG: 1

Client Sample ID: ARGWC-8

Lab Sample ID: 180-94593-7

Date Collected: 08/21/19 13:22

Matrix: Water

Date Received: 08/23/19 08:40

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.125	U	0.214	0.214	5.00	0.353	pCi/L		09/25/19 07:30	1

Client Sample ID: ARGWC-9

Lab Sample ID: 180-94593-8

Date Collected: 08/21/19 11:33

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0224	U	0.0563	0.0563	1.00	0.126	pCi/L	08/29/19 09:07	09/23/19 14:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.3		40 - 110					08/29/19 09:07	09/23/19 14:47	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0778	U	0.206	0.206	1.00	0.356	pCi/L	08/29/19 10:34	09/16/19 09:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.3		40 - 110					08/29/19 10:34	09/16/19 09:47	1
Y Carrier	90.1		40 - 110					08/29/19 10:34	09/16/19 09:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0554	U	0.214	0.214	5.00	0.356	pCi/L		09/25/19 07:30	1

Client Sample ID: ARGWC-10

Lab Sample ID: 180-94593-9

Date Collected: 08/21/19 14:45

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0177	U	0.0584	0.0584	1.00	0.125	pCi/L	08/29/19 09:07	09/23/19 14:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.6		40 - 110					08/29/19 09:07	09/23/19 14:47	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
SDG: 1

Client Sample ID: ARGWC-10

Lab Sample ID: 180-94593-9

Date Collected: 08/21/19 14:45

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.370	U	0.250	0.252	1.00	0.389	pCi/L	08/29/19 10:34	09/16/19 09:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.6		40 - 110					08/29/19 10:34	09/16/19 09:47	1
Y Carrier	90.8		40 - 110					08/29/19 10:34	09/16/19 09:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.352	U	0.257	0.259	5.00	0.389	pCi/L		09/25/19 07:30	1

Client Sample ID: ARGWC-15

Lab Sample ID: 180-94593-10

Date Collected: 08/21/19 11:30

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0885	U	0.0766	0.0771	1.00	0.115	pCi/L	08/29/19 09:07	09/23/19 14:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					08/29/19 09:07	09/23/19 14:48	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.402	U	0.301	0.304	1.00	0.478	pCi/L	08/29/19 10:34	09/16/19 09:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					08/29/19 10:34	09/16/19 09:49	1
Y Carrier	86.4		40 - 110					08/29/19 10:34	09/16/19 09:49	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.491		0.311	0.314	5.00	0.478	pCi/L		09/25/19 07:30	1

Client Sample Results

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: ARGWC-16

Lab Sample ID: 180-94593-11

Date Collected: 08/20/19 16:59

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0487	U	0.0801	0.0802	1.00	0.138	pCi/L	08/29/19 09:07	09/23/19 14:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.7		40 - 110					08/29/19 09:07	09/23/19 14:48	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.179	U	0.272	0.272	1.00	0.455	pCi/L	08/29/19 10:34	09/16/19 09:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.7		40 - 110					08/29/19 10:34	09/16/19 09:49	1
Y Carrier	85.2		40 - 110					08/29/19 10:34	09/16/19 09:49	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.227	U	0.284	0.284	5.00	0.455	pCi/L		09/25/19 07:30	1

Client Sample ID: ARGWC-17

Lab Sample ID: 180-94593-12

Date Collected: 08/21/19 13:55

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0233	U	0.0759	0.0759	1.00	0.139	pCi/L	08/29/19 09:07	09/23/19 17:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.6		40 - 110					08/29/19 09:07	09/23/19 17:01	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0599	U	0.243	0.244	1.00	0.440	pCi/L	08/29/19 10:34	09/16/19 09:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.6		40 - 110					08/29/19 10:34	09/16/19 09:49	1
Y Carrier	87.5		40 - 110					08/29/19 10:34	09/16/19 09:49	1

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
SDG: 1

Client Sample ID: ARGWC-17

Lab Sample ID: 180-94593-12

Date Collected: 08/21/19 13:55

Matrix: Water

Date Received: 08/23/19 08:40

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0366	U	0.255	0.256	5.00	0.440	pCi/L		09/25/19 07:30	1

Client Sample ID: ARGWC-18

Lab Sample ID: 180-94593-13

Date Collected: 08/21/19 10:18

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0296	U	0.0619	0.0619	1.00	0.137	pCi/L	08/29/19 09:07	09/23/19 17:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.1		40 - 110					08/29/19 09:07	09/23/19 17:02	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.722		0.346	0.352	1.00	0.518	pCi/L	08/29/19 10:34	09/16/19 09:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.1		40 - 110					08/29/19 10:34	09/16/19 09:50	1
Y Carrier	83.7		40 - 110					08/29/19 10:34	09/16/19 09:50	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.693		0.351	0.357	5.00	0.518	pCi/L		09/25/19 07:30	1

Client Sample ID: EB-1-8-21-19

Lab Sample ID: 180-94593-14

Date Collected: 08/21/19 15:05

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0489	U	0.0528	0.0530	1.00	0.133	pCi/L	08/29/19 09:07	09/23/19 17:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.8		40 - 110					08/29/19 09:07	09/23/19 17:02	1

Client Sample Results

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: EB-1-8-21-19

Lab Sample ID: 180-94593-14

Date Collected: 08/21/19 15:05

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.395	U	0.275	0.278	1.00	0.429	pCi/L	08/29/19 10:34	09/16/19 09:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.8		40 - 110					08/29/19 10:34	09/16/19 09:50	1
Y Carrier	87.5		40 - 110					08/29/19 10:34	09/16/19 09:50	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.347	U	0.280	0.283	5.00	0.429	pCi/L		09/25/19 07:30	1

Client Sample ID: FB-1-8-21-19

Lab Sample ID: 180-94593-15

Date Collected: 08/21/19 10:35

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0328	U	0.0689	0.0690	1.00	0.124	pCi/L	08/29/19 09:07	09/23/19 17:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.3		40 - 110					08/29/19 09:07	09/23/19 17:02	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0229	U	0.223	0.223	1.00	0.401	pCi/L	08/29/19 10:34	09/16/19 09:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.3		40 - 110					08/29/19 10:34	09/16/19 09:50	1
Y Carrier	89.0		40 - 110					08/29/19 10:34	09/16/19 09:50	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.00986	U	0.233	0.233	5.00	0.401	pCi/L		09/25/19 07:30	1

Client Sample Results

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Client Sample ID: DUP-1

Lab Sample ID: 180-94593-16

Date Collected: 08/20/19 00:00

Matrix: Water

Date Received: 08/23/19 08:40

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00144	U	0.0678	0.0678	1.00	0.134	pCi/L	08/29/19 09:07	09/23/19 17:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					08/29/19 09:07	09/23/19 17:02	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.335	U	0.268	0.270	1.00	0.427	pCi/L	08/29/19 10:34	09/16/19 09:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					08/29/19 10:34	09/16/19 09:50	1
Y Carrier	84.5		40 - 110					08/29/19 10:34	09/16/19 09:50	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.334	U	0.276	0.278	5.00	0.427	pCi/L		09/25/19 07:30	1

QC Sample Results

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-441266/23-A
Matrix: Water
Analysis Batch: 443706

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 441266

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-0.03923	U	0.0426	0.0428	1.00	0.115	pCi/L	08/29/19 09:07	09/23/19 17:03	1
Carrier	MB	MB	Limits		Prepared	Analyzed	Dil Fac			
	%Yield	Qualifier								
Ba Carrier	94.9		40 - 110		08/29/19 09:07	09/23/19 17:03	1			

Lab Sample ID: LCS 160-441266/1-A
Matrix: Water
Analysis Batch: 443706

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 441266

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.4	9.942		1.06	1.00	0.154	pCi/L	88	75 - 125
Carrier	LCS	LCS	Limits		Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier							
Ba Carrier	87.3		40 - 110						

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-441285/23-A
Matrix: Water
Analysis Batch: 442955

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 441285

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.2001	U	0.257	0.257	1.00	0.426	pCi/L	08/29/19 10:34	09/16/19 09:51	1
Carrier	MB	MB	Limits		Prepared	Analyzed	Dil Fac			
	%Yield	Qualifier								
Ba Carrier	94.9		40 - 110		08/29/19 10:34	09/16/19 09:51	1			
Y Carrier	87.9		40 - 110		08/29/19 10:34	09/16/19 09:51	1			

Lab Sample ID: LCS 160-441285/1-A
Matrix: Water
Analysis Batch: 442963

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 441285

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-228	9.58	8.927		1.05	1.00	0.400	pCi/L	93	75 - 125
Carrier	LCS	LCS	Limits		Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier							
Ba Carrier	87.3		40 - 110						
Y Carrier	93.1		40 - 110						

QC Association Summary

Client: Southern Company
 Project/Site: CCR - Plant Arkwright Ash Pond 3

Job ID: 180-94593-2
 SDG: 1

Rad

Prep Batch: 441266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94593-1	ARGWA-3	Total/NA	Water	PrecSep-21	
180-94593-2	ARGWA-5	Total/NA	Water	PrecSep-21	
180-94593-3	ARGWA-12	Total/NA	Ground Water	PrecSep-21	
180-94593-4	ARGWA-13	Total/NA	Water	PrecSep-21	
180-94593-5	ARGWA-14	Total/NA	Water	PrecSep-21	
180-94593-6	ARGWC-7	Total/NA	Water	PrecSep-21	
180-94593-7	ARGWC-8	Total/NA	Water	PrecSep-21	
180-94593-8	ARGWC-9	Total/NA	Water	PrecSep-21	
180-94593-9	ARGWC-10	Total/NA	Water	PrecSep-21	
180-94593-10	ARGWC-15	Total/NA	Water	PrecSep-21	
180-94593-11	ARGWC-16	Total/NA	Water	PrecSep-21	
180-94593-12	ARGWC-17	Total/NA	Water	PrecSep-21	
180-94593-13	ARGWC-18	Total/NA	Water	PrecSep-21	
180-94593-14	EB-1-8-21-19	Total/NA	Water	PrecSep-21	
180-94593-15	FB-1-8-21-19	Total/NA	Water	PrecSep-21	
180-94593-16	DUP-1	Total/NA	Water	PrecSep-21	
MB 160-441266/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-441266/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 441285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-94593-1	ARGWA-3	Total/NA	Water	PrecSep_0	
180-94593-2	ARGWA-5	Total/NA	Water	PrecSep_0	
180-94593-3	ARGWA-12	Total/NA	Ground Water	PrecSep_0	
180-94593-4	ARGWA-13	Total/NA	Water	PrecSep_0	
180-94593-5	ARGWA-14	Total/NA	Water	PrecSep_0	
180-94593-6	ARGWC-7	Total/NA	Water	PrecSep_0	
180-94593-7	ARGWC-8	Total/NA	Water	PrecSep_0	
180-94593-8	ARGWC-9	Total/NA	Water	PrecSep_0	
180-94593-9	ARGWC-10	Total/NA	Water	PrecSep_0	
180-94593-10	ARGWC-15	Total/NA	Water	PrecSep_0	
180-94593-11	ARGWC-16	Total/NA	Water	PrecSep_0	
180-94593-12	ARGWC-17	Total/NA	Water	PrecSep_0	
180-94593-13	ARGWC-18	Total/NA	Water	PrecSep_0	
180-94593-14	EB-1-8-21-19	Total/NA	Water	PrecSep_0	
180-94593-15	FB-1-8-21-19	Total/NA	Water	PrecSep_0	
180-94593-16	DUP-1	Total/NA	Water	PrecSep_0	
MB 160-441285/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-441285/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Chain of Custody Record

Client Information Client Contact: <u>Roby Walker / T. Goble</u> Phone: <u>770-594-5998</u> Lab PM: <u>Veronica Bortot</u> E-Mail: <u>Veronica.Bortot@testamericainc.com</u>		Carrier Tracking No(s): COC No: <u>400-73521-29028.1</u> Page: Job #:	
Southern Company Address: <u>PO BOX 2641 GSC8</u> City: <u>Birmingham</u> State, Zip: <u>AL, 35291</u> Phone: <u>SCS10347656</u> Email: <u>JAbraham@southernco.com</u> Project Name: <u>CCR Plant Arkwright - Ash Pond 3</u> Site: <u>Georgia</u>		Analysis Requested Due Date Requested: TAT Requested (days): Matrix (W=water, S=solid, O=soil, BT=Tissue, A=Air) Sample Type (C=comp, G=grab) Preservation Code: Sample Date Sample Time Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Metals App. IV (EPA 6020/470) Radium 226 & 228 (SW-846 9315/9320) Fluoride Total Number of Containers Spet	
Sample Identification <u>ARGWA-3</u> <u>ARGWA-5</u> <u>ARGWA-12</u> <u>ARGWA-13</u> <u>ARGWA-14</u> <u>ARGWC-7</u> <u>ARGWC-8</u> <u>ARGWC-9</u> <u>ARGWC-10</u>		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDA Z - other (specify)	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:	
Empty Kit Relinquished by: Relinquished by: <u>Taylor Jolly</u> Relinquished by: <u>[Signature]</u> Relinquished by: <u>[Signature]</u> Date/Time: <u>8/22/19 1530</u> Date/Time: <u>8/22/19 1530</u> Date/Time: <u>8/23/19 8:23:19</u>		Method of Shipment: Received by: <u>[Signature]</u> Company: <u>ACC</u> Received by: <u>[Signature]</u> Company: <u>574</u> Received by: <u>[Signature]</u> Company: <u>890</u>	
Custody Seals Intact: <input checked="" type="checkbox"/> Custody Seal No.: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks:	



Chain of Custody Record

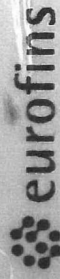
Client Information Client Contact: <u>Joju Abraham</u> Company: <u>Southern Company</u> Address: <u>PO BOX 2641 GSC8</u> City: <u>Birmingham</u> State, Zip: <u>AL, 35291</u> Phone: <u>PO #: SCS10347656</u> <u>WO #:</u> Email: <u>JAbraham@southernco.com</u> Project Name: <u>CCR Plant Arkwright - Ash Pond 3</u> Site: <u>Georgia</u>		Lab PM: <u>Veronica Bortot</u> E-Mail: <u>Veronica.Bortot@testamericainc.com</u> Carrier Tracking No(s): _____ COC No: <u>400-73521-29028.1</u> Page: _____ Page: _____ Job #: _____							
Due Date Requested: _____ TAT Requested (days): _____ PO #: _____ SCS10347656 WO #: _____ Project #: <u>40007712</u> SSOw#: _____		Analysis Requested							
Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No Metals App. IV (EPA 6020/470) <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No Radium 226 & 228 (SW-846 9315/9320) <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Total Number of Containers: _____ Special Instructions/Note: _____							
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=soil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Metals App. IV (EPA 6020/470)	Radium 226 & 228 (SW-846 9315/9320)	Special Instructions/Note:
ARGWC-15	8-21-19	1130	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
ARGWC-16	8-20-19	1659	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
ARGWC-17	8-21-19	1355	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
ARGWC-18	8-21-19	1018	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
EB-1-8-21-19	8-21-19	1505	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
EB-1-8-21-19	8-21-19	1035	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Dup-1	8-20-19	-	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
				Water		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				Water		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				Water		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				Water		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months									
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify) _____									
Empty Kit Relinquished by: _____ Date: _____ Relinquished by: <u>Veronica Bortot</u> Date/Time: <u>8-22-19 / 1520</u> Company: <u>ACC</u> Relinquished by: <u>[Signature]</u> Date/Time: <u>8/24/19</u> Company: <u>ETN</u> Relinquished by: <u>[Signature]</u> Date/Time: <u>8-23-19</u> Company: <u>ETN</u>									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: _____ Cooler Temperature(s) °C and Cooler Remarks: _____									





180-94593 Waybill

Part # 159469-434 R/T2 EXP 05/20



Environment Testing
TestAmerica

ORIGIN ID: MULA (678) 966-9991
GEORGE TAYLOR
EUROFINSTESTAMERICA, ATLANTA
6500 MCDONOUGH DRIVE
NORCROSS, GA 30093
UNITED STATES US

SHIP DATE: 22AUG19
ACTWGT: 59.60 LB
CAD: 859116/CAFE3211

BILL RECIPIENT

TO SAMPLE RECEIVING
TA PITTSBURGH
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 968-7068
REF: ACC

edEX
Express



FRI - 23 AUG 3:00
STANDARD OVERNIGHT

1 of 5
TRK# 0201
4651 0083 4424
MASTER

NA AGCA

217
CF=13
#10
T.S.

SHL
ACT#
CAD: TA
BILL RECIPIENT

787 966 9991
30093
30 US
ERICA, ATLANTA
DRIVE

SAMPLE RECEIVING
TA PITTSBURGH

301 AL
RIDC PARK
PITTSBURGH PA 15238
(412) 968-7068
REF: ACC

FedEx
Express



FRI - 23 AUG 3:00
STANDARD OVERNIGHT

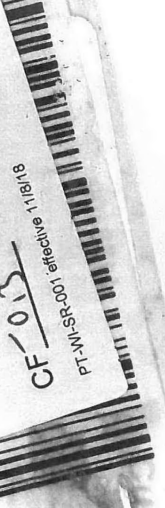
4 of 5
Mstr# 4651 0083 4457
4651 0083 4424

NA AGCA

Mstr#

PA-US

Uncorrected temp
Thermometer ID
Initials
CF-101
T-TM-SP-300 effective 1/18/18



Seal
Xpoc

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13



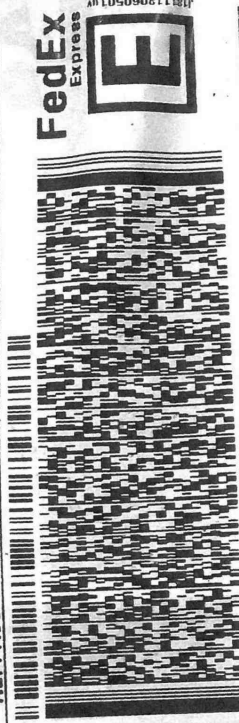
Environment Testing
TestAmerica

ORIGIN ID: MULA (678) 966-9991
GEORGE TAYLOR
EUROFINS TEST AMERICA, ATLANTA
6500 MCDONOUGH DRIVE
NORCROSS, GA 30093
UNITED STATES US

SHIP DATE: 22AUG19
ACTWT: 59.60 LB
CAD: 859116/CAFE3211
BILL RECIPIENT

TO **SAMPLE RECEIVING**
TA PITTSBURGH
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 968-7068
REF: ACC

REF: ACC



FRI - 23 AUG 3:00P
STANDARD OVERNIGHT

5 of 5
MPS# 4651 0083 4468
0263
Mstr# 4651 0083 4424

0201
NA AGCA

15238
PA-US
PIT

Uncorrected temp _____ °C
Thermometer ID _____
CF 0.3 Initials TS
PT-WI-SR-001 effective 11/8/18



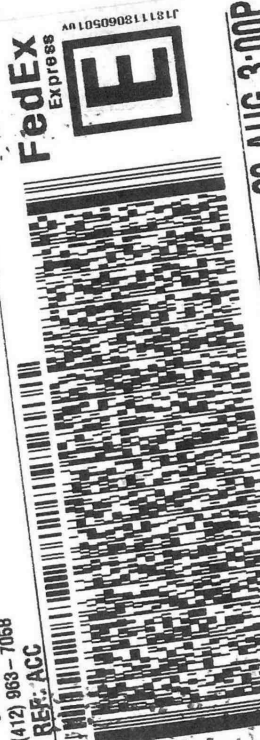
Environment Testing
TestAmerica

SHIP DATE: 22AUG19
ACTWT: 59.60 LB
CAD: 859116/CAFE3211
BILL RECIPIENT

ORIGIN ID: MULA (678) 966-9991
GEORGE TAYLOR
EUROFINS TEST AMERICA, ATLANTA
6500 MCDONOUGH DRIVE
NORCROSS, GA 30093
UNITED STATES US

TO **SAMPLE RECEIVING**
TA PITTSBURGH
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 968-7068
REF: ACC

REF: ACC



FRI - 23 AUG 3:00P
STANDARD OVERNIGHT

3 of 5
MPS# 4651 0083 4446
0263
Mstr# 4651 0083 4424

0201
NA AGCA

15238
PA-US
PIT

Uncorrected temp _____ °C
Thermometer ID _____
CF 0.3 Initials TS
PT-WI-SR-001 effective 11/8/18



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13



PT-VI-SR-001 effective 11/8/18

CF-013 Initials

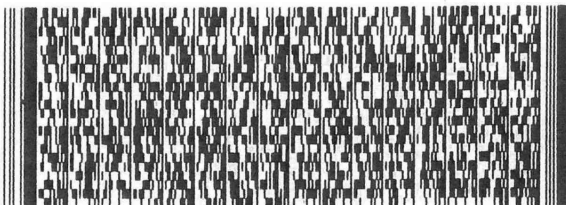
Uncorrected temp
Thermometer ID

PA-US PIT
15238

NA AGCA

MPS# 4651 0083 4435
Mstr# 4651 0083 4424

FRI - 23 AUG 3:00P
STANDARD OVERNIGHT



PO: N

REF: AGC

(412) 968-7068

PITTSBURGH PA 15238

RIDC PARK

301 ALPHA DRIVE

TA PITTSBURGH

SAMPLE RECEIVING

CHI
ATI
11
SU
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10

NORCR

US

550C

EURD

GEORG

FROM:

ORIGIN ID: NULA (678) 966-9991
GEORGE TAYLOR
EUROFINS AMERICA, ATLANTA
6500 McDONOUGH DRIVE
NORCROSS, GA 30093
UNITED STATES US

BILL RECIPIENT

SHIP DATE: 22AUG19
ACTWGT: 59.60 LB
CAD: 859116/CAFE3211

5511/3251/104c

TestAm

eurofins



Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-94593-2

SDG Number: 1

Login Number: 94593

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

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



Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-94593-2

SDG Number: 1

Login Number: 94593

List Number: 2

Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis

List Creation: 08/27/19 03:53 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	22.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-94593-2

SDG Number: 1

Login Number: 94593

List Number: 3

Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis

List Creation: 08/27/19 03:55 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	22.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



LEVEL 2A LABORATORY DATA VALIDATIONS

Plant Arkwright Ash Pond 3

Scan Event

August 2019

Georgia Power Company – Plant Arkwright Ash Pond 3 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 Eurofins TestAmerica, Pittsburgh and St. Louis for groundwater samples collected at Plant Arkwright Ash Pond 3 between August 19, 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.

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.

Field Precision: Field goals for precision were met, with the exception of Cobalt on ARGWA-3 (180-94593-1) and DUP-1 (180-94593-16) as described in the qualifications section below.

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

U: The analyte was not detected above the method detection limit

The data generated as part of this sampling event met the QC criteria established in the respective analytical methods and data validation guidelines except as specified below. 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.

- Samples ARGWA-3 (180-94593-1) and DUP-1 (180-94593-16) were qualified as estimated (J) for Cobalt as the field relative percent difference (RPD) exceeded QC criteria (32.2% above limit of 25).
- Certain radium results in SDG 94593 were qualified as non-detect (U) 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 Arkwright Ash Pond 3 sampled between August 19, 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

¹USEPA, 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

²USEPA, 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 Arkwright Ash Pond 3

Sample Summary Table – August 2019

SDG	Field Identification	Collection Date	Lab Identification	Matrix	QC Samples	Analyses			
						Metals (6020B, 7470A)	Anions (300.0)	TDS (SM 2540C)	Radium-226/-228 (9315, 9320)
94593	ARGWA-3	8/20/2019	180-94593-1	GW		X	X	X	X
94593	ARGWA-5	8/20/2019	180-94593-2	GW		X	X	X	X
94593	ARGWA-12	8/20/2019	180-94593-3	GW		X	X	X	X
94593	ARGWA-13	8/19/2019	180-94593-4	GW		X	X	X	X
94593	ARGWA-14	8/21/2019	180-94593-5	GW		X	X	X	X
94593	ARGWC-7	8/21/2019	180-94593-6	GW		X	X	X	X
94593	ARGWC-8	8/21/2019	180-94593-7	GW		X	X	X	X
94593	ARGWC-9	8/21/2019	180-94593-8	GW		X	X	X	X
94593	ARGWC-10	8/21/2019	180-94593-9	GW		X	X	X	X
94593	ARGWC-15	8/21/2019	180-94593-10	GW		X	X	X	X
94593	ARGWC-16	8/20/2019	180-94593-11	GW		X	X	X	X
94593	ARGWC-17	8/21/2019	180-94593-12	GW		X	X	X	X
94593	ARGWC-18	8/21/2019	180-94593-13	GW		X	X	X	X
94593	EB-1-8-21-19	8/21/2019	180-94593-14	WQ	EB	X	X	X	X
94593	FB-1-8-21-19	8/21/2019	180-94593-15	WQ	FB	X	X	X	X
94593	DUP-1	8/20/2019	180-94593-16	GW	FD (ARGWA-3)	X	X	X	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 Arkwright Ash Pond 3

Qualifier Summary Table – August 2019

SDG	Field Identification	Constituent	New RL	New MDL or MDC	Qualifier	Reason
94593	ARGWA-3	Cobalt			J	RPD exceeds field goal
94593	DUP-1	Cobalt			J	RPD exceeds field goal
94593	ARGWA-14	Radium-228		0.0788	U	Blank detection
94593	ARGWC-7	Radium-228		0.0631	U	Blank detection
94593	ARGWC-8	Radium-228		0.105	U	Blank detection
94593	ARGWC-9	Radium-228		0.0778	U	Blank detection
94593	ARGWC-16	Radium-228		0.179	U	Blank detection

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 12:46:01

Project Information:

Operator Name Ryan Walker
Company Name ACC
Project Name Plant Arkwright
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 56.6"
Longitude -83° -42' -27.25"
Sonde SN 369323
Turbidity Make/Model Hach 2100Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .17 in
Tubing Length 42 ft

Pump placement from TOC 40 ft

Well Information:

Well ID ARGWA-3
Well diameter 2 in
Well Total Depth 42.29 ft
Screen Length 10 ft
Depth to Water 36.02 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.5774637 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4 in
Total Volume Pumped 14 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	12:24:53	2400.01	20.46	5.83	80.04	3.87	36.30	5.82	72.12
Last 5	12:29:53	2700.00	20.52	5.83	80.01	2.55	36.30	5.81	71.49
Last 5	12:34:53	3000.01	20.55	5.83	79.90	3.06	36.30	5.83	72.66
Last 5	12:39:53	3300.00	20.66	5.83	79.98	2.63	36.30	5.82	72.34
Last 5	12:44:53	3600.00	20.67	5.83	79.94	2.82	36.30	5.81	72.69
Variance 0			0.03	-0.01	-0.11			0.02	1.17
Variance 1			0.11	-0.00	0.08			-0.01	-0.32
Variance 2			0.01	0.00	-0.04			-0.01	0.35

Notes

Sampled at 12:44. Sunny, 80's.

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-20 16:49:51

Project Information:

Operator Name Ryan Walker
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 47.11"
Longitude -83° -42' -19.61"
Sonde SN 369323
Turbidity Make/Model Hach 2100Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .17 in
Tubing Length 33 ft

Pump placement from TOC 28 ft

Well Information:

Well ID ARGWA-5
Well diameter 2 in
Well Total Depth 33.11 ft
Screen Length 10 ft
Depth to Water 23.89 ft

Pumping Information:

Final Pumping Rate 280 mL/min
Total System Volume 0.537293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 18.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	16:29:07	2700.01	19.53	5.76	78.77	1.41	24.10	5.45	57.40
Last 5	16:34:07	3000.01	19.48	5.80	78.05	1.39	24.10	5.37	57.93
Last 5	16:39:07	3300.00	19.42	5.79	77.72	1.12	24.10	5.39	58.80
Last 5	16:44:07	3600.00	19.45	5.76	78.37	0.92	24.10	5.48	56.67
Last 5	16:49:07	3900.00	19.45	5.80	77.71	1.37	24.10	5.36	56.93
Variance 0			-0.06	-0.01	-0.33			0.01	0.87
Variance 1			0.03	-0.03	0.66			0.09	-2.12
Variance 2			0.00	0.04	-0.67			-0.12	0.25

Notes

Sampled at 16:49. Sunny, 90's.

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-20 14:03:14

Project Information:

Operator Name Ryan Walker
Company Name ACC
Project Name Plant Arkwright
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 57.65"
Longitude -83° -42' -34.77"
Sonde SN 369323
Turbidity Make/Model Hach 2100Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .25 in
Tubing Length 32 ft

Pump placement from TOC 27 ft

Well Information:

Well ID ARGWA-12
Well diameter 2 in
Well Total Depth 32.35 ft
Screen Length 10 ft
Depth to Water 16.65 ft

Pumping Information:

Final Pumping Rate 220 mL/min
Total System Volume 0.6988875 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 9 in
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	13:42:16	900.02	20.41	5.90	172.29	5.27	17.40	3.49	64.49
Last 5	13:47:16	1200.02	20.46	5.89	171.60	4.67	17.40	3.62	64.37
Last 5	13:52:16	1500.02	20.55	5.84	172.12	4.89	17.40	3.58	65.49
Last 5	13:57:16	1800.02	20.59	5.89	172.13	3.37	17.40	3.39	63.65
Last 5	14:02:16	2100.01	20.34	5.89	171.79	3.41	17.40	3.32	63.57
Variance 0			0.09	-0.05	0.51			-0.05	1.13
Variance 1			0.04	0.05	0.01			-0.19	-1.84
Variance 2			-0.25	-0.01	-0.34			-0.06	-0.09

Notes

Sampled at 14:02. Sunny, 80's.

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-19 17:02:13

Project Information:

Operator Name Taylor Goble
Company Name ACC
Project Name Plant Arkwright
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 47.11"
Longitude -83° -42' -19.61"
Sonde SN 466058
Turbidity Make/Model Hach 2100Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .17 in
Tubing Length 43 ft

Pump placement from TOC 38 ft

Well Information:

Well ID ARGWA-13
Well diameter 2 in
Well Total Depth 43.25 ft
Screen Length 10 ft
Depth to Water 24.97 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.5819272 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	16:39:54	2106.01	20.66	5.62	1395.42	1.39	25.26	1.02	110.42
Last 5	16:44:57	2409.00	20.71	5.61	1394.79	1.25	25.27	0.97	110.72
Last 5	16:49:57	2708.98	20.62	5.60	1395.34	1.12	25.26	0.96	111.81
Last 5	16:54:57	3008.99	20.62	5.59	1391.35	1.15	25.26	0.90	111.57
Last 5	16:59:57	3308.98	20.64	5.59	1385.27	1.03	25.26	0.87	111.65
Variance 0			-0.09	-0.01	0.55			-0.01	1.10
Variance 1			0.01	-0.01	-3.99			-0.06	-0.25
Variance 2			0.02	-0.00	-6.08			-0.03	0.09

Notes

Sampled at 1659. Sunny 91 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-20 11:26:47

Project Information:

Operator Name Ryan Walker
Company Name ACC
Project Name Plant Arkwright
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 47.66"
Longitude -83° -42' -16.37"
Sonde SN 369323
Turbidity Make/Model Hach 2100Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .17 in
Tubing Length 58 ft

Pump placement from TOC 53 ft

Well Information:

Well ID ARGWA-14
Well diameter 2 in
Well Total Depth 58.18 ft
Screen Length 10 ft
Depth to Water 43.13 ft

Pumping Information:

Final Pumping Rate 50 mL/min
Total System Volume 0.6488785 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 102 in
Total Volume Pumped 8.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	11:04:17	6904.94	21.08	6.47	366.54	0.88	50.40	2.87	26.50
Last 5	11:09:17	7204.98	21.13	6.52	394.06	0.67	50.70	3.03	23.11
Last 5	11:14:17	7504.94	20.95	6.58	435.85	0.68	51.00	2.90	19.03
Last 5	11:19:17	7804.93	21.17	6.68	492.09	0.55	51.40	2.09	-13.56
Last 5	11:24:17	8104.93	21.31	6.74	526.83	0.61	51.70	1.73	-71.25
Variance 0			-0.18	0.06	41.80			-0.13	-4.09
Variance 1			0.22	0.10	56.23			-0.81	-32.59
Variance 2			0.14	0.06	34.74			-0.36	-57.69

Notes

Well purged dry. Not sampled.

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-21 09:12:10

Project Information:

Operator Name Ryan Walker
Company Name ACC
Project Name Plant Arkwright
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 47.84"
Longitude -83° -42' -16.06"
Sonde SN 369323
Turbidity Make/Model Hach 2100Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .17 in
Tubing Length 58 ft

Pump placement from TOC 53 ft

Well Information:

Well ID ARGWA-14
Well diameter 2 in
Well Total Depth 58.18 ft
Screen Length 10 ft
Depth to Water 53.0 ft

Pumping Information:

Final Pumping Rate 50 mL/min
Total System Volume 0.6488785 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4 in
Total Volume Pumped 0.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	09:10:48	300.09	23.50	6.94	573.47	8.60	53.00	8.33	129.98
Last 5									
Last 5									
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.00	0.00	0.00			0.00	0.00
Variance 2			0.00	0.00	0.00			0.00	0.00

Notes

Well purged dry 8/20/2019. Sampled at 09:10. WL below top of Pump.

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-21 09:40:50

Project Information:

Operator Name Taylor Goble
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 47.11"
Longitude -83° -42' -19.61"
Sonde SN 573204
Turbidity Make/Model Hach 2100 Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .17 in
Tubing Length 48 ft

Pump placement from TOC 43 ft

Well Information:

Well ID ARGWC-7
Well diameter 2 in
Well Total Depth 48.32 ft
Screen Length 10 ft
Depth to Water 24.94 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6992443 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	09:20:02	600.03	23.69	5.83	158.50	2.29	24.99	4.89	165.23
Last 5	09:25:02	900.03	23.46	5.79	157.69	2.15	24.99	4.65	169.69
Last 5	09:30:02	1200.02	23.42	5.77	157.49	1.77	24.99	4.59	177.52
Last 5	09:35:02	1500.01	23.50	5.77	157.70	1.51	24.99	4.54	182.16
Last 5	09:40:02	1800.01	23.60	5.77	157.87	1.33	24.99	4.52	188.43
Variance 0			-0.05	-0.02	-0.20			-0.06	7.83
Variance 1			0.09	0.01	0.20			-0.04	4.64
Variance 2			0.10	-0.00	0.18			-0.03	6.27

Notes

Sampled at 0940. Sunny 79 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-21 13:23:40

Project Information:

Operator Name Ryan Walker
Company Name ACC
Project Name Plant Arkwright
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 32.98"
Longitude -83° -42' -25.66"
Sonde SN 369323
Turbidity Make/Model Hach 2100Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .25 in
Tubing Length 43 ft

Pump placement from TOC 38 ft

Well Information:

Well ID ARGWC-8
Well diameter 2 in
Well Total Depth 43.22 ft
Screen Length 10 ft
Depth to Water 25.93 ft

Pumping Information:

Final Pumping Rate 160 mL/min
Total System Volume 0.8050674 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	13:02:09	600.07	21.71	6.34	440.02	1.94	26.20	0.55	49.42
Last 5	13:07:09	900.03	21.80	6.35	444.83	2.11	26.20	0.52	48.45
Last 5	13:12:09	1200.02	21.80	6.35	440.22	1.99	26.20	0.47	47.76
Last 5	13:17:09	1500.02	21.76	6.35	439.30	2.19	26.20	0.43	48.07
Last 5	13:22:09	1800.02	21.86	6.36	440.44	1.72	26.20	0.43	48.88
Variance 0			0.01	0.00	-4.61			-0.05	-0.70
Variance 1			-0.04	0.00	-0.93			-0.04	0.32
Variance 2			0.10	0.00	1.15			0.00	0.81

Notes

Sampled at 13:22. Sunny, 80's.

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-21 11:34:31

Project Information:

Operator Name Ryan Walker
Company Name ACC
Project Name Plant Arkwright
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 47.11"
Longitude -83° -42' -19.61"
Sonde SN 369323
Turbidity Make/Model Hach 2100Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .25 in
Tubing Length 38 ft

Pump placement from TOC 33 ft

Well Information:

Well ID ARGWC-9
Well diameter 2 in
Well Total Depth 38.07 ft
Screen Length 10 ft
Depth to Water 22.28 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.7568038 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 2 in
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	11:13:58	600.02	22.33	5.77	78.62	6.85	22.40	5.89	75.73
Last 5	11:18:58	900.02	22.43	5.76	78.30	5.08	22.40	5.82	75.17
Last 5	11:23:58	1200.02	22.15	5.76	78.37	3.99	22.40	5.80	74.96
Last 5	11:29:00	1502.01	22.19	5.76	78.81	2.80	22.40	5.85	74.31
Last 5	11:34:00	1802.00	22.13	5.76	78.26	2.57	22.40	5.77	73.82
Variance 0			-0.27	-0.01	0.07			-0.01	-0.20
Variance 1			0.04	-0.00	0.44			0.04	-0.65
Variance 2			-0.06	0.00	-0.55			-0.07	-0.49

Notes

Sampled at 11:33. Sunny, 80's.

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-21 14:46:37

Project Information:

Operator Name Ryan Walker
Company Name ACC
Project Name Plant Arkwright
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 41.8"
Longitude -83° -42' -30.18"
Sonde SN 369323
Turbidity Make/Model Hach 2100Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .25 in
Tubing Length 38 ft

Pump placement from TOC 33 ft

Well Information:

Well ID ARGWC-10
Well diameter 2 in
Well Total Depth 38.35 ft
Screen Length 10 ft
Depth to Water 22.78 ft

Pumping Information:

Final Pumping Rate 220 mL/min
Total System Volume 0.7568038 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4 in
Total Volume Pumped 12.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	14:25:55	1501.03	20.64	5.81	96.99	8.35	23.10	4.36	67.56
Last 5	14:30:55	1801.03	20.45	5.83	96.55	9.07	23.10	4.18	65.43
Last 5	14:35:55	2101.02	20.46	5.82	96.31	7.55	23.10	4.21	64.38
Last 5	14:40:55	2401.02	20.48	5.82	96.38	8.54	23.10	4.05	63.03
Last 5	14:45:55	2701.02	20.46	5.82	96.06	4.92	23.10	4.15	63.07
Variance 0			0.00	-0.00	-0.24			0.02	-1.05
Variance 1			0.03	-0.00	0.07			-0.15	-1.36
Variance 2			-0.02	0.00	-0.32			0.10	0.04

Notes

Sampled at 14:45. Sunny, 90's.

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-21 11:31:22

Project Information:

Operator Name Taylor Goble
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 47.11"
Longitude -83° -42' -19.61"
Sonde SN 466058
Turbidity Make/Model Hach 2100 Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter 0.17 in
Tubing Length 43 ft

Pump placement from TOC 38 ft

Well Information:

Well ID ARGWC-15
Well diameter 2 in
Well Total Depth 42.35 ft
Screen Length 10 ft
Depth to Water 29.35 ft

Pumping Information:

Final Pumping Rate 50 mL/min
Total System Volume 0.6769272 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 12 in
Total Volume Pumped 2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	11:10:21	600.03	24.71	6.33	230.25	2.29	30.11	1.70	100.52
Last 5	11:15:21	900.03	27.00	6.32	232.20	2.22	30.17	1.24	96.76
Last 5	11:20:21	1200.02	27.02	6.30	225.61	3.16	30.22	1.16	95.92
Last 5	11:25:21	1500.02	27.23	6.30	223.52	3.05	30.28	1.06	95.58
Last 5	11:30:23	1802.01	26.69	6.30	222.20	2.84	30.32	1.04	95.22
Variance 0			0.02	-0.02	-6.59			-0.08	-0.84
Variance 1			0.21	-0.00	-2.10			-0.11	-0.34
Variance 2			-0.54	0.00	-1.32			-0.02	-0.36

Notes

Sampled at 1130. Sunny 86 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-20 16:59:51

Project Information:

Operator Name Taylor Goble
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright
Site Name Plant Arkwright - Ash Pond 3
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 573204
Turbidity Make/Model Hach 2100Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .17 in
Tubing Length 34 ft

Pump placement from TOC 29 ft

Well Information:

Well ID ARGWC-16
Well diameter 2 in
Well Total Depth 34.52 ft
Screen Length 10 ft
Depth to Water 21.38 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.2417564 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	16:39:09	2101.01	21.89	5.36	362.24	1.22	21.45	3.63	276.47
Last 5	16:44:10	2402.01	22.24	5.36	361.25	1.35	21.47	3.42	285.57
Last 5	16:49:10	2702.00	22.41	5.35	360.98	1.20	21.46	3.41	305.31
Last 5	16:54:10	3001.99	22.45	5.35	361.31	1.02	21.46	3.22	321.57
Last 5	16:59:12	3303.99	22.45	5.35	360.49	1.10	21.46	3.16	339.09
Variance 0			0.17	-0.00	-0.27			-0.00	19.74
Variance 1			0.04	0.00	0.34			-0.20	16.26
Variance 2			-0.01	0.00	-0.83			-0.05	17.53

Notes

Sampled at 1659. Sunny 89 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-21 13:56:44

Project Information:

Operator Name Taylor Goble
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 47.11"
Longitude -83° -42' -19.61"
Sonde SN 466058
Turbidity Make/Model Hach 2100 Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter 0.17 in
Tubing Length 33 ft

Pump placement from TOC 28 ft

Well Information:

Well ID ARGWC-17
Well diameter 2 in
Well Total Depth 33.92 ft
Screen Length 10 ft
Depth to Water 22.7 ft

Pumping Information:

Final Pumping Rate 100 mL/min
Total System Volume 0.632293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 0 in
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 10
Last 5	13:35:59	3906.98	25.69	5.08	153.48	2.28	22.93	1.18	112.80
Last 5	13:41:00	4207.96	25.51	5.07	153.66	1.79	22.93	1.14	113.54
Last 5	13:46:01	4508.96	25.74	5.07	153.29	1.53	22.94	1.03	114.08
Last 5	13:51:03	4810.96	26.02	5.07	153.56	1.72	22.94	0.98	115.60
Last 5	13:56:03	5110.95	25.73	5.07	152.98	1.80	22.94	0.90	115.81
Variance 0			0.23	0.00	-0.37			-0.10	0.54
Variance 1			0.27	0.00	0.27			-0.05	1.52
Variance 2			-0.29	-0.00	-0.58			-0.08	0.21

Notes

Sampled at 1355. Sunny 90 degrees

Grab Samples

Product Name: Low-Flow System

Date: 2019-08-21 10:18:55

Project Information:

Operator Name Ryan Walker
Company Name ACC
Project Name Plant Arkwright
Site Name Plant Arkwright - Ash Pond 3
Latitude 32° 55' 32.49"
Longitude -83° -42' -20.98"
Sonde SN 369323
Turbidity Make/Model Hach 2100Q

Pump Information:

Pump Model/Type QED Bladder
Tubing Type poly
Tubing Diameter .25 in
Tubing Length 50 ft

Pump placement from TOC 45 ft

Well Information:

Well ID ARGWC-18
Well diameter 2 in
Well Total Depth 50.65 ft
Screen Length 10 ft
Depth to Water 28.40 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.8726366 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4 in
Total Volume Pumped 5.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0.5	+/- 0.1	+/- 3%	+/- 10		+/- 0.3	+/- 10
Last 5	09:58:16	600.02	21.83	5.94	548.93	2.38	28.70	0.31	26.35
Last 5	10:03:16	900.01	21.54	5.93	547.41	2.24	28.70	0.26	26.51
Last 5	10:08:16	1200.00	21.52	5.93	546.99	2.41	28.70	0.24	26.62
Last 5	10:13:16	1500.01	21.47	5.94	548.43	2.02	28.70	0.24	28.23
Last 5	10:18:17	1801.00	21.40	5.94	546.76	2.45	28.70	0.23	29.14
Variance 0			-0.02	0.00	-0.42			-0.02	0.11
Variance 1			-0.05	0.00	1.44			0.00	1.61
Variance 2			-0.07	0.00	-1.67			-0.01	0.91

Notes

Sampled at 10:18. Sunny, 80's. FB-1 here.

Grab Samples

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-97054-1

Client Project/Site: CCR - Plant Arkwright
Sampling Event: PLANT ARKWRIGHT- AP-3
Revision: 1

For:

Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:
11/29/2019 4:42:22 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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

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

PA Lab ID: 02-00416



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Case Narrative

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Job ID: 180-97054-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-97054-1

Comments

No additional comments.

Receipt

The samples were received on 10/10/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.1° C, 2.1° C and 2.4° C.

GC Semi VOA

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

Metals

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

General Chemistry

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

RAD

Method 9315: Radium-226 Prep Batch 160-446085

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

DUP-1 (180-97054-1), ARGWA-14 (180-97054-2), ARGWA-5 (180-97054-3), ARGWA-3 (180-97054-4), ARGWC-15 (180-97054-5), ARGWA-12 (180-97054-6), ARGWA-13 (180-97054-7), (LCS 160-446085/1-A), (MB 160-446085/21-A), (310-167066-C-3-A), (310-167066-D-3-A MS) and (310-167066-D-3-B MSD)

Method 9320: Ra-228 Prep Batch 160-446088

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

DUP-1 (180-97054-1), ARGWA-14 (180-97054-2), ARGWA-5 (180-97054-3), ARGWA-3 (180-97054-4), ARGWC-15 (180-97054-5), ARGWA-12 (180-97054-6), ARGWA-13 (180-97054-7), (LCS 160-446088/1-A), (MB 160-446088/21-A), (310-167066-C-3-B), (310-167066-D-3-C MS) and (310-167066-D-3-D MSD)

Method PrecSep_0: Radium 228 Prep Batch 160-446088:

The following samples had light yellow discoloration: DUP-1 (180-97054-1) and ARGWA-3 (180-97054-4).

Method PrecSep-21: Radium 226 Prep Batch 160-446085:

The following samples had light yellow discoloration: DUP-1 (180-97054-1) and ARGWA-3 (180-97054-4).

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

Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Qualifiers

HPLC/IC

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

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

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

Accreditation/Certification Summary

Client: Southern Company
 Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Laboratory: Eurofins TestAmerica, Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
California	State	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-19
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-19
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	04-01-20
North Carolina (WW/SW)	State	434	12-31-19
North Dakota	State	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-30-19
South Carolina	State	89014	04-30-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	01-31-20
Wisconsin	State	998027800	08-31-20

Accreditation/Certification Summary

Client: Southern Company
 Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Laboratory: Eurofins TestAmerica, St. Louis

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-19
California	Los Angeles County Sanitation Districts	10259	06-30-20
California	State	2886	06-30-20
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-20
HI - RadChem Recognition	State	n/a	06-30-20
Illinois	NELAP	004553	11-30-19
Iowa	State	373	09-17-20
Kansas	NELAP	E-10236	10-31-20
Kentucky (DW)	State	KY90125	12-31-19
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	State	LA011	12-31-19
Maryland	State	310	09-30-20
MI - RadChem Recognition	State	9005	06-30-20
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	06-30-20
New York	NELAP	11616	04-01-20
North Dakota	State	R-207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-20
South Carolina	State	85002001	06-30-20
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00028	02-02-20
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	10310	06-14-20
Washington	State	C592	08-30-20
West Virginia DEP	State	381	12-01-19

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-97054-1	DUP-1	Water	10/07/19 00:00	10/10/19 09:00	
180-97054-2	ARGWA-14	Water	10/07/19 16:25	10/10/19 09:00	
180-97054-3	ARGWA-5	Water	10/08/19 09:40	10/10/19 09:00	
180-97054-4	ARGWA-3	Water	10/08/19 12:20	10/10/19 09:00	
180-97054-5	ARGWC-15	Water	10/08/19 14:10	10/10/19 09:00	
180-97054-6	ARGWA-12	Ground Water	10/08/19 11:00	10/10/19 09:00	
180-97054-7	ARGWA-13	Water	10/08/19 14:05	10/10/19 09:00	

- 1
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- 3
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- 11
- 12
- 13

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

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

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Client Sample ID: DUP-1

Lab Sample ID: 180-97054-1

Date Collected: 10/07/19 00:00

Matrix: Water

Date Received: 10/10/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296903	11/03/19 03:10	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295911	10/23/19 14:45	WTR	TAL PIT
Instrument ID: NEMO										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294600	10/11/19 12:06	AGP	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.30 mL	1.0 g	446085	10/14/19 15:32	ORM	TAL SL
Total/NA	Analysis	9315		1			449238	11/06/19 09:31	AJD	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.30 mL	1.0 g	446088	10/14/19 16:21	ORM	TAL SL
Total/NA	Analysis	9320		1			448159	10/29/19 17:41	AJD	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			449547	11/08/19 07:24	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWA-14

Lab Sample ID: 180-97054-2

Date Collected: 10/07/19 16:25

Matrix: Water

Date Received: 10/10/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296903	11/03/19 03:25	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295911	10/23/19 14:47	WTR	TAL PIT
Instrument ID: NEMO										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294600	10/11/19 12:06	AGP	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.10 mL	1.0 g	446085	10/14/19 15:32	ORM	TAL SL
Total/NA	Analysis	9315		1			449238	11/06/19 09:31	AJD	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.10 mL	1.0 g	446088	10/14/19 16:21	ORM	TAL SL
Total/NA	Analysis	9320		1			448159	10/29/19 17:41	AJD	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			449547	11/08/19 07:24	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWA-5

Lab Sample ID: 180-97054-3

Date Collected: 10/08/19 09:40

Matrix: Water

Date Received: 10/10/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296903	11/03/19 04:13	MJH	TAL PIT
Instrument ID: CHICS2100B										

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Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Client Sample ID: ARGWA-5

Lab Sample ID: 180-97054-3

Date Collected: 10/08/19 09:40

Matrix: Water

Date Received: 10/10/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295911	10/23/19 14:54	WTR	TAL PIT
Instrument ID: NEMO										
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			296162	10/24/19 15:49	WTR	TAL PIT
Instrument ID: NEMO										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294600	10/11/19 12:06	AGP	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.13 mL	1.0 g	446085	10/14/19 15:32	ORM	TAL SL
Total/NA	Analysis	9315		1			449238	11/06/19 09:31	AJD	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.13 mL	1.0 g	446088	10/14/19 16:21	ORM	TAL SL
Total/NA	Analysis	9320		1			448159	10/29/19 17:41	AJD	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			449547	11/08/19 07:24	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWA-3

Lab Sample ID: 180-97054-4

Date Collected: 10/08/19 12:20

Matrix: Water

Date Received: 10/10/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296903	11/03/19 04:29	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295911	10/23/19 14:57	WTR	TAL PIT
Instrument ID: NEMO										
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			296162	10/24/19 15:51	WTR	TAL PIT
Instrument ID: NEMO										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294600	10/11/19 12:06	AGP	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.62 mL	1.0 g	446085	10/14/19 15:32	ORM	TAL SL
Total/NA	Analysis	9315		1			449238	11/06/19 09:31	AJD	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.62 mL	1.0 g	446088	10/14/19 16:21	ORM	TAL SL
Total/NA	Analysis	9320		1			448159	10/29/19 17:41	AJD	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			449547	11/08/19 07:24	SMP	TAL SL
Instrument ID: NOEQUIP										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Client Sample ID: ARGWC-15

Lab Sample ID: 180-97054-5

Date Collected: 10/08/19 14:10

Matrix: Water

Date Received: 10/10/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5			296903	11/03/19 04:45	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295911	10/23/19 14:59	WTR	TAL PIT
Instrument ID: NEMO										
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			296162	10/24/19 15:53	WTR	TAL PIT
Instrument ID: NEMO										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294600	10/11/19 12:06	AGP	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.46 mL	1.0 g	446085	10/14/19 15:32	ORM	TAL SL
Total/NA	Analysis	9315		1			449238	11/06/19 09:31	AJD	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.46 mL	1.0 g	446088	10/14/19 16:21	ORM	TAL SL
Total/NA	Analysis	9320		1			448159	10/29/19 17:41	AJD	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			449547	11/08/19 07:24	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWA-12

Lab Sample ID: 180-97054-6

Date Collected: 10/08/19 11:00

Matrix: Ground Water

Date Received: 10/10/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5			296903	11/03/19 05:00	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295911	10/23/19 15:01	WTR	TAL PIT
Instrument ID: NEMO										
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			296162	10/24/19 15:56	WTR	TAL PIT
Instrument ID: NEMO										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294600	10/11/19 12:06	AGP	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.12 mL	1.0 g	446085	10/14/19 15:32	ORM	TAL SL
Total/NA	Analysis	9315		1			449238	11/06/19 09:32	AJD	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.12 mL	1.0 g	446088	10/14/19 16:21	ORM	TAL SL
Total/NA	Analysis	9320		1			448159	10/29/19 17:41	AJD	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			449547	11/08/19 07:24	SMP	TAL SL
Instrument ID: NOEQUIP										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Client Sample ID: ARGWA-13

Lab Sample ID: 180-97054-7

Date Collected: 10/08/19 14:05

Matrix: Water

Date Received: 10/10/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296903	11/03/19 05:16	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total/NA	Analysis	300.0		10			296903	11/03/19 05:32	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295911	10/23/19 15:03	WTR	TAL PIT
Instrument ID: NEMO										
Total Recoverable	Prep	3005A			50 mL	50 mL	294901	10/15/19 12:22	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			296162	10/24/19 15:58	WTR	TAL PIT
Instrument ID: NEMO										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294600	10/11/19 12:06	AGP	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.27 mL	1.0 g	446085	10/14/19 15:32	ORM	TAL SL
Total/NA	Analysis	9315		1			449238	11/06/19 09:32	AJD	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.27 mL	1.0 g	446088	10/14/19 16:21	ORM	TAL SL
Total/NA	Analysis	9320		1			448159	10/29/19 17:41	AJD	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			449547	11/08/19 07:24	SMP	TAL SL
Instrument ID: NOEQUIP										

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: TAL PIT

Batch Type: Prep

MWW = Margaret Wanyoike

Batch Type: Analysis

AGP = Angela Partridge

MJH = Matthew Hartman

WTR = Bill Reinheimer

Lab: TAL SL

Batch Type: Prep

ORM = Octavia Moore

Batch Type: Analysis

AJD = Audra DeMariano

SMP = Siobhan Perry

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Client Sample ID: DUP-1

Lab Sample ID: 180-97054-1

Date Collected: 10/07/19 00:00

Matrix: Water

Date Received: 10/10/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.7		1.0	0.32	mg/L			11/03/19 03:10	1
Fluoride	0.060	J	0.20	0.026	mg/L			11/03/19 03:10	1
Sulfate	0.81	J	1.0	0.38	mg/L			11/03/19 03:10	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.32		1.0	0.32	ug/L		10/15/19 12:22	10/23/19 14:45	1
Barium	19		10	1.6	ug/L		10/15/19 12:22	10/23/19 14:45	1
Beryllium	<0.18		1.0	0.18	ug/L		10/15/19 12:22	10/23/19 14:45	1
Cadmium	<0.13		1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:45	1
Cobalt	<0.075		0.50	0.075	ug/L		10/15/19 12:22	10/23/19 14:45	1
Chromium	3.0		2.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:45	1
Molybdenum	<0.61		5.0	0.61	ug/L		10/15/19 12:22	10/23/19 14:45	1
Lead	0.30	J B	1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:45	1
Antimony	<0.38		2.0	0.38	ug/L		10/15/19 12:22	10/23/19 14:45	1
Selenium	<1.5		5.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:45	1
Silver	0.29	J	1.0	0.18	ug/L		10/15/19 12:22	10/23/19 14:45	1
Thallium	<0.15		1.0	0.15	ug/L		10/15/19 12:22	10/23/19 14:45	1
Lithium	6.3	B	5.0	3.4	ug/L		10/15/19 12:22	10/23/19 14:45	1
Calcium	5.5		0.50	0.13	mg/L		10/15/19 12:22	10/23/19 14:45	1
Boron	<0.039		0.080	0.039	mg/L		10/15/19 12:22	10/23/19 14:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	70		10	10	mg/L			10/11/19 12:06	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.184		0.105	0.106	1.00	0.143	pCi/L	10/14/19 15:32	11/06/19 09:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.1		40 - 110					10/14/19 15:32	11/06/19 09:31	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.231	U	0.283	0.283	1.00	0.537	pCi/L	10/14/19 16:21	10/29/19 17:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.1		40 - 110					10/14/19 16:21	10/29/19 17:41	1
Y Carrier	81.1		40 - 110					10/14/19 16:21	10/29/19 17:41	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0467	U	0.302	0.302	5.00	0.537	pCi/L		11/08/19 07:24	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Client Sample ID: ARGWA-14

Lab Sample ID: 180-97054-2

Date Collected: 10/07/19 16:25

Matrix: Water

Date Received: 10/10/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.0		1.0	0.32	mg/L			11/03/19 03:25	1
Fluoride	0.12	J	0.20	0.026	mg/L			11/03/19 03:25	1
Sulfate	12		1.0	0.38	mg/L			11/03/19 03:25	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.45	J B	1.0	0.32	ug/L		10/15/19 12:22	10/23/19 14:47	1
Barium	33		10	1.6	ug/L		10/15/19 12:22	10/23/19 14:47	1
Beryllium	<0.18		1.0	0.18	ug/L		10/15/19 12:22	10/23/19 14:47	1
Cadmium	<0.13		1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:47	1
Cobalt	<0.075		0.50	0.075	ug/L		10/15/19 12:22	10/23/19 14:47	1
Chromium	<1.5		2.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:47	1
Molybdenum	0.67	J	5.0	0.61	ug/L		10/15/19 12:22	10/23/19 14:47	1
Lead	<0.13		1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:47	1
Antimony	<0.38		2.0	0.38	ug/L		10/15/19 12:22	10/23/19 14:47	1
Selenium	<1.5		5.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:47	1
Silver	0.22	J	1.0	0.18	ug/L		10/15/19 12:22	10/23/19 14:47	1
Thallium	<0.15		1.0	0.15	ug/L		10/15/19 12:22	10/23/19 14:47	1
Lithium	7.0	B	5.0	3.4	ug/L		10/15/19 12:22	10/23/19 14:47	1
Calcium	36		0.50	0.13	mg/L		10/15/19 12:22	10/23/19 14:47	1
Boron	<0.039		0.080	0.039	mg/L		10/15/19 12:22	10/23/19 14:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			10/11/19 12:06	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.101	U	0.0955	0.0959	1.00	0.150	pCi/L	10/14/19 15:32	11/06/19 09:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.2		40 - 110					10/14/19 15:32	11/06/19 09:31	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.346	U	0.331	0.332	1.00	0.536	pCi/L	10/14/19 16:21	10/29/19 17:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.2		40 - 110					10/14/19 16:21	10/29/19 17:41	1
Y Carrier	86.7		40 - 110					10/14/19 16:21	10/29/19 17:41	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.447	U	0.345	0.346	5.00	0.536	pCi/L		11/08/19 07:24	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Client Sample ID: ARGWA-5

Lab Sample ID: 180-97054-3

Date Collected: 10/08/19 09:40

Matrix: Water

Date Received: 10/10/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.7		1.0	0.32	mg/L			11/03/19 04:13	1
Fluoride	0.050	J	0.20	0.026	mg/L			11/03/19 04:13	1
Sulfate	0.70	J	1.0	0.38	mg/L			11/03/19 04:13	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.32		1.0	0.32	ug/L		10/15/19 12:22	10/23/19 14:54	1
Barium	30		10	1.6	ug/L		10/15/19 12:22	10/23/19 14:54	1
Beryllium	0.41	J	1.0	0.18	ug/L		10/15/19 12:22	10/24/19 15:49	1
Cadmium	<0.13		1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:54	1
Cobalt	<0.075		0.50	0.075	ug/L		10/15/19 12:22	10/23/19 14:54	1
Chromium	<1.5		2.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:54	1
Molybdenum	<0.61		5.0	0.61	ug/L		10/15/19 12:22	10/23/19 14:54	1
Lead	0.16	J B	1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:54	1
Antimony	<0.38		2.0	0.38	ug/L		10/15/19 12:22	10/23/19 14:54	1
Selenium	<1.5		5.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:54	1
Silver	0.30	J B	1.0	0.18	ug/L		10/15/19 12:22	10/24/19 15:49	1
Thallium	<0.15		1.0	0.15	ug/L		10/15/19 12:22	10/23/19 14:54	1
Lithium	5.5	B	5.0	3.4	ug/L		10/15/19 12:22	10/24/19 15:49	1
Calcium	5.9		0.50	0.13	mg/L		10/15/19 12:22	10/23/19 14:54	1
Boron	<0.039		0.080	0.039	mg/L		10/15/19 12:22	10/24/19 15:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	68		10	10	mg/L			10/11/19 12:06	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.151		0.0976	0.0986	1.00	0.136	pCi/L	10/14/19 15:32	11/06/19 09:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.7		40 - 110					10/14/19 15:32	11/06/19 09:31	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.198	U	0.365	0.365	1.00	0.616	pCi/L	10/14/19 16:21	10/29/19 17:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.7		40 - 110					10/14/19 16:21	10/29/19 17:41	1
Y Carrier	83.0		40 - 110					10/14/19 16:21	10/29/19 17:41	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.348	U	0.378	0.378	5.00	0.616	pCi/L		11/08/19 07:24	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Client Sample ID: ARGWA-3

Lab Sample ID: 180-97054-4

Date Collected: 10/08/19 12:20

Matrix: Water

Date Received: 10/10/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.6		1.0	0.32	mg/L			11/03/19 04:29	1
Fluoride	0.056	J	0.20	0.026	mg/L			11/03/19 04:29	1
Sulfate	0.70	J	1.0	0.38	mg/L			11/03/19 04:29	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.32		1.0	0.32	ug/L		10/15/19 12:22	10/23/19 14:57	1
Barium	20		10	1.6	ug/L		10/15/19 12:22	10/23/19 14:57	1
Beryllium	<0.18		1.0	0.18	ug/L		10/15/19 12:22	10/24/19 15:51	1
Cadmium	<0.13		1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:57	1
Cobalt	<0.075		0.50	0.075	ug/L		10/15/19 12:22	10/23/19 14:57	1
Chromium	3.1		2.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:57	1
Molybdenum	<0.61		5.0	0.61	ug/L		10/15/19 12:22	10/23/19 14:57	1
Lead	1.0	B	1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:57	1
Antimony	<0.38		2.0	0.38	ug/L		10/15/19 12:22	10/23/19 14:57	1
Selenium	<1.5		5.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:57	1
Silver	0.19	J B	1.0	0.18	ug/L		10/15/19 12:22	10/24/19 15:51	1
Thallium	<0.15		1.0	0.15	ug/L		10/15/19 12:22	10/23/19 14:57	1
Lithium	4.7	J B	5.0	3.4	ug/L		10/15/19 12:22	10/24/19 15:51	1
Calcium	6.0		0.50	0.13	mg/L		10/15/19 12:22	10/23/19 14:57	1
Boron	<0.039		0.080	0.039	mg/L		10/15/19 12:22	10/24/19 15:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	66		10	10	mg/L			10/11/19 12:06	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.166		0.0924	0.0936	1.00	0.119	pCi/L	10/14/19 15:32	11/06/19 09:31	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>					<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Ba Carrier</i>	91.2		40 - 110					10/14/19 15:32	11/06/19 09:31	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.253	U	0.285	0.286	1.00	0.468	pCi/L	10/14/19 16:21	10/29/19 17:41	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>					<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Ba Carrier</i>	91.2		40 - 110					10/14/19 16:21	10/29/19 17:41	1
<i>Y Carrier</i>	88.2		40 - 110					10/14/19 16:21	10/29/19 17:41	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.419	U	0.300	0.301	5.00	0.468	pCi/L		11/08/19 07:24	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Client Sample ID: ARGWC-15

Lab Sample ID: 180-97054-5

Date Collected: 10/08/19 14:10

Matrix: Water

Date Received: 10/10/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.4		5.0	1.6	mg/L			11/03/19 04:45	5
Fluoride	0.33	J	1.0	0.13	mg/L			11/03/19 04:45	5
Sulfate	31		5.0	1.9	mg/L			11/03/19 04:45	5

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.32		1.0	0.32	ug/L		10/15/19 12:22	10/23/19 14:59	1
Barium	31		10	1.6	ug/L		10/15/19 12:22	10/23/19 14:59	1
Beryllium	<0.18		1.0	0.18	ug/L		10/15/19 12:22	10/24/19 15:53	1
Cadmium	<0.13		1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:59	1
Cobalt	0.19	J	0.50	0.075	ug/L		10/15/19 12:22	10/23/19 14:59	1
Chromium	<1.5		2.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:59	1
Molybdenum	1.1	J	5.0	0.61	ug/L		10/15/19 12:22	10/23/19 14:59	1
Lead	<0.13		1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:59	1
Antimony	<0.38		2.0	0.38	ug/L		10/15/19 12:22	10/23/19 14:59	1
Selenium	<1.5		5.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:59	1
Silver	0.18	J B	1.0	0.18	ug/L		10/15/19 12:22	10/24/19 15:53	1
Thallium	<0.15		1.0	0.15	ug/L		10/15/19 12:22	10/23/19 14:59	1
Lithium	4.0	J B	5.0	3.4	ug/L		10/15/19 12:22	10/24/19 15:53	1
Calcium	24		0.50	0.13	mg/L		10/15/19 12:22	10/23/19 14:59	1
Boron	<0.039		0.080	0.039	mg/L		10/15/19 12:22	10/24/19 15:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	130		10	10	mg/L			10/11/19 12:06	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.286		0.127	0.130	1.00	0.153	pCi/L	10/14/19 15:32	11/06/19 09:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74.6		40 - 110					10/14/19 15:32	11/06/19 09:31	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.136	U	0.355	0.355	1.00	0.610	pCi/L	10/14/19 16:21	10/29/19 17:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	74.6		40 - 110					10/14/19 16:21	10/29/19 17:41	1
Y Carrier	85.2		40 - 110					10/14/19 16:21	10/29/19 17:41	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.421	U	0.377	0.378	5.00	0.610	pCi/L		11/08/19 07:24	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Client Sample ID: ARGWA-12

Lab Sample ID: 180-97054-6

Date Collected: 10/08/19 11:00

Matrix: Ground Water

Date Received: 10/10/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	64		5.0	1.6	mg/L			11/03/19 05:00	5
Fluoride	0.27	J	1.0	0.13	mg/L			11/03/19 05:00	5
Sulfate	55		5.0	1.9	mg/L			11/03/19 05:00	5

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.32		1.0	0.32	ug/L		10/15/19 12:22	10/23/19 15:01	1
Barium	78		10	1.6	ug/L		10/15/19 12:22	10/23/19 15:01	1
Beryllium	<0.18		1.0	0.18	ug/L		10/15/19 12:22	10/24/19 15:56	1
Cadmium	<0.13		1.0	0.13	ug/L		10/15/19 12:22	10/23/19 15:01	1
Cobalt	<0.075		0.50	0.075	ug/L		10/15/19 12:22	10/23/19 15:01	1
Chromium	<1.5		2.0	1.5	ug/L		10/15/19 12:22	10/23/19 15:01	1
Molybdenum	<0.61		5.0	0.61	ug/L		10/15/19 12:22	10/23/19 15:01	1
Lead	<0.13		1.0	0.13	ug/L		10/15/19 12:22	10/23/19 15:01	1
Antimony	<0.38		2.0	0.38	ug/L		10/15/19 12:22	10/23/19 15:01	1
Selenium	<1.5		5.0	1.5	ug/L		10/15/19 12:22	10/23/19 15:01	1
Silver	<0.18		1.0	0.18	ug/L		10/15/19 12:22	10/24/19 15:56	1
Thallium	<0.15		1.0	0.15	ug/L		10/15/19 12:22	10/23/19 15:01	1
Lithium	7.8	B	5.0	3.4	ug/L		10/15/19 12:22	10/24/19 15:56	1
Calcium	13		0.50	0.13	mg/L		10/15/19 12:22	10/23/19 15:01	1
Boron	<0.039		0.080	0.039	mg/L		10/15/19 12:22	10/24/19 15:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	130		10	10	mg/L			10/11/19 12:06	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.202		0.0970	0.0987	1.00	0.111	pCi/L	10/14/19 15:32	11/06/19 09:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.7		40 - 110					10/14/19 15:32	11/06/19 09:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.558	U	0.372	0.376	1.00	0.581	pCi/L	10/14/19 16:21	10/29/19 17:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.7		40 - 110					10/14/19 16:21	10/29/19 17:41	1
Y Carrier	81.9		40 - 110					10/14/19 16:21	10/29/19 17:41	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.760		0.384	0.389	5.00	0.581	pCi/L		11/08/19 07:24	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Client Sample ID: ARGWA-13

Lab Sample ID: 180-97054-7

Date Collected: 10/08/19 14:05

Matrix: Water

Date Received: 10/10/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.7		1.0	0.32	mg/L			11/03/19 05:16	1
Fluoride	0.033	J	0.20	0.026	mg/L			11/03/19 05:16	1
Sulfate	950		10	3.8	mg/L			11/03/19 05:32	10

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.32		1.0	0.32	ug/L		10/15/19 12:22	10/23/19 15:03	1
Barium	42		10	1.6	ug/L		10/15/19 12:22	10/23/19 15:03	1
Beryllium	<0.18		1.0	0.18	ug/L		10/15/19 12:22	10/24/19 15:58	1
Cadmium	<0.13		1.0	0.13	ug/L		10/15/19 12:22	10/23/19 15:03	1
Cobalt	0.11	J	0.50	0.075	ug/L		10/15/19 12:22	10/23/19 15:03	1
Chromium	<1.5		2.0	1.5	ug/L		10/15/19 12:22	10/23/19 15:03	1
Molybdenum	<0.61		5.0	0.61	ug/L		10/15/19 12:22	10/23/19 15:03	1
Lead	0.13	J B	1.0	0.13	ug/L		10/15/19 12:22	10/23/19 15:03	1
Antimony	<0.38		2.0	0.38	ug/L		10/15/19 12:22	10/23/19 15:03	1
Selenium	30	B	5.0	1.5	ug/L		10/15/19 12:22	10/23/19 15:03	1
Silver	0.47	J B	1.0	0.18	ug/L		10/15/19 12:22	10/24/19 15:58	1
Thallium	<0.15		1.0	0.15	ug/L		10/15/19 12:22	10/23/19 15:03	1
Lithium	9.9	B	5.0	3.4	ug/L		10/15/19 12:22	10/24/19 15:58	1
Calcium	190		0.50	0.13	mg/L		10/15/19 12:22	10/23/19 15:03	1
Boron	0.68		0.080	0.039	mg/L		10/15/19 12:22	10/24/19 15:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1500		10	10	mg/L			10/11/19 12:06	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.215		0.108	0.110	1.00	0.140	pCi/L	10/14/19 15:32	11/06/19 09:32	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>					<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier	85.6		40 - 110					10/14/19 15:32	11/06/19 09:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.183	U	0.325	0.326	1.00	0.549	pCi/L	10/14/19 16:21	10/29/19 17:41	1
<i>Carrier</i>	<i>%Yield</i>	<i>Qualifier</i>	<i>Limits</i>					<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Ba Carrier	85.6		40 - 110					10/14/19 16:21	10/29/19 17:41	1
Y Carrier	91.2		40 - 110					10/14/19 16:21	10/29/19 17:41	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.398	U	0.342	0.344	5.00	0.549	pCi/L		11/08/19 07:24	1

Eurofins TestAmerica, Pittsburgh

QC Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 180-296903/81
Matrix: Water
Analysis Batch: 296903

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			11/03/19 01:51	1
Fluoride	<0.026		0.20	0.026	mg/L			11/03/19 01:51	1
Sulfate	<0.38		1.0	0.38	mg/L			11/03/19 01:51	1

Lab Sample ID: LCS 180-296903/80
Matrix: Water
Analysis Batch: 296903

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	48.5		mg/L		97	90 - 110
Fluoride	2.50	2.43		mg/L		97	90 - 110
Sulfate	50.0	49.1		mg/L		98	90 - 110

Method: EPA 6020 - Metals (ICP/MS)

Lab Sample ID: MB 180-294901/1-A
Matrix: Water
Analysis Batch: 295911

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 294901

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.358	J	1.0	0.32	ug/L		10/15/19 12:22	10/23/19 14:27	1
Barium	<1.6		10	1.6	ug/L		10/15/19 12:22	10/23/19 14:27	1
Beryllium	<0.18		1.0	0.18	ug/L		10/15/19 12:22	10/23/19 14:27	1
Cadmium	0.268	J	1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:27	1
Cobalt	<0.075		0.50	0.075	ug/L		10/15/19 12:22	10/23/19 14:27	1
Chromium	<1.5		2.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:27	1
Molybdenum	<0.61		5.0	0.61	ug/L		10/15/19 12:22	10/23/19 14:27	1
Lead	0.420	J	1.0	0.13	ug/L		10/15/19 12:22	10/23/19 14:27	1
Antimony	<0.38		2.0	0.38	ug/L		10/15/19 12:22	10/23/19 14:27	1
Selenium	1.51	J	5.0	1.5	ug/L		10/15/19 12:22	10/23/19 14:27	1
Thallium	0.281	J	1.0	0.15	ug/L		10/15/19 12:22	10/23/19 14:27	1
Calcium	<130		500	130	ug/L		10/15/19 12:22	10/23/19 14:27	1
Boron	<39		80	39	ug/L		10/15/19 12:22	10/23/19 14:27	1

Lab Sample ID: MB 180-294901/1-A
Matrix: Water
Analysis Batch: 296378

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 294901

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.18		1.0	0.18	ug/L		10/15/19 12:22	10/28/19 17:12	1
Lithium	<3.4		5.0	3.4	ug/L		10/15/19 12:22	10/28/19 17:12	1

Lab Sample ID: MB 180-294901/1-A
Matrix: Water
Analysis Batch: 297456

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 294901

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<3.4		5.0	3.4	ug/L		10/15/19 12:22	11/07/19 06:01	1

Eurofins TestAmerica, Pittsburgh

QC Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Method: EPA 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-294901/2-A
Matrix: Water
Analysis Batch: 295911

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 294901

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	1000	926		ug/L		93	80 - 120
Barium	1000	984		ug/L		98	80 - 120
Beryllium	500	521		ug/L		104	80 - 120
Cadmium	500	499		ug/L		100	80 - 120
Cobalt	500	462		ug/L		92	80 - 120
Chromium	500	495		ug/L		99	80 - 120
Molybdenum	500	490		ug/L		98	80 - 120
Lead	500	461		ug/L		92	80 - 120
Antimony	250	257		ug/L		103	80 - 120
Selenium	1000	925		ug/L		92	80 - 120
Silver	250	215		ug/L		86	80 - 120
Thallium	1000	942		ug/L		94	80 - 120
Lithium	500	474		ug/L		95	80 - 120
Calcium	25000	25400		ug/L		102	80 - 120
Boron	1250	1130		ug/L		91	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-294600/2
Matrix: Water
Analysis Batch: 294600

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			10/11/19 12:06	1

Lab Sample ID: LCS 180-294600/1
Matrix: Water
Analysis Batch: 294600

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Dissolved Solids	633	628		mg/L		99	80 - 120

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-446085/21-A
Matrix: Water
Analysis Batch: 449238

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 446085

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.07641	U	0.0764	0.0767	1.00	0.121	pCi/L	10/14/19 15:32	11/06/19 12:16	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.3		40 - 110					10/14/19 15:32	11/06/19 12:16	1

Eurofins TestAmerica, Pittsburgh

QC Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-446085/1-A
Matrix: Water
Analysis Batch: 449238

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 446085

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	
Radium-226	11.4	10.05		1.09	1.00	0.155	pCi/L	89	75 - 125	
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	74.9		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-446088/21-A
Matrix: Water
Analysis Batch: 448150

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 446088

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2521	U	0.242	0.243	1.00	0.390	pCi/L	10/14/19 16:21	10/29/19 17:44	1
Carrier	MB %Yield	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac		
Ba Carrier	98.3		40 - 110			10/14/19 16:21	10/29/19 17:44	1		
Y Carrier	86.0		40 - 110			10/14/19 16:21	10/29/19 17:44	1		

Lab Sample ID: LCS 160-446088/1-A
Matrix: Water
Analysis Batch: 448159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 446088

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	
Radium-228	9.45	10.31		1.28	1.00	0.646	pCi/L	109	75 - 125	
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	74.9		40 - 110							
Y Carrier	87.1		40 - 110							

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

HPLC/IC

Analysis Batch: 296903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97054-1	DUP-1	Total/NA	Water	300.0	
180-97054-2	ARGWA-14	Total/NA	Water	300.0	
180-97054-3	ARGWA-5	Total/NA	Water	300.0	
180-97054-4	ARGWA-3	Total/NA	Water	300.0	
180-97054-5	ARGWC-15	Total/NA	Water	300.0	
180-97054-6	ARGWA-12	Total/NA	Ground Water	300.0	
180-97054-7	ARGWA-13	Total/NA	Water	300.0	
180-97054-7	ARGWA-13	Total/NA	Water	300.0	
MB 180-296903/81	Method Blank	Total/NA	Water	300.0	
LCS 180-296903/80	Lab Control Sample	Total/NA	Water	300.0	

Metals

Prep Batch: 294901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97054-1	DUP-1	Total Recoverable	Water	3005A	
180-97054-2	ARGWA-14	Total Recoverable	Water	3005A	
180-97054-3	ARGWA-5	Total Recoverable	Water	3005A	
180-97054-4	ARGWA-3	Total Recoverable	Water	3005A	
180-97054-5	ARGWC-15	Total Recoverable	Water	3005A	
180-97054-6	ARGWA-12	Total Recoverable	Ground Water	3005A	
180-97054-7	ARGWA-13	Total Recoverable	Water	3005A	
MB 180-294901/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-294901/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 295911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97054-1	DUP-1	Total Recoverable	Water	EPA 6020	294901
180-97054-2	ARGWA-14	Total Recoverable	Water	EPA 6020	294901
180-97054-3	ARGWA-5	Total Recoverable	Water	EPA 6020	294901
180-97054-4	ARGWA-3	Total Recoverable	Water	EPA 6020	294901
180-97054-5	ARGWC-15	Total Recoverable	Water	EPA 6020	294901
180-97054-6	ARGWA-12	Total Recoverable	Ground Water	EPA 6020	294901
180-97054-7	ARGWA-13	Total Recoverable	Water	EPA 6020	294901
MB 180-294901/1-A	Method Blank	Total Recoverable	Water	EPA 6020	294901
LCS 180-294901/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	294901

Analysis Batch: 296162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97054-3	ARGWA-5	Total Recoverable	Water	EPA 6020	294901
180-97054-4	ARGWA-3	Total Recoverable	Water	EPA 6020	294901
180-97054-5	ARGWC-15	Total Recoverable	Water	EPA 6020	294901
180-97054-6	ARGWA-12	Total Recoverable	Ground Water	EPA 6020	294901
180-97054-7	ARGWA-13	Total Recoverable	Water	EPA 6020	294901

Analysis Batch: 296378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-294901/1-A	Method Blank	Total Recoverable	Water	EPA 6020	294901

Eurofins TestAmerica, Pittsburgh

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97054-1

Metals

Analysis Batch: 297456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-294901/1-A	Method Blank	Total Recoverable	Water	EPA 6020	294901

General Chemistry

Analysis Batch: 294600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97054-1	DUP-1	Total/NA	Water	SM 2540C	
180-97054-2	ARGWA-14	Total/NA	Water	SM 2540C	
180-97054-3	ARGWA-5	Total/NA	Water	SM 2540C	
180-97054-4	ARGWA-3	Total/NA	Water	SM 2540C	
180-97054-5	ARGWC-15	Total/NA	Water	SM 2540C	
180-97054-6	ARGWA-12	Total/NA	Ground Water	SM 2540C	
180-97054-7	ARGWA-13	Total/NA	Water	SM 2540C	
MB 180-294600/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-294600/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 446085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97054-1	DUP-1	Total/NA	Water	PrecSep-21	
180-97054-2	ARGWA-14	Total/NA	Water	PrecSep-21	
180-97054-3	ARGWA-5	Total/NA	Water	PrecSep-21	
180-97054-4	ARGWA-3	Total/NA	Water	PrecSep-21	
180-97054-5	ARGWC-15	Total/NA	Water	PrecSep-21	
180-97054-6	ARGWA-12	Total/NA	Ground Water	PrecSep-21	
180-97054-7	ARGWA-13	Total/NA	Water	PrecSep-21	
MB 160-446085/21-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-446085/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 446088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97054-1	DUP-1	Total/NA	Water	PrecSep_0	
180-97054-2	ARGWA-14	Total/NA	Water	PrecSep_0	
180-97054-3	ARGWA-5	Total/NA	Water	PrecSep_0	
180-97054-4	ARGWA-3	Total/NA	Water	PrecSep_0	
180-97054-5	ARGWC-15	Total/NA	Water	PrecSep_0	
180-97054-6	ARGWA-12	Total/NA	Ground Water	PrecSep_0	
180-97054-7	ARGWA-13	Total/NA	Water	PrecSep_0	
MB 160-446088/21-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-446088/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

HOTTIS

Chain of Custody Record

Client Information
 Client Contact: Joju Abraham
 City: Birmingham
 State, Zip: AL, 35291
 Phone: 205-541-5448
 Address: PO BOX 2641 GSC8
 Southern Company
 Email: JAbraham@southernco.com
 Project Name: CCR Plant Arkwright - Ash Pond 3
 Site: Georgia

Sampler: J. Bostad AS
 Lab PM:
 Phone: 770-541-5448
 E-Mail:
 Carrier Tracking No(s):
 COC No: 400-73521-29028.1
 Page:
 Page:
 Job #:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=water/oil, BT=tissue, A=air)	Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Metals - App III (Boron, Calcium)					TDS		State Metals (arsenic, barium, cadmium, lead, silver, and selenium)		Detected A4: Radium 226 & 228 (SW-846 9315/9320)	Detected A4: Metals (Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Lead, Lithium, Molybdenum, Selenium, Thallium)	Total Number of Containers	Special Ir
					Yes	No	Yes	No	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Dup-1			G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	3		
ARGWA-14	10-7-19	1625	G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	3		
ARGWA-5	10-8-19	0940	G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	3		
ARGWA-3	10-8-19	1220	G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	3		
ARGWC-15	10-8-19	1410	G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	3		
ARGWA-12	10-8-19	1100	G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	3		
ARGWA-13	10-8-19	1705	G	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	3		

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological
 Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:
 Return To Client Disposal By Lab Archive For _____ Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Chain of Custody

Relinquished by:	Date/Time:	Company:	Method of Shipment:
<u>[Signature]</u>	<u>10-9-19 11:25</u>	<u>Acc Company</u>	<u>10/9/19 11:25</u>
<u>[Signature]</u>	<u>10-9-19 16:02</u>	<u>ASTA Company</u>	<u>10-10-19</u>
<u>[Signature]</u>	<u>10-10-19 9:10</u>	<u>ASTA Company</u>	<u>10-10-19</u>

Custody Seal No.: 180-97054 Chain of Custody

Cooler Temperature(s) °C and Other Remarks:





FedEx Express



UnCorrected temp Thermometer ID
CF 0
Initials J

ORIGIN ID: NLA
GEORGE TAYLOR
EUROFINS TESTING
5560 MCDONOUGH DRIVE
ATLANTA
986-9991
EUROFINS TESTING
30 ALPHA DRIVE
RIDGE PARK
PITTSBURGH PA 15238

Environment Testing TestAmerica

1129386
Environment Testing TestAmerica
eurofins
Custody Seal
6/1/19
SIGNATURE

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

1129389

Cystody
DATE

Environment Testing
TestAmerica

eurolins

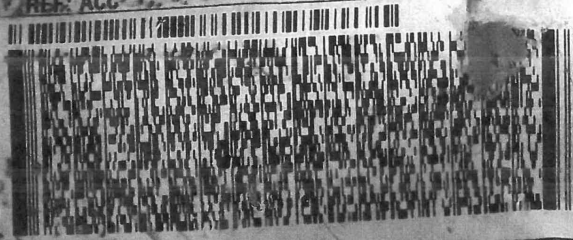
SIGNATURE

366-9991
ATLANTA

SHIP ACTING
CAD 116/CAFE3211
B-RL IPIENT

TO SAMPLE RECEIVING
EUROFINS TESTAMERICA PITTSBURGH
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238

(412) 983-7068
REF: ACC



FedEx
Express



THU - 10 OCT 3:00P
STANDARD OVERNIGHT

TRK# 4651 0084 1470
0201

MASTER ##

NA AGCA

15238
PA-US PIT



Uncalibrated temp
thermometer ID

CF 0

Initials D

PT-WI-SR-001 effective 11/3/18

BILL RECIPIENT

NOV 23, 2018 10:58 AM
PITTSBURGH, PA 15238

TO SAMPLE RECEIVING

EUROFIM TESTAMERICA PITTSBURGH

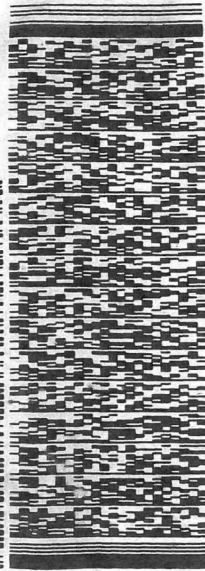
301 ALPHA DRIVE

RIDC PARK

PITTSBURGH PA 15238

(412) 868-7058

REF: ACC



THU - 10 OCT 3:00P
STANDARD OVERNIGHT

2 of 3

MPS# 4651 0084 1481

0263

Metr# 4651 0084 1470

0201

NA AGCA

15238

PA-US PIT



Uncorrected temp
Thermometer ID

CF

24.0 °C

Initials

PT-WI-SR-001 effective 1/18/18



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler: Lab PM: Bortot, Veronica	Carrier Tracking No(s): 180-375855.1
Client Contact: Shipping/Receiving		E-Mail: veronica.bortot@testamericainc.com	State of Origin: Georgia
Company: TestAmerica Laboratories, Inc.		Page: Page 1 of 1	
Address: 13715 Rider Trail North, Earth City, MO, 63045		Job #: 180-97054-1	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 L - EDA Z - other (specify) Other:	
Due Date Requested: 10/22/2019		Analysis Requested:	
TAT Requested (days):		Total Number of Containers	
PO #:	WO #:	Form MS/MSD (Yes or No)	Field Filtered Sample (Yes or No)
Project #: 18020201	SSQW#:	9315_Ra226/PreSep_21 Radium 226	9320_Ra228/PreSep_0 Radium 228
Site: Georgia Power Site Sampling Data (GW)		Perform MS/MSD (Yes or No)	9320_Ra228/PreSep_0 Radium 228
		Field Filtered Sample (Yes or No)	9315_Ra226/PreSep_21 Radium 226
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)
DUP-1 (180-97054-1)	10/7/19	Eastern	Water
ARGWA-14 (180-97054-2)	10/7/19	16:25 Eastern	Water
ARGWA-5 (180-97054-3)	10/8/19	09:40 Eastern	Water
ARGWA-3 (180-97054-4)	10/8/19	12:20 Eastern	Water
ARGWC-15 (180-97054-5)	10/8/19	14:10 Eastern	Water
ARGWA-12 (180-97054-6)	10/8/19	11:00 Eastern	Water
ARGWA-13 (180-97054-7)	10/8/19	14:05 Eastern	Water
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>			
Possible Hazard Identification			
Unconfirmed			
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2	
Empty Kit Relinquished by:		Time: _____ Method of Shipment: _____	
Relinquished by: _____		Date/Time: 10/10/19 17:20	
Relinquished by: _____		Date/Time: _____	
Relinquished by: _____		Date/Time: _____	
Custody Seals Intact: _____		Cooler Temperature(s) °C and Other Remarks: _____	
Δ Yes Δ No			



Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler: Lab PM: Bortot, Veronica		Carrier Tracking No(s):		COC No: 180-375855_1	
Client Contact: Shipping/Receiving		Phone: E-Mail: veronica.bortot@testamericainc.com		State of Origin: Georgia		Page: Page 1 of 1	
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #:		180-97054-1	
Address: 13715 Rider Trail North, Earth City, MO, 63045		Due Date Requested: 10/22/2019		Analysis Requested:		Preservation Codes:	
City: Earth City		TAT Requested (days):		9315_Ra226/PrecSep_21 Radium 226		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
State, Zip: MO, 63045		PO #:		9320_Ra228/PrecSep_0 Radium 228		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		WO #:		Ra226Ra228_GFPCC		Other:	
Email:		Project #: 18020201		Perform MS/MSD (Yes or No)		Total Number of Containers	
CCR - Plant Arkwright		SSOW#:		Field Filtered Sample (Yes or No)		Special Instructions/Note:	
Site: Georgia Power Site Sampling Data (GW)		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (W=Water, S=Solid, O=Soil, B=Tris, A=Air)	
DUP-1 (180-97054-1)		10/7/19		Eastern		Water	
ARGWA-14 (180-97054-2)		10/7/19		16:25 Eastern		Water	
ARGWA-5 (180-97054-3)		10/8/19		09:40 Eastern		Water	
ARGWA-3 (180-97054-4)		10/8/19		12:20 Eastern		Water	
ARGWC-15 (180-97054-5)		10/8/19		14:10 Eastern		Water	
ARGWA-12 (180-97054-6)		10/8/19		11:00 Eastern		Water	
ARGWA-13 (180-97054-7)		10/8/19		14:05 Eastern		Water	
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.</p>							
Possible Hazard Identification							
Unconfirmed							
Deliverable Requested: I, II, III, IV, Other (specify)							
Primary Deliverable Rank: 2							
Empty Kit Relinquished by:							
Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:		Date:		Time:		Company:	
Relinquished by:		Date:		Time:		Company:	
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		Company:	
Δ Yes Δ No						Company:	



Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-97054-1

Login Number: 97054

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

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

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-97054-1

Login Number: 97054
List Number: 2
Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis
List Creation: 10/11/19 01:51 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-97145-1
Laboratory Sample Delivery Group: Ash Pond 3
Client Project/Site: CCR - Plant Arkwright
Revision: 1

For:
Southern Company
241 Ralph McGill Blvd SE
B10185
Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:
12/16/2019 11:06:34 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

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www.testamericainc.com

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

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

PA Lab ID: 02-00416



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Case Narrative

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Job ID: 180-97145-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative 180-97145-1

Revised: to delete duplicate analytes that were reported

Comments

No additional comments.

Receipt

The samples were received on 10/11/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1° C.

GC Semi VOA

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

RAD

Method 9315: Radium-226 Prep Batch 160-447420

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

ARGWC-18 (180-97145-1), FB-1-10-9-19 (180-97145-2), ARGWC-16 (180-97145-3), ARGWC-7 (180-97145-4), ARGWC-8 (180-97145-5), ARGWC-9 (180-97145-6), ARGWC-10 (180-97145-7), EB-1-10-9-19 (180-97145-8), ARGWC-17 (180-97145-9), (LCS 160-447420/1-A), (MB 160-447420/20-A), (180-97385-A-2-A) and (180-97385-B-2-A DU)

Method 9320: Radium-228 Prep Batch 160-447441

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

ARGWC-18 (180-97145-1), FB-1-10-9-19 (180-97145-2), ARGWC-16 (180-97145-3), ARGWC-7 (180-97145-4), ARGWC-8 (180-97145-5), ARGWC-9 (180-97145-6), ARGWC-10 (180-97145-7), EB-1-10-9-19 (180-97145-8), ARGWC-17 (180-97145-9), (LCS 160-447441/1-A), (MB 160-447441/20-A), (180-97385-A-2-B) and (180-97385-B-2-B DU)

Method 9320: Radium-228 Prep Batch: 160-447441

The detection goal was not met for the following sample due to insufficient sample available for analysis: ARGWC-17 (180-97145-9). See Prep NCM 160-181214. Analytical results are reported with the detection limit achieved.

Method PrecSep_0: Radium 228 Prep Batch 160-447441:

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: ARGWC-17 (180-97145-9). This sample has a yellow discoloration and is cloudy due to sediment.

Method PrecSep-21: Radium 226 Prep Batch 160-447420:

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: ARGWC-17 (180-97145-9). This sample has a yellow discoloration and is cloudy due to sediment.

Case Narrative

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Job ID: 180-97145-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

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

Metals

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

General Chemistry

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

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Definitions/Glossary

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

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

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

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

Accreditation/Certification Summary

Client: Southern Company
 Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
 SDG: Ash Pond 3

Laboratory: Eurofins TestAmerica, Pittsburgh

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

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
California	State	2891	04-30-20
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-20
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	03-31-20
Kentucky (UST)	State	162013	04-30-20
Kentucky (WW)	State	KY98043	12-31-19
Louisiana	NELAP	04041	06-30-20
Minnesota	NELAP	042-999-482	12-31-19
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-04-20
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	04-01-20
North Carolina (WW/SW)	State	434	12-31-19
North Dakota	State	R-227	04-30-20
Oregon	NELAP	PA-2151	02-06-20
Pennsylvania	NELAP	02-00416	04-30-20
Rhode Island	State	LAO00362	12-30-19
South Carolina	State	89014	04-30-20
Texas	NELAP	T104704528	03-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	01-31-20
Wisconsin	State	998027800	08-31-20

Accreditation/Certification Summary

Client: Southern Company
 Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
 SDG: Ash Pond 3

Laboratory: Eurofins TestAmerica, St. Louis

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-19
California	Los Angeles County Sanitation Districts	10259	06-30-20
California	State	2886	06-30-20
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-20
HI - RadChem Recognition	State	n/a	06-30-20
Illinois	NELAP	004553	11-30-19
Iowa	State	373	09-17-20
Kansas	NELAP	E-10236	10-31-20
Kentucky (DW)	State	KY90125	12-31-19
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	State	LA011	12-31-19
Maryland	State	310	09-30-20
MI - RadChem Recognition	State	9005	06-30-20
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	06-30-20
New York	NELAP	11616	04-01-20
North Dakota	State	R-207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-20
South Carolina	State	85002001	06-30-20
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00028	02-02-20
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	10310	06-14-20
Washington	State	C592	08-30-20
West Virginia DEP	State	381	12-31-19

Sample Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-97145-1	ARGWC-18	Water	10/09/19 10:05	10/11/19 09:00	
180-97145-2	FB-1-10-9-19	Water	10/09/19 09:30	10/11/19 09:00	
180-97145-3	ARGWC-16	Water	10/09/19 09:55	10/11/19 09:00	
180-97145-4	ARGWC-7	Water	10/09/19 11:15	10/11/19 09:00	
180-97145-5	ARGWC-8	Water	10/09/19 13:15	10/11/19 09:00	
180-97145-6	ARGWC-9	Water	10/09/19 12:50	10/11/19 09:00	
180-97145-7	ARGWC-10	Water	10/09/19 14:05	10/11/19 09:00	
180-97145-8	EB-1-10-9-19	Water	10/09/19 14:30	10/11/19 09:00	
180-97145-9	ARGWC-17	Water	10/09/19 15:40	10/11/19 09:00	

Method Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

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

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-18

Lab Sample ID: 180-97145-1

Date Collected: 10/09/19 10:05

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296964	11/04/19 07:53	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	295402	10/18/19 14:02	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	296270	10/25/19 18:29	WTR	TAL PIT
Instrument ID: M										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294718	10/12/19 13:57	AGP	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			999.87 mL	1.0 g	447420	10/23/19 09:13	EJQ	TAL SL
Total/NA	Analysis	9315		1			450354	11/14/19 13:09	CJQ	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			999.87 mL	1.0 g	447441	10/23/19 11:46	EJQ	TAL SL
Total/NA	Analysis	9320		1			449088	11/05/19 17:57	AJD	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			450875	11/18/19 08:43	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: FB-1-10-9-19

Lab Sample ID: 180-97145-2

Date Collected: 10/09/19 09:30

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296964	11/04/19 07:21	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	295402	10/18/19 14:02	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	296270	10/25/19 18:34	WTR	TAL PIT
Instrument ID: M										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294718	10/12/19 13:57	AGP	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.22 mL	1.0 g	447420	10/23/19 09:13	EJQ	TAL SL
Total/NA	Analysis	9315		1			450354	11/14/19 13:09	CJQ	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.22 mL	1.0 g	447441	10/23/19 11:46	EJQ	TAL SL
Total/NA	Analysis	9320		1			449089	11/05/19 18:00	AJD	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			450875	11/18/19 08:43	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWC-16

Lab Sample ID: 180-97145-3

Date Collected: 10/09/19 09:55

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296903	11/03/19 08:42	MJH	TAL PIT
Instrument ID: CHICS2100B										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-16

Lab Sample ID: 180-97145-3

Date Collected: 10/09/19 09:55

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5			296964	11/04/19 06:18	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	295402	10/18/19 14:02	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	296270	10/25/19 18:39	WTR	TAL PIT
		Instrument ID: M								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294718	10/12/19 13:57	AGP	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			1000.78 mL	1.0 g	447420	10/23/19 09:13	EJQ	TAL SL
Total/NA	Analysis	9315		1			450354	11/14/19 13:09	CJQ	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.78 mL	1.0 g	447441	10/23/19 11:46	EJQ	TAL SL
Total/NA	Analysis	9320		1			449089	11/05/19 18:00	AJD	TAL SL
		Instrument ID: GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228		1			450875	11/18/19 08:43	SMP	TAL SL
		Instrument ID: NOEQUIP								

Client Sample ID: ARGWC-7

Lab Sample ID: 180-97145-4

Date Collected: 10/09/19 11:15

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296903	11/03/19 08:58	MJH	TAL PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			50 mL	50 mL	295402	10/18/19 14:02	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	296270	10/25/19 18:44	WTR	TAL PIT
		Instrument ID: M								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294718	10/12/19 13:57	AGP	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			1000.14 mL	1.0 g	447420	10/23/19 09:13	EJQ	TAL SL
Total/NA	Analysis	9315		1			450354	11/14/19 13:09	CJQ	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.14 mL	1.0 g	447441	10/23/19 11:46	EJQ	TAL SL
Total/NA	Analysis	9320		1			449089	11/05/19 18:00	AJD	TAL SL
		Instrument ID: GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228		1			450875	11/18/19 08:43	SMP	TAL SL
		Instrument ID: NOEQUIP								

Client Sample ID: ARGWC-8

Lab Sample ID: 180-97145-5

Date Collected: 10/09/19 13:15

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296903	11/03/19 09:13	MJH	TAL PIT
		Instrument ID: CHICS2100B								

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-8

Lab Sample ID: 180-97145-5

Date Collected: 10/09/19 13:15

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	295402	10/18/19 14:02	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	296270	10/25/19 18:49	WTR	TAL PIT
		Instrument ID: M								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294718	10/12/19 13:57	AGP	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			1000.52 mL	1.0 g	447420	10/23/19 09:13	EJQ	TAL SL
Total/NA	Analysis	9315		1			450354	11/14/19 13:09	CJQ	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.52 mL	1.0 g	447441	10/23/19 11:46	EJQ	TAL SL
Total/NA	Analysis	9320		1			449089	11/05/19 18:00	AJD	TAL SL
		Instrument ID: GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228		1			450875	11/18/19 08:43	SMP	TAL SL
		Instrument ID: NOEQUIP								

Client Sample ID: ARGWC-9

Lab Sample ID: 180-97145-6

Date Collected: 10/09/19 12:50

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296903	11/03/19 09:29	MJH	TAL PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			50 mL	50 mL	295402	10/18/19 14:02	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	296270	10/25/19 18:54	WTR	TAL PIT
		Instrument ID: M								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294718	10/12/19 13:57	AGP	TAL PIT
		Instrument ID: NOEQUIP								
Total/NA	Prep	PrecSep-21			1000.91 mL	1.0 g	447420	10/23/19 09:13	EJQ	TAL SL
Total/NA	Analysis	9315		1			450354	11/14/19 13:09	CJQ	TAL SL
		Instrument ID: GFPCBLUE								
Total/NA	Prep	PrecSep_0			1000.91 mL	1.0 g	447441	10/23/19 11:46	EJQ	TAL SL
Total/NA	Analysis	9320		1			449089	11/05/19 18:01	AJD	TAL SL
		Instrument ID: GFPCPROTEAN								
Total/NA	Analysis	Ra226_Ra228		1			450875	11/18/19 08:43	SMP	TAL SL
		Instrument ID: NOEQUIP								

Client Sample ID: ARGWC-10

Lab Sample ID: 180-97145-7

Date Collected: 10/09/19 14:05

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296964	11/04/19 08:09	MJH	TAL PIT
		Instrument ID: CHICS2100B								
Total Recoverable	Prep	3005A			50 mL	50 mL	295402	10/18/19 14:02	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	296270	10/25/19 18:59	WTR	TAL PIT
		Instrument ID: M								

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-10

Lab Sample ID: 180-97145-7

Date Collected: 10/09/19 14:05

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294718	10/12/19 13:57	AGP	TAL PIT
Total/NA	Prep	PrecSep-21			999.45 mL	1.0 g	447420	10/23/19 09:13	EJQ	TAL SL
Total/NA	Analysis	9315		1			450354	11/14/19 13:09	CJQ	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			999.45 mL	1.0 g	447441	10/23/19 11:46	EJQ	TAL SL
Total/NA	Analysis	9320		1			449089	11/05/19 18:01	AJD	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			450875	11/18/19 08:43	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: EB-1-10-9-19

Lab Sample ID: 180-97145-8

Date Collected: 10/09/19 14:30

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296964	11/04/19 07:37	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	295402	10/18/19 14:02	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	296270	10/25/19 19:14	WTR	TAL PIT
Instrument ID: M										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294718	10/12/19 13:57	AGP	TAL PIT
Instrument ID: NOEQUIP										
Total/NA	Prep	PrecSep-21			1000.27 mL	1.0 g	447420	10/23/19 09:13	EJQ	TAL SL
Total/NA	Analysis	9315		1			450354	11/14/19 13:09	CJQ	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.27 mL	1.0 g	447441	10/23/19 11:46	EJQ	TAL SL
Total/NA	Analysis	9320		1			449089	11/05/19 18:01	AJD	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			450875	11/18/19 08:43	SMP	TAL SL
Instrument ID: NOEQUIP										

Client Sample ID: ARGWC-17

Lab Sample ID: 180-97145-9

Date Collected: 10/09/19 15:40

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			296903	11/03/19 09:45	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	295402	10/18/19 14:02	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	296270	10/25/19 19:19	WTR	TAL PIT
Instrument ID: M										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	294718	10/12/19 13:57	AGP	TAL PIT
Instrument ID: NOEQUIP										

Eurofins TestAmerica, Pittsburgh

Lab Chronicle

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-17

Lab Sample ID: 180-97145-9

Date Collected: 10/09/19 15:40

Matrix: Water

Date Received: 10/11/19 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			750.08 mL	1.0 g	447420	10/23/19 09:13	EJQ	TAL SL
Total/NA	Analysis	9315		1			450354	11/14/19 13:09	CJQ	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			750.08 mL	1.0 g	447441	10/23/19 11:46	EJQ	TAL SL
Total/NA	Analysis	9320		1			449089	11/05/19 18:01	AJD	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			450875	11/18/19 08:43	SMP	TAL SL
Instrument ID: NOEQUIP										

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: TAL PIT

Batch Type: Prep

KEM = Kimberly Mahoney

Batch Type: Analysis

AGP = Angela Partridge

MJH = Matthew Hartman

WTR = Bill Reinheimer

Lab: TAL SL

Batch Type: Prep

EJQ = Erin Quinn

Batch Type: Analysis

AJD = Audra DeMariano

CJQ = Caleb Quinn

SMP = Siobhan Perry

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-18

Lab Sample ID: 180-97145-1

Date Collected: 10/09/19 10:05

Matrix: Water

Date Received: 10/11/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.7		1.0	0.32	mg/L			11/04/19 07:53	1
Fluoride	0.068	J B	0.20	0.026	mg/L			11/04/19 07:53	1
Sulfate	180		1.0	0.38	mg/L			11/04/19 07:53	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0016		0.0010	0.00032	mg/L		10/18/19 14:02	10/25/19 18:29	1
Silver	<0.00018		0.0013	0.00018	mg/L		10/18/19 14:02	10/25/19 18:29	1
Barium	0.039		0.010	0.0016	mg/L		10/18/19 14:02	10/25/19 18:29	1
Beryllium	0.00034	J	0.0010	0.00018	mg/L		10/18/19 14:02	10/25/19 18:29	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:29	1
Cobalt	0.00099		0.00050	0.000075	mg/L		10/18/19 14:02	10/25/19 18:29	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/18/19 14:02	10/25/19 18:29	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/18/19 14:02	10/25/19 18:29	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:29	1
Antimony	<0.00038		0.0020	0.00038	mg/L		10/18/19 14:02	10/25/19 18:29	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/18/19 14:02	10/25/19 18:29	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/18/19 14:02	10/25/19 18:29	1
Lithium	0.013		0.0050	0.0034	mg/L		10/18/19 14:02	10/25/19 18:29	1
Calcium	49		0.50	0.13	mg/L		10/18/19 14:02	10/25/19 18:29	1
Boron	2.1		0.080	0.039	mg/L		10/18/19 14:02	10/25/19 18:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	420		10	10	mg/L			10/12/19 13:57	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0781	U	0.103	0.103	1.00	0.172	pCi/L	10/23/19 09:13	11/14/19 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	71.5		40 - 110					10/23/19 09:13	11/14/19 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.00969	U	0.359	0.359	1.00	0.641	pCi/L	10/23/19 11:46	11/05/19 17:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	71.5		40 - 110					10/23/19 11:46	11/05/19 17:57	1
Y Carrier	78.9		40 - 110					10/23/19 11:46	11/05/19 17:57	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0684	U	0.373	0.373	5.00	0.641	pCi/L		11/18/19 08:43	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: FB-1-10-9-19

Lab Sample ID: 180-97145-2

Date Collected: 10/09/19 09:30

Matrix: Water

Date Received: 10/11/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			11/04/19 07:21	1
Fluoride	0.031	J B	0.20	0.026	mg/L			11/04/19 07:21	1
Sulfate	<0.38		1.0	0.38	mg/L			11/04/19 07:21	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0013		0.0010	0.00032	mg/L		10/18/19 14:02	10/25/19 18:34	1
Silver	<0.00018		0.0013	0.00018	mg/L		10/18/19 14:02	10/25/19 18:34	1
Barium	0.0024	J	0.010	0.0016	mg/L		10/18/19 14:02	10/25/19 18:34	1
Beryllium	0.00054	J	0.0010	0.00018	mg/L		10/18/19 14:02	10/25/19 18:34	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:34	1
Cobalt	0.00029	J	0.00050	0.000075	mg/L		10/18/19 14:02	10/25/19 18:34	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/18/19 14:02	10/25/19 18:34	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/18/19 14:02	10/25/19 18:34	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:34	1
Antimony	<0.00038		0.0020	0.00038	mg/L		10/18/19 14:02	10/25/19 18:34	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/18/19 14:02	10/25/19 18:34	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/18/19 14:02	10/25/19 18:34	1
Lithium	0.0059		0.0050	0.0034	mg/L		10/18/19 14:02	10/25/19 18:34	1
Calcium	<0.13		0.50	0.13	mg/L		10/18/19 14:02	10/25/19 18:34	1
Boron	<0.039		0.080	0.039	mg/L		10/18/19 14:02	10/25/19 18:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			10/12/19 13:57	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.157	U	0.0435	0.0457	1.00	0.177	pCi/L	10/23/19 09:13	11/14/19 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	65.3		40 - 110					10/23/19 09:13	11/14/19 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.357	U	0.403	0.405	1.00	0.765	pCi/L	10/23/19 11:46	11/05/19 18:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	65.3		40 - 110					10/23/19 11:46	11/05/19 18:00	1
Y Carrier	81.9		40 - 110					10/23/19 11:46	11/05/19 18:00	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.515	U	0.405	0.408	5.00	0.765	pCi/L		11/18/19 08:43	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-16

Lab Sample ID: 180-97145-3

Date Collected: 10/09/19 09:55

Matrix: Water

Date Received: 10/11/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.7		1.0	0.32	mg/L			11/03/19 08:42	1
Fluoride	0.031	J	0.20	0.026	mg/L			11/03/19 08:42	1
Sulfate	210		5.0	1.9	mg/L			11/04/19 06:18	5

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0010		0.0010	0.00032	mg/L		10/18/19 14:02	10/25/19 18:39	1
Silver	<0.00018		0.0013	0.00018	mg/L		10/18/19 14:02	10/25/19 18:39	1
Barium	0.057		0.010	0.0016	mg/L		10/18/19 14:02	10/25/19 18:39	1
Beryllium	0.00027	J	0.0010	0.00018	mg/L		10/18/19 14:02	10/25/19 18:39	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:39	1
Cobalt	0.00026	J	0.00050	0.000075	mg/L		10/18/19 14:02	10/25/19 18:39	1
Chromium	0.0027		0.0020	0.0015	mg/L		10/18/19 14:02	10/25/19 18:39	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/18/19 14:02	10/25/19 18:39	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:39	1
Antimony	<0.00038		0.0020	0.00038	mg/L		10/18/19 14:02	10/25/19 18:39	1
Selenium	0.0018	J	0.0050	0.0015	mg/L		10/18/19 14:02	10/25/19 18:39	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/18/19 14:02	10/25/19 18:39	1
Lithium	0.0076		0.0050	0.0034	mg/L		10/18/19 14:02	10/25/19 18:39	1
Calcium	39		0.50	0.13	mg/L		10/18/19 14:02	10/25/19 18:39	1
Boron	0.065	J	0.080	0.039	mg/L		10/18/19 14:02	10/25/19 18:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	350		10	10	mg/L			10/12/19 13:57	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0463	U	0.105	0.105	1.00	0.187	pCi/L	10/23/19 09:13	11/14/19 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	64.1		40 - 110					10/23/19 09:13	11/14/19 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0708	U	0.412	0.412	1.00	0.740	pCi/L	10/23/19 11:46	11/05/19 18:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	64.1		40 - 110					10/23/19 11:46	11/05/19 18:00	1
Y Carrier	82.2		40 - 110					10/23/19 11:46	11/05/19 18:00	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0245	U	0.425	0.425	5.00	0.740	pCi/L		11/18/19 08:43	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-7

Lab Sample ID: 180-97145-4

Date Collected: 10/09/19 11:15

Matrix: Water

Date Received: 10/11/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.6		1.0	0.32	mg/L			11/03/19 08:58	1
Fluoride	0.032	J	0.20	0.026	mg/L			11/03/19 08:58	1
Sulfate	42		1.0	0.38	mg/L			11/03/19 08:58	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0015		0.0010	0.00032	mg/L		10/18/19 14:02	10/25/19 18:44	1
Silver	<0.00018		0.0013	0.00018	mg/L		10/18/19 14:02	10/25/19 18:44	1
Barium	0.046		0.010	0.0016	mg/L		10/18/19 14:02	10/25/19 18:44	1
Beryllium	0.00041	J	0.0010	0.00018	mg/L		10/18/19 14:02	10/25/19 18:44	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:44	1
Cobalt	0.00034	J	0.00050	0.000075	mg/L		10/18/19 14:02	10/25/19 18:44	1
Chromium	0.0042		0.0020	0.0015	mg/L		10/18/19 14:02	10/25/19 18:44	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/18/19 14:02	10/25/19 18:44	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:44	1
Antimony	<0.00038		0.0020	0.00038	mg/L		10/18/19 14:02	10/25/19 18:44	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/18/19 14:02	10/25/19 18:44	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/18/19 14:02	10/25/19 18:44	1
Lithium	0.0083		0.0050	0.0034	mg/L		10/18/19 14:02	10/25/19 18:44	1
Calcium	11		0.50	0.13	mg/L		10/18/19 14:02	10/25/19 18:44	1
Boron	0.076	J	0.080	0.039	mg/L		10/18/19 14:02	10/25/19 18:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	130		10	10	mg/L			10/12/19 13:57	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0770	U	0.0678	0.0682	1.00	0.101	pCi/L	10/23/19 09:13	11/14/19 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.8		40 - 110					10/23/19 09:13	11/14/19 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.475	U	0.333	0.335	1.00	0.522	pCi/L	10/23/19 11:46	11/05/19 18:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.8		40 - 110					10/23/19 11:46	11/05/19 18:00	1
Y Carrier	83.0		40 - 110					10/23/19 11:46	11/05/19 18:00	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.552		0.340	0.342	5.00	0.522	pCi/L		11/18/19 08:43	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-8

Lab Sample ID: 180-97145-5

Date Collected: 10/09/19 13:15

Matrix: Water

Date Received: 10/11/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.7		1.0	0.32	mg/L			11/03/19 09:13	1
Fluoride	0.085	J	0.20	0.026	mg/L			11/03/19 09:13	1
Sulfate	63		1.0	0.38	mg/L			11/03/19 09:13	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0014		0.0010	0.00032	mg/L		10/18/19 14:02	10/25/19 18:49	1
Silver	<0.00018		0.0013	0.00018	mg/L		10/18/19 14:02	10/25/19 18:49	1
Barium	0.049		0.010	0.0016	mg/L		10/18/19 14:02	10/25/19 18:49	1
Beryllium	0.00047	J	0.0010	0.00018	mg/L		10/18/19 14:02	10/25/19 18:49	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:49	1
Cobalt	0.00041	J	0.00050	0.000075	mg/L		10/18/19 14:02	10/25/19 18:49	1
Chromium	0.0017	J	0.0020	0.0015	mg/L		10/18/19 14:02	10/25/19 18:49	1
Molybdenum	0.049		0.0050	0.00061	mg/L		10/18/19 14:02	10/25/19 18:49	1
Lead	0.00019	J	0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:49	1
Antimony	<0.00038		0.0020	0.00038	mg/L		10/18/19 14:02	10/25/19 18:49	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/18/19 14:02	10/25/19 18:49	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/18/19 14:02	10/25/19 18:49	1
Lithium	0.0077		0.0050	0.0034	mg/L		10/18/19 14:02	10/25/19 18:49	1
Calcium	53		0.50	0.13	mg/L		10/18/19 14:02	10/25/19 18:49	1
Boron	1.2		0.080	0.039	mg/L		10/18/19 14:02	10/25/19 18:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	290		10	10	mg/L			10/12/19 13:57	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0373	U	0.0563	0.0564	1.00	0.132	pCi/L	10/23/19 09:13	11/14/19 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.9		40 - 110					10/23/19 09:13	11/14/19 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.127	U	0.339	0.339	1.00	0.614	pCi/L	10/23/19 11:46	11/05/19 18:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.9		40 - 110					10/23/19 11:46	11/05/19 18:00	1
Y Carrier	81.9		40 - 110					10/23/19 11:46	11/05/19 18:00	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.164	U	0.344	0.344	5.00	0.614	pCi/L		11/18/19 08:43	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-9

Lab Sample ID: 180-97145-6

Date Collected: 10/09/19 12:50

Matrix: Water

Date Received: 10/11/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.2		1.0	0.32	mg/L			11/03/19 09:29	1
Fluoride	0.038	J	0.20	0.026	mg/L			11/03/19 09:29	1
Sulfate	1.5		1.0	0.38	mg/L			11/03/19 09:29	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0011		0.0010	0.00032	mg/L		10/18/19 14:02	10/25/19 18:54	1
Silver	<0.00018		0.0013	0.00018	mg/L		10/18/19 14:02	10/25/19 18:54	1
Barium	0.041		0.010	0.0016	mg/L		10/18/19 14:02	10/25/19 18:54	1
Beryllium	0.00037	J	0.0010	0.00018	mg/L		10/18/19 14:02	10/25/19 18:54	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:54	1
Cobalt	0.00021	J	0.00050	0.000075	mg/L		10/18/19 14:02	10/25/19 18:54	1
Chromium	0.0084		0.0020	0.0015	mg/L		10/18/19 14:02	10/25/19 18:54	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/18/19 14:02	10/25/19 18:54	1
Lead	0.00016	J	0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:54	1
Antimony	0.00048	J	0.0020	0.00038	mg/L		10/18/19 14:02	10/25/19 18:54	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/18/19 14:02	10/25/19 18:54	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/18/19 14:02	10/25/19 18:54	1
Lithium	0.0061		0.0050	0.0034	mg/L		10/18/19 14:02	10/25/19 18:54	1
Calcium	5.7		0.50	0.13	mg/L		10/18/19 14:02	10/25/19 18:54	1
Boron	<0.039		0.080	0.039	mg/L		10/18/19 14:02	10/25/19 18:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	75		10	10	mg/L			10/12/19 13:57	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0360	U	0.0618	0.0618	1.00	0.138	pCi/L	10/23/19 09:13	11/14/19 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.9		40 - 110					10/23/19 09:13	11/14/19 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.203	U	0.263	0.264	1.00	0.502	pCi/L	10/23/19 11:46	11/05/19 18:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.9		40 - 110					10/23/19 11:46	11/05/19 18:01	1
Y Carrier	84.9		40 - 110					10/23/19 11:46	11/05/19 18:01	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.238	U	0.270	0.271	5.00	0.502	pCi/L		11/18/19 08:43	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-10

Lab Sample ID: 180-97145-7

Date Collected: 10/09/19 14:05

Matrix: Water

Date Received: 10/11/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.8		1.0	0.32	mg/L			11/04/19 08:09	1
Fluoride	0.053	J B	0.20	0.026	mg/L			11/04/19 08:09	1
Sulfate	0.59	J	1.0	0.38	mg/L			11/04/19 08:09	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0019		0.0010	0.00032	mg/L		10/18/19 14:02	10/25/19 18:59	1
Silver	<0.00018		0.0013	0.00018	mg/L		10/18/19 14:02	10/25/19 18:59	1
Barium	0.031		0.010	0.0016	mg/L		10/18/19 14:02	10/25/19 18:59	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		10/18/19 14:02	10/25/19 18:59	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:59	1
Cobalt	0.00019	J	0.00050	0.000075	mg/L		10/18/19 14:02	10/25/19 18:59	1
Chromium	0.0060		0.0020	0.0015	mg/L		10/18/19 14:02	10/25/19 18:59	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/18/19 14:02	10/25/19 18:59	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 18:59	1
Antimony	<0.00038		0.0020	0.00038	mg/L		10/18/19 14:02	10/25/19 18:59	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/18/19 14:02	10/25/19 18:59	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/18/19 14:02	10/25/19 18:59	1
Lithium	0.0055		0.0050	0.0034	mg/L		10/18/19 14:02	10/25/19 18:59	1
Calcium	7.7		0.50	0.13	mg/L		10/18/19 14:02	10/25/19 18:59	1
Boron	<0.039		0.080	0.039	mg/L		10/18/19 14:02	10/25/19 18:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	92		10	10	mg/L			10/12/19 13:57	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0688	U	0.0693	0.0696	1.00	0.167	pCi/L	10/23/19 09:13	11/14/19 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.1		40 - 110					10/23/19 09:13	11/14/19 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.311	U	0.294	0.295	1.00	0.573	pCi/L	10/23/19 11:46	11/05/19 18:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.1		40 - 110					10/23/19 11:46	11/05/19 18:01	1
Y Carrier	83.4		40 - 110					10/23/19 11:46	11/05/19 18:01	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.380	U	0.302	0.303	5.00	0.573	pCi/L		11/18/19 08:43	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: EB-1-10-9-19

Lab Sample ID: 180-97145-8

Date Collected: 10/09/19 14:30

Matrix: Water

Date Received: 10/11/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			11/04/19 07:37	1
Fluoride	<0.026		0.20	0.026	mg/L			11/04/19 07:37	1
Sulfate	<0.38		1.0	0.38	mg/L			11/04/19 07:37	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0011		0.0010	0.00032	mg/L		10/18/19 14:02	10/25/19 19:14	1
Silver	<0.00018		0.0013	0.00018	mg/L		10/18/19 14:02	10/25/19 19:14	1
Barium	<0.0016		0.010	0.0016	mg/L		10/18/19 14:02	10/25/19 19:14	1
Beryllium	0.00045 J		0.0010	0.00018	mg/L		10/18/19 14:02	10/25/19 19:14	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 19:14	1
Cobalt	0.00016 J		0.00050	0.000075	mg/L		10/18/19 14:02	10/25/19 19:14	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/18/19 14:02	10/25/19 19:14	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/18/19 14:02	10/25/19 19:14	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 19:14	1
Antimony	0.00073 J		0.0020	0.00038	mg/L		10/18/19 14:02	10/25/19 19:14	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/18/19 14:02	10/25/19 19:14	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/18/19 14:02	10/25/19 19:14	1
Lithium	0.010		0.0050	0.0034	mg/L		10/18/19 14:02	10/25/19 19:14	1
Calcium	0.14 J		0.50	0.13	mg/L		10/18/19 14:02	10/25/19 19:14	1
Boron	<0.039		0.080	0.039	mg/L		10/18/19 14:02	10/25/19 19:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			10/12/19 13:57	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.107	U	0.0778	0.0784	1.00	0.202	pCi/L	10/23/19 09:13	11/14/19 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	62.1		40 - 110					10/23/19 09:13	11/14/19 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.247	U	0.435	0.436	1.00	0.735	pCi/L	10/23/19 11:46	11/05/19 18:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	62.1		40 - 110					10/23/19 11:46	11/05/19 18:01	1
Y Carrier	86.0		40 - 110					10/23/19 11:46	11/05/19 18:01	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.140	U	0.442	0.443	5.00	0.735	pCi/L		11/18/19 08:43	1

Eurofins TestAmerica, Pittsburgh

Client Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Client Sample ID: ARGWC-17

Lab Sample ID: 180-97145-9

Date Collected: 10/09/19 15:40

Matrix: Water

Date Received: 10/11/19 09:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.3		1.0	0.32	mg/L			11/03/19 09:45	1
Fluoride	0.030	J	0.20	0.026	mg/L			11/03/19 09:45	1
Sulfate	57		1.0	0.38	mg/L			11/03/19 09:45	1

Method: EPA 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0015		0.0010	0.00032	mg/L		10/18/19 14:02	10/25/19 19:19	1
Silver	<0.00018		0.0013	0.00018	mg/L		10/18/19 14:02	10/25/19 19:19	1
Barium	0.049		0.010	0.0016	mg/L		10/18/19 14:02	10/25/19 19:19	1
Beryllium	0.00076	J	0.0010	0.00018	mg/L		10/18/19 14:02	10/25/19 19:19	1
Cadmium	0.00018	J	0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 19:19	1
Cobalt	0.017		0.00050	0.000075	mg/L		10/18/19 14:02	10/25/19 19:19	1
Chromium	0.0021		0.0020	0.0015	mg/L		10/18/19 14:02	10/25/19 19:19	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/18/19 14:02	10/25/19 19:19	1
Lead	<0.00013		0.0010	0.00013	mg/L		10/18/19 14:02	10/25/19 19:19	1
Antimony	<0.00038		0.0020	0.00038	mg/L		10/18/19 14:02	10/25/19 19:19	1
Selenium	<0.0015		0.0050	0.0015	mg/L		10/18/19 14:02	10/25/19 19:19	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/18/19 14:02	10/25/19 19:19	1
Lithium	0.0071		0.0050	0.0034	mg/L		10/18/19 14:02	10/25/19 19:19	1
Calcium	10		0.50	0.13	mg/L		10/18/19 14:02	10/25/19 19:19	1
Boron	<0.039		0.080	0.039	mg/L		10/18/19 14:02	10/25/19 19:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	120		10	10	mg/L			10/12/19 13:57	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.132	U	0.149	0.149	1.00	0.242	pCi/L	10/23/19 09:13	11/14/19 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	66.7		40 - 110					10/23/19 09:13	11/14/19 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0144	U G	0.588	0.588	1.00	1.04	pCi/L	10/23/19 11:46	11/05/19 18:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	66.7		40 - 110					10/23/19 11:46	11/05/19 18:01	1
Y Carrier	80.0		40 - 110					10/23/19 11:46	11/05/19 18:01	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.118	U	0.607	0.607	5.00	1.04	pCi/L		11/18/19 08:43	1

Eurofins TestAmerica, Pittsburgh

QC Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 180-296903/81
Matrix: Water
Analysis Batch: 296903

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			11/03/19 01:51	1
Fluoride	<0.026		0.20	0.026	mg/L			11/03/19 01:51	1
Sulfate	<0.38		1.0	0.38	mg/L			11/03/19 01:51	1

Lab Sample ID: LCS 180-296903/80
Matrix: Water
Analysis Batch: 296903

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	48.5		mg/L		97	90 - 110
Fluoride	2.50	2.43		mg/L		97	90 - 110
Sulfate	50.0	49.1		mg/L		98	90 - 110

Lab Sample ID: MB 180-296964/6
Matrix: Water
Analysis Batch: 296964

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.32		1.0	0.32	mg/L			11/04/19 04:06	1
Fluoride	0.0260	J	0.20	0.026	mg/L			11/04/19 04:06	1
Sulfate	<0.38		1.0	0.38	mg/L			11/04/19 04:06	1

Lab Sample ID: LCS 180-296964/5
Matrix: Water
Analysis Batch: 296964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.0		mg/L		98	90 - 110
Fluoride	2.50	2.42		mg/L		97	90 - 110
Sulfate	50.0	49.4		mg/L		99	90 - 110

Lab Sample ID: 180-97145-7 MS
Matrix: Water
Analysis Batch: 296964

Client Sample ID: ARGWC-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.8		50.0	50.6		mg/L		94	80 - 120
Fluoride	0.053	J B	2.50	2.42		mg/L		95	80 - 120
Sulfate	0.59	J	50.0	48.1		mg/L		95	80 - 120

Lab Sample ID: 180-97145-7 MSD
Matrix: Water
Analysis Batch: 296964

Client Sample ID: ARGWC-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.8		50.0	50.7		mg/L		94	80 - 120	0	20
Fluoride	0.053	J B	2.50	2.44		mg/L		95	80 - 120	1	20
Sulfate	0.59	J	50.0	47.9		mg/L		95	80 - 120	0	20

Eurofins TestAmerica, Pittsburgh

QC Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Method: EPA 6020 - Metals (ICP/MS)

Lab Sample ID: MB 180-295402/1-A
Matrix: Water
Analysis Batch: 296270

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295402

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.00018		0.0013	0.00018	mg/L		10/18/19 14:02	10/25/19 17:16	1
Arsenic	<0.00032		0.0013	0.00032	mg/L		10/18/19 14:02	10/25/19 17:16	1
Barium	<0.0016		0.0025	0.0016	mg/L		10/18/19 14:02	10/25/19 17:16	1
Beryllium	<0.00018		0.0010	0.00018	mg/L		10/18/19 14:02	10/25/19 17:16	1
Cadmium	<0.00013		0.0025	0.00013	mg/L		10/18/19 14:02	10/25/19 17:16	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		10/18/19 14:02	10/25/19 17:16	1
Chromium	<0.0015		0.0020	0.0015	mg/L		10/18/19 14:02	10/25/19 17:16	1
Molybdenum	<0.00061		0.0050	0.00061	mg/L		10/18/19 14:02	10/25/19 17:16	1
Lead	<0.00013		0.0013	0.00013	mg/L		10/18/19 14:02	10/25/19 17:16	1
Antimony	<0.00038		0.0020	0.00038	mg/L		10/18/19 14:02	10/25/19 17:16	1
Selenium	<0.0015		0.0015	0.0015	mg/L		10/18/19 14:02	10/25/19 17:16	1
Thallium	<0.00015		0.0010	0.00015	mg/L		10/18/19 14:02	10/25/19 17:16	1
Lithium	<0.0034		0.0050	0.0034	mg/L		10/18/19 14:02	10/25/19 17:16	1
Calcium	<0.13		0.50	0.13	mg/L		10/18/19 14:02	10/25/19 17:16	1
Boron	<0.039		0.080	0.039	mg/L		10/18/19 14:02	10/25/19 17:16	1

Lab Sample ID: LCS 180-295402/2-A
Matrix: Water
Analysis Batch: 296270

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295402

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.250	0.255		mg/L		102	80 - 120
Arsenic	1.00	0.961		mg/L		96	80 - 120
Barium	1.00	0.990		mg/L		99	80 - 120
Beryllium	0.500	0.505		mg/L		101	80 - 120
Cadmium	0.500	0.561		mg/L		112	80 - 120
Cobalt	0.500	0.481		mg/L		96	80 - 120
Chromium	0.500	0.489		mg/L		98	80 - 120
Molybdenum	0.500	0.539		mg/L		108	80 - 120
Lead	0.500	0.497		mg/L		99	80 - 120
Antimony	0.250	0.273		mg/L		109	80 - 120
Selenium	1.00	0.935		mg/L		93	80 - 120
Thallium	1.00	0.996		mg/L		100	80 - 120
Lithium	0.500	0.584		mg/L		117	80 - 120
Calcium	25.0	25.2		mg/L		101	80 - 120
Boron	1.25	1.05		mg/L		84	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-294718/2
Matrix: Water
Analysis Batch: 294718

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			10/12/19 13:57	1

Eurofins TestAmerica, Pittsburgh

QC Sample Results

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 180-294718/1
Matrix: Water
Analysis Batch: 294718

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	633	632		mg/L		100	80 - 120

Lab Sample ID: 180-97145-1 DU
Matrix: Water
Analysis Batch: 294718

Client Sample ID: ARGWC-18
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	420		421		mg/L		0.5	10

Lab Sample ID: 180-97145-3 DU
Matrix: Water
Analysis Batch: 294718

Client Sample ID: ARGWC-16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	350		359		mg/L		3	10

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-447420/20-A
Matrix: Water
Analysis Batch: 450354

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 447420

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.1264	U	0.0844	0.0851	1.00	0.226	pCi/L	10/23/19 09:13	11/14/19 16:49	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	68.9		40 - 110		10/23/19 09:13	11/14/19 16:49	1			

Lab Sample ID: LCS 160-447420/1-A
Matrix: Water
Analysis Batch: 450354

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 447420

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	8.667		0.936	1.00	0.142	pCi/L	76	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	89.8		40 - 110						

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-447441/20-A
Matrix: Water
Analysis Batch: 449088

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 447441

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5451		0.352	0.356	1.00	0.538	pCi/L	10/23/19 11:46	11/05/19 17:58	1

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QC Sample Results

Client: Southern Company
 Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
 SDG: Ash Pond 3

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-447441/20-A
Matrix: Water
Analysis Batch: 449088

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 447441

Carrier	MB MB		Limits
	%Yield	Qualifier	
Ba Carrier	68.9		40 - 110
Y Carrier	81.1		40 - 110

Prepared	Analyzed	Dil Fac
10/23/19 11:46	11/05/19 17:58	1
10/23/19 11:46	11/05/19 17:58	1

Lab Sample ID: LCS 160-447441/1-A
Matrix: Water
Analysis Batch: 449088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 447441

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec.
									Limits
Radium-228	9.42	9.822		1.20	1.00	0.462	pCi/L	104	75 - 125

Carrier	LCS LCS		Limits
	%Yield	Qualifier	
Ba Carrier	89.8		40 - 110
Y Carrier	71.4		40 - 110

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

HPLC/IC

Analysis Batch: 296903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97145-3	ARGWC-16	Total/NA	Water	300.0	
180-97145-4	ARGWC-7	Total/NA	Water	300.0	
180-97145-5	ARGWC-8	Total/NA	Water	300.0	
180-97145-6	ARGWC-9	Total/NA	Water	300.0	
180-97145-9	ARGWC-17	Total/NA	Water	300.0	
MB 180-296903/81	Method Blank	Total/NA	Water	300.0	
LCS 180-296903/80	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 296964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97145-1	ARGWC-18	Total/NA	Water	300.0	
180-97145-2	FB-1-10-9-19	Total/NA	Water	300.0	
180-97145-3	ARGWC-16	Total/NA	Water	300.0	
180-97145-7	ARGWC-10	Total/NA	Water	300.0	
180-97145-8	EB-1-10-9-19	Total/NA	Water	300.0	
MB 180-296964/6	Method Blank	Total/NA	Water	300.0	
LCS 180-296964/5	Lab Control Sample	Total/NA	Water	300.0	
180-97145-7 MS	ARGWC-10	Total/NA	Water	300.0	
180-97145-7 MSD	ARGWC-10	Total/NA	Water	300.0	

Metals

Prep Batch: 295402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97145-1	ARGWC-18	Total Recoverable	Water	3005A	
180-97145-2	FB-1-10-9-19	Total Recoverable	Water	3005A	
180-97145-3	ARGWC-16	Total Recoverable	Water	3005A	
180-97145-4	ARGWC-7	Total Recoverable	Water	3005A	
180-97145-5	ARGWC-8	Total Recoverable	Water	3005A	
180-97145-6	ARGWC-9	Total Recoverable	Water	3005A	
180-97145-7	ARGWC-10	Total Recoverable	Water	3005A	
180-97145-8	EB-1-10-9-19	Total Recoverable	Water	3005A	
180-97145-9	ARGWC-17	Total Recoverable	Water	3005A	
MB 180-295402/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-295402/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 296270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97145-1	ARGWC-18	Total Recoverable	Water	EPA 6020	295402
180-97145-2	FB-1-10-9-19	Total Recoverable	Water	EPA 6020	295402
180-97145-3	ARGWC-16	Total Recoverable	Water	EPA 6020	295402
180-97145-4	ARGWC-7	Total Recoverable	Water	EPA 6020	295402
180-97145-5	ARGWC-8	Total Recoverable	Water	EPA 6020	295402
180-97145-6	ARGWC-9	Total Recoverable	Water	EPA 6020	295402
180-97145-7	ARGWC-10	Total Recoverable	Water	EPA 6020	295402
180-97145-8	EB-1-10-9-19	Total Recoverable	Water	EPA 6020	295402
180-97145-9	ARGWC-17	Total Recoverable	Water	EPA 6020	295402
MB 180-295402/1-A	Method Blank	Total Recoverable	Water	EPA 6020	295402
LCS 180-295402/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	295402

Eurofins TestAmerica, Pittsburgh

QC Association Summary

Client: Southern Company
Project/Site: CCR - Plant Arkwright

Job ID: 180-97145-1
SDG: Ash Pond 3

General Chemistry

Analysis Batch: 294718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97145-1	ARGWC-18	Total/NA	Water	SM 2540C	
180-97145-2	FB-1-10-9-19	Total/NA	Water	SM 2540C	
180-97145-3	ARGWC-16	Total/NA	Water	SM 2540C	
180-97145-4	ARGWC-7	Total/NA	Water	SM 2540C	
180-97145-5	ARGWC-8	Total/NA	Water	SM 2540C	
180-97145-6	ARGWC-9	Total/NA	Water	SM 2540C	
180-97145-7	ARGWC-10	Total/NA	Water	SM 2540C	
180-97145-8	EB-1-10-9-19	Total/NA	Water	SM 2540C	
180-97145-9	ARGWC-17	Total/NA	Water	SM 2540C	
MB 180-294718/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-294718/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-97145-1 DU	ARGWC-18	Total/NA	Water	SM 2540C	
180-97145-3 DU	ARGWC-16	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 447420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97145-1	ARGWC-18	Total/NA	Water	PrecSep-21	
180-97145-2	FB-1-10-9-19	Total/NA	Water	PrecSep-21	
180-97145-3	ARGWC-16	Total/NA	Water	PrecSep-21	
180-97145-4	ARGWC-7	Total/NA	Water	PrecSep-21	
180-97145-5	ARGWC-8	Total/NA	Water	PrecSep-21	
180-97145-6	ARGWC-9	Total/NA	Water	PrecSep-21	
180-97145-7	ARGWC-10	Total/NA	Water	PrecSep-21	
180-97145-8	EB-1-10-9-19	Total/NA	Water	PrecSep-21	
180-97145-9	ARGWC-17	Total/NA	Water	PrecSep-21	
MB 160-447420/20-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-447420/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 447441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-97145-1	ARGWC-18	Total/NA	Water	PrecSep_0	
180-97145-2	FB-1-10-9-19	Total/NA	Water	PrecSep_0	
180-97145-3	ARGWC-16	Total/NA	Water	PrecSep_0	
180-97145-4	ARGWC-7	Total/NA	Water	PrecSep_0	
180-97145-5	ARGWC-8	Total/NA	Water	PrecSep_0	
180-97145-6	ARGWC-9	Total/NA	Water	PrecSep_0	
180-97145-7	ARGWC-10	Total/NA	Water	PrecSep_0	
180-97145-8	EB-1-10-9-19	Total/NA	Water	PrecSep_0	
180-97145-9	ARGWC-17	Total/NA	Water	PrecSep_0	
MB 160-447441/20-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-447441/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

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180-97145 Waybill



FedEx
 TRK# 1194 6303 5365
 0221

NA AGCA

WED - 09 OCT 10:30A
PRIORITY OVERNIGHT AT
HT



PA-US 15238
 PIT 18

EXP 06/20

Uncorrected temp
 Thermometer ID

CF 0 Initials R

PT-WI-SR-001 effective 11/8/18

#938347 10/08 56713/283C/05H2

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Shipping/Receiving		Phone:	Bortot, Veronica		180-376574.1
Company: TestAmerica Laboratories, Inc.		E-Mail:	veronica.bortot@testamericainc.com	State of Origin:	Page 1 of 1
Address: 13715 Rider Trail North,		Accreditations Required (See note):		Job #:	180-97145-1
City: Earth City	Due Date Requested: 10/23/2019	Analysis Requested			
State, Zip: MO, 63045	TAT Requested (days):	Total Number of containers			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:	Field Filtered Sample (Yes or No)			
Email:	WO #:	Perform MS/MSD (Yes or No)			
Project Name: CCR - Plant Arkwright	Project #: 18020201	9315_Ra226/PreSep_21 Radium 226			
Site: Georgia Power Site Sampling Data (GW)	SSOW#:	9320_Ra228/PreSep_0 Radium 228			
Sample Identification - Client ID (Lab ID)		Special Instructions/Note:			
ARGWC-18 (180-97145-1)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=water/oil, BT=Tissue, A=Air)	Preservation Code:
FB-1-10-9-19 (180-97145-2)	10/9/19	10:05 Eastern	Water	Water	
ARGWC-16 (180-97145-3)	10/9/19	09:30 Eastern	Water	Water	
ARGWC-7 (180-97145-4)	10/9/19	09:55 Eastern	Water	Water	
ARGWC-8 (180-97145-5)	10/9/19	11:15 Eastern	Water	Water	
ARGWC-9 (180-97145-6)	10/9/19	13:15 Eastern	Water	Water	
ARGWC-10 (180-97145-7)	10/9/19	12:50 Eastern	Water	Water	
EB-1-10-9-19 (180-97145-8)	10/9/19	14:05 Eastern	Water	Water	
ARGWC-17 (180-97145-9)	10/9/19	14:30 Eastern	Water	Water	
ARGWC-17 (180-97145-9)	10/9/19	15:40 Eastern	Water	Water	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
 Unconfirmed
 Return To Client
 Disposal By Lab
 Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) _____
 Primary Deliverable Rank: 2

Empty Kit Relinquished by: _____ Date: _____ Method of Shipment: _____
 Relinquished by: _____ Date/Time: 10/17/19 17:00 Company: M.A.T. Company
 Relinquished by: _____ Date/Time: _____ Date/Time: 10-18-19 09:05 Company: T.A.S.T. Company
 Relinquished by: _____ Date/Time: _____ Date/Time: _____ Company: _____
 Custody Seals Intact: _____ Custody Seal No.: _____
 Cooler Temperature(s) °C and Other Remarks: _____



Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-97145-1

SDG Number: Ash Pond 3

Login Number: 97145

List Source: Eurofins TestAmerica, Pittsburgh

List Number: 1

Creator: Watson, Debbie

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

Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-97145-1

SDG Number: Ash Pond 3

Login Number: 97145

List Number: 2

Creator: Hellm, Michael

List Source: Eurofins TestAmerica, St. Louis

List Creation: 10/18/19 01:02 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	22.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

LEVEL 2A LABORATORY DATA VALIDATIONS

Plant Arkwright Ash Pond 3

2nd Semi-Annual Event

October 2019

Georgia Power Company – Plant Arkwright Ash Pond 3

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 Eurofins TestAmerica, Pittsburgh and St. Louis for groundwater samples collected at Plant Arkwright Ash Pond 3 between October 7, 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.

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.

Field Precision: Field goals for precision were met, with the exceptions of Lead, Silver, and Lithium on ARGWA-3 (180-97054-4) and DUP-1 (180-97054-1) as described in the qualifications section below.

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

U: The analyte was not detected above the method detection limit

The data generated as part of this sampling event met the QC criteria established in the respective analytical methods and data validation guidelines except as specified below. 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.

- Samples ARGWA-3 (180-97054-4) and DUP-1 (180-97054-1) were qualified as estimated (J) for Lead, Silver, and Lithium as the respective field relative percent differences (RPDs) exceeded QC criteria (107.7%, 41.7%, and 29.1%, respectively, above limit of 25).
- Certain metals analyte results in SDG 97054 were qualified as non-detect (U) due to the analyte being detected at a similar concentration in an associated blank sample. As shown in Table 2, when the original sample result was above the reporting limit (RL),

both the RL and method detection limit (MDL) were raised to the sample result as part of the qualification process. When the original sample result was between the RL and MDL, only the MDL was raised to the sample result as part of the qualification process.

- Fluoride results for ARGWC-18 (180-97145-1), ARGWC-16 (180-97145-3), and ARGWC-10 (180-97145-7) were qualified as non-detect (U) due to the analyte being detected at a similar concentration in an associated blank sample. As shown in Table 2, the MDL was raised to the sample result as part of the qualification process.
- Certain radium results in SDGs 97054 and 97145 were qualified as non-detect (U) 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 Arkwright Ash Pond 3 sampled between October 7, 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

¹USEPA, 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

²USEPA, 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 Arkwright Ash Pond 3

Sample Summary Table – October 2019

SDG	Field Identification	Collection Date	Lab Identification	Matrix	QC Samples	Analyses			
						Metals (6020B, 7470A)	Anions (300.0)	TDS (SM 2540C)	Radium-226/-228 (9315, 9320)
97054	DUP-1	10/7/2019	180-97054-1	GW	FD (ARGWA-3)	X	X	X	X
97054	ARGWA-14	10/7/2019	180-97054-2	GW		X	X	X	X
97054	ARGWA-5	10/8/2019	180-97054-3	GW		X	X	X	X
97054	ARGWA-3	10/8/2019	180-97054-4	GW		X	X	X	X
97054	ARGWC-15	10/8/2019	180-97054-5	GW		X	X	X	X
97054	ARGWA-12	10/8/2019	180-97054-6	GW		X	X	X	X
97054	ARGWA-13	10/8/2019	180-97054-7	GW		X	X	X	X
97145	ARGWC-18	10/9/2019	180-97145-1	GW		X	X	X	X
97145	FB-1-10-9-19	10/9/2019	180-97145-2	WQ	FB	X	X	X	X
97145	ARGWC-16	10/9/2019	180-97145-3	GW		X	X	X	X
97145	ARGWC-7	10/9/2019	180-97145-4	GW		X	X	X	X
97145	ARGWC-8	10/9/2019	180-97145-5	GW		X	X	X	X
97145	ARGWC-9	10/9/2019	180-97145-6	GW		X	X	X	X
97145	ARGWC-10	10/9/2019	180-97145-7	GW		X	X	X	X
97145	EB-1-10-9-19	10/9/2019	180-97057-8	WQ	EB	X	X	X	X
97145	ARGWC-17	10/9/2019	180-97145-9	GW		X	X	X	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 Arkwright Ash Pond 3

Qualifier Summary Table – October 2019

SDG	Field Identification	Constituent	New RL	New MDL or MDC	Qualifier	Reason
97054	ARGWA-14	Arsenic		0.00045	U	Blank detection
97054	ARGWA-5	Lead		0.00016	U	Blank detection
97054	ARGWA-5	Radium-228		0.198	U	Blank detection
97054	ARGWA-3	Lead			J	RPD exceeds field goal
97054	ARGWA-3	Silver			J	RPD exceeds field goal
97054	ARGWA-3	Lithium			J	RPD exceeds field goal
97054	DUP-1	Lead			J	RPD exceeds field goal
97054	DUP-1	Silver			J	RPD exceeds field goal
97054	DUP-1	Lithium			J	RPD exceeds field goal
97054	ARGWC-15	Radium-228		0.136	U	Blank detection
97054	ARGWA-13	Lead		0.00013	U	Blank detection
97054	ARGWA-13	Selenium	0.03	0.003	U	Blank detection
97054	ARGWA-13	Radium-228		0.183	U	Blank detection
97145	ARGWC-18	Fluoride		0.068	U	Blank detection
97145	ARGWC-16	Fluoride		0.031	U	Blank detection
97145	ARGWC-7	Radium-228		0.475	U	Blank detection
97145	ARGWC-10	Fluoride		0.053	U	Blank detection

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 12:22:52

Project Information:

Operator Name Jordan Berisford
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 588863
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter 0.17 in
Tubing Length 42 ft

Pump placement from TOC 37 ft

Well Information:

Well ID ARGWA-3
Well diameter 2 in
Well Total Depth 42.29 ft
Screen Length 10 ft
Depth to Water 37.08 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.6724638 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 2.6 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	12:00:05	1800.00	19.53	5.96	88.96	2.18	37.30	6.34	95.47
Last 5	12:05:05	2100.00	19.68	5.96	89.40	2.82	37.30	6.35	100.19
Last 5	12:10:05	2400.00	19.98	5.96	89.06	2.84	37.30	6.32	104.60
Last 5	12:15:05	2699.98	20.19	5.96	88.90	3.31	37.30	6.31	109.75
Last 5	12:20:05	2999.99	20.12	5.96	89.11	3.29	37.30	6.32	115.74
Variance 0			0.31	0.00	-0.34			-0.03	4.41
Variance 1			0.20	0.00	-0.16			-0.01	5.14
Variance 2			-0.07	-0.00	0.21			0.00	5.99

Notes

Sunny, 70s, sample Time-1220, DUP-1 here

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-08 09:42:34

Project Information:

Operator Name Jordan Berisford
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 588863
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter .17 in
Tubing Length 33 ft

Pump placement from TOC 28 ft

Well Information:

Well ID ARGWA-5
Well diameter 2 in
Well Total Depth 33.11 ft
Screen Length 10 ft
Depth to Water 24.80 ft

Pumping Information:

Final Pumping Rate 275 mL/min
Total System Volume 0.632293 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3.6 in
Total Volume Pumped 15.13 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	09:20:16	2100.00	17.58	5.95	89.28	0.90	25.10	5.84	70.11
Last 5	09:25:16	2400.00	17.58	5.95	88.93	0.93	25.10	5.84	70.79
Last 5	09:30:16	2700.00	17.59	5.94	88.54	0.80	25.10	5.84	71.59
Last 5	09:35:16	2999.99	17.61	5.94	88.71	0.73	25.10	5.87	71.99
Last 5	09:40:16	3299.99	17.66	5.93	88.35	0.89	25.10	5.90	72.78
Variance 0			0.02	-0.01	-0.39			0.00	0.80
Variance 1			0.02	0.00	0.17			0.03	0.41
Variance 2			0.05	-0.00	-0.36			0.03	0.78

Notes

Sunny, 70, Sample time: 9:40

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-08 11:03:35

Project Information:

Operator Name Anna Schnittker
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter .25 in
Tubing Length 32 ft

Pump placement from TOC 27 ft

Well Information:

Well ID ARGWA-12
Well diameter 2 in
Well Total Depth 32.35 ft
Screen Length 10 ft
Depth to Water 17.05 ft

Pumping Information:

Final Pumping Rate 210 mL/min
Total System Volume 0.7938874 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 8 in
Total Volume Pumped 6.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	10:40:29	600.02	20.06	5.95	199.65	2.22	17.72	2.79	109.81
Last 5	10:45:29	900.02	20.01	5.93	195.29	2.14	17.71	2.75	108.00
Last 5	10:50:29	1200.02	20.02	5.93	194.87	2.50	17.72	2.73	107.33
Last 5	10:55:31	1502.02	20.04	5.93	194.77	2.50	17.72	2.72	107.19
Last 5	11:00:32	1803.02	20.09	5.93	194.70	2.50	17.72	2.70	107.14
Variance 0			0.01	-0.00	-0.42			-0.02	-0.67
Variance 1			0.03	0.00	-0.10			-0.01	-0.14
Variance 2			0.04	0.00	-0.07			-0.02	-0.05

Notes

Sunny, 74. Sample time: 11:00

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-08 14:09:02

Project Information:

Operator Name Anna Schnittker
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter .25 in
Tubing Length 43 ft

Pump placement from TOC 38 ft

Well Information:

Well ID ARGWA-13
Well diameter 2 in
Well Total Depth 43.25 ft
Screen Length 10 ft
Depth to Water 25.69 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.9000674 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 6 in
Total Volume Pumped 29 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	13:45:17	7514.81	19.70	5.73	1680.51	0.36	26.19	0.90	123.20
Last 5	13:50:17	7814.81	19.59	5.73	1679.49	0.43	26.19	0.97	123.19
Last 5	13:55:17	8114.81	19.63	5.73	1694.73	0.33	26.19	0.73	123.37
Last 5	14:00:22	8419.81	19.53	5.73	1703.50	0.42	26.19	0.83	123.43
Last 5	14:05:22	8719.81	19.60	5.74	1696.75	0.27	26.19	0.89	123.12
Variance 0			0.04	-0.00	15.24			-0.24	0.18
Variance 1			-0.10	-0.00	8.77			0.10	0.06
Variance 2			0.07	0.01	-6.75			0.06	-0.30

Notes

Sunny, 84. Sample time: 14:05

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-07 16:27:27

Project Information:

Operator Name Jordan Berisford
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 588863
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter 0.25 in
Tubing Length 58 ft

Pump placement from TOC 53 ft

Well Information:

Well ID ARGWA-14
Well diameter 2 in
Well Total Depth 58.18 ft
Screen Length 10 ft
Depth to Water 44.21 ft

Pumping Information:

Final Pumping Rate 50 mL/min
Total System Volume 1.044858 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 31.1 in
Total Volume Pumped 2.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	16:05:05	2102.00	26.73	6.72	411.28	0.85	46.30	4.08	38.99
Last 5	16:10:05	2402.00	26.58	6.72	400.08	1.02	46.50	4.78	40.11
Last 5	16:15:05	2701.99	25.63	6.71	401.97	0.46	46.60	5.26	44.00
Last 5	16:20:05	3001.99	25.73	6.70	409.28	0.69	46.70	5.44	46.54
Last 5	16:25:05	3301.99	26.16	6.69	411.95	0.63	46.70	5.46	48.50
Variance 0			-0.95	-0.01	1.89			0.48	3.89
Variance 1			0.10	-0.01	7.31			0.18	2.54
Variance 2			0.43	-0.00	2.67			0.03	1.96

Notes

Cloudy, 80s, sample Time-1625

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 11:19:37

Project Information:

Operator Name Anna Schnittker
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter .25 in
Tubing Length 48 ft

Pump placement from TOC 43 ft

Well Information:

Well ID ARGWC-7
Well diameter 2 in
Well Total Depth 48.32 ft
Screen Length 10 ft
Depth to Water 26.85 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.9483311 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 3 in
Total Volume Pumped 5.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	10:56:17	900.02	19.75	5.78	172.03	4.11	27.09	3.79	121.53
Last 5	11:01:17	1200.02	19.66	5.78	171.90	2.87	27.09	3.70	121.25
Last 5	11:06:17	1500.02	19.63	5.76	171.93	2.26	27.09	3.49	121.73
Last 5	11:11:17	1800.02	19.64	5.76	172.00	2.03	27.09	3.42	121.52
Last 5	11:16:17	2100.02	19.66	5.76	171.93	1.58	27.09	3.40	121.71
Variance 0			-0.03	-0.02	0.03			-0.20	0.48
Variance 1			0.02	0.00	0.07			-0.07	-0.22
Variance 2			0.01	-0.00	-0.07			-0.02	0.20

Notes

Cloudy, 70. Sample time: 11:15

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 13:16:43

Project Information:

Operator Name Jordan Berisford
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 32° 55' 31.61"
Longitude -83° -42' -31.39"
Sonde SN 588863
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter 0.25 in
Tubing Length 43 ft

Pump placement from TOC 38 ft

Well Information:

Well ID ARGWC-8
Well diameter 2 in
Well Total Depth 43.22 ft
Screen Length 10 ft
Depth to Water 26.64 ft

Pumping Information:

Final Pumping Rate 150 mL/min
Total System Volume 0.9000674 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 2 in
Total Volume Pumped 8.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	12:55:04	2100.00	19.39	6.47	498.71	8.02	26.80	0.29	96.73
Last 5	13:00:04	2400.00	19.41	6.47	499.00	7.09	26.80	0.28	98.49
Last 5	13:05:04	2700.00	19.50	6.47	499.09	6.72	26.80	0.27	100.13
Last 5	13:10:04	3000.00	19.64	6.47	498.92	5.21	26.80	0.26	101.87
Last 5	13:15:05	3300.99	19.73	6.47	498.96	3.83	26.80	0.25	103.74
Variance 0			0.09	0.00	0.10			-0.01	1.63
Variance 1			0.14	-0.00	-0.18			-0.00	1.75
Variance 2			0.09	-0.00	0.04			-0.01	1.87

Notes

Cloudy, 60s, sample Time -1315

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 12:53:47

Project Information:

Operator Name Anna Schnittker
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter .25 in
Tubing Length 38 ft

Pump placement from TOC 33 ft

Well Information:

Well ID ARGWC-9
Well diameter 2 in
Well Total Depth 38.07 ft
Screen Length 10 ft
Depth to Water 23.72 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.8518038 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 2 in
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	12:25:12	1801.02	20.28	5.89	86.31	11.00	23.93	5.48	133.48
Last 5	12:30:12	2101.02	20.28	5.89	86.28	12.30	23.93	5.45	133.12
Last 5	12:35:12	2401.09	20.25	5.90	86.35	8.52	23.93	5.45	132.54
Last 5	12:45:12	3001.05	20.28	5.90	86.38	5.47	23.93	5.39	132.66
Last 5	12:50:12	3301.02	20.28	5.90	86.43	3.41	23.93	5.37	132.61
Variance 0			-0.03	0.01	0.07			0.00	-0.59
Variance 1			0.04	-0.00	0.03			-0.06	0.12
Variance 2			0.00	-0.00	0.05			-0.02	-0.05

Notes

Cloudy, 70. Sample time: 12:50

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 14:07:37

Project Information:

Operator Name Anna Schnittker
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter .25 in
Tubing Length 38 ft

Pump placement from TOC 33 ft

Well Information:

Well ID ARGWC-10
Well diameter 2 in
Well Total Depth 38.35 ft
Screen Length 10 ft
Depth to Water 24.22 ft

Pumping Information:

Final Pumping Rate 220 mL/min
Total System Volume 0.8518038 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 7 in
Total Volume Pumped 7.7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	13:45:12	900.02	20.04	5.94	108.13	3.28	24.48	4.05	124.17
Last 5	13:50:12	1200.02	19.97	5.95	107.62	4.01	24.48	3.94	123.70
Last 5	13:55:12	1500.02	19.88	5.94	106.97	3.16	24.48	3.91	123.35
Last 5	14:00:12	1800.02	19.84	5.94	106.30	3.31	24.48	3.91	122.87
Last 5	14:05:13	2101.02	19.80	5.94	105.87	3.04	24.48	3.85	122.57
Variance 0			-0.09	-0.00	-0.64			-0.03	-0.36
Variance 1			-0.05	-0.00	-0.67			-0.01	-0.48
Variance 2			-0.03	-0.00	-0.44			-0.05	-0.29

Notes

Cloudy, 70. Sample time: 1405

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-08 14:12:19

Project Information:

Operator Name Jordan Berisford
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 588863
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter 0.25 in
Tubing Length 42 ft

Pump placement from TOC 37 ft

Well Information:

Well ID ARGWC-15
Well diameter 2 in
Well Total Depth 42.35 ft
Screen Length 10 ft
Depth to Water 30.41 ft

Pumping Information:

Final Pumping Rate 50 mL/min
Total System Volume 0.8904147 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 17.9 in
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	13:50:02	2400.00	24.99	6.40	234.28	1.77	31.60	1.97	138.67
Last 5	13:55:02	2699.99	25.85	6.39	236.36	1.91	31.70	1.88	139.27
Last 5	14:00:02	2999.99	26.67	6.38	236.80	1.11	31.80	1.71	139.47
Last 5	14:05:02	3299.99	27.22	6.38	236.44	1.72	31.80	1.68	139.73
Last 5	14:10:02	3599.99	27.33	6.38	235.25	1.60	31.90	1.64	140.08
Variance 0			0.83	-0.01	0.44			-0.16	0.20
Variance 1			0.54	-0.00	-0.36			-0.03	0.27
Variance 2			0.12	0.00	-1.18			-0.04	0.34

Notes

Cloudy, 70s, sample Time-1410

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 09:58:41

Project Information:

Operator Name Anna Schnittker
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 647057
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter .25 in
Tubing Length 35 ft

Pump placement from TOC 30 ft

Well Information:

Well ID ARGWC-16
Well diameter 2 in
Well Total Depth 34.52 ft
Screen Length 10 ft
Depth to Water 23.09 ft

Pumping Information:

Final Pumping Rate 220 mL/min
Total System Volume 0.8228456 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 1 in
Total Volume Pumped 8.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	09:35:47	1200.02	20.11	5.21	515.26	0.60	23.18	1.35	134.22
Last 5	09:40:47	1500.02	20.09	5.23	514.86	0.68	23.18	1.35	134.15
Last 5	09:45:47	1800.49	20.06	5.23	515.33	0.33	23.18	1.33	134.92
Last 5	09:50:47	2100.49	20.11	5.22	512.11	0.40	23.18	1.26	136.58
Last 5	09:55:47	2400.49	20.11	5.22	510.21	0.30	23.18	1.20	136.10
Variance 0			-0.03	-0.00	0.47			-0.02	0.77
Variance 1			0.04	-0.00	-3.22			-0.07	1.66
Variance 2			0.00	-0.00	-1.91			-0.06	-0.48

Notes

Cloudy, 68. Sample time: 0955

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 15:42:04

Project Information:

Operator Name Jordan Berisford
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 588863
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter 0.25 in
Tubing Length 33 ft

Pump placement from TOC 27 ft

Well Information:

Well ID ARGWC-17
Well diameter 2 in
Well Total Depth 33.92 ft
Screen Length 10 ft
Depth to Water 23.30 ft

Pumping Information:

Final Pumping Rate 175 mL/min
Total System Volume 0.8035402 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 8.4 in
Total Volume Pumped 20.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	15:20:50	5700.97	18.92	5.27	184.28	3.05	24.00	0.27	177.33
Last 5	15:25:50	6000.97	18.89	5.27	185.57	2.99	24.00	0.27	177.96
Last 5	15:30:50	6300.96	18.92	5.27	185.91	3.16	24.00	0.26	178.66
Last 5	15:35:50	6600.96	18.88	5.27	187.09	3.11	24.00	0.26	178.93
Last 5	15:40:50	6900.96	18.93	5.27	187.61	3.64	24.00	0.26	179.73
Variance 0			0.03	-0.00	0.33			-0.00	0.69
Variance 1			-0.04	0.01	1.18			0.00	0.27
Variance 2			0.05	-0.01	0.52			0.00	0.80

Notes

Sunny, sample Time -1540, 70s, EB-1-10-9-19 here at 1430

Grab Samples

Product Name: Low-Flow System

Date: 2019-10-09 10:07:13

Project Information:

Operator Name Jordan Berisford
Company Name Atlantic Coast Consulting
Project Name Plant Arkwright - Ash Pond 3
Site Name Plant Arkwright
Latitude 0° 0' 0"
Longitude 0° 0' 0"
Sonde SN 588863
Turbidity Make/Model HACH 2100Q

Pump Information:

Pump Model/Type QED Bladder Pump
Tubing Type poly
Tubing Diameter 0.25 in
Tubing Length 50 ft

Pump placement from TOC 45 ft

Well Information:

Well ID ARGWC-18
Well diameter 2 in
Well Total Depth 50.65 ft
Screen Length 10 ft
Depth to Water 29.17 ft

Pumping Information:

Final Pumping Rate 200 mL/min
Total System Volume 0.9676365 L
Calculated Sample Rate 300 sec
Stabilization Drawdown 4 in
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond μ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 100	+/- 0.1	+/- 5%	+/- 100		+/- 10%	+/- 100
Last 5	09:45:59	1800.01	19.23	6.03	612.83	1.73	29.50	0.24	73.06
Last 5	09:50:59	2100.06	19.23	6.03	613.98	2.05	29.50	0.24	74.91
Last 5	09:55:59	2400.00	19.23	6.02	615.13	2.89	29.50	0.23	76.46
Last 5	10:00:59	2700.00	19.25	6.02	615.68	2.74	29.50	0.23	77.79
Last 5	10:05:59	2999.99	19.25	6.01	616.38	2.69	29.50	0.23	78.97
Variance 0			0.00	-0.00	1.15			-0.00	1.55
Variance 1			0.02	-0.00	0.55			-0.00	1.33
Variance 2			0.01	-0.01	0.70			0.00	1.18

Notes

Cloudy, 60s, sample Time-1005, FB-1-10-9-19 here at 0930

Grab Samples

APPENDIX C

Statistical Analyses

100% ND

Date: 1/10/2020 3:10 PM

Plant Arkwright Client: Southern Company Data: Arkwright No 3

Antimony (mg/L)

ARGWA-12, ARGWA-13, ARGWA-3, ARGWA-5, ARGWC-10, ARGWC-15, ARGWC-16, ARGWC-17, ARGWC-18, ARGWC-8

Beryllium (mg/L)

ARGWA-12, ARGWA-13, ARGWA-14, ARGWC-10, ARGWC-15

Cadmium (mg/L)

ARGWA-13, ARGWC-10, ARGWC-18, ARGWC-7, ARGWC-8, ARGWC-9

Chromium (mg/L)

ARGWC-18

Lead (mg/L)

ARGWC-10, ARGWC-16, ARGWC-17

Molybdenum (mg/L)

ARGWA-12, ARGWA-5, ARGWC-10, ARGWC-16, ARGWC-17, ARGWC-18, ARGWC-7, ARGWC-9

Silver (mg/L)

ARGWC-8

Thallium (mg/L)

ARGWA-12, ARGWA-13, ARGWA-14, ARGWC-10, ARGWC-16, ARGWC-17, ARGWC-18, ARGWC-7, ARGWC-8, ARGWC-9

Interwell Prediction Limits Significant Results

Plant Arkwright Client: Southern Company Data: Arkwright No 3 Printed 2/20/2020, 5:33 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	ARGWC-18	0.68	n/a	10/9/2019	2.1	Yes	50	44	n/a	0.0007349	NP (normality) 1 of 2
Boron (mg/L)	ARGWC-8	0.68	n/a	10/9/2019	1.2	Yes	50	44	n/a	0.0007349	NP (normality) 1 of 2
pH (SU)	ARGWC-16	6.94	5.58	10/9/2019	5.22	Yes	52	0	n/a	0.001383	NP (normality) 1 of 2
pH (SU)	ARGWC-17	6.94	5.58	10/9/2019	5.27	Yes	52	0	n/a	0.001383	NP (normality) 1 of 2

Interwell Prediction Limits All Results

Plant Arkwright Client: Southern Company Data: Arkwright No 3 Printed 2/20/2020, 5:33 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	ARGWC-10	0.68	n/a	10/9/2019	0.08ND	No	50	44	n/a	0.0007349	NP (normality) 1 of 2
Boron (mg/L)	ARGWC-15	0.68	n/a	10/8/2019	0.08ND	No	50	44	n/a	0.0007349	NP (normality) 1 of 2
Boron (mg/L)	ARGWC-16	0.68	n/a	10/9/2019	0.065	No	50	44	n/a	0.0007349	NP (normality) 1 of 2
Boron (mg/L)	ARGWC-17	0.68	n/a	10/9/2019	0.08ND	No	50	44	n/a	0.0007349	NP (normality) 1 of 2
Boron (mg/L)	ARGWC-18	0.68	n/a	10/9/2019	2.1	Yes	50	44	n/a	0.0007349	NP (normality) 1 of 2
Boron (mg/L)	ARGWC-7	0.68	n/a	10/9/2019	0.076	No	50	44	n/a	0.0007349	NP (normality) 1 of 2
Boron (mg/L)	ARGWC-8	0.68	n/a	10/9/2019	1.2	Yes	50	44	n/a	0.0007349	NP (normality) 1 of 2
Boron (mg/L)	ARGWC-9	0.68	n/a	10/9/2019	0.08ND	No	50	44	n/a	0.0007349	NP (normality) 1 of 2
Calcium (mg/L)	ARGWC-10	190	n/a	10/9/2019	7.7	No	50	0	n/a	0.0007349	NP (normality) 1 of 2
Calcium (mg/L)	ARGWC-15	190	n/a	10/8/2019	24	No	50	0	n/a	0.0007349	NP (normality) 1 of 2
Calcium (mg/L)	ARGWC-16	190	n/a	10/9/2019	39	No	50	0	n/a	0.0007349	NP (normality) 1 of 2
Calcium (mg/L)	ARGWC-17	190	n/a	10/9/2019	10	No	50	0	n/a	0.0007349	NP (normality) 1 of 2
Calcium (mg/L)	ARGWC-18	190	n/a	10/9/2019	49	No	50	0	n/a	0.0007349	NP (normality) 1 of 2
Calcium (mg/L)	ARGWC-7	190	n/a	10/9/2019	11	No	50	0	n/a	0.0007349	NP (normality) 1 of 2
Calcium (mg/L)	ARGWC-8	190	n/a	10/9/2019	53	No	50	0	n/a	0.0007349	NP (normality) 1 of 2
Calcium (mg/L)	ARGWC-9	190	n/a	10/9/2019	5.7	No	50	0	n/a	0.0007349	NP (normality) 1 of 2
Chloride (mg/L)	ARGWC-10	12.4	n/a	10/9/2019	3.8	No	151	0	n/a	0.00008684	NP (normality) 1 of 2
Chloride (mg/L)	ARGWC-15	12.4	n/a	10/8/2019	9.4	No	151	0	n/a	0.00008684	NP (normality) 1 of 2
Chloride (mg/L)	ARGWC-16	12.4	n/a	10/9/2019	4.7	No	151	0	n/a	0.00008684	NP (normality) 1 of 2
Chloride (mg/L)	ARGWC-17	12.4	n/a	10/9/2019	3.3	No	151	0	n/a	0.00008684	NP (normality) 1 of 2
Chloride (mg/L)	ARGWC-18	12.4	n/a	10/9/2019	6.7	No	151	0	n/a	0.00008684	NP (normality) 1 of 2
Chloride (mg/L)	ARGWC-7	12.4	n/a	10/9/2019	4.6	No	151	0	n/a	0.00008684	NP (normality) 1 of 2
Chloride (mg/L)	ARGWC-8	12.4	n/a	10/9/2019	5.7	No	151	0	n/a	0.00008684	NP (normality) 1 of 2
Chloride (mg/L)	ARGWC-9	12.4	n/a	10/9/2019	5.2	No	151	0	n/a	0.00008684	NP (normality) 1 of 2
Fluoride (mg/L)	ARGWC-10	1	n/a	10/9/2019	0.053	No	55	50.91	n/a	0.000627	NP (NDs) 1 of 2
Fluoride (mg/L)	ARGWC-15	1	n/a	10/8/2019	0.33	No	55	50.91	n/a	0.000627	NP (NDs) 1 of 2
Fluoride (mg/L)	ARGWC-16	1	n/a	10/9/2019	0.031	No	55	50.91	n/a	0.000627	NP (NDs) 1 of 2
Fluoride (mg/L)	ARGWC-17	1	n/a	10/9/2019	0.03	No	55	50.91	n/a	0.000627	NP (NDs) 1 of 2
Fluoride (mg/L)	ARGWC-18	1	n/a	10/9/2019	0.068	No	55	50.91	n/a	0.000627	NP (NDs) 1 of 2
Fluoride (mg/L)	ARGWC-7	1	n/a	10/9/2019	0.032	No	55	50.91	n/a	0.000627	NP (NDs) 1 of 2
Fluoride (mg/L)	ARGWC-8	1	n/a	10/9/2019	0.085	No	55	50.91	n/a	0.000627	NP (NDs) 1 of 2
Fluoride (mg/L)	ARGWC-9	1	n/a	10/9/2019	0.038	No	55	50.91	n/a	0.000627	NP (NDs) 1 of 2
pH (SU)	ARGWC-10	6.94	5.58	10/9/2019	5.94	No	52	0	n/a	0.001383	NP (normality) 1 of 2
pH (SU)	ARGWC-15	6.94	5.58	10/8/2019	6.38	No	52	0	n/a	0.001383	NP (normality) 1 of 2
pH (SU)	ARGWC-16	6.94	5.58	10/9/2019	5.22	Yes	52	0	n/a	0.001383	NP (normality) 1 of 2
pH (SU)	ARGWC-17	6.94	5.58	10/9/2019	5.27	Yes	52	0	n/a	0.001383	NP (normality) 1 of 2
pH (SU)	ARGWC-18	6.94	5.58	10/9/2019	6.01	No	52	0	n/a	0.001383	NP (normality) 1 of 2
pH (SU)	ARGWC-7	6.94	5.58	10/9/2019	5.76	No	52	0	n/a	0.001383	NP (normality) 1 of 2
pH (SU)	ARGWC-8	6.94	5.58	10/9/2019	6.47	No	52	0	n/a	0.001383	NP (normality) 1 of 2
pH (SU)	ARGWC-9	6.94	5.58	10/9/2019	5.9	No	52	0	n/a	0.001383	NP (normality) 1 of 2
Sulfate (mg/L)	ARGWC-10	950	n/a	10/9/2019	0.59	No	145	19.31	n/a	0.00009375	NP (normality) 1 of 2
Sulfate (mg/L)	ARGWC-15	950	n/a	10/8/2019	31	No	145	19.31	n/a	0.00009375	NP (normality) 1 of 2
Sulfate (mg/L)	ARGWC-16	950	n/a	10/9/2019	210	No	145	19.31	n/a	0.00009375	NP (normality) 1 of 2
Sulfate (mg/L)	ARGWC-17	950	n/a	10/9/2019	57	No	145	19.31	n/a	0.00009375	NP (normality) 1 of 2
Sulfate (mg/L)	ARGWC-18	950	n/a	10/9/2019	180	No	145	19.31	n/a	0.00009375	NP (normality) 1 of 2
Sulfate (mg/L)	ARGWC-7	950	n/a	10/9/2019	42	No	145	19.31	n/a	0.00009375	NP (normality) 1 of 2
Sulfate (mg/L)	ARGWC-8	950	n/a	10/9/2019	63	No	145	19.31	n/a	0.00009375	NP (normality) 1 of 2
Sulfate (mg/L)	ARGWC-9	950	n/a	10/9/2019	1.5	No	145	19.31	n/a	0.00009375	NP (normality) 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-10	1331	n/a	10/9/2019	92	No	50	0	ln(x)	0.0009403	Param 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-15	1331	n/a	10/8/2019	130	No	50	0	ln(x)	0.0009403	Param 1 of 2

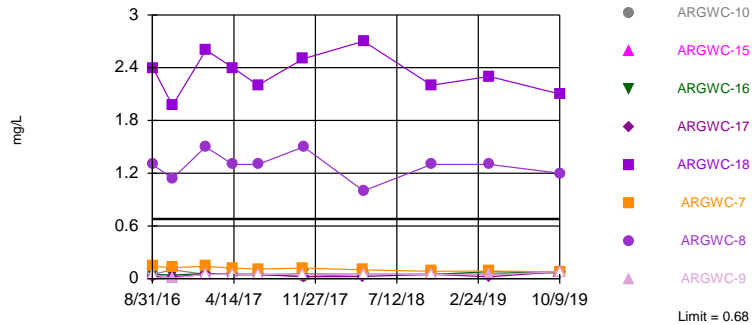
Interwell Prediction Limits All Results

Plant Arkwright Client: Southern Company Data: Arkwright No 3 Printed 2/20/2020, 5:33 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Total Dissolved Solids (mg/L)	ARGWC-16	1331	n/a	10/9/2019	350	No	50	0	ln(x)	0.0009403	Param 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-17	1331	n/a	10/9/2019	120	No	50	0	ln(x)	0.0009403	Param 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-18	1331	n/a	10/9/2019	420	No	50	0	ln(x)	0.0009403	Param 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-7	1331	n/a	10/9/2019	130	No	50	0	ln(x)	0.0009403	Param 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-8	1331	n/a	10/9/2019	290	No	50	0	ln(x)	0.0009403	Param 1 of 2
Total Dissolved Solids (mg/L)	ARGWC-9	1331	n/a	10/9/2019	75	No	50	0	ln(x)	0.0009403	Param 1 of 2

Exceeds Limit: ARGWC-18, ARGWC-8

Prediction Limit
Interwell Non-parametric

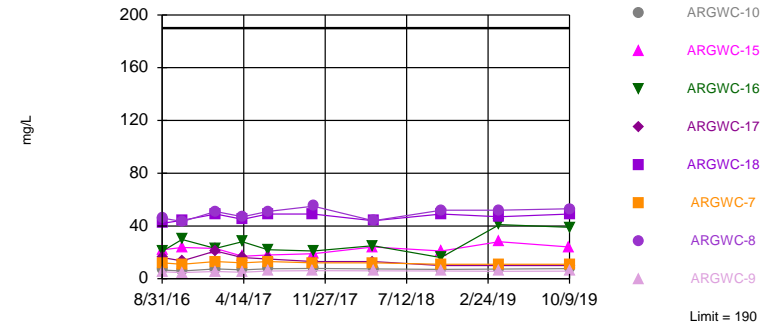


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 50 background values. 44% NDs. Annual per-constituent alpha = 0.01169. Individual comparison alpha = 0.0007349 (1 of 2). Comparing 8 points to limit.

Constituent: Boron Analysis Run 2/20/2020 5:30 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Within Limit

Prediction Limit
Interwell Non-parametric

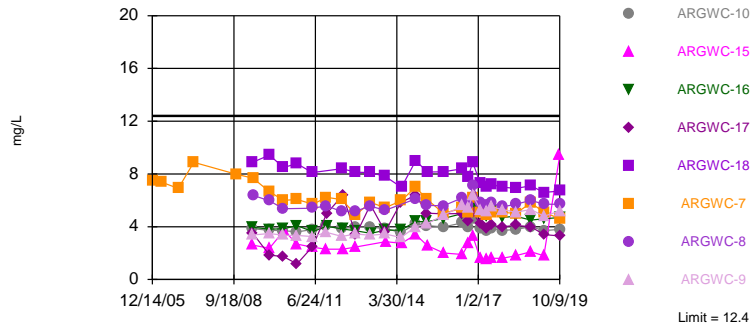


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 50 background values. Annual per-constituent alpha = 0.01169. Individual comparison alpha = 0.0007349 (1 of 2). Comparing 8 points to limit.

Constituent: Calcium Analysis Run 2/20/2020 5:30 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Within Limit

Prediction Limit
Interwell Non-parametric

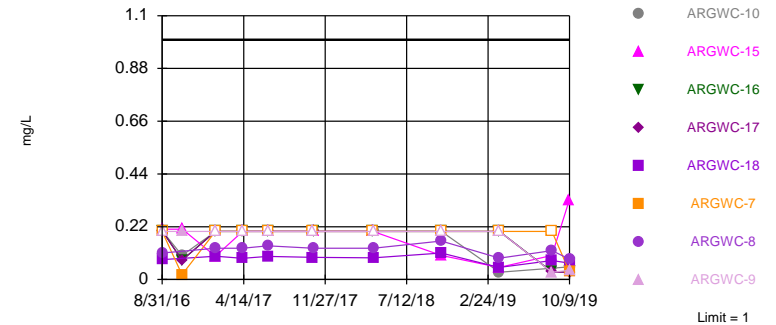


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 151 background values. Annual per-constituent alpha = 0.001389. Individual comparison alpha = 0.00008684 (1 of 2). Comparing 8 points to limit.

Constituent: Chloride Analysis Run 2/20/2020 5:30 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Within Limit

Prediction Limit
Interwell Non-parametric

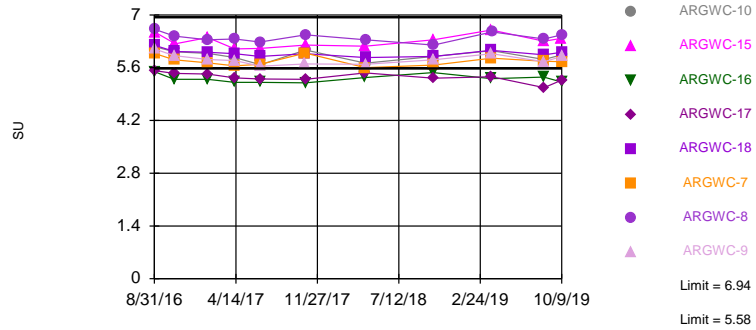


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 55 background values. 50.91% NDs. Annual per-constituent alpha = 0.009985. Individual comparison alpha = 0.000627 (1 of 2). Comparing 8 points to limit.

Constituent: Fluoride Analysis Run 2/20/2020 5:30 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Exceeds Limits: ARGWC-16, ARGWC-17

Prediction Limit
Interwell Non-parametric

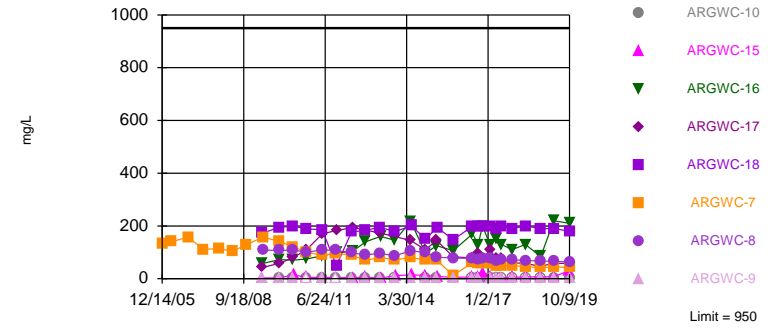


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 52 background values. Annual per-constituent alpha = 0.02202. Individual comparison alpha = 0.001383 (1 of 2). Comparing 8 points to limit.

Constituent: pH Analysis Run 2/20/2020 5:30 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Within Limit

Prediction Limit
Interwell Non-parametric

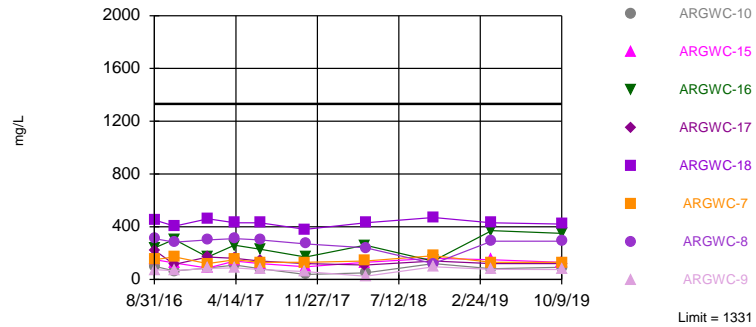


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 145 background values. 19.31% NDs. Annual per-constituent alpha = 0.001499. Individual comparison alpha = 0.00009375 (1 of 2). Comparing 8 points to limit.

Constituent: Sulfate Analysis Run 2/20/2020 5:30 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Within Limit

Prediction Limit
Interwell Parametric



Background Data Summary (based on natural log transformation): Mean=5.039, Std. Dev.=1.087, n=50. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9498, critical = 0.935. Kappa = 1.982 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 8 points to limit.

Constituent: Total Dissolved Solids Analysis Run 2/20/2020 5:30 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-12 (bg)	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-9	ARGWC-7	ARGWA-14 (bg)	ARGWA-13 (bg)	ARGWC-8	ARGWC-16
8/30/2016	0.032 (J)	<0.05							
8/31/2016			<0.05	<0.05	0.14	0.04 (J)	0.1	1.3	
9/1/2016									0.049 (J)
9/2/2016									
10/24/2016	0.0406 (J)								
10/25/2016		0.0073 (J)	0.0068 (J)	0.0071 (J)	0.126	0.065 (J)	0.204		0.042 (J)
10/26/2016								1.14	
1/23/2017	0.023 (J)					0.031 (J)			
1/24/2017		<0.05	<0.05				0.064		
1/26/2017				<0.05	0.14			1.5	0.059
1/27/2017									
4/11/2017	0.025 (J)	<0.05	<0.05			0.043 (J)	0.081		0.045 (J)
4/12/2017				<0.05	0.12			1.3	
6/20/2017		<0.05	<0.05			0.029 (J)			
6/21/2017	<0.05						0.13	1.3	0.045 (J)
6/22/2017				<0.05	0.11				
10/25/2017	0.028 (J)	<0.05	<0.05	<0.05	0.12	0.041 (J)	0.17		
10/26/2017								1.5	0.054
4/9/2018						0.04 (J)	0.059		
4/10/2018	0.027 (J)	<0.05	<0.05		0.1				0.048 (J)
4/11/2018				<0.05				1	
10/16/2018	0.023 (J)	<0.05	<0.05			0.046 (J)	0.34		0.048 (J)
10/17/2018				<0.05	0.084			1.3	
3/26/2019							0.32		
3/27/2019	<0.05	<0.05	<0.05			0.032 (J)			
3/28/2019				0.044 (J)	0.087			1.3	0.08
10/7/2019						<0.08			
10/8/2019	<0.08	<0.08	<0.08				0.68		
10/9/2019				<0.08	0.076 (J)			1.2	0.065 (J)

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-10	ARGWC-17	ARGWC-18	ARGWC-15
8/30/2016				
8/31/2016				
9/1/2016	<0.05	0.022 (J)	2.4	
9/2/2016				<0.05
10/24/2016				
10/25/2016	<0.1	0.0219 (J)		
10/26/2016			1.97	0.0138 (J)
1/23/2017				
1/24/2017				
1/26/2017		<0.05		<0.05
1/27/2017	<0.05		2.6	
4/11/2017		<0.05		
4/12/2017	<0.05		2.4	<0.05
6/20/2017				
6/21/2017		<0.05	2.2	<0.05
6/22/2017	<0.05			
10/25/2017			2.5	
10/26/2017	0.026 (J)	0.023 (J)		<0.05
4/9/2018				
4/10/2018		0.026 (J)		<0.05
4/11/2018	<0.05		2.7	
10/16/2018				
10/17/2018	<0.05	<0.05	2.2	<0.05
3/26/2019				
3/27/2019			2.3	<0.05
3/28/2019	<0.05	0.022 (J)		
10/7/2019				
10/8/2019				<0.08
10/9/2019	<0.08	<0.08	2.1	

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-12 (bg)	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-9	ARGWC-7	ARGWA-14 (bg)	ARGWA-13 (bg)	ARGWC-8	ARGWC-16
8/30/2016	11	5.1							
8/31/2016			5.4	5.2	12	31	110	46	
9/1/2016									21
9/2/2016									
10/24/2016	10.4								
10/25/2016		4.76	4.47	4.64	10.9	38.5	150		29.8
10/26/2016								43.3	
1/23/2017	12					25			
1/24/2017		5.6	5.8				78		
1/26/2017				5.5	13			51	23
1/27/2017									
4/11/2017	12	4.7	5.3			33	78		28
4/12/2017				4.9	12			47	
6/20/2017		5.4	5.8			34			
6/21/2017	12						110	51	22
6/22/2017				5.8	13				
10/25/2017	13	6	5.9	6.1	12	28	120		
10/26/2017								55	21
4/9/2018						30	49		
4/10/2018	13	5.3	5.9		12				25
4/11/2018				6				44	
10/16/2018	12	5.6	5.8			41	110		16
10/17/2018				5.8	11			52	
3/26/2019							95		
3/27/2019	11	4.5	5.4			42			
3/28/2019				5.6	11			52	41
10/7/2019						36			
10/8/2019	13	5.9	6				190		
10/9/2019				5.7	11			53	39

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-10	ARGWC-17	ARGWC-18	ARGWC-15
8/30/2016				
8/31/2016				
9/1/2016	6.6	16	42	
9/2/2016				22
10/24/2016				
10/25/2016	5.89	13.5		
10/26/2016			44.3	23.7
1/23/2017				
1/24/2017				
1/26/2017		21		23
1/27/2017	7.4		49	
4/11/2017		16		
4/12/2017	6.7		45	17
6/20/2017				
6/21/2017		15	49	18
6/22/2017	7.5			
10/25/2017			49	
10/26/2017	7.8	13		19
4/9/2018				
4/10/2018		13		24
4/11/2018	7.4		44	
10/16/2018				
10/17/2018	7.1	10	49	21
3/26/2019				
3/27/2019			47	28
3/28/2019	7.3	10		
10/7/2019				
10/8/2019				24
10/9/2019	7.7	10	49	

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-16	ARGWC-17	ARGWC-18
12/16/1997	3.8								
6/30/1998	2.9	4.6							
12/2/1998	1.76	3.13							
6/8/1999	1.97	1.56							
12/7/1999	1.98	3.05							
6/15/2000	2.08	3.35							
12/12/2000	2.02	2.42							
12/5/2001	2.03	2.62							
6/26/2002	2.52	3.4							
12/3/2002	2.12	3.04							
6/11/2003	2.43	3.02							
12/10/2003	1.93	2.9							
6/15/2004	2.42	2.05							
12/14/2004	2.44	2.78							
6/2/2005	2.79	3.15							
12/14/2005	2.77	3.38	7.52						
4/5/2006	2.8	3.49	7.38						
10/30/2006	3.09	2.84	6.9						
5/10/2007	3.93	3.68	8.88						
11/17/2007		2.69							
5/3/2008	3.52	2.85							
10/22/2008	3.15	2.99	7.97						
5/5/2009				2.61					
5/6/2009	3.49				10.7				
5/7/2009		2.96				4.24			
5/12/2009							3.96	3.5	8.89
5/13/2009									
5/14/2009			7.68						
12/1/2009	3.26		6.66						
12/3/2009					10.1	2.66			
12/4/2009		2.97		2.37				1.85	9.43
12/5/2009							3.81		
5/25/2010	3.62				7.11	3.29		1.74	8.49
5/26/2010			6				3.85		
6/1/2010		3.23		3.71					
11/9/2010	3.38				8.4		4.08	1.18	
11/10/2010		2.86	6.07	2.69		3.82			8.77
5/18/2011									
5/19/2011									8.11
5/24/2011	3.62				9.07		3.63	2.51	
5/25/2011		2.86	5.7	2.44		4.92			
11/9/2011				2.3					
11/10/2011	3.74				10.3	4.48			
11/11/2011			6.23						
11/12/2011		2.83					4.03	4.99	
5/17/2012			6.06						8.4
5/18/2012	3.6				10.1				
5/30/2012						4.72	3.82	6.4	
5/31/2012		2.68		2.29					
11/9/2012	3.66		4.9		8.73	5.1	3.69	3.37	
11/10/2012				2.46					8.13
11/11/2012		2.63							

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-16	ARGWC-17	ARGWC-18
10/8/2019	5.7	2.6		9.4		6.7			
10/9/2019			4.6				4.7	3.3	6.7

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-10	ARGWC-9	ARGWC-8	ARGWA-14 (bg)
12/16/1997				
6/30/1998				
12/2/1998				
6/8/1999				
12/7/1999				
6/15/2000				
12/12/2000				
12/5/2001				
6/26/2002				
12/3/2002				
6/11/2003				
12/10/2003				
6/15/2004				
12/14/2004				
6/2/2005				
12/14/2005				
4/5/2006				
10/30/2006				
5/10/2007				
11/17/2007				
5/3/2008				
10/22/2008				
5/5/2009				
5/6/2009				
5/7/2009				
5/12/2009				
5/13/2009	3.85	3.37		
5/14/2009			6.38	
12/1/2009				
12/3/2009	3.73	3.49	5.96	
12/4/2009				
12/5/2009				
5/25/2010				
5/26/2010	3.7	3.35	5.37	
6/1/2010				
11/9/2010	3.6	3.34		
11/10/2010				
5/18/2011			5.4	
5/19/2011	3.79	3.25		
5/24/2011				
5/25/2011				
11/9/2011				
11/10/2011				
11/11/2011	4.07	3.57	5.58	
11/12/2011				
5/17/2012	3.84	3.27	5.15	
5/18/2012				
5/30/2012				
5/31/2012				
11/9/2012	3.99	3.45	5.2	
11/10/2012				
11/11/2012				

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-10	ARGWC-9	ARGWC-8	ARGWA-14 (bg)
5/7/2013	3.94	3.35	5.56	
5/8/2013				
5/9/2013				
5/13/2013				
11/5/2013			5.24	
11/6/2013	3.89	3.45		
11/11/2013				
11/12/2013				
5/20/2014	3.54			
5/21/2014		3.18		
5/28/2014				
5/29/2014				
11/17/2014				
11/18/2014	4.2	4	6.1	
11/19/2014				
11/20/2014				
4/7/2015	4.09	4.22	5.62	
4/14/2015				
4/15/2015				
10/28/2015	3.98	4.87	5.58	
10/29/2015				
11/3/2015				
11/4/2015				12.4
6/23/2016	4.3	5.6	6.2	9
6/24/2016				
8/30/2016				
8/31/2016		5.4	5.6	5.4
9/1/2016	4			
9/2/2016				
10/24/2016				
10/25/2016	4.6	6.4		9.3
10/26/2016			7.1	
1/23/2017				5.1
1/24/2017				
1/26/2017		5.3	5.8	
1/27/2017	3.9			
4/11/2017				4.1
4/12/2017	3.7	5.2	5.6	
6/20/2017				4.1
6/21/2017			5.8	
6/22/2017	3.9	5.5		
10/25/2017		5.3		3.8
10/26/2017	3.7		5.5	
4/9/2018				3.9
4/10/2018				
4/11/2018	3.8	5.1	5.7	
10/16/2018				4.3
10/17/2018	4	5.3	6	
3/26/2019				
3/27/2019				4
3/28/2019	3.7	4.8	5.7	
10/7/2019				4

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-10	ARGWC-9	ARGWC-8	ARGWA-14 (bg)
10/8/2019				
10/9/2019	3.8	5.2	5.7	

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-12 (bg)	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWA-14 (bg)	ARGWC-9	ARGWC-7	ARGWC-8	ARGWA-13 (bg)	ARGWC-16
8/30/2016	<0.2	<0.2							
8/31/2016			<0.2	0.12 (J)	<0.2	<0.2	0.11 (J)	<0.2	
9/1/2016									<0.2
9/2/2016									
10/24/2016	0.1 (J)								
10/25/2016		0.09 (J)	0.14 (J)	0.53	0.2 (J)	0.02 (J)		0.08 (J)	0.08 (J)
10/26/2016									
1/23/2017	<0.2			0.4					
1/24/2017		<0.2	<0.2					<0.2	
1/26/2017					<0.2	<0.2	0.13 (J)		<0.2
1/27/2017									
4/11/2017	<0.2	<0.2	<0.2	0.31				<0.2	<0.2
4/12/2017					<0.2	<0.2	0.13 (J)		
6/20/2017		<0.2	<0.2	0.27					
6/21/2017	<0.2						0.14 (J)	<0.2	<0.2
6/22/2017					<0.2	<0.2			
10/25/2017	<0.2	<0.2	<0.2	0.29	<0.2	<0.2		<1	
10/26/2017							0.13 (J)		<0.2
4/9/2018				0.25				<0.2	
4/10/2018	<0.2	<0.2	<0.2			<0.2			<0.2
4/11/2018					<0.2		0.13 (J)		
10/16/2018	0.1 (J)	<0.2	0.1 (J)	0.33				<0.4	<0.2
10/17/2018					<0.2	<0.2	0.16 (J)		
3/26/2019								<0.2	
3/27/2019	0.031 (J)	0.026 (J)	0.034 (J)	0.15 (J)					
3/28/2019					<0.2	<0.2	0.089 (J)		<0.2
8/19/2019								<0.2	
8/20/2019	0.049 (J)	0.047 (J)	0.053 (J)						0.033 (J)
8/21/2019				0.35	0.03 (J)	<0.2	0.12 (J)		
10/7/2019				0.12 (J)					
10/8/2019	0.27 (J)	0.05 (J)	0.056 (J)					0.033 (J)	
10/9/2019					0.038 (J)	0.032 (J)	0.085 (J)		0.031 (J)

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-17	ARGWC-10	ARGWC-18	ARGWC-15
8/30/2016				
8/31/2016				
9/1/2016	<0.2	<0.2	0.083 (J)	
9/2/2016				0.21
10/24/2016				
10/25/2016	0.08 (J)	0.1 (J)		
10/26/2016				0.21 (J)
1/23/2017				
1/24/2017				
1/26/2017	<0.2			0.097 (J)
1/27/2017		<0.2	0.097 (J)	
4/11/2017	<0.2			
4/12/2017		<0.2	0.088 (J)	<0.2
6/20/2017				
6/21/2017	<0.2		0.096 (J)	<0.2
6/22/2017		<0.2		
10/25/2017			0.092 (J)	
10/26/2017	<0.2	<0.2		<0.2
4/9/2018				
4/10/2018	<0.2			<0.2
4/11/2018		<0.2	0.09 (J)	
10/16/2018				
10/17/2018	<0.2	<0.2	0.11 (J)	0.1 (J)
3/26/2019				
3/27/2019			0.05 (J)	0.05 (J)
3/28/2019	<0.2	0.03 (J)		
8/19/2019				
8/20/2019				
8/21/2019	0.031 (J)	0.047 (J)	0.079 (J)	0.1 (J)
10/7/2019				
10/8/2019				0.33 (J)
10/9/2019	0.03 (J)	0.053 (J)	0.068 (J)	

Prediction Limit

Constituent: pH (SU) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWC-8	ARGWA-3 (bg)	ARGWC-9	ARGWC-10	ARGWC-7	ARGWC-16	ARGWC-17	ARGWC-18
8/30/2016	6.07								
8/31/2016		6.62	6.09	6.1	6.16	5.98			
9/1/2016							5.49	5.52	6.19
9/2/2016									
10/24/2016									
10/25/2016	5.96		5.92	5.92	6.02	5.81	5.29	5.45	
10/26/2016		6.44							6.03
1/23/2017									
1/24/2017	5.89		5.98						
1/26/2017		6.34		5.82		5.73	5.29	5.43	
1/27/2017					5.98				6.01
4/11/2017	5.78		5.82				5.21	5.33	
4/12/2017		6.36		5.79	5.87	5.65			5.97
6/20/2017	5.69		5.8						
6/21/2017		6.28					5.21	5.3	5.9
6/22/2017				5.64	5.68	5.69			
10/25/2017	6.11		5.89	5.7		5.99			5.97
10/26/2017		6.47			6.07		5.2	5.29	
4/9/2018									
4/10/2018	5.58		5.85			5.6	5.34	5.46	
4/11/2018		6.34		5.69	5.72				5.87
10/16/2018	5.86		6.03				5.47		
10/17/2018		6.2		5.81	5.9	5.67		5.32	5.9
3/26/2019									
3/27/2019	5.97		6.1						6.06
3/28/2019				5.97	6.05	5.85	5.31	5.36	
3/29/2019		6.55							
8/19/2019									
8/20/2019	5.8		5.83				5.35		
8/21/2019		6.36		5.76	5.82	5.77		5.07	5.94
10/7/2019									
10/8/2019	5.93		5.96						
10/9/2019		6.47		5.9	5.94	5.76	5.22	5.27	6.01

Prediction Limit

Constituent: pH (SU) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-15	ARGWA-12 (bg)	ARGWA-14 (bg)	ARGWA-13 (bg)
8/30/2016				
8/31/2016				
9/1/2016				
9/2/2016	6.54			
10/24/2016		5.99		
10/25/2016	6.25		6.92	5.8
10/26/2016	6.23			
1/23/2017		5.94	6.76	
1/24/2017				5.82
1/26/2017	6.4			
1/27/2017				
4/11/2017		5.88	6.72	5.78
4/12/2017	6.1			
6/20/2017			6.66	
6/21/2017	6.11	5.73		5.67
6/22/2017				
10/25/2017		6.13	6.77	5.72
10/26/2017	6.2			
4/9/2018			6.6	5.78
4/10/2018	6.17	5.95		
4/11/2018				
10/16/2018		5.94	6.63	5.74
10/17/2018	6.34			
3/26/2019				5.96
3/27/2019	6.6	6	6.83	
3/28/2019				
3/29/2019				
8/19/2019				5.59
8/20/2019		5.89		
8/21/2019	6.3		6.94	
10/7/2019			6.69	
10/8/2019	6.38	5.93		5.74
10/9/2019				

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-3 (bg)	ARGWA-5 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWC-18	ARGWC-16	ARGWC-17	ARGWC-9
12/16/1997	<1	2							
6/30/1998	<1	<1							
12/2/1998	0.654	0.709							
6/8/1999	1.46	<0.038							
12/7/1999	0.399	0.531							
6/15/2000	0.601	0.733							
12/12/2000	0.45	0.621							
12/5/2001	0.094	0.274							
6/26/2002	4.95	0.505							
12/3/2002	0.911	0.515							
6/11/2003	1.85	0.508							
12/10/2003	0.77	0.578							
6/15/2004	1.3	1.23							
12/14/2004	1.02	1.22							
6/2/2005	0.834	0.908							
12/14/2005	<0.13	0.825	133						
4/5/2006	<0.13	1.06	140						
10/30/2006	0.865	0.996	157						
5/10/2007	1.03	1.01	111						
11/17/2007	0.818	1.72	114						
5/2/2008			104						
5/3/2008	0.941	1.2							
10/22/2008	<0.14	<0.14	129						
5/5/2009				2.89					
5/6/2009		0.807			16.6				
5/7/2009	0.46								
5/12/2009						173	57.9	42.6	
5/13/2009									0.938
5/14/2009			157						
12/1/2009		0.644	142						
12/3/2009					12.3				0.422
12/4/2009	1.06			3.13		195		58.4	
12/5/2009							72.1		
5/25/2010		0.509			6.44	199		79.4	
5/26/2010			120				70.3		0.262
6/1/2010	5.56			14.5					
11/9/2010		0.348			6.83		74.8	111	<0.19
11/10/2010	0.241		100	5.04		189			
5/18/2011									
5/19/2011						186			0.359
5/24/2011		0.532			8.55		87.2	171	
5/25/2011	0.383		88.8	4.57					
11/9/2011				4.15					
11/10/2011		0.209			9.74				
11/11/2011			96.6						<0.17
11/12/2011	<0.17					49.9	97.9	182	
5/17/2012			88.9			177			0.398
5/18/2012		0.471			8.72				
5/30/2012							103	194	
5/31/2012	0.426			4.05					
11/9/2012		0.589	70.1		5.9		140		0.545
11/10/2012				5.68		184			

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-3 (bg)	ARGWA-5 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWC-18	ARGWC-16	ARGWC-17	ARGWC-9
10/8/2019	0.7 (J)	0.7 (J)		31	55				
10/9/2019			42			180	210	57	1.5

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-8	ARGWC-10	ARGWA-13 (bg)	ARGWA-14 (bg)
12/16/1997				
6/30/1998				
12/2/1998				
6/8/1999				
12/7/1999				
6/15/2000				
12/12/2000				
12/5/2001				
6/26/2002				
12/3/2002				
6/11/2003				
12/10/2003				
6/15/2004				
12/14/2004				
6/2/2005				
12/14/2005				
4/5/2006				
10/30/2006				
5/10/2007				
11/17/2007				
5/2/2008				
5/3/2008				
10/22/2008				
5/5/2009				
5/6/2009				
5/7/2009				
5/12/2009				
5/13/2009				
5/14/2009	109			
12/1/2009				
12/3/2009	107	0.544		
12/4/2009				
12/5/2009				
5/25/2010				
5/26/2010	109	0.37		
6/1/2010				
11/9/2010	100	0.299		
11/10/2010				
5/18/2011	110			
5/19/2011		0.502		
5/24/2011				
5/25/2011				
11/9/2011				
11/10/2011				
11/11/2011	107	0.172		
11/12/2011				
5/17/2012	98	0.438		
5/18/2012				
5/30/2012				
5/31/2012				
11/9/2012	90.4	0.537		
11/10/2012				

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-8	ARGWC-10	ARGWA-13 (bg)	ARGWA-14 (bg)
11/11/2012				
5/7/2013	96.2	0.437		
5/8/2013				
5/13/2013				
11/5/2013	86.9			
11/6/2013		<0.5		
11/11/2013			316	
11/12/2013				
5/20/2014				
5/21/2014	106		162	
5/28/2014				
5/29/2014				
11/17/2014				
11/18/2014	99	<1	370	
11/19/2014				
11/20/2014				
4/7/2015	82.3	0.464	235	
4/14/2015				105
4/15/2015				
10/28/2015	78	0.293		
10/29/2015				
11/3/2015				
11/4/2015				74.4
6/23/2016	78	<1	380	18
6/24/2016				
8/30/2016				
8/31/2016	72		600	19
9/1/2016		<1		
9/2/2016				
10/24/2016				
10/25/2016		0.38 (J)		42
10/26/2016	77			
1/23/2017				12
1/24/2017			370	
1/26/2017	75			
1/27/2017		<1		
4/11/2017			340	7.1
4/12/2017	69	<1		
6/20/2017				8.5
6/21/2017	73		540	
6/22/2017		<1		
10/25/2017			580	9.1
10/26/2017	72	<1		
4/9/2018			230	11
4/10/2018				
4/11/2018	69	<1		
10/16/2018			520	14
10/17/2018	67	<1		
3/26/2019			430	
3/27/2019				15
3/28/2019	66	0.38 (J)		
10/7/2019				12

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-8	ARGWC-10	ARGWA-13 (bg)	ARGWA-14 (bg)
10/8/2019			950	
10/9/2019	63	0.59 (J)		

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-12 (bg)	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-9	ARGWC-7	ARGWA-14 (bg)	ARGWA-13 (bg)	ARGWC-8	ARGWC-16
8/30/2016	100	58							
8/31/2016			80	74	150	330	1000	310	
9/1/2016									240
9/2/2016									
10/24/2016	136								
10/25/2016		34	65	67	171	459	1280		304
10/26/2016								283	
1/23/2017	16					340			
1/24/2017		120	70				590		
1/26/2017				84	120			300	170
1/27/2017									
4/11/2017	120	76	64			300	610		260
4/12/2017				88	150			310	
6/20/2017		36	52			210			
6/21/2017	140						880	300	230
6/22/2017				76	130				
10/25/2017	120	64	72	60	130	280	900		
10/26/2017								270	170
4/9/2018						280	440		
4/10/2018	130	60	86		140				260
4/11/2018				24				240	
10/16/2018	150	54	74			48	910		140
10/17/2018				96	180			120	
3/26/2019							750		
3/27/2019	110	61	69			330			
3/28/2019				77	130			290	370
10/7/2019						230			
10/8/2019	130	68	66				1500		
10/9/2019				75	130			290	350

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 2/20/2020 5:33 PM View: CCR Interwell PL
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-10	ARGWC-17	ARGWC-18	ARGWC-15
8/30/2016				
8/31/2016				
9/1/2016	100	220	450	
9/2/2016				150
10/24/2016				
10/25/2016	65	114		
10/26/2016			404	125
1/23/2017				
1/24/2017				
1/26/2017		170		86
1/27/2017	86		460	
4/11/2017		160		
4/12/2017	110		430	140
6/20/2017				
6/21/2017		140	430	120
6/22/2017	82			
10/25/2017			380	
10/26/2017	38	120		96
4/9/2018				
4/10/2018		110		130
4/11/2018	50		430	
10/16/2018				
10/17/2018	120	140	470	160
3/26/2019				
3/27/2019			430	150
3/28/2019	82	120		
10/7/2019				
10/8/2019				130
10/9/2019	92	120	420	

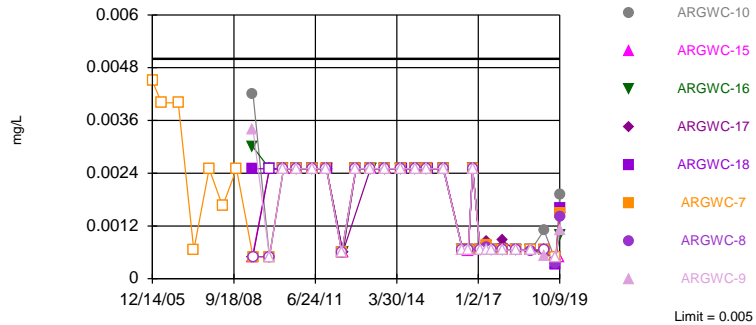
Interwell Prediction Limit

Plant Arkwright Client: Southern Company Data: Arkwright No 3 Printed 2/12/2020, 10:45 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	ARGWC-10	0.005	n/a	10/9/2019	0.0019	No	171	78.36	n/a	0.000...	NP (NDs) 1 of 2
Arsenic (mg/L)	ARGWC-15	0.005	n/a	10/8/2019	0.0005ND	No	171	78.36	n/a	0.000...	NP (NDs) 1 of 2
Arsenic (mg/L)	ARGWC-16	0.005	n/a	10/9/2019	0.001	No	171	78.36	n/a	0.000...	NP (NDs) 1 of 2
Arsenic (mg/L)	ARGWC-17	0.005	n/a	10/9/2019	0.0015	No	171	78.36	n/a	0.000...	NP (NDs) 1 of 2
Arsenic (mg/L)	ARGWC-18	0.005	n/a	10/9/2019	0.0016	No	171	78.36	n/a	0.000...	NP (NDs) 1 of 2
Arsenic (mg/L)	ARGWC-7	0.005	n/a	10/9/2019	0.0015	No	171	78.36	n/a	0.000...	NP (NDs) 1 of 2
Arsenic (mg/L)	ARGWC-8	0.005	n/a	10/9/2019	0.0014	No	171	78.36	n/a	0.000...	NP (NDs) 1 of 2
Arsenic (mg/L)	ARGWC-9	0.005	n/a	10/9/2019	0.0011	No	171	78.36	n/a	0.000...	NP (NDs) 1 of 2
Barium (mg/L)	ARGWC-10	0.24	n/a	10/9/2019	0.031	No	167	0	n/a	0.000...	NP (normality) 1 of 2
Barium (mg/L)	ARGWC-15	0.24	n/a	10/8/2019	0.031	No	167	0	n/a	0.000...	NP (normality) 1 of 2
Barium (mg/L)	ARGWC-16	0.24	n/a	10/9/2019	0.057	No	167	0	n/a	0.000...	NP (normality) 1 of 2
Barium (mg/L)	ARGWC-17	0.24	n/a	10/9/2019	0.049	No	167	0	n/a	0.000...	NP (normality) 1 of 2
Barium (mg/L)	ARGWC-18	0.24	n/a	10/9/2019	0.039	No	167	0	n/a	0.000...	NP (normality) 1 of 2
Barium (mg/L)	ARGWC-7	0.24	n/a	10/9/2019	0.046	No	167	0	n/a	0.000...	NP (normality) 1 of 2
Barium (mg/L)	ARGWC-8	0.24	n/a	10/9/2019	0.049	No	167	0	n/a	0.000...	NP (normality) 1 of 2
Barium (mg/L)	ARGWC-9	0.24	n/a	10/9/2019	0.041	No	167	0	n/a	0.000...	NP (normality) 1 of 2
Cadmium (mg/L)	ARGWC-10	0.0043	n/a	10/9/2019	0.0005ND	No	168	93.45	n/a	0.000...	NP (NDs) 1 of 2
Cadmium (mg/L)	ARGWC-15	0.0043	n/a	10/8/2019	0.0005ND	No	168	93.45	n/a	0.000...	NP (NDs) 1 of 2
Cadmium (mg/L)	ARGWC-16	0.0043	n/a	10/9/2019	0.0005ND	No	168	93.45	n/a	0.000...	NP (NDs) 1 of 2
Cadmium (mg/L)	ARGWC-17	0.0043	n/a	10/9/2019	0.00018	No	168	93.45	n/a	0.000...	NP (NDs) 1 of 2
Lead (mg/L)	ARGWC-15	0.013	n/a	10/8/2019	0.0005ND	No	170	87.65	n/a	0.000...	NP (NDs) 1 of 2
Lead (mg/L)	ARGWC-18	0.013	n/a	10/9/2019	0.0005ND	No	170	87.65	n/a	0.000...	NP (NDs) 1 of 2
Lead (mg/L)	ARGWC-7	0.013	n/a	10/9/2019	0.0005ND	No	170	87.65	n/a	0.000...	NP (NDs) 1 of 2
Lead (mg/L)	ARGWC-8	0.013	n/a	10/9/2019	0.00019	No	170	87.65	n/a	0.000...	NP (NDs) 1 of 2
Lead (mg/L)	ARGWC-9	0.013	n/a	10/9/2019	0.00016	No	170	87.65	n/a	0.000...	NP (NDs) 1 of 2
Selenium (mg/L)	ARGWC-10	0.034	n/a	10/9/2019	0.0025ND	No	160	82.5	n/a	0.000...	NP (NDs) 1 of 2
Selenium (mg/L)	ARGWC-15	0.034	n/a	10/8/2019	0.0025ND	No	160	82.5	n/a	0.000...	NP (NDs) 1 of 2
Selenium (mg/L)	ARGWC-16	0.034	n/a	10/9/2019	0.0018	No	160	82.5	n/a	0.000...	NP (NDs) 1 of 2
Selenium (mg/L)	ARGWC-17	0.034	n/a	10/9/2019	0.0025ND	No	160	82.5	n/a	0.000...	NP (NDs) 1 of 2
Selenium (mg/L)	ARGWC-18	0.034	n/a	10/9/2019	0.0025ND	No	160	82.5	n/a	0.000...	NP (NDs) 1 of 2
Selenium (mg/L)	ARGWC-7	0.034	n/a	10/9/2019	0.0025ND	No	160	82.5	n/a	0.000...	NP (NDs) 1 of 2
Selenium (mg/L)	ARGWC-8	0.034	n/a	10/9/2019	0.0025ND	No	160	82.5	n/a	0.000...	NP (NDs) 1 of 2
Selenium (mg/L)	ARGWC-9	0.034	n/a	10/9/2019	0.0025ND	No	160	82.5	n/a	0.000...	NP (NDs) 1 of 2
Silver (mg/L)	ARGWC-10	0.0051	n/a	10/9/2019	0.00065ND	No	145	92.41	n/a	0.000...	NP (NDs) 1 of 2
Silver (mg/L)	ARGWC-15	0.0051	n/a	10/8/2019	0.00018	No	145	92.41	n/a	0.000...	NP (NDs) 1 of 2
Silver (mg/L)	ARGWC-16	0.0051	n/a	10/9/2019	0.00065ND	No	145	92.41	n/a	0.000...	NP (NDs) 1 of 2
Silver (mg/L)	ARGWC-17	0.0051	n/a	10/9/2019	0.00065ND	No	145	92.41	n/a	0.000...	NP (NDs) 1 of 2
Silver (mg/L)	ARGWC-18	0.0051	n/a	10/9/2019	0.00065ND	No	145	92.41	n/a	0.000...	NP (NDs) 1 of 2
Silver (mg/L)	ARGWC-7	0.0051	n/a	10/9/2019	0.00065ND	No	145	92.41	n/a	0.000...	NP (NDs) 1 of 2
Silver (mg/L)	ARGWC-9	0.0051	n/a	10/9/2019	0.00065ND	No	145	92.41	n/a	0.000...	NP (NDs) 1 of 2

Within Limit

Prediction Limit
Interwell Non-parametric

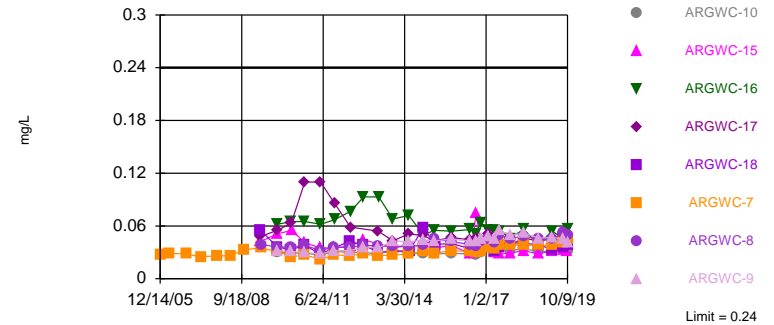


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 171 background values. 78.36% NDs. Annual per-constituent alpha = 0.001083. Individual comparison alpha = 0.00006773 (1 of 2). Comparing 8 points to limit.

Constituent: Arsenic Analysis Run 2/12/2020 10:44 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Within Limit

Prediction Limit
Interwell Non-parametric

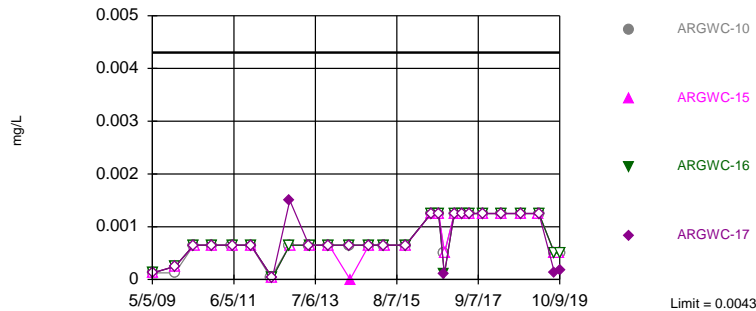


Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 167 background values. Annual per-constituent alpha = 0.001134. Individual comparison alpha = 0.00007091 (1 of 2). Comparing 8 points to limit.

Constituent: Barium Analysis Run 2/12/2020 10:44 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Within Limit

Prediction Limit
Interwell Non-parametric

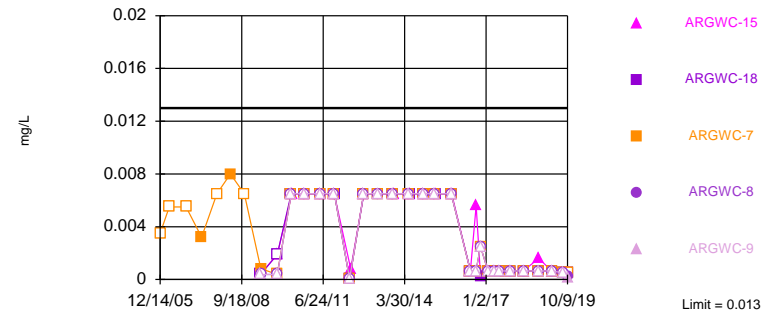


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 168 background values. 93.45% NDs. Annual per-constituent alpha = 0.001121. Individual comparison alpha = 0.00007012 (1 of 2). Comparing 4 points to limit. Assumes 4 future values.

Constituent: Cadmium Analysis Run 2/12/2020 10:44 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Within Limit

Prediction Limit
Interwell Non-parametric

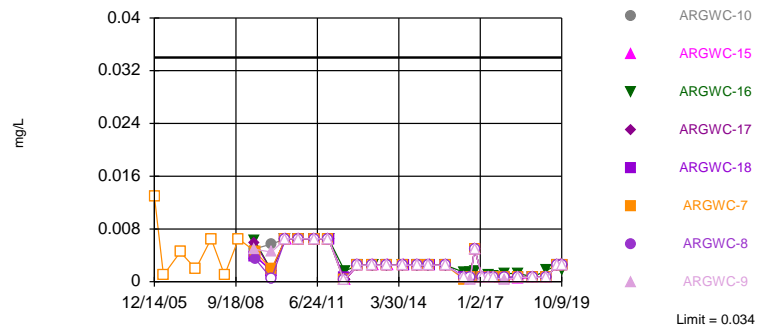


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 170 background values. 87.65% NDs. Annual per-constituent alpha = 0.001096. Individual comparison alpha = 0.00006853 (1 of 2). Comparing 5 points to limit. Assumes 3 future values.

Constituent: Lead Analysis Run 2/12/2020 10:44 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Within Limit

Prediction Limit
 Interwell Non-parametric

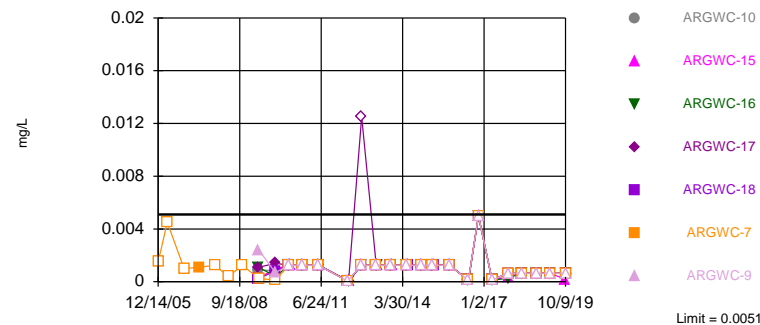


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 160 background values. 82.5% NDs. Annual per-constituent alpha = 0.001223. Individual comparison alpha = 0.00007648 (1 of 2). Comparing 8 points to limit.

Constituent: Selenium Analysis Run 2/12/2020 10:44 AM View: Time Series
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

Within Limit

Prediction Limit
 Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 145 background values. 92.41% NDs. Annual per-constituent alpha = 0.001499. Individual comparison alpha = 0.00009375 (1 of 2). Comparing 7 points to limit. Assumes 1 future value.

Constituent: Silver Analysis Run 2/12/2020 10:44 AM View: Time Series
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-3 (bg)	ARGWA-5 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-17	ARGWC-16	ARGWC-18
12/16/1997	0.002	<0.0003							
6/30/1998	0.0006	<0.0003							
12/2/1998	0.0007	<0.0003							
6/8/1999	<0.0003	<0.0003							
12/7/1999	<0.0003	<0.0003							
6/15/2000	<0.0003	<0.0003							
12/12/2000	0.000475	0.00032							
12/5/2001	<0.0003	0.0003							
6/26/2002	0.000431	0.000939							
12/3/2002	<0.009	<0.009							
6/11/2003	<0.009	<0.009							
12/10/2003	<0.009	<0.009							
6/15/2004	<0.008	<0.008							
12/14/2004	<0.008	<0.008							
6/2/2005	<0.009	<0.009							
12/14/2005	<0.009	<0.009	<0.009						
4/5/2006	<0.008	<0.008	<0.008						
10/30/2006	<0.008	<0.008	<0.008						
5/10/2007	0.0044	<0.0013	<0.0013						
11/17/2007	<0.005	<0.005	<0.005						
5/2/2008			<0.0033						
5/3/2008	<0.0033	<0.0033							
10/22/2008	<0.005	<0.005	<0.005						
5/5/2009				<0.001					
5/6/2009		<0.001			<0.001				
5/7/2009	0.0028					0.0013			
5/12/2009							<0.001	0.003	0.0025
5/13/2009									
5/14/2009			<0.001						
12/1/2009		<0.001	<0.001						
12/3/2009					<0.001	<0.001			
12/4/2009	<0.005			<0.005			<0.005		<0.005
12/5/2009								<0.005	
5/25/2010		<0.005			<0.005	<0.005	<0.005		<0.005
5/26/2010			<0.005					<0.005	
6/1/2010	<0.005			<0.005					
6/2/2010									
11/9/2010		<0.005			<0.005		<0.005	<0.005	
11/10/2010	<0.005		<0.005	<0.005		<0.005			<0.005
5/18/2011									
5/19/2011									<0.005
5/24/2011		<0.005			<0.005		<0.005	<0.005	
5/25/2011	<0.005		<0.005	<0.005		<0.005			
11/9/2011				<0.005					
11/10/2011		<0.005			<0.005	<0.005			
11/11/2011			<0.005						
11/12/2011	<0.005						<0.005	<0.005	<0.005
5/17/2012			<0.0012						<0.0012
5/18/2012		<0.0012			<0.0012				
5/30/2012						<0.0012	<0.0012	<0.0012	
5/31/2012	<0.0012			<0.0012					
11/9/2012		<0.005	<0.005		<0.005	<0.005		<0.005	

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-3 (bg)	ARGWA-5 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-17	ARGWC-16	ARGWC-18
11/10/2012				<0.005					<0.005
11/11/2012	<0.005								
5/7/2013									<0.005
5/8/2013		<0.005	<0.005		<0.005		<0.005		
5/9/2013						<0.005			
5/13/2013	<0.005			<0.005				<0.005	
11/5/2013			<0.005						<0.005
11/6/2013		<0.005			<0.005		<0.005	<0.005	
11/11/2013						<0.005			
11/12/2013	<0.005			<0.005					
5/20/2014		<0.005			<0.005		<0.005		
5/21/2014			<0.005			<0.005		<0.005	
5/28/2014				<0.005					<0.005
5/29/2014	<0.005								
11/17/2014		<0.005	<0.005				<0.005	<0.005	
11/18/2014					<0.005	<0.005			
11/19/2014									<0.005
11/20/2014				<0.005					
4/7/2015		<0.005	<0.005			<0.005	<0.005	<0.005	
4/14/2015	<0.005			<0.005	<0.005				
4/15/2015									<0.005
10/28/2015		<0.005	<0.005			<0.005	<0.005	<0.005	
10/29/2015					<0.005				<0.005
11/3/2015	<0.005			<0.005					
11/4/2015									
6/23/2016	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013			
6/24/2016							<0.0013	<0.0013	<0.0013
8/30/2016		<0.0013			<0.0013				
8/31/2016	<0.0013		<0.0013			<0.0013			
9/1/2016							<0.0013	<0.0013	<0.0013
9/2/2016				0.00062 (J)					
10/24/2016					<0.005				
10/25/2016	<0.005	<0.005	<0.005			<0.005	<0.005	<0.005	
10/26/2016				<0.005					<0.005
1/23/2017					<0.0013				
1/24/2017	<0.0013	<0.0013				<0.0013			
1/26/2017			<0.0013	<0.0013			<0.0013	<0.0013	
1/27/2017									<0.0013
4/11/2017	0.00067 (J)	0.00077 (J)			0.00076 (J)	0.00063 (J)	0.00084 (J)	0.00067 (J)	
4/12/2017			0.00078 (J)	<0.0013					<0.0013
6/20/2017	0.00064 (J)	0.00052 (J)							
6/21/2017				<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013
6/22/2017			<0.0013						
10/25/2017	<0.0013	<0.0013	<0.0013		<0.0013	<0.0013			<0.0013
10/26/2017				<0.0013			0.00087 (J)	<0.0013	
4/9/2018						<0.0013			
4/10/2018	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013		<0.0013	<0.0013	
4/11/2018									<0.0013
10/16/2018	<0.0013	<0.0013			<0.0013	0.00055 (J)		<0.0013	
10/17/2018			<0.0013	<0.0013			<0.0013		0.00066 (J)
3/26/2019						0.00089 (J)			
3/27/2019	0.00055 (J)	0.00055 (J)		<0.0013	0.00049 (J)				<0.0013

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-3 (bg)	ARGWA-5 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-17	ARGWC-16	ARGWC-18
3/28/2019			<0.0013				<0.0013	0.00057 (J)	
8/19/2019						0.00045 (J)			
8/20/2019	0.00045 (J)	0.00058 (J)			0.00046 (J)			<0.001	
8/21/2019			<0.001	0.00036 (J)			0.00044 (J)		0.00033 (J)
10/7/2019									
10/8/2019	<0.001	<0.001		<0.001	<0.001	<0.001			
10/9/2019			0.0015				0.0015	0.001	0.0016

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-9	ARGWC-10	ARGWC-8	ARGWA-14 (bg)
12/16/1997				
6/30/1998				
12/2/1998				
6/8/1999				
12/7/1999				
6/15/2000				
12/12/2000				
12/5/2001				
6/26/2002				
12/3/2002				
6/11/2003				
12/10/2003				
6/15/2004				
12/14/2004				
6/2/2005				
12/14/2005				
4/5/2006				
10/30/2006				
5/10/2007				
11/17/2007				
5/2/2008				
5/3/2008				
10/22/2008				
5/5/2009				
5/6/2009				
5/7/2009				
5/12/2009				
5/13/2009	0.0034	0.0042		
5/14/2009			<0.001	
12/1/2009				
12/3/2009	<0.001	<0.001	<0.001	
12/4/2009				
12/5/2009				
5/25/2010				
5/26/2010	<0.005	<0.005	<0.005	
6/1/2010				
6/2/2010				<0.005
11/9/2010	<0.005	<0.005	<0.005	
11/10/2010				<0.005
5/18/2011			<0.005	
5/19/2011	<0.005	<0.005		<0.005
5/24/2011				
5/25/2011				
11/9/2011				<0.005
11/10/2011				
11/11/2011	<0.005	<0.005	<0.005	
11/12/2011				
5/17/2012	<0.0012	<0.0012	<0.0012	
5/18/2012				
5/30/2012				0.0026 (J)
5/31/2012				
11/9/2012	<0.005	<0.005	<0.005	

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-9	ARGWC-10	ARGWC-8	ARGWA-14 (bg)
11/10/2012				
11/11/2012				<0.005
5/7/2013	<0.005	<0.005	<0.005	
5/8/2013				
5/9/2013				<0.005
5/13/2013				
11/5/2013			<0.005	
11/6/2013	<0.005	<0.005		
11/11/2013				<0.005
11/12/2013				
5/20/2014		<0.005		
5/21/2014	<0.005		<0.005	
5/28/2014				
5/29/2014				0.005 (J)
11/17/2014				
11/18/2014	<0.005	<0.005	<0.005	
11/19/2014				<0.005
11/20/2014				
4/7/2015	<0.005	<0.005	<0.005	
4/14/2015				<0.005
4/15/2015				
10/28/2015	<0.005	<0.005	<0.005	
10/29/2015				
11/3/2015				
11/4/2015				<0.005
6/23/2016	<0.0013	<0.0013	<0.0013	0.0026
6/24/2016				
8/30/2016				
8/31/2016	<0.0013		<0.0013	0.0032
9/1/2016		<0.0013		
9/2/2016				
10/24/2016				
10/25/2016	<0.005	<0.005		<0.005
10/26/2016			<0.005	
1/23/2017				0.00088 (J)
1/24/2017				
1/26/2017	<0.0013		<0.0013	
1/27/2017		<0.0013		
4/11/2017				0.00095 (J)
4/12/2017	<0.0013	<0.0013	0.00072 (J)	
6/20/2017				0.00099 (J)
6/21/2017			<0.0013	
6/22/2017	<0.0013	<0.0013		
10/25/2017	<0.0013			<0.0013
10/26/2017		<0.0013	<0.0013	
4/9/2018				<0.0013
4/10/2018				
4/11/2018	<0.0013	<0.0013	<0.0013	
10/16/2018				0.00083 (J)
10/17/2018	<0.0013	<0.0013	0.00063 (J)	
3/26/2019				
3/27/2019				0.0013

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-9	ARGWC-10	ARGWC-8	ARGWA-14 (bg)
3/28/2019	0.00051 (J)	0.0011 (J)	<0.0013	
8/19/2019				
8/20/2019				
8/21/2019	<0.001	0.0004 (J)	0.00036 (J)	0.0013
10/7/2019				0.00045 (J)
10/8/2019				
10/9/2019	0.0011	0.0019	0.0014	

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-18	ARGWC-17	ARGWC-8
12/16/1997	0.032								
6/30/1998	0.028	0.177							
12/2/1998	0.032	0.115							
6/8/1999	0.0287	0.074							
12/7/1999	0.034	0.043							
6/15/2000	0.034	0.113							
12/12/2000	0.027	0.059							
12/5/2001	0.027	0.052							
6/26/2002	0.032	0.087							
12/3/2002	0.023	0.043							
6/11/2003	0.04	0.24							
12/10/2003	0.024	0.03							
6/15/2004	0.021	0.028							
12/14/2004	0.025	0.017							
6/2/2005	0.025	0.019							
12/14/2005	0.026	0.02	0.027						
4/5/2006	0.027	0.019	0.029						
10/30/2006	0.027		0.028						
5/10/2007	0.024	0.017	0.025						
11/17/2007	0.026	0.015	0.026						
5/2/2008			0.026						
5/3/2008	0.022	0.017							
10/22/2008	0.027	0.11	0.033						
5/5/2009				0.042					
5/6/2009	0.023				0.065				
5/7/2009		0.13				0.068			
5/12/2009							0.055	0.048	
5/14/2009			0.035						0.039
12/1/2009	0.033		0.031						
12/3/2009					0.062	0.044			0.036
12/4/2009		0.019		0.051			0.036	0.055	
12/5/2009									
5/25/2010	0.03					0.049	0.033	0.063	
5/26/2010			0.025						0.036
6/1/2010		0.027		0.055					
6/2/2010									
11/9/2010	0.033				0.059			0.11	0.038
11/10/2010		0.025	0.027	0.041		0.052	0.038		
5/18/2011									0.032
5/19/2011							0.028		
5/24/2011	0.027				0.054			0.11	
5/25/2011		0.015	0.022	0.035		0.045			
11/9/2011				0.035					
11/10/2011	0.032				0.063	0.11			
11/11/2011			0.027						0.036
11/12/2011		0.021						0.086	
5/17/2012			0.0265				0.0427		0.0353
5/18/2012	0.0311				0.0646				
5/30/2012						0.0831		0.0586	
5/31/2012		0.0222		0.0372					
11/9/2012	0.034		0.028		0.081	0.13			0.038
11/10/2012				0.044			0.038		

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-18	ARGWC-17	ARGWC-8
11/11/2012		0.022							
5/7/2013							0.03		0.037
5/8/2013	0.026		0.026		0.066			0.054	
5/9/2013						0.059			
5/13/2013		0.019							
11/5/2013			0.027						0.037
11/6/2013	0.028				0.074			0.043	
11/11/2013						0.12			
11/12/2013		0.025		0.035					
5/20/2014	0.027				0.057			0.051	
5/21/2014			0.028			0.073			0.037
5/28/2014				0.038			0.032		
5/29/2014		0.024							
11/17/2014	0.029		0.031					0.049	
11/18/2014					0.069	0.072			0.038
11/19/2014							0.058		
11/20/2014				0.037					
4/7/2015	0.024		0.029			0.06		0.043	0.045
4/14/2015		0.022		0.035	0.067				
4/15/2015							0.039		
10/28/2015	0.028		0.032			0.057		0.047	0.042
10/29/2015					0.069		0.04		
11/3/2015		0.022		0.038					
11/4/2015									
6/23/2016	0.025	0.019	0.031	0.028	0.063	0.036			0.039
6/24/2016							0.034	0.044	
8/30/2016	0.026				0.062				
8/31/2016		0.018	0.03			0.041			0.037
9/1/2016							0.033	0.046	
9/2/2016				0.074					
10/24/2016					0.0674				
10/25/2016	0.0293	0.016	0.0317			0.0429		0.0436	
10/26/2016				0.0408			0.0339		0.0423
1/23/2017					0.069				
1/24/2017	0.028	0.017				0.025			
1/26/2017			0.035	0.038				0.051	0.046
1/27/2017							0.037		
4/11/2017	0.024	0.016			0.064	0.024		0.043	
4/12/2017			0.034	0.03			0.032		0.041
6/20/2017	0.027	0.02							
6/21/2017				0.028	0.074	0.034	0.036	0.043	0.049
6/22/2017			0.038						
10/25/2017	0.03	0.019	0.038		0.07	0.03	0.041		
10/26/2017				0.029				0.038	0.046
4/9/2018						0.023			
4/10/2018	0.028	0.019	0.038	0.032	0.073			0.046	
4/11/2018							0.04		0.048
10/16/2018	0.027	0.018			0.069	0.028			
10/17/2018			0.038	0.028			0.039	0.043	0.045
3/26/2019						0.029			
3/27/2019	0.024	0.019		0.032	0.063		0.033		
3/28/2019			0.038					0.045	0.045

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-18	ARGWC-17	ARGWC-8
8/19/2019						0.035			
8/20/2019	0.029	0.02			0.075				
8/21/2019			0.041	0.033			0.036	0.05	0.052
10/7/2019									
10/8/2019	0.03	0.02		0.031	0.078	0.042			
10/9/2019			0.046				0.039	0.049	0.049

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-9	ARGWC-10	ARGWC-16	ARGWA-14 (bg)
12/16/1997				
6/30/1998				
12/2/1998				
6/8/1999				
12/7/1999				
6/15/2000				
12/12/2000				
12/5/2001				
6/26/2002				
12/3/2002				
6/11/2003				
12/10/2003				
6/15/2004				
12/14/2004				
6/2/2005				
12/14/2005				
4/5/2006				
10/30/2006				
5/10/2007				
11/17/2007				
5/2/2008				
5/3/2008				
10/22/2008				
5/5/2009				
5/6/2009				
5/7/2009				
5/12/2009				
5/14/2009				
12/1/2009				
12/3/2009	0.032	0.03		
12/4/2009				
12/5/2009			0.062	
5/25/2010				
5/26/2010	0.031	0.029	0.065	
6/1/2010				
6/2/2010				0.046
11/9/2010	0.03	0.029	0.065	
11/10/2010				0.057
5/18/2011				
5/19/2011	0.028	0.027		0.048
5/24/2011			0.062	
5/25/2011				
11/9/2011				0.045
11/10/2011				
11/11/2011	0.032	0.031		
11/12/2011			0.067	
5/17/2012	0.0319	0.0299		
5/18/2012				
5/30/2012			0.0767	0.0519
5/31/2012				
11/9/2012	0.036	0.03	0.093	
11/10/2012				

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-9	ARGWC-10	ARGWC-16	ARGWA-14 (bg)
11/11/2012				0.051
5/7/2013	0.035	0.028		
5/8/2013				
5/9/2013				0.056
5/13/2013			0.093	
11/5/2013				
11/6/2013	0.043	0.033	0.068	
11/11/2013				0.041
11/12/2013				
5/20/2014		0.029		
5/21/2014	0.042		0.072	
5/28/2014				
5/29/2014				0.051
11/17/2014			0.05	
11/18/2014	0.044	0.029		
11/19/2014				0.051
11/20/2014				
4/7/2015	0.043	0.028	0.055	
4/14/2015				0.043
4/15/2015				
10/28/2015	0.045	0.029	0.054	
10/29/2015				
11/3/2015				
11/4/2015				0.042
6/23/2016	0.043	0.028		
6/24/2016			0.056	
8/30/2016				
8/31/2016	0.042			0.076
9/1/2016		0.027	0.051	
9/2/2016				
10/24/2016				
10/25/2016	0.0455	0.0296	0.0637	0.039
10/26/2016				
1/23/2017				0.044
1/24/2017				
1/26/2017	0.048		0.055	
1/27/2017		0.035		
4/11/2017			0.055	0.038
4/12/2017	0.045	0.031		
6/20/2017				0.057
6/21/2017			0.054	
6/22/2017	0.055	0.035		
10/25/2017	0.049			0.05
10/26/2017		0.032	0.046	
4/9/2018				0.049
4/10/2018			0.056	
4/11/2018	0.052	0.034		
10/16/2018			0.039	0.06
10/17/2018	0.046	0.031		
3/26/2019				
3/27/2019				0.054
3/28/2019	0.047	0.031	0.054	

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-9	ARGWC-10	ARGWC-16	ARGWA-14 (bg)
8/19/2019				
8/20/2019			0.046	
8/21/2019	0.045	0.035		0.031
10/7/2019				0.033
10/8/2019				
10/9/2019	0.041	0.031	0.057	

Prediction Limit

Constituent: Cadmium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-16	ARGWC-17	ARGWC-10	ARGWA-14 (bg)
12/16/1997	<0.003								
6/30/1998	<0.003								
12/2/1998	<0.003								
6/8/1999	<0.003	<0.003							
12/7/1999	<0.003	<0.003							
6/15/2000	<0.001	<0.001							
12/12/2000	<0.001	<0.001							
12/5/2001	<0.001	0.002							
6/26/2002	<0.002	0.003							
12/3/2002	<0.002	<0.002							
6/11/2003	<0.002	0.0043							
12/10/2003	<0.002	<0.002							
6/15/2004	<0.001	<0.001							
12/14/2004	0.0012	<0.001							
6/2/2005	<0.001	<0.001							
12/14/2005	<0.001	<0.001							
4/5/2006	<0.002	<0.002							
10/30/2006	<0.002	<0.002							
5/10/2007	<0.00048	<0.00048							
11/17/2007	<0.0013	<0.0013							
5/3/2008	<0.00025	0.00033							
10/22/2008	<0.0013	<0.0013							
5/5/2009			<0.00025						
5/6/2009	<0.00025			<0.00025					
5/7/2009		<0.00025			<0.00025				
5/12/2009						<0.00025	<0.00025		
5/13/2009								<0.00025	
12/1/2009	<0.00025								
12/3/2009				<0.00025	<0.00025				<0.00025
12/4/2009		<0.0005	<0.0005				<0.0005		
12/5/2009						<0.0005			
5/25/2010	<0.0013			<0.0013	<0.0013		<0.0013		
5/26/2010						<0.0013		<0.0013	
6/1/2010		<0.0013	<0.0013						
6/2/2010									<0.0013
11/9/2010	<0.0013			<0.0013		<0.0013	<0.0013	<0.0013	
11/10/2010		<0.0013	<0.0013		<0.0013				<0.0013
5/19/2011								<0.0013	<0.0013
5/24/2011	<0.0013			<0.0013		<0.0013	<0.0013		
5/25/2011		<0.0013	<0.0013		<0.0013				
11/9/2011			<0.0013						<0.0013
11/10/2011	<0.0013			<0.0013	<0.0013				
11/11/2011								<0.0013	
11/12/2011		<0.0013				<0.0013	<0.0013		
5/17/2012								<6E-05	
5/18/2012	<6E-05			<6E-05					
5/30/2012					<6E-05	<6E-05	<6E-05		<6E-05
5/31/2012		<6E-05	<6E-05						
11/9/2012	<0.0013			<0.0013	<0.0013	<0.0013	0.0015	<0.0013	
11/10/2012			<0.0013						
11/11/2012		<0.0013							<0.0013
5/7/2013							<0.0013		

Prediction Limit

Constituent: Cadmium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-16	ARGWC-17	ARGWC-10	ARGWA-14 (bg)
10/8/2019	<0.001	<0.001	<0.001	<0.001	<0.001				
10/9/2019						<0.001	0.00018 (J)	<0.001	

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-18	ARGWC-9	ARGWC-8
12/16/1997	<0.002								
6/30/1998	<0.002	0.013							
12/2/1998	0.002	0.01							
6/8/1999	<0.002	0.004							
12/7/1999	<0.002	0.004							
6/15/2000	<0.002	0.004							
12/12/2000	<0.0022	0.00378							
12/5/2001	<0.0022	0.003							
6/26/2002	0.00539	0.00815							
12/3/2002	<0.008	0.008							
6/11/2003	<0.011	<0.011							
12/10/2003	<0.011	<0.011							
6/15/2004	<0.01	<0.01							
12/14/2004	0.013	<0.01							
6/2/2005	<0.007	<0.007							
12/14/2005	<0.007	<0.007	<0.007						
4/5/2006	<0.011	<0.011	<0.011						
10/30/2006	<0.011	<0.011	<0.011						
5/10/2007	<0.0021	<0.0021	0.0032						
11/17/2007	<0.013	<0.013	<0.013						
5/2/2008			0.008						
5/3/2008	<0.003	<0.003							
10/22/2008	<0.013	<0.013	<0.013						
5/5/2009				<0.00075					
5/6/2009	<0.00075				<0.00075				
5/7/2009		<0.00075				<0.00075			
5/12/2009							<0.00075		
5/13/2009								<0.00075	
5/14/2009			0.00083						<0.00075
12/1/2009	<0.00075		<0.00075						
12/3/2009					<0.00075	<0.00075		<0.00075	<0.00075
12/4/2009		<0.0038		<0.0038			<0.0038		
5/25/2010	<0.013				<0.013	<0.013	<0.013		
5/26/2010			<0.013					<0.013	<0.013
6/1/2010		<0.013		<0.013					
6/2/2010									
11/9/2010	<0.013				<0.013			<0.013	<0.013
11/10/2010		<0.013	<0.013	<0.013		<0.013	<0.013		
5/18/2011									<0.013
5/19/2011							<0.013	<0.013	
5/24/2011	<0.013				<0.013				
5/25/2011		<0.013	<0.013	<0.013		<0.013			
11/9/2011				<0.013					
11/10/2011	<0.013				<0.013	<0.013			
11/11/2011			<0.013					<0.013	<0.013
11/12/2011		<0.013					<0.013		
5/17/2012			<9E-05				<9E-05	<9E-05	<9E-05
5/18/2012	<9E-05				<9E-05				
5/30/2012						<9E-05			
5/31/2012		0.0005 (J)		0.0008 (J)					
11/9/2012	<0.013		<0.013		<0.013	<0.013		<0.013	<0.013
11/10/2012				<0.013			<0.013		

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-18	ARGWC-9	ARGWC-8
11/11/2012		<0.013							
5/7/2013							<0.013	<0.013	<0.013
5/8/2013	<0.013		<0.013		<0.013				
5/9/2013						<0.013			
5/13/2013		<0.013							
11/5/2013			<0.013				<0.013		<0.013
11/6/2013	<0.013				<0.013			<0.013	
11/11/2013						<0.013			
11/12/2013		<0.013		<0.013					
5/20/2014	<0.013				<0.013				
5/21/2014			<0.013			<0.013		<0.013	<0.013
5/28/2014				<0.013			<0.013		
5/29/2014		<0.013							
11/17/2014	<0.013		<0.013						
11/18/2014					<0.013	<0.013		<0.013	<0.013
11/19/2014							<0.013		
11/20/2014				<0.013					
4/7/2015	<0.013		<0.013			<0.013		<0.013	<0.013
4/14/2015		<0.013		<0.013	<0.013				
4/15/2015							<0.013		
10/28/2015	<0.013		<0.013			<0.013		<0.013	<0.013
10/29/2015					<0.013		<0.013		
11/3/2015		<0.013		<0.013					
11/4/2015									
6/23/2016	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013		<0.0013	<0.0013
6/24/2016							<0.0013		
8/30/2016	<0.0013				<0.0013				
8/31/2016		<0.0013	<0.0013			<0.0013		<0.0013	<0.0013
9/1/2016							<0.0013		
9/2/2016				0.0056					
10/24/2016					0.0002 (J)				
10/25/2016	<0.005	<0.005	<0.005			<0.005		<0.005	
10/26/2016				0.0003 (J)			0.0002 (J)		<0.005
1/23/2017					<0.0013				
1/24/2017	<0.0013	<0.0013				<0.0013			
1/26/2017			<0.0013	<0.0013				<0.0013	<0.0013
1/27/2017							<0.0013		
4/11/2017	<0.0013	<0.0013			<0.0013	<0.0013			
4/12/2017			<0.0013	<0.0013			<0.0013	<0.0013	<0.0013
6/20/2017	<0.0013	<0.0013							
6/21/2017				<0.0013	<0.0013	<0.0013	<0.0013		<0.0013
6/22/2017			<0.0013					<0.0013	
10/25/2017	<0.0013	<0.0013	<0.0013		<0.0013	<0.0013	<0.0013	<0.0013	
10/26/2017				<0.0013					<0.0013
4/9/2018						<0.0013			
4/10/2018	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013				
4/11/2018							<0.0013	<0.0013	<0.0013
10/16/2018	<0.0013	<0.0013			<0.0013	<0.0013		<0.0013	<0.0013
10/17/2018			<0.0013	0.0016			<0.0013	<0.0013	<0.0013
3/26/2019						<0.0013			
3/27/2019	<0.0013	<0.0013		<0.0013	<0.0013		<0.0013		
3/28/2019			<0.0013					<0.0013	<0.0013

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-18	ARGWC-9	ARGWC-8
8/19/2019						<0.001			
8/20/2019	0.00014 (J)	0.00014 (J)			<0.001				
8/21/2019			<0.001	<0.001			<0.001	<0.001	<0.001
10/7/2019									
10/8/2019	0.00016 (J)	0.001		<0.001	<0.001	0.00013 (J)			
10/9/2019			<0.001				<0.001	0.00016 (J)	0.00019 (J)

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

ARGWA-14 (bg)

12/16/1997
6/30/1998
12/2/1998
6/8/1999
12/7/1999
6/15/2000
12/12/2000
12/5/2001
6/26/2002
12/3/2002
6/11/2003
12/10/2003
6/15/2004
12/14/2004
6/2/2005
12/14/2005
4/5/2006
10/30/2006
5/10/2007
11/17/2007
5/2/2008
5/3/2008
10/22/2008
5/5/2009
5/6/2009
5/7/2009
5/12/2009
5/13/2009
5/14/2009
12/1/2009
12/3/2009
12/4/2009
5/25/2010
5/26/2010
6/1/2010
6/2/2010
11/9/2010
11/10/2010
5/18/2011
5/19/2011
5/24/2011
5/25/2011
11/9/2011
11/10/2011
11/11/2011
11/12/2011
5/17/2012
5/18/2012
5/30/2012
5/31/2012
11/9/2012
11/10/2012

<0.013
<0.013
<0.013
<0.013
<0.013
<9E-05

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-14 (bg)
11/11/2012	<0.013
5/7/2013	
5/8/2013	
5/9/2013	<0.013
5/13/2013	
11/5/2013	
11/6/2013	
11/11/2013	<0.013
11/12/2013	
5/20/2014	
5/21/2014	
5/28/2014	
5/29/2014	<0.013
11/17/2014	
11/18/2014	
11/19/2014	<0.013
11/20/2014	
4/7/2015	
4/14/2015	<0.013
4/15/2015	
10/28/2015	
10/29/2015	
11/3/2015	
11/4/2015	<0.013
6/23/2016	<0.0013
6/24/2016	
8/30/2016	
8/31/2016	<0.0013
9/1/2016	
9/2/2016	
10/24/2016	
10/25/2016	<0.005
10/26/2016	
1/23/2017	0.0013
1/24/2017	
1/26/2017	
1/27/2017	
4/11/2017	<0.0013
4/12/2017	
6/20/2017	<0.0013
6/21/2017	
6/22/2017	
10/25/2017	<0.0013
10/26/2017	
4/9/2018	<0.0013
4/10/2018	
4/11/2018	
10/16/2018	<0.0013
10/17/2018	
3/26/2019	
3/27/2019	<0.0013
3/28/2019	

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

ARGWA-14 (bg)

8/19/2019

8/20/2019

8/21/2019 0.00019 (J)

10/7/2019 <0.001

10/8/2019

10/9/2019

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWC-18	ARGWC-17	ARGWC-16	ARGWC-9
12/16/1997	<0.002	<0.002							
6/30/1998	<0.002	<0.002							
12/2/1998	<0.002	<0.002							
6/8/1999	<0.002	<0.002							
12/7/1999	<0.002	<0.002							
6/15/2000	<0.002	<0.002							
12/12/2000	<0.012	<0.012							
12/5/2001	<0.012	<0.012							
6/26/2002	<0.012	<0.012							
12/3/2002	<0.012	<0.012							
6/11/2003	<0.012	<0.012							
12/10/2003	<0.012	<0.012							
6/15/2004	<0.012	<0.012							
12/14/2004	<0.012	<0.012							
6/2/2005	<0.026	<0.026							
12/14/2005	<0.026	<0.026	<0.026						
4/5/2006	<0.002	<0.002	<0.002						
10/30/2006	<0.009	<0.009	<0.009						
5/10/2007	<0.0039	<0.0039	<0.0039						
11/17/2007	<0.013	<0.013	<0.013						
5/2/2008			<0.002						
5/3/2008	<0.002	<0.002							
10/22/2008	<0.013	<0.013	<0.013						
5/5/2009				0.0041					
5/6/2009	0.0047				0.0054				
5/7/2009		0.0049							
5/12/2009						0.0039	0.0059	0.0062	
5/13/2009									0.0049
5/14/2009			0.0046						
12/1/2009	0.0046		0.0019						
12/3/2009					0.006				0.0045
12/4/2009		<0.0033		<0.0033		<0.0033	<0.0033		
12/5/2009								<0.0033	
5/25/2010	<0.013				<0.013	<0.013	<0.013		
5/26/2010			<0.013					<0.013	<0.013
6/1/2010		<0.013		<0.013					
6/2/2010									
11/9/2010	<0.013				<0.013		<0.013	<0.013	<0.013
11/10/2010		<0.013	<0.013	<0.013		<0.013			
5/18/2011									
5/19/2011						<0.013			<0.013
5/24/2011	<0.013				<0.013		<0.013	<0.013	
5/25/2011		<0.013	<0.013	<0.013					
11/9/2011				<0.013					
11/10/2011	<0.013				<0.013				
11/11/2011			<0.013						<0.013
11/12/2011		<0.013				<0.013	<0.013	<0.013	
5/17/2012			<0.0005			0.0006 (J)			<0.0005
5/18/2012	<0.0005				<0.0005				
5/30/2012							<0.0005	0.0016 (J)	
5/31/2012		<0.0005		<0.0005					
11/9/2012	<0.005		<0.005		<0.005		<0.005	<0.005	<0.005

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWC-18	ARGWC-17	ARGWC-16	ARGWC-9
11/10/2012				<0.005		<0.005			
11/11/2012		<0.005							
5/7/2013						<0.005			<0.005
5/8/2013	<0.005		<0.005		<0.005		<0.005		
5/9/2013									
5/13/2013		<0.005		<0.005				<0.005	
11/5/2013			<0.005			<0.005			
11/6/2013	<0.005				<0.005		<0.005	<0.005	<0.005
11/11/2013									
11/12/2013		<0.005		<0.005					
5/20/2014	<0.005				<0.005		<0.005		
5/21/2014			<0.005					<0.005	<0.005
5/28/2014				<0.005		<0.005			
5/29/2014		<0.005							
11/17/2014	<0.005		<0.005				<0.005	<0.005	
11/18/2014					<0.005				<0.005
11/19/2014						<0.005			
11/20/2014				<0.005					
4/7/2015	<0.005		<0.005				<0.005	<0.005	<0.005
4/14/2015		<0.005		<0.005	<0.005				
4/15/2015						<0.005			
10/28/2015	<0.005		<0.005				<0.005	<0.005	<0.005
10/29/2015					<0.005	<0.005			
11/3/2015		<0.005		<0.005					
11/4/2015									
6/23/2016	<0.0013	<0.0013	0.00029 (J)	<0.0013	<0.0013				<0.0013
6/24/2016						<0.0013	<0.0013	0.0014	
8/30/2016	<0.0013				<0.0013				
8/31/2016		<0.0013	<0.0013						0.00024 (J)
9/1/2016						<0.0013	<0.0013	0.0014	
9/2/2016				0.0005 (J)					
10/24/2016					<0.01				
10/25/2016	<0.01	<0.01	<0.01				<0.01	0.0015 (J)	<0.01
10/26/2016				<0.01		<0.01			
1/23/2017					<0.0013				
1/24/2017	<0.0013	<0.0013							
1/26/2017			<0.0013	<0.0013			<0.0013	0.00071 (J)	<0.0013
1/27/2017						<0.0013			
4/11/2017	<0.0013	<0.0013			<0.0013		<0.0013	0.0011 (J)	
4/12/2017			<0.0013	<0.0013		<0.0013			<0.0013
6/20/2017	<0.0013	<0.0013							
6/21/2017				<0.0013	0.00025 (J)	<0.0013	<0.0013	0.00075 (J)	
6/22/2017			<0.0013						<0.0013
10/25/2017	0.00027 (J)	0.00032 (J)	<0.0013		0.00027 (J)	<0.0013			0.00029 (J)
10/26/2017				0.0004 (J)			<0.0013	0.0012 (J)	
4/9/2018									
4/10/2018	<0.0013	<0.0013	<0.0013	0.00044 (J)	0.00033 (J)		<0.0013	0.0013	
4/11/2018						<0.0013			<0.0013
10/16/2018	<0.0013	<0.0013			<0.0013			0.00072 (J)	
10/17/2018			<0.0013	<0.0013		<0.0013	<0.0013		<0.0013
3/26/2019									
3/27/2019	<0.0013	<0.0013		<0.0013	<0.0013	<0.0013			

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWC-18	ARGWC-17	ARGWC-16	ARGWC-9
3/28/2019			<0.0013				<0.0013	0.0017	<0.0013
8/19/2019									
8/20/2019	<0.005	<0.005			<0.005			<0.005	
8/21/2019			<0.005	<0.005		<0.005	<0.005		<0.005
10/7/2019									
10/8/2019	<0.005	<0.005		<0.005	<0.005				
10/9/2019			<0.005			<0.005	<0.005	0.0018 (J)	<0.005

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-10	ARGWC-8	ARGWA-14 (bg)	ARGWA-13 (bg)
12/16/1997				
6/30/1998				
12/2/1998				
6/8/1999				
12/7/1999				
6/15/2000				
12/12/2000				
12/5/2001				
6/26/2002				
12/3/2002				
6/11/2003				
12/10/2003				
6/15/2004				
12/14/2004				
6/2/2005				
12/14/2005				
4/5/2006				
10/30/2006				
5/10/2007				
11/17/2007				
5/2/2008				
5/3/2008				
10/22/2008				
5/5/2009				
5/6/2009				
5/7/2009				
5/12/2009				
5/13/2009	0.005			
5/14/2009		0.0035		
12/1/2009				
12/3/2009	0.0057	<0.001		
12/4/2009				
12/5/2009				
5/25/2010				
5/26/2010	<0.013	<0.013		
6/1/2010				
6/2/2010			<0.013	
11/9/2010	<0.013	<0.013		
11/10/2010			<0.013	
5/18/2011		<0.013		
5/19/2011	<0.013		<0.013	
5/24/2011				
5/25/2011				
11/9/2011			<0.013	
11/10/2011				
11/11/2011	<0.013	<0.013		
11/12/2011				
5/17/2012	<0.0005	<0.0005		
5/18/2012				
5/30/2012			<0.0005	
5/31/2012				
11/9/2012	<0.005	<0.005		

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-10	ARGWC-8	ARGWA-14 (bg)	ARGWA-13 (bg)
11/10/2012				
11/11/2012			<0.005	
5/7/2013	<0.005	<0.005		
5/8/2013				
5/9/2013			<0.005	
5/13/2013				
11/5/2013		<0.005		
11/6/2013	<0.005			
11/11/2013			<0.005	
11/12/2013				
5/20/2014	<0.005			
5/21/2014		<0.005		
5/28/2014				
5/29/2014			<0.005	
11/17/2014				
11/18/2014	<0.005	<0.005		0.0083
11/19/2014			<0.005	
11/20/2014				
4/7/2015	<0.005	<0.005		<0.005
4/14/2015			<0.005	
4/15/2015				
10/28/2015	<0.005	<0.005		0.023
10/29/2015				
11/3/2015				
11/4/2015			<0.005	
6/23/2016	<0.0013	<0.0013	<0.0013	0.0096
6/24/2016				
8/30/2016				
8/31/2016		<0.0013	0.00077 (J)	0.017
9/1/2016	<0.0013			
9/2/2016				
10/24/2016				
10/25/2016	<0.01		<0.01	0.0257
10/26/2016		<0.01		
1/23/2017			0.00037 (J)	
1/24/2017				0.0097
1/26/2017		<0.0013		
1/27/2017	<0.0013			
4/11/2017			<0.0013	0.0079
4/12/2017	<0.0013	<0.0013		
6/20/2017			0.00044 (J)	
6/21/2017		<0.0013		0.019
6/22/2017	<0.0013			
10/25/2017			0.00038 (J)	0.022
10/26/2017	<0.0013	<0.0013		
4/9/2018			<0.0013	0.0063
4/10/2018				
4/11/2018	<0.0013	<0.0013		
10/16/2018			<0.0013	0.021
10/17/2018	<0.0013	<0.0013		
3/26/2019				0.015
3/27/2019			<0.0013	

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-10	ARGWC-8	ARGWA-14 (bg)	ARGWA-13 (bg)
3/28/2019	<0.0013	<0.0013		
8/19/2019				0.034
8/20/2019				
8/21/2019	<0.005	<0.005	<0.005	
10/7/2019			<0.005	
10/8/2019				0.03
10/9/2019	<0.005	<0.005		

Prediction Limit

Constituent: Silver (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-18	ARGWC-17	ARGWC-16
12/16/1997	<0.005								
6/30/1998	<0.005	<0.005							
12/2/1998	<0.005	<0.005							
6/8/1999	<0.005	<0.005							
12/7/1999	<0.005	<0.005							
6/15/2000	<0.004	<0.004							
12/12/2000	<0.004	0.0051							
12/5/2001	<0.003	<0.003							
6/26/2002	<0.002	<0.002							
12/3/2002	<0.002	<0.002							
6/11/2003	<0.002	<0.002							
12/10/2003	0.002	0.003							
6/15/2004	<0.001	<0.001							
12/14/2004	<0.001	<0.001							
6/2/2005	<0.003	<0.003							
12/14/2005	<0.003	<0.003	<0.003						
4/5/2006	<0.009	<0.009	<0.009						
10/30/2006	<0.002	0.002	<0.002						
5/10/2007	<0.0006	0.0017	0.0011						
11/17/2007	<0.0025	<0.0025	<0.0025						
5/2/2008			<0.00075						
5/3/2008	<0.00075	<0.00075							
10/22/2008	<0.0025	<0.0025	<0.0025						
5/5/2009				<0.0005					
5/6/2009	<0.0005				<0.0005				
5/7/2009		<0.0005				<0.0005			
5/12/2009							<0.0005	0.0011	0.0011
5/13/2009									
5/14/2009			<0.0005						
12/1/2009	<0.00025		<0.00025						
12/3/2009					<0.00025	<0.00025			
12/4/2009		<0.00025		0.00098			0.0008	0.0014	
12/5/2009									0.0004
5/25/2010	<0.0025				<0.0025	<0.0025	<0.0025	<0.0025	
5/26/2010			<0.0025						<0.0025
6/1/2010		<0.0025		<0.0025					
6/2/2010									
11/9/2010	<0.0025				<0.0025			<0.0025	<0.0025
11/10/2010		<0.0025	<0.0025	<0.0025		<0.0025	<0.0025		
5/19/2011							<0.0025		
5/24/2011	<0.0025				<0.0025			<0.0025	<0.0025
5/25/2011		<0.0025	<0.0025	<0.0025		<0.0025			
5/17/2012			<0.0001				<0.0001		
5/18/2012	<0.0001				0.0001 (J)				
5/30/2012						<0.0001		<0.0001	<0.0001
5/31/2012		<0.0001		<0.0001					
11/9/2012	<0.0025		<0.0025		<0.0025	<0.0025		<0.025	<0.0025
11/10/2012				<0.0025			<0.0025		
11/11/2012		<0.0025							
5/7/2013							<0.0025		
5/8/2013	<0.0025		<0.0025		<0.0025			<0.0025	
5/9/2013						<0.0025			

Prediction Limit

Constituent: Silver (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWA-5 (bg)	ARGWA-3 (bg)	ARGWC-7	ARGWC-15	ARGWA-12 (bg)	ARGWA-13 (bg)	ARGWC-18	ARGWC-17	ARGWC-16
5/13/2013		<0.0025		<0.0025					<0.0025
11/5/2013			<0.0025				<0.0025		
11/6/2013	<0.0025				<0.0025			<0.0025	<0.0025
11/11/2013						<0.0025			
11/12/2013		<0.0025		<0.0025					
5/20/2014	<0.0025				<0.0025			<0.0025	
5/21/2014			<0.0025			<0.0025			<0.0025
5/28/2014				<0.0025			<0.0025		
5/29/2014		<0.0025							
11/17/2014	<0.0025		<0.0025					<0.0025	<0.0025
11/18/2014					<0.0025	<0.0025			
11/19/2014							<0.0025		
11/20/2014				<0.0025					
4/7/2015	<0.0025		<0.0025			<0.0025		<0.0025	<0.0025
4/14/2015		<0.0025		<0.0025	<0.0025				
4/15/2015							<0.0025		
10/28/2015	<0.0025		<0.0025			<0.0025		<0.0025	<0.0025
10/29/2015					<0.0025		<0.0025		
11/3/2015		<0.0025		<0.0025					
11/4/2015									
6/23/2016	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025	<0.00025		<0.00025	<0.00025
6/24/2016							<0.00025	<0.00025	<0.00025
10/24/2016					<0.01				
10/25/2016	<0.01	<0.01	<0.01			<0.01		<0.01	<0.01
10/26/2016				<0.01			<0.01		
4/11/2017	<0.00025	<0.00025			<0.00025	<0.00025		<0.00025	<0.00025
4/12/2017			<0.00025	<0.00025			<0.00025		
10/25/2017	<0.0013	<0.0013	<0.0013		<0.0013	0.00013 (J)	<0.0013		
10/26/2017				0.00037 (J)				<0.0013	0.00026 (J)
4/9/2018						<0.0013			
4/10/2018	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013			<0.0013	<0.0013
4/11/2018							<0.0013		
10/16/2018	<0.0013	<0.0013			<0.0013	<0.0013			<0.0013
10/17/2018			<0.0013	<0.0013			<0.0013	<0.0013	
3/26/2019						<0.0013			
3/27/2019	<0.0013	<0.0013		<0.0013	<0.0013		<0.0013		
3/28/2019			<0.0013					<0.0013	<0.0013
10/7/2019									
10/8/2019	0.0003 (J)	0.00019 (J)		0.00018 (J)	<0.001	0.00047 (J)			
10/9/2019			<0.0013				<0.0013	<0.0013	<0.0013

Prediction Limit

Constituent: Silver (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

	ARGWC-10	ARGWC-9	ARGWA-14 (bg)
12/16/1997			
6/30/1998			
12/2/1998			
6/8/1999			
12/7/1999			
6/15/2000			
12/12/2000			
12/5/2001			
6/26/2002			
12/3/2002			
6/11/2003			
12/10/2003			
6/15/2004			
12/14/2004			
6/2/2005			
12/14/2005			
4/5/2006			
10/30/2006			
5/10/2007			
11/17/2007			
5/2/2008			
5/3/2008			
10/22/2008			
5/5/2009			
5/6/2009			
5/7/2009			
5/12/2009			
5/13/2009	0.0009	0.0024	
5/14/2009			
12/1/2009			
12/3/2009	0.00083	0.0007	
12/4/2009			
12/5/2009			
5/25/2010			
5/26/2010	<0.0025	<0.0025	
6/1/2010			
6/2/2010			<0.0025
11/9/2010	<0.0025	<0.0025	
11/10/2010			<0.0025
5/19/2011	<0.0025	<0.0025	<0.0025
5/24/2011			
5/25/2011			
5/17/2012	<0.0001	<0.0001	
5/18/2012			
5/30/2012			<0.0001
5/31/2012			
11/9/2012	<0.0025	<0.0025	
11/10/2012			
11/11/2012			<0.0025
5/7/2013	<0.0025	<0.0025	
5/8/2013			
5/9/2013			<0.0025

Prediction Limit

Constituent: Silver (mg/L) Analysis Run 2/12/2020 10:45 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

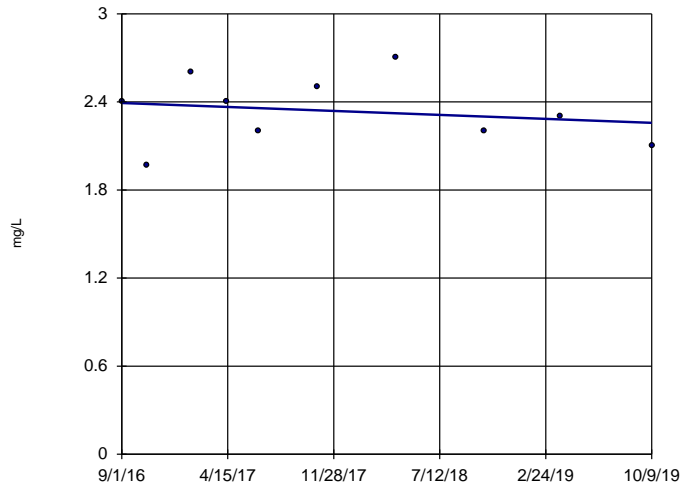
	ARGWC-10	ARGWC-9	ARGWA-14 (bg)
5/13/2013			
11/5/2013			
11/6/2013	<0.0025	<0.0025	
11/11/2013			<0.0025
11/12/2013			
5/20/2014	<0.0025		
5/21/2014		<0.0025	
5/28/2014			
5/29/2014			<0.0025
11/17/2014			
11/18/2014	<0.0025	<0.0025	
11/19/2014			<0.0025
11/20/2014			
4/7/2015	<0.0025	<0.0025	
4/14/2015			<0.0025
4/15/2015			
10/28/2015	<0.0025	<0.0025	
10/29/2015			
11/3/2015			
11/4/2015			<0.0025
6/23/2016	<0.00025	<0.00025	<0.00025
6/24/2016			
10/24/2016			
10/25/2016	<0.01	<0.01	<0.01
10/26/2016			
4/11/2017			<0.00025
4/12/2017	<0.00025	<0.00025	
10/25/2017		<0.0013	<0.0013
10/26/2017	<0.0013		
4/9/2018			<0.0013
4/10/2018			
4/11/2018	<0.0013	<0.0013	
10/16/2018			<0.0013
10/17/2018	<0.0013	<0.0013	
3/26/2019			
3/27/2019			<0.0013
3/28/2019	<0.0013	<0.0013	
10/7/2019			0.00022 (J)
10/8/2019			
10/9/2019	<0.0013	<0.0013	

Trend Test

Plant Arkwright Client: Southern Company Data: Arkwright No 3 Printed 2/12/2020, 10:54 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	ARGWC-18	-0.04345	-5	-27	No	10	0	n/a	n/a	0.02	NP
Boron (mg/L)	ARGWC-8	0	-6	-27	No	10	0	n/a	n/a	0.02	NP
pH (SU)	ARGWA-12 ...	-0.01022	-4	-27	No	10	0	n/a	n/a	0.02	NP
pH (SU)	ARGWC-16	0	-1	-31	No	11	0	n/a	n/a	0.02	NP
pH (SU)	ARGWC-17	-0.07849	-31	-31	No	11	0	n/a	n/a	0.02	NP

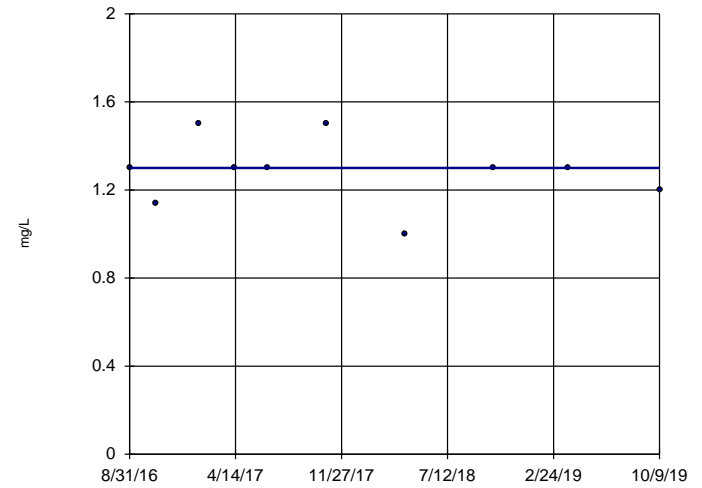
Sen's Slope Estimator ARGWC-18



n = 10
 Slope = -0.04345
 units per year.
 Mann-Kendall
 statistic = -5
 critical = -27
 Trend not sig-
 nificant at 98%
 confidence level
 (α = 0.01 per
 tail).

Constituent: Boron Analysis Run 2/12/2020 10:53 AM View: Time Series
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

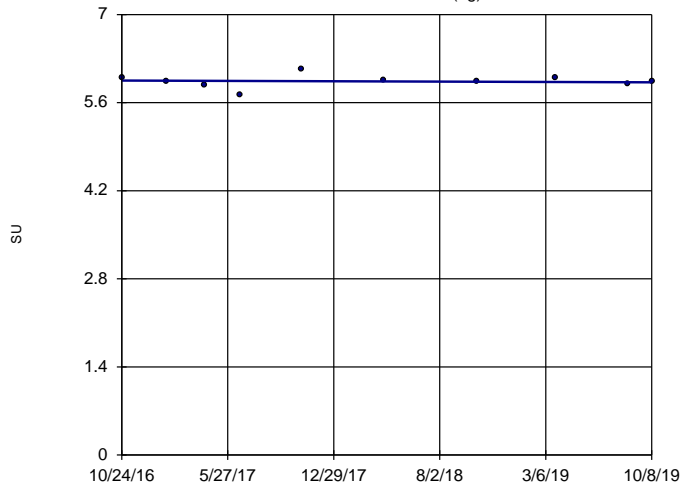
Sen's Slope Estimator ARGWC-8



n = 10
 Slope = 0
 units per year.
 Mann-Kendall
 statistic = -6
 critical = -27
 Trend not sig-
 nificant at 98%
 confidence level
 (α = 0.01 per
 tail).

Constituent: Boron Analysis Run 2/12/2020 10:53 AM View: Time Series
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

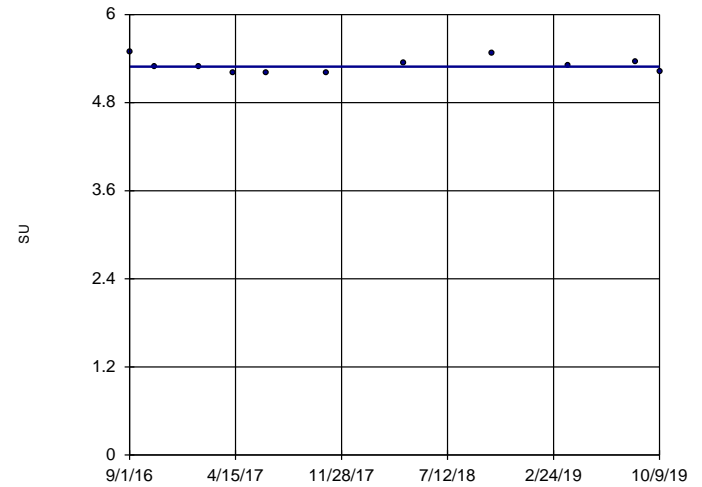
Sen's Slope Estimator ARGWA-12 (bg)



n = 10
 Slope = -0.01022
 units per year.
 Mann-Kendall
 statistic = -4
 critical = -27
 Trend not sig-
 nificant at 98%
 confidence level
 (α = 0.01 per
 tail).

Constituent: pH Analysis Run 2/12/2020 10:53 AM View: Time Series
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

Sen's Slope Estimator ARGWC-16

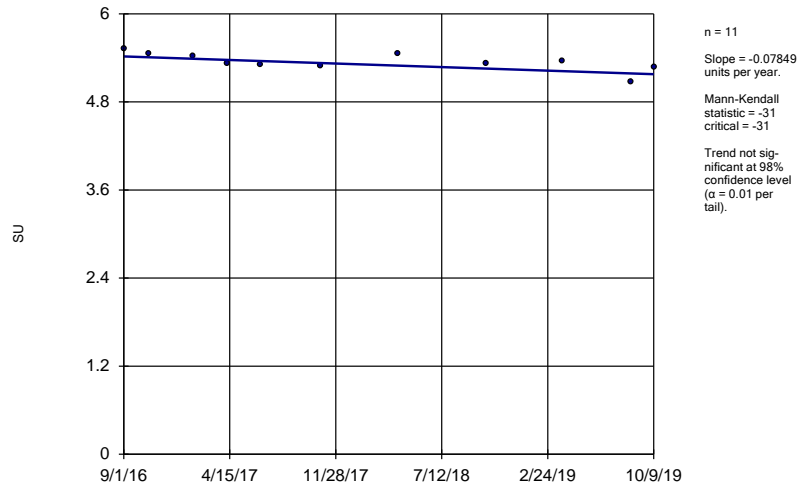


n = 11
 Slope = 0
 units per year.
 Mann-Kendall
 statistic = -1
 critical = -31
 Trend not sig-
 nificant at 98%
 confidence level
 (α = 0.01 per
 tail).

Constituent: pH Analysis Run 2/12/2020 10:53 AM View: Time Series
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

Sen's Slope Estimator

ARGWC-17



Constituent: pH Analysis Run 2/12/2020 10:53 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Sen's Slope Estimator

Constituent: Boron, pH Analysis Run 2/12/2020 10:54 AM View: Time Series

Plant Arkwright Client: Southern Company Data: Arkwright No 3

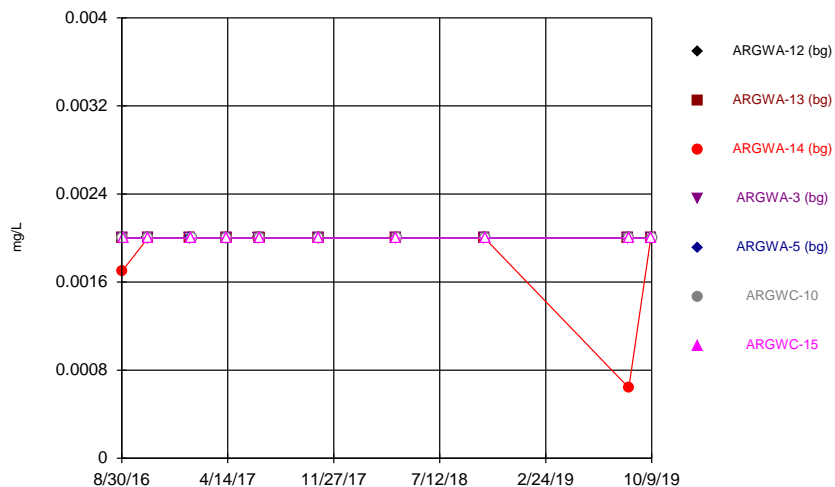
	ARGWC-18	ARGWC-8	ARGWA-12 (bg)	ARGWC-16
8/31/2016		1.3		
9/1/2016	2.4			5.49
10/24/2016			5.99	
10/25/2016				5.29
10/26/2016	1.97	1.14		
1/23/2017			5.94	
1/26/2017		1.5		5.29
1/27/2017	2.6			
4/11/2017			5.88	5.21
4/12/2017	2.4	1.3		
6/21/2017	2.2	1.3	5.73	5.21
10/25/2017	2.5		6.13	
10/26/2017		1.5		5.2
4/10/2018			5.95	5.34
4/11/2018	2.7	1		
10/16/2018			5.94	5.47
10/17/2018	2.2	1.3		
3/27/2019	2.3		6	
3/28/2019		1.3		5.31
8/20/2019			5.89	5.35
10/8/2019			5.93	
10/9/2019	2.1	1.2		5.22

Sen's Slope Estimator

Constituent: pH Analysis Run 2/12/2020 10:54 AM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

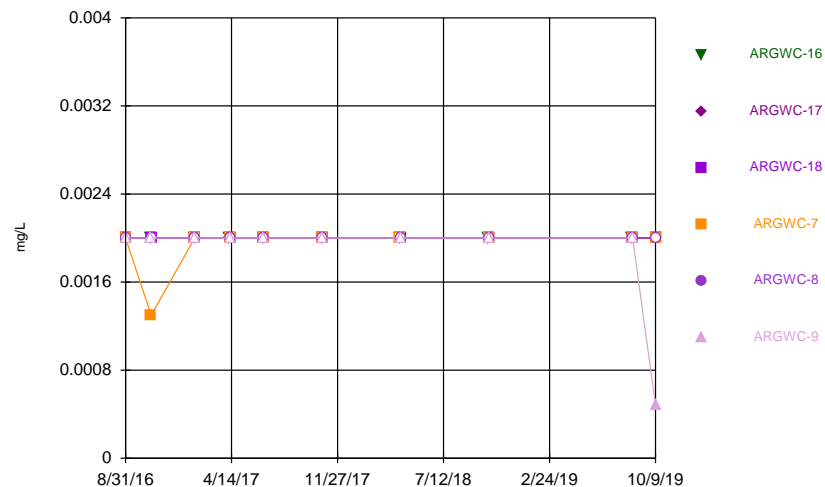
	ARGWC-17
9/1/2016	5.52
10/25/2016	5.45
1/26/2017	5.43
4/11/2017	5.33
6/21/2017	5.3
10/26/2017	5.29
4/10/2018	5.46
10/17/2018	5.32
3/28/2019	5.36
8/21/2019	5.07
10/9/2019	5.27

Time Series



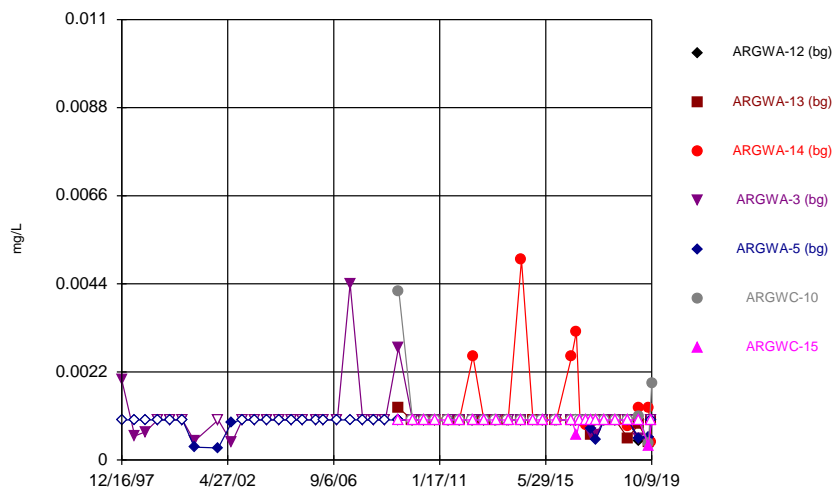
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



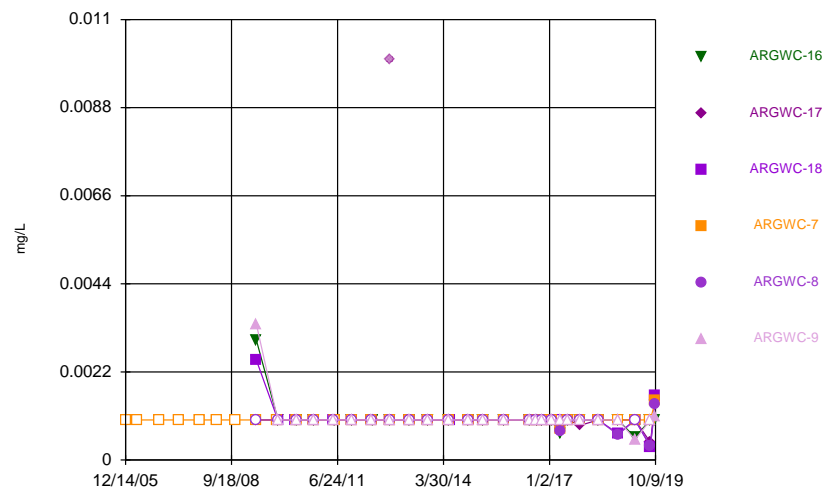
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



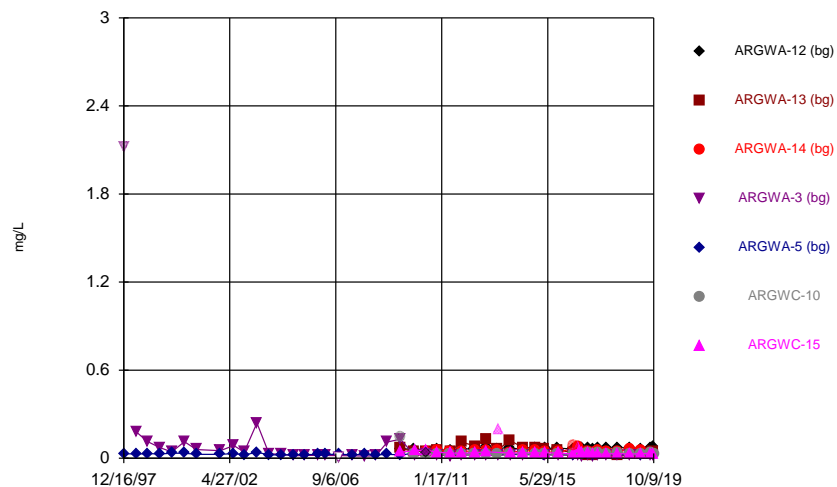
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



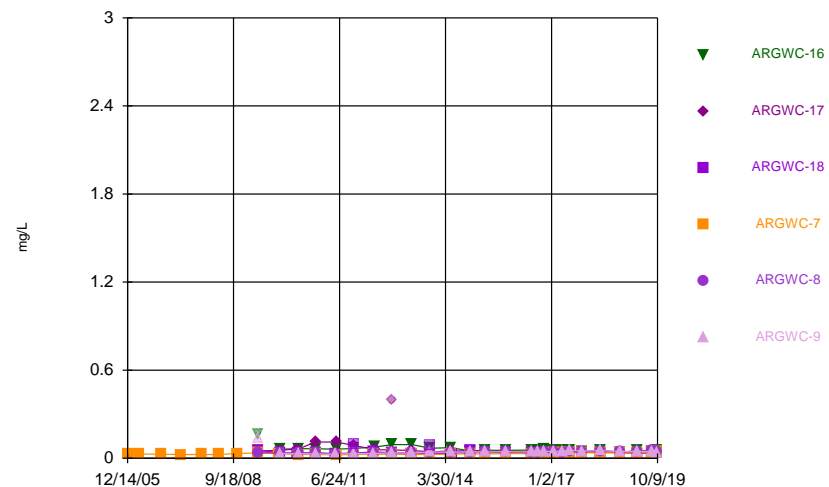
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



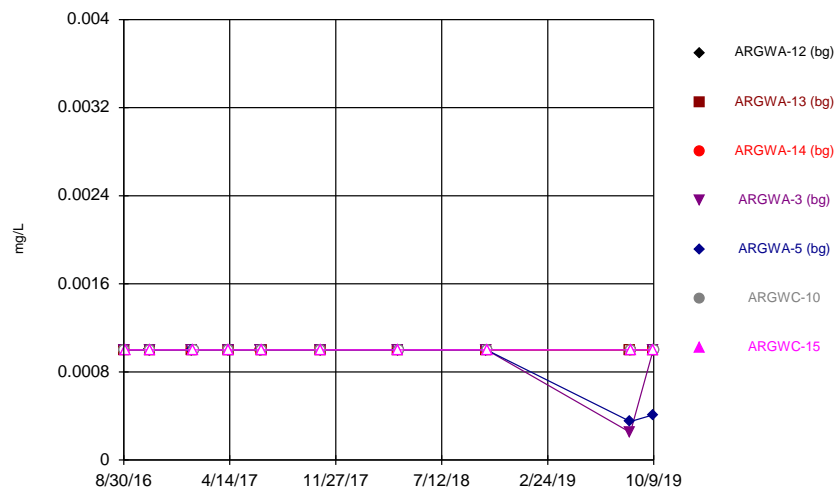
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Time Series



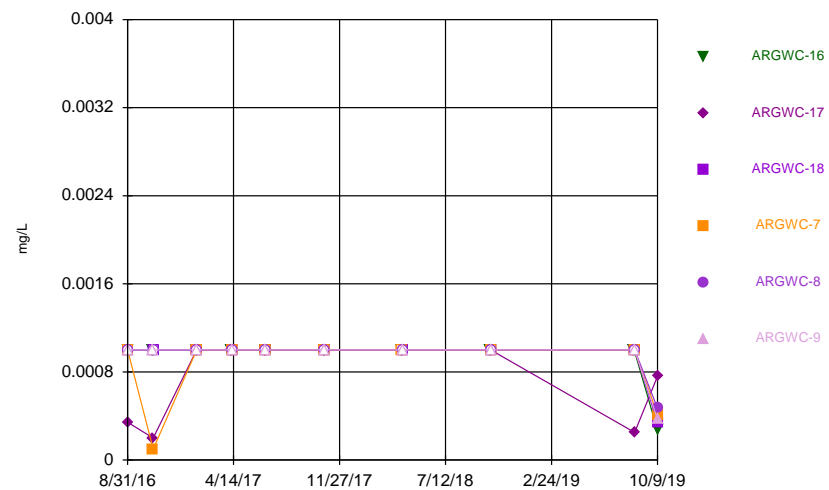
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Time Series



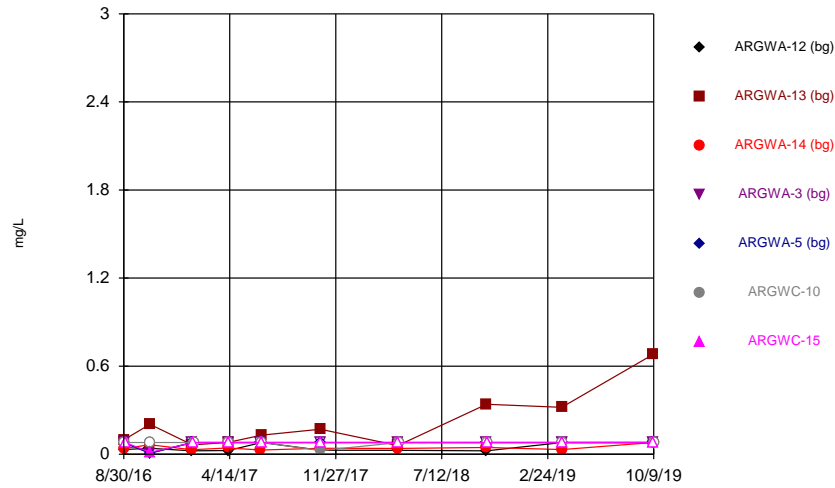
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



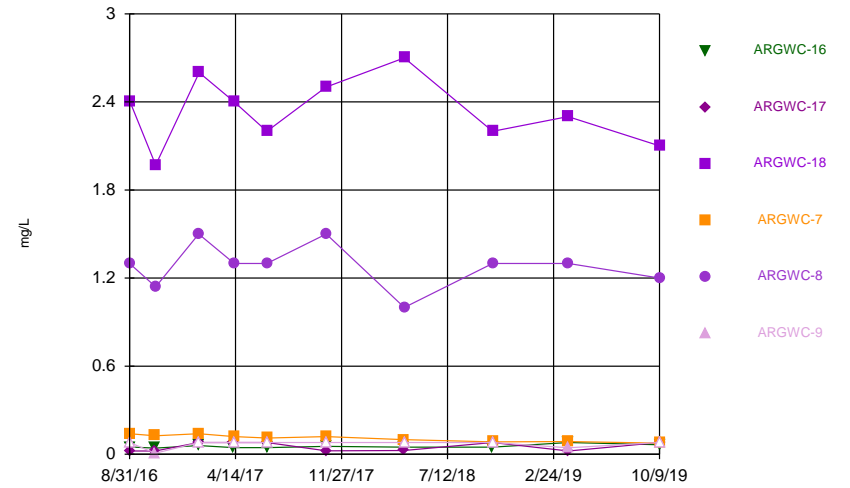
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Time Series



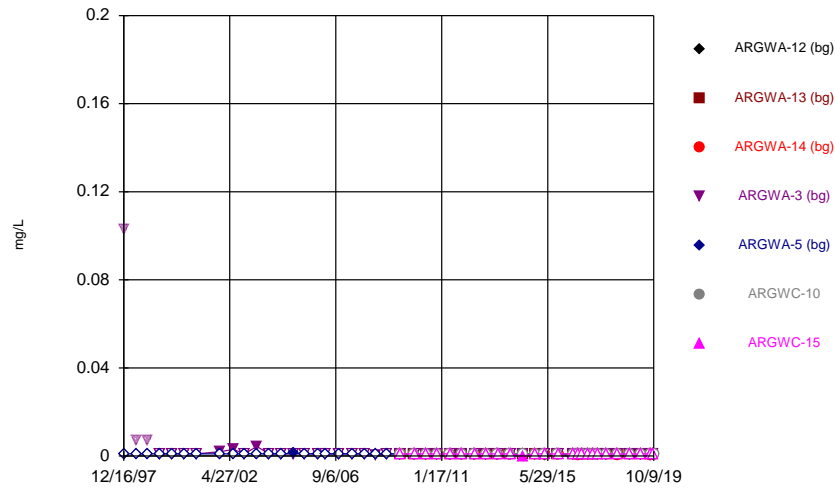
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



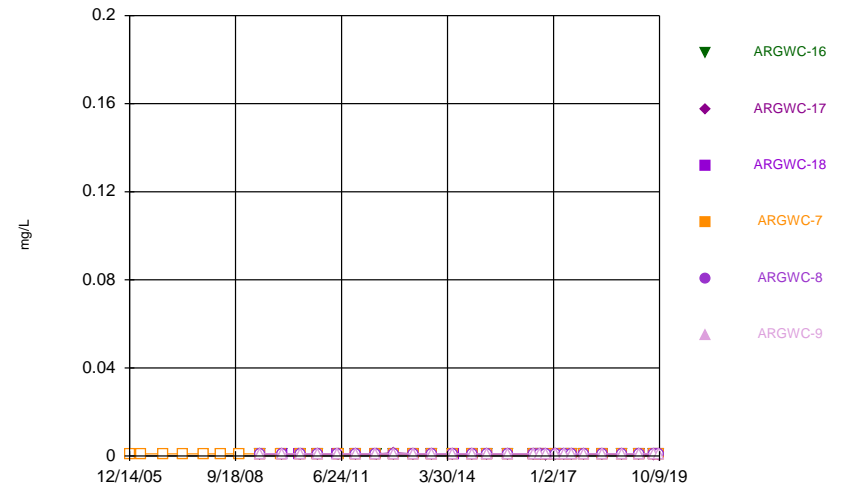
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



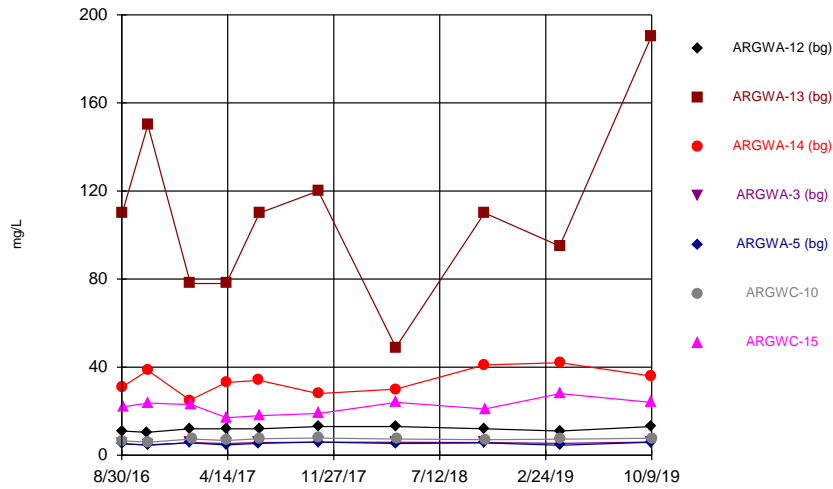
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



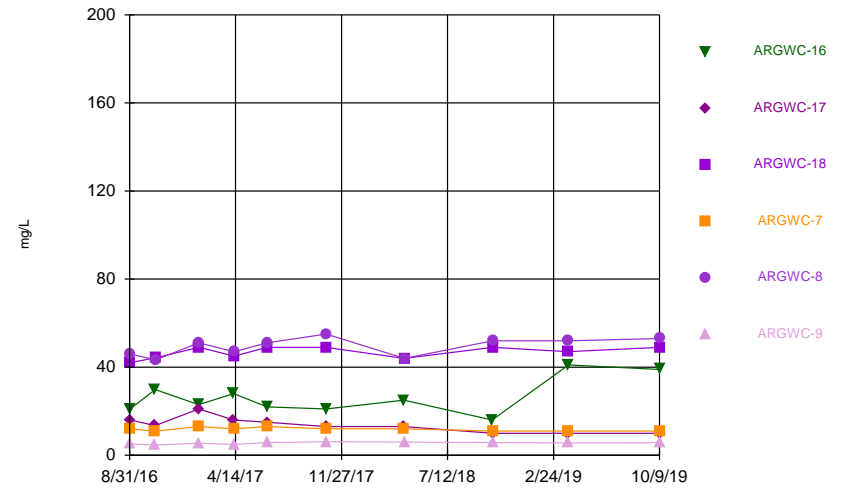
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



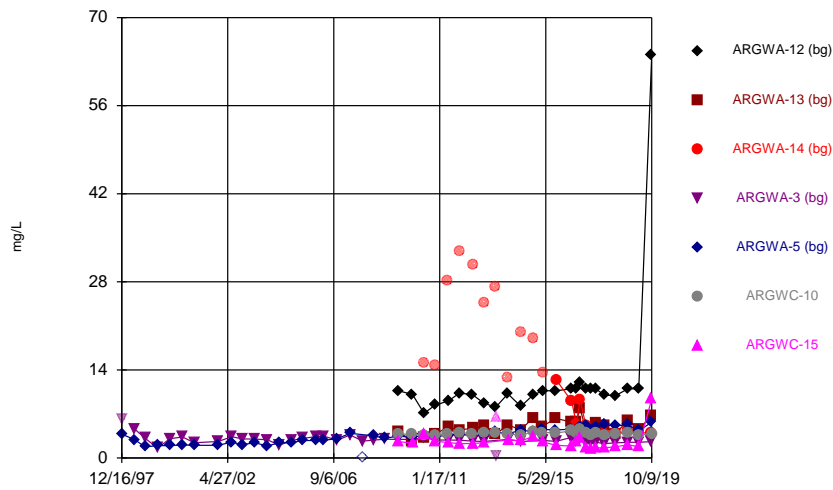
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 Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



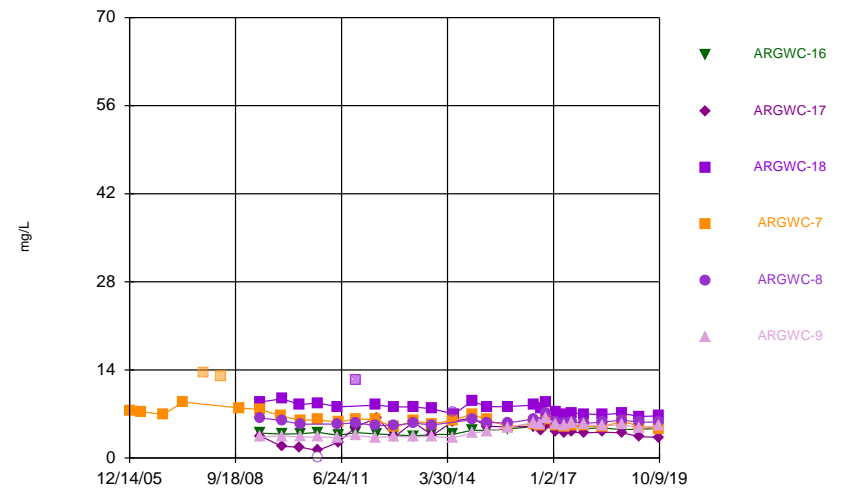
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 Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



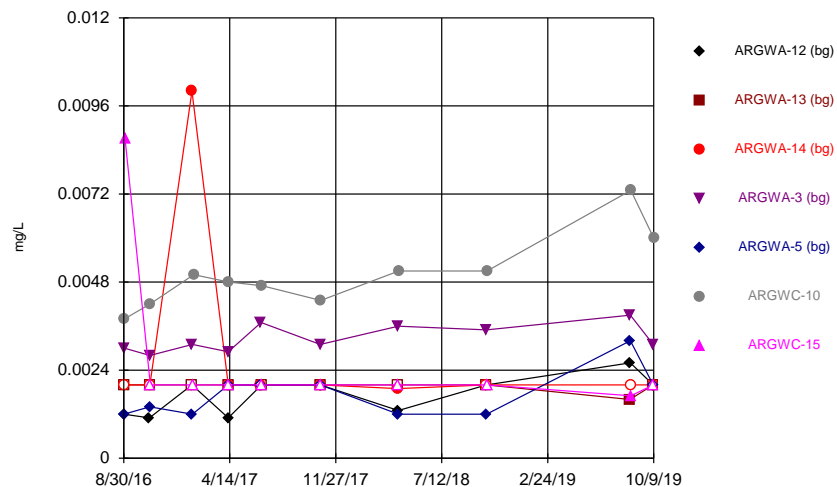
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 Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



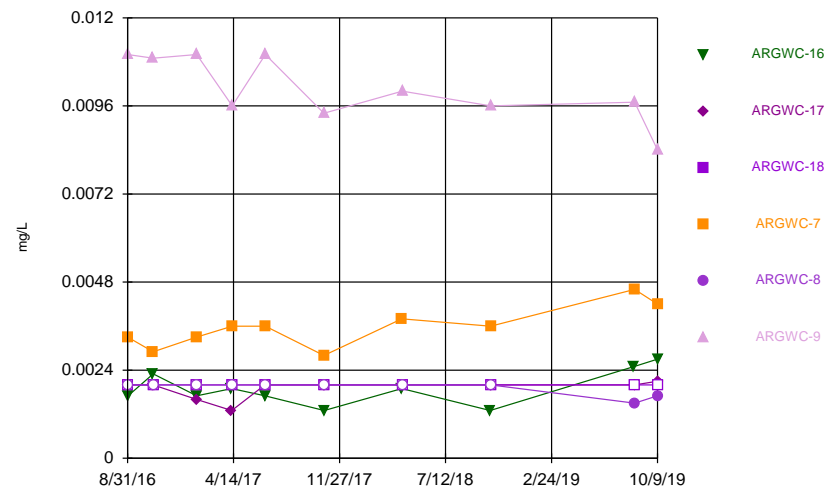
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 Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



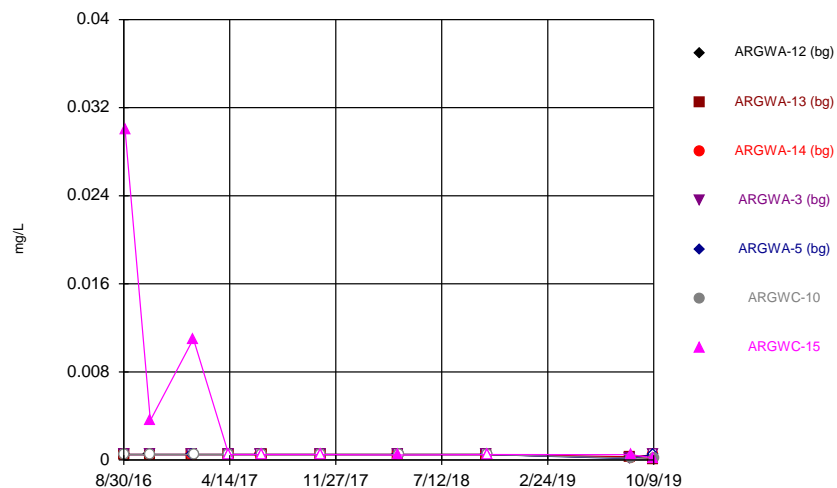
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



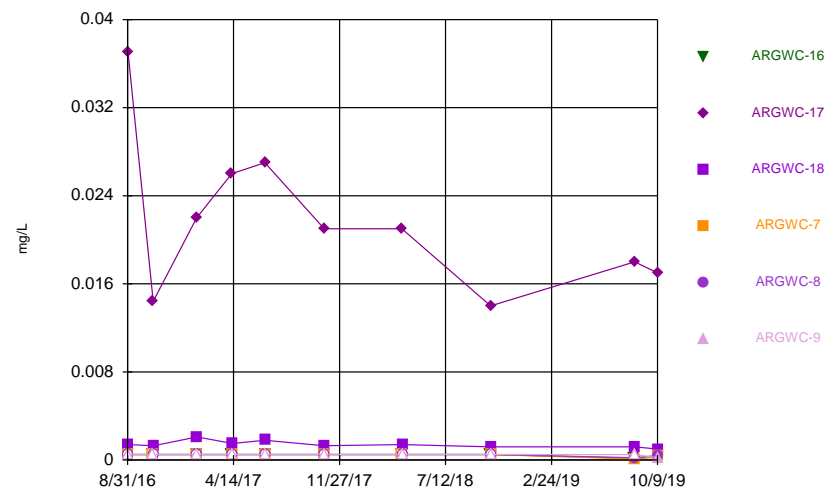
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



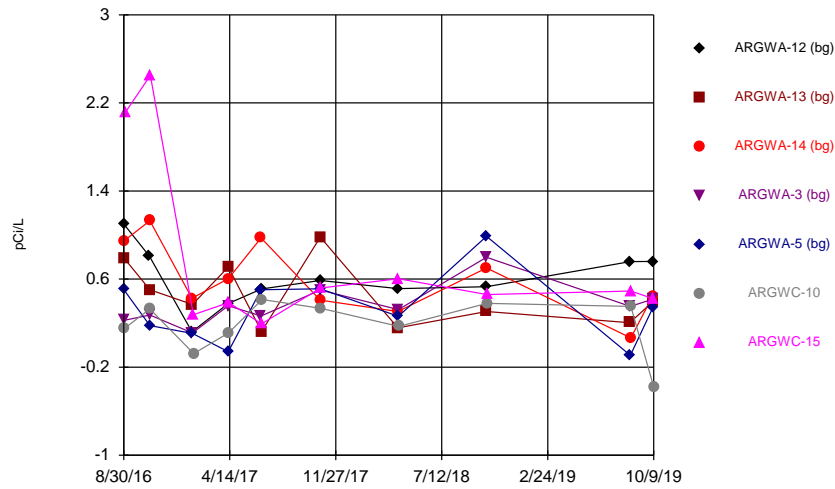
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



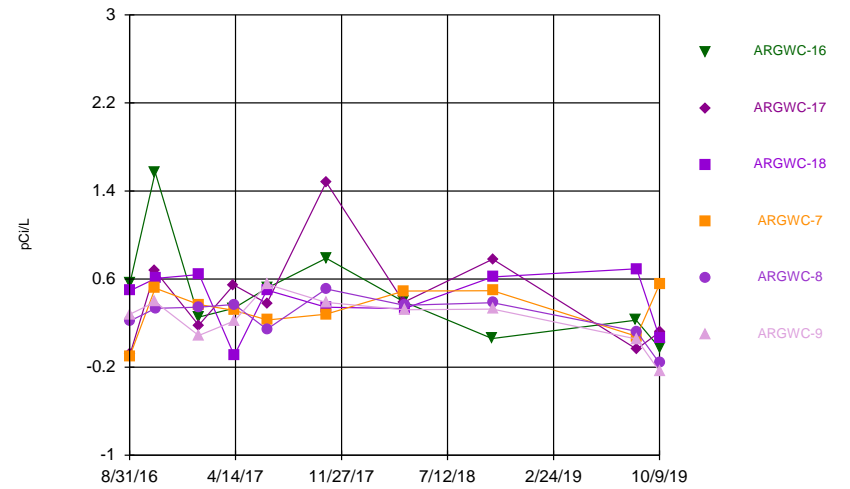
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



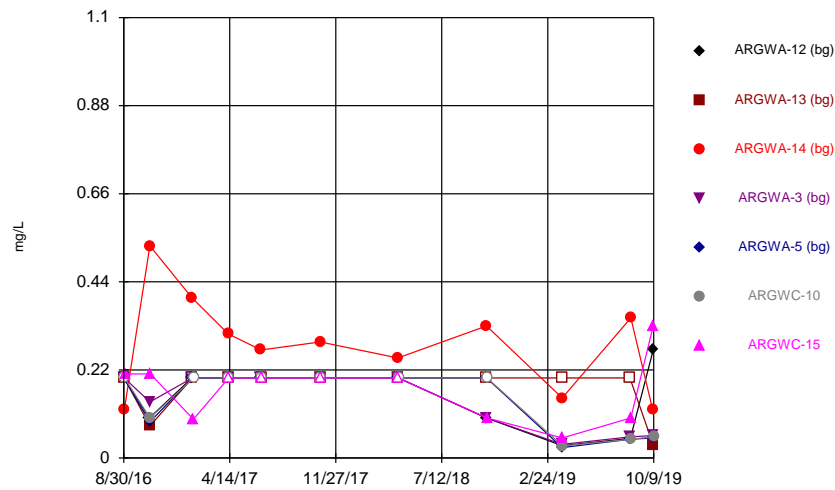
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 Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



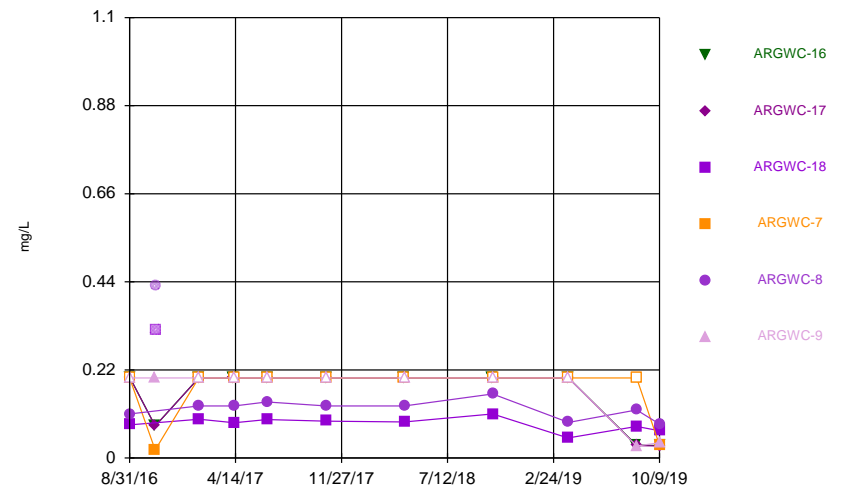
Constituent: Combined Radium 226 + 228 Analysis Run 1/10/2020 3:07 PM View: Time Series
 Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



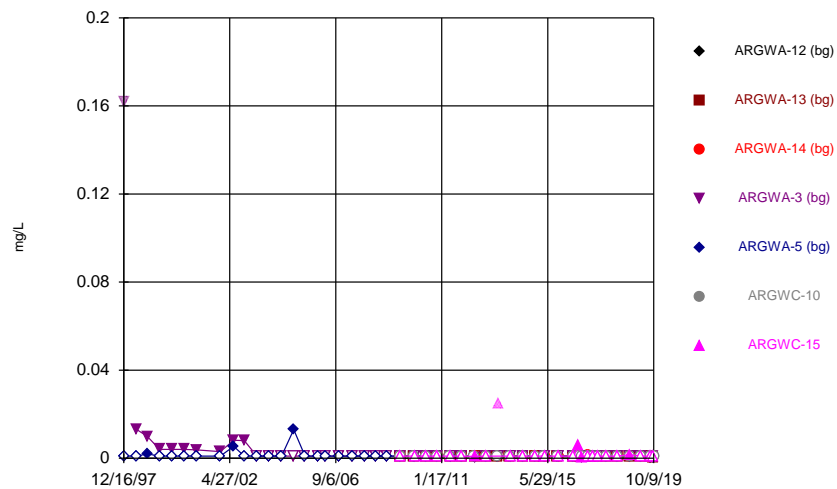
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Time Series



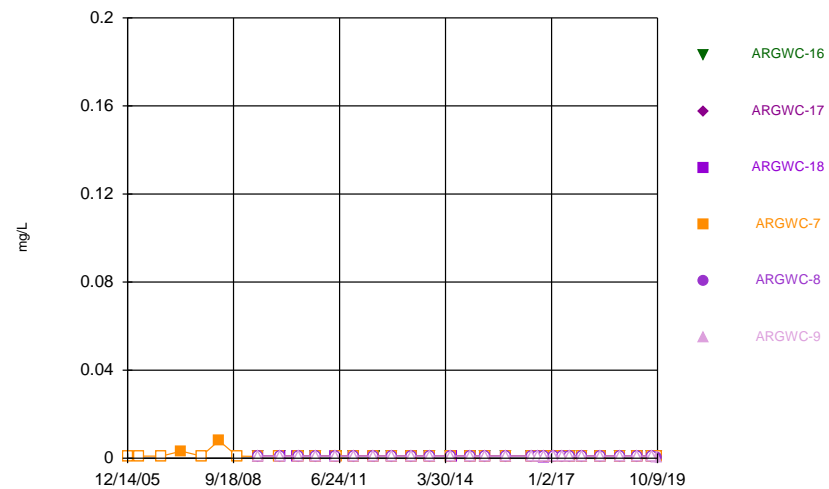
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Time Series



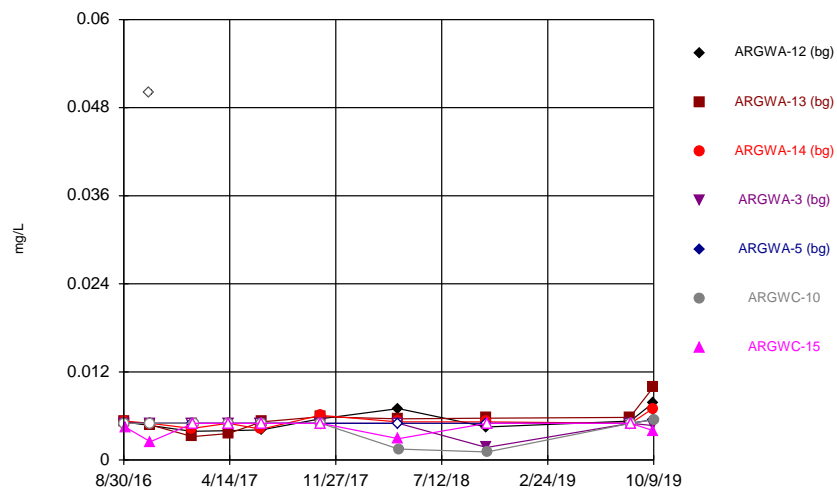
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Time Series



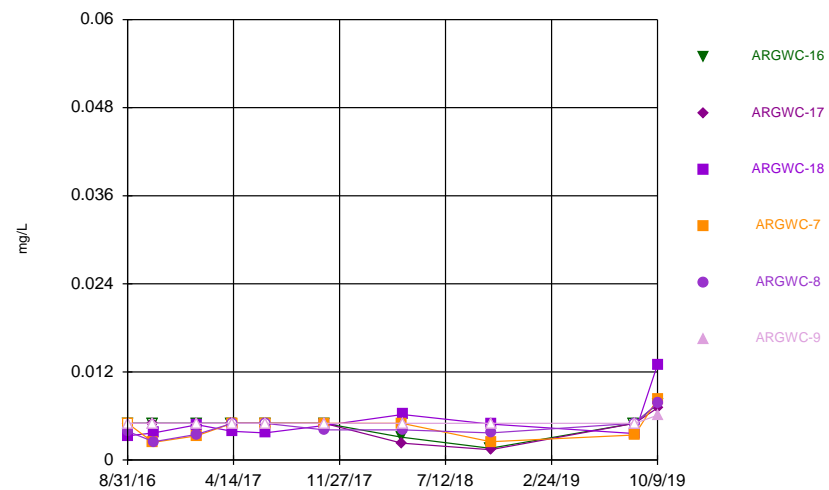
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



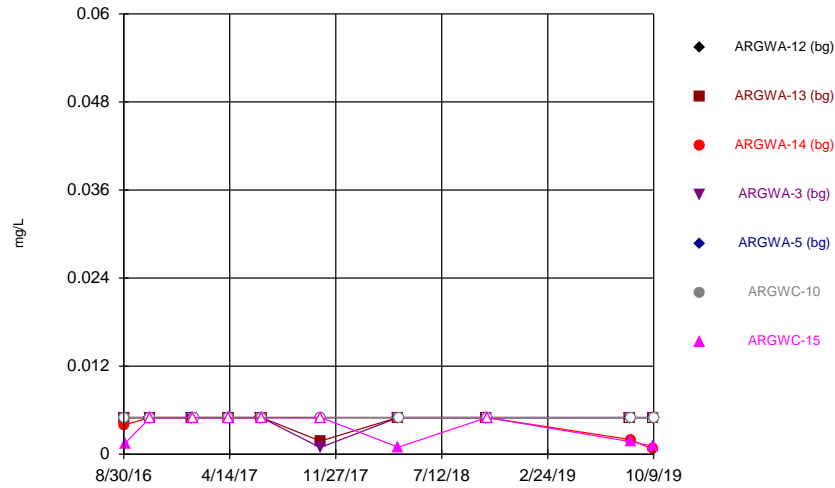
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Time Series



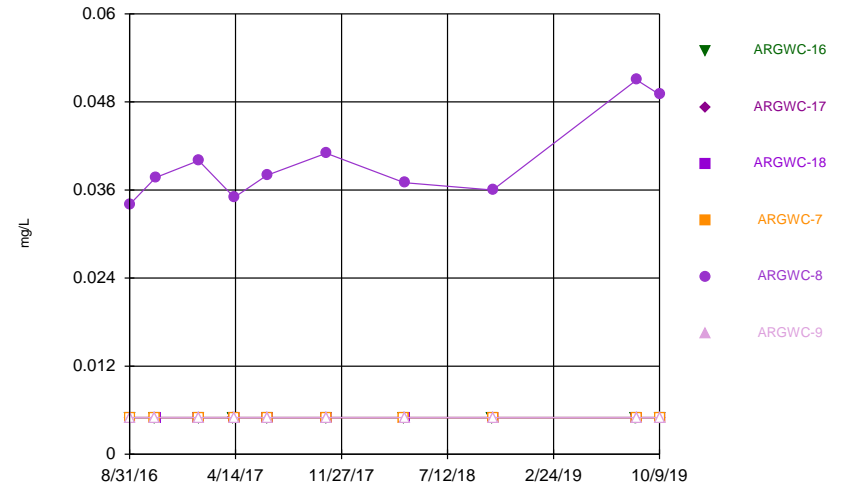
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Time Series



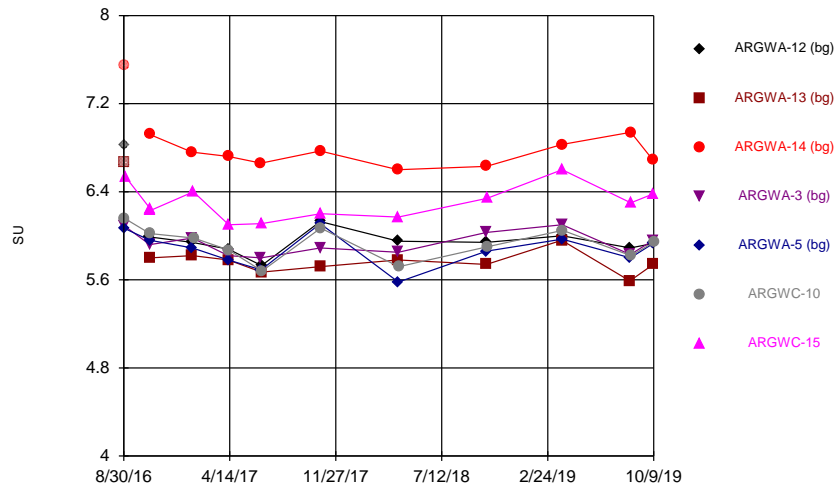
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



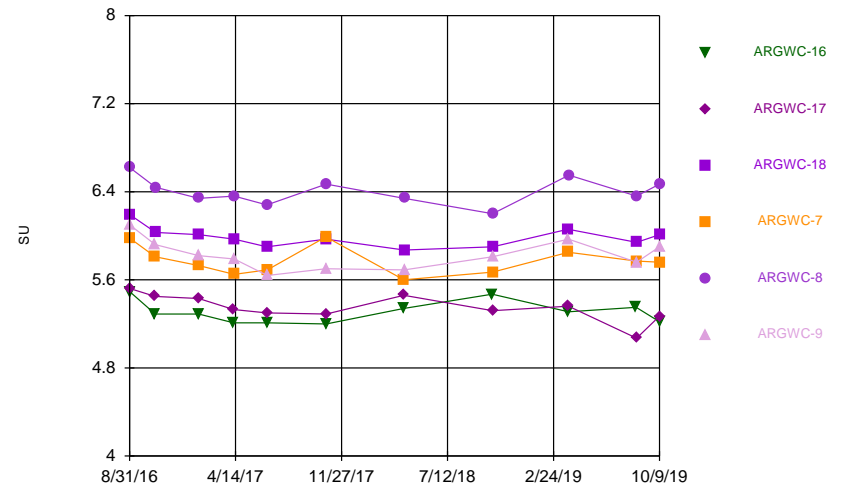
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Time Series



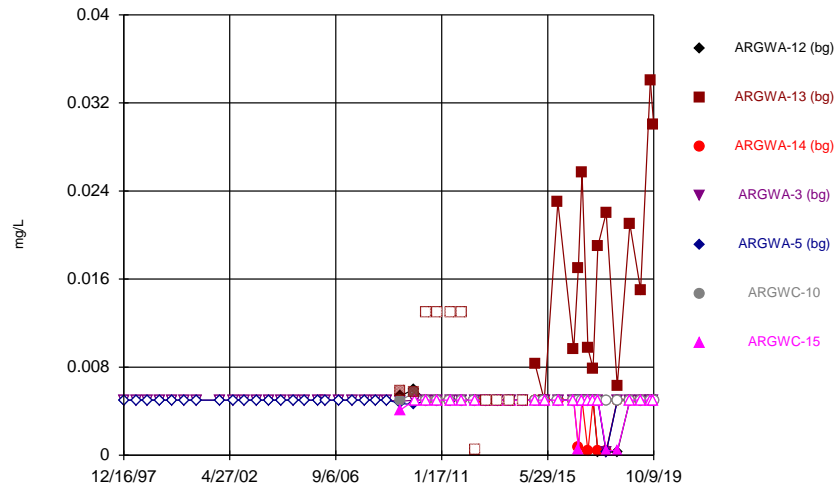
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



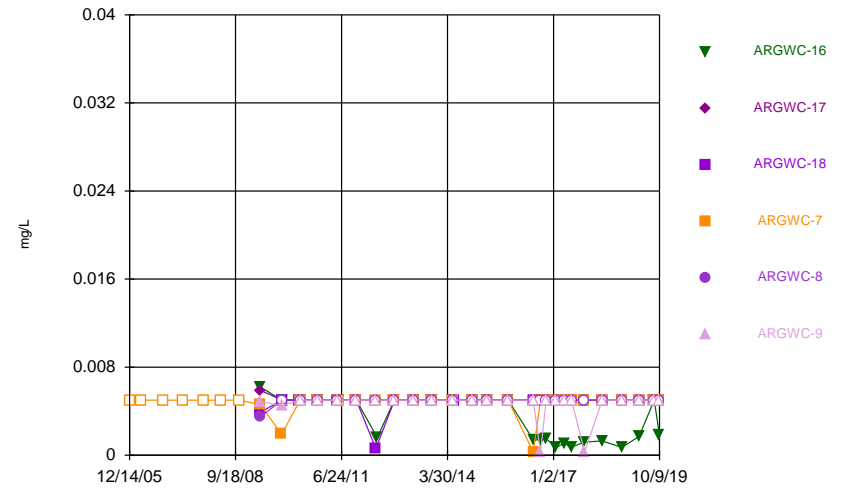
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Time Series



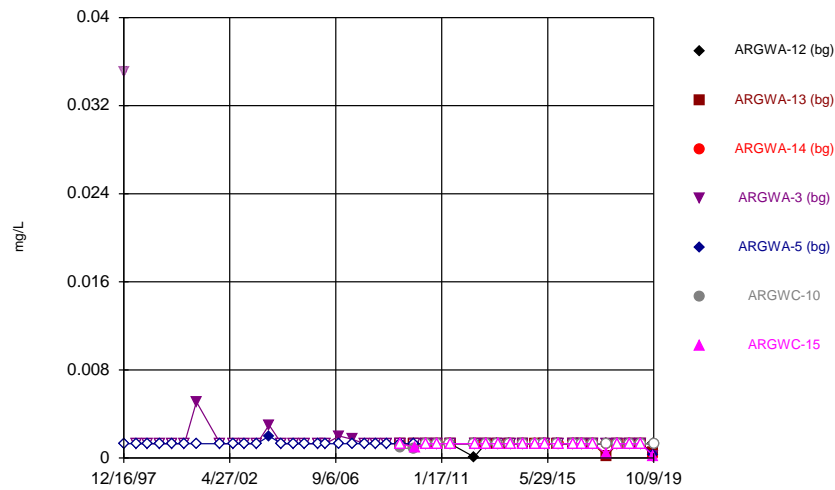
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Time Series



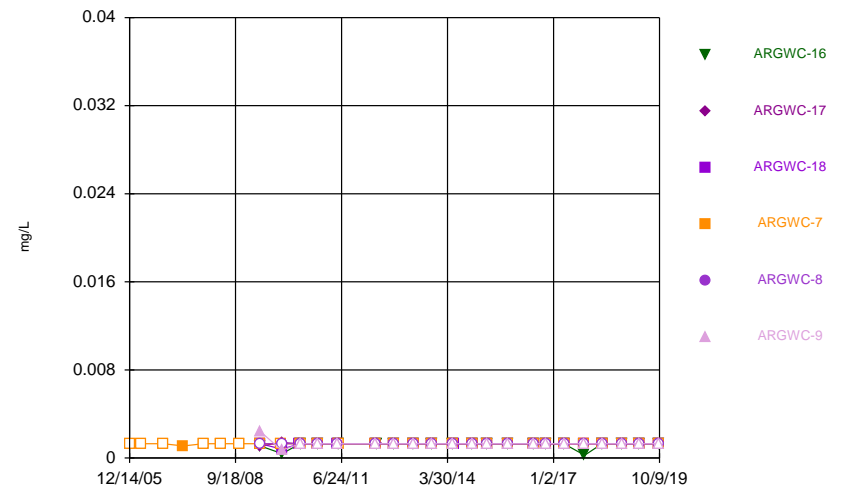
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Time Series



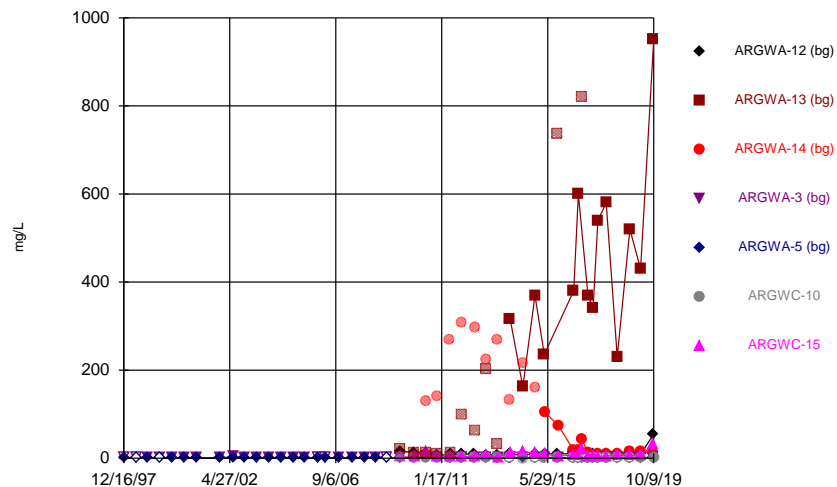
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



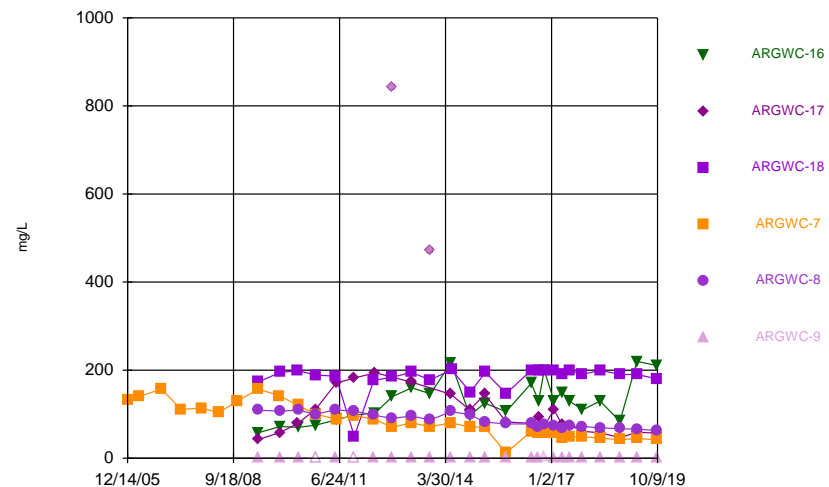
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Time Series



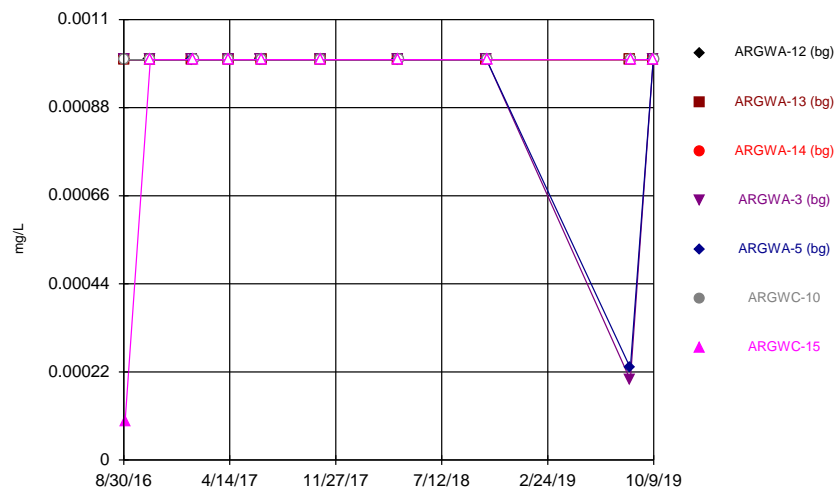
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



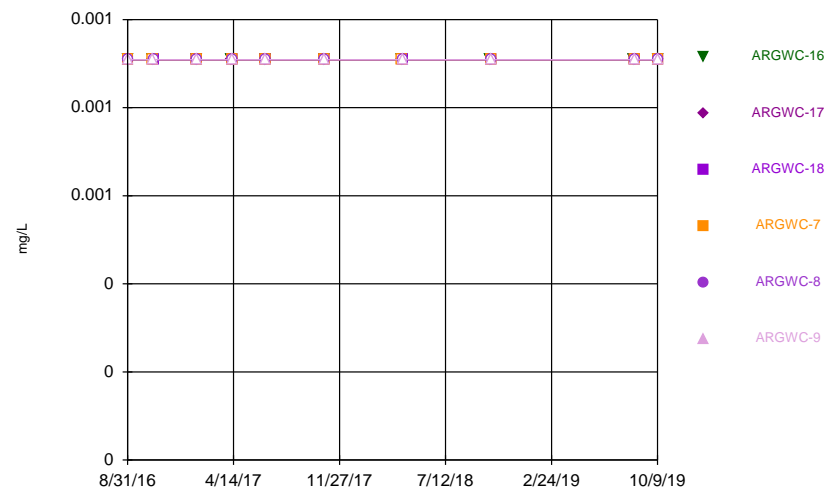
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Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



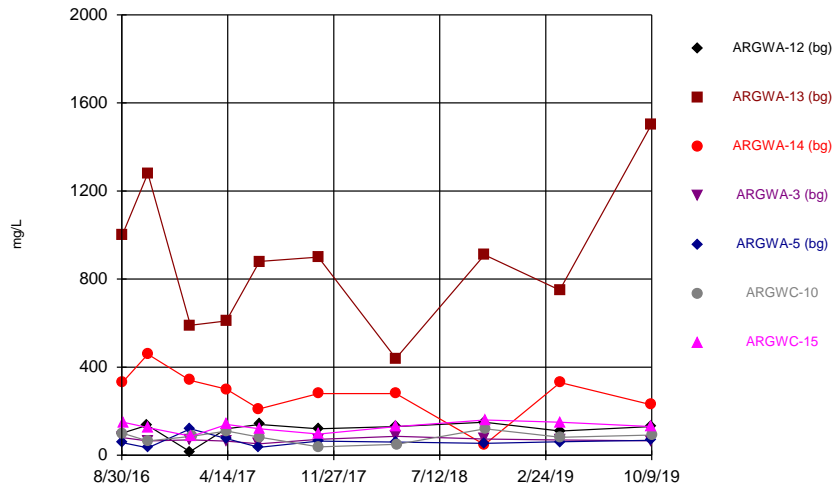
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Time Series



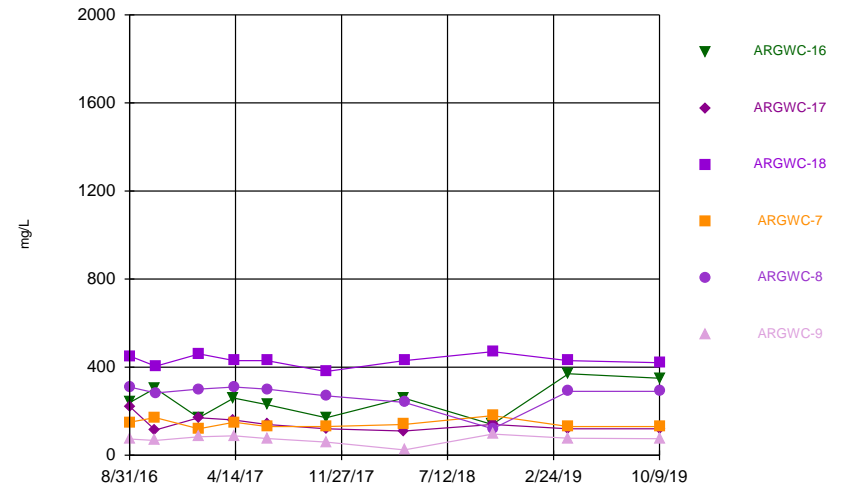
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Time Series



Constituent: Total Dissolved Solids Analysis Run 1/10/2020 3:07 PM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3

Time Series



Constituent: Total Dissolved Solids Analysis Run 1/10/2020 3:08 PM View: Time Series
Plant Arkwright Client: Southern Company Data: Arkwright No 3



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