



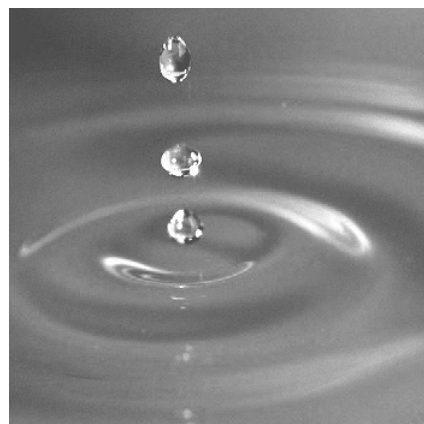
Consulting  
Engineers and  
Scientists

**Georgia Power Company**  
**2019 Annual Groundwater Monitoring**  
**and Corrective Action Report**

Plant McIntosh  
Ash Pond 1

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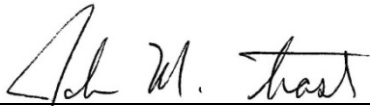
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# Certification

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## PROFESSIONAL ENGINEER CERTIFICATION

This 2019 Annual Groundwater Monitoring and Corrective Action Report, Georgia Power Company – Plant McIntosh Ash Pond 1 has been prepared in accordance with the United States Environmental Protection Agency coal combustion residual rule (40 Code of Federal Regulations [CFR] 257 Subpart D) and the Georgia Environmental Protection Division Rules for Solid Waste Management 391-3-4-.10 under the supervision of a licensed professional engineer with GEI Consultants, Inc:



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John M. Trast, P.E.  
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# 1. Introduction

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In accordance with the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) rule (40 Code of Federal Regulations [CFR] 257 Subpart D; published in 80 FR 21302-21501, April 17, 2015) and the Georgia Environmental Protection Division (EPD) Rules for Solid Waste Management 391-3-4-.10(6)(a), GEI Consultants, Inc. (GEI) has prepared this *2019 Annual Groundwater Monitoring and Corrective Action Report* to document groundwater monitoring activities conducted at Georgia Power Company's (GPC) Plant McIntosh (the Site) Ash Pond 1 (AP-1). Semiannual monitoring for the CCR unit is performed in accordance with the monitoring requirements of 40 CFR §257.90 through §257.95 of the federal CCR Rule. Georgia EPD Rules for Solid Waste Management 391-3-4-.10(6)(a) adopt federal CCR rule by reference, as such references to the federal rule herein also apply the Georgia EPD Rules. This report documents the groundwater monitoring activities completed in 2019.

## 1.1 Site Description and Background

The plant property is located at 981 Old Augusta Central Road, in southeast Effingham County, Georgia, approximately 4 miles northeast of the City of Rincon, and 20 miles north-northwest of the City of Savannah. The plant property is situated on the west bank of the Savannah River at Big Kiffer Point (Figure 1). AP-1 is located on the eastern portion of the plant property, approximately 0.5 miles west of the Savannah River and approximately 0.75 miles south of Lockner Creek (Figure 1).

## 1.2 Regional Geology and Hydrogeologic Setting

Rincon, Georgia is located within the Coastal Plain Province of Georgia. Coastal Plain sediments are composed of stratified clay, silt, sand, and limestone, resting on much older igneous and metamorphic basement rocks. These older, crystalline rocks dip to the south and east causing the overlying sediments to form a wedge-shaped deposit, which is thickest to the east and the south. The Coastal Plain deposits crop out at the land surface in bands, from the oldest to the most recent, from the Fall Line to the coast. Pleistocene-aged deposits are at the surface in this region. Recharge to the major aquifers in the area is to the northeast of the Site, where these formations outcrop (Southern Company Services Earth Science & Environmental Engineering [SCS ES&EE], 2002).

The Site is situated on sediments that were deposited from the Cretaceous to Pleistocene periods and consist of stratified marine deposits and materials eroded from crystalline rock of the Piedmont Region. Boring logs describe soils at AP-1 as interbedded clays, silts, and sands typical of Coastal Plain sediments.

The uppermost aquifer at AP-1 is the surficial aquifer, characterized by silty to sandy clays, clayey silts, silty sands, and fine to medium-grained sands. Monitoring wells and piezometers are screened in the surficial aquifer between 30 and -20 feet (ft) North American Vertical Datum 88 (NAVD 88).

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

Pursuant to 40 CFR §257.91, a groundwater monitoring network was installed within the uppermost aquifer at AP-1. The monitoring network is designed to monitor groundwater passing the waste boundary of AP-1 within the uppermost aquifer. Wells were located to serve as upgradient and downgradient monitoring points based on groundwater flow direction (Table 1).

## 2. Groundwater Monitoring Activities

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The following subsections describe groundwater monitoring activities performed in 2019. All groundwater sampling was performed in accordance with 40 CFR §257.93. Samples were collected from each well in the monitoring network shown on Figure 2. Pursuant to 40 CFR §257.90(e)(3), a summary and description of groundwater sampling events completed at AP-1 is shown on Table 2. The current groundwater monitoring network is provided in Table 1.

### 2.1 Piezometer Installation and Well Maintenance

Two monitoring wells, MGWA-6A and MGWA-24, were installed in January 2019 to provide additional data for characterizing groundwater conditions upgradient of AP-1. Piezometer and monitoring well locations are shown on Figure 2. Well maintenance was performed in April 2019 on the existing groundwater monitoring network, and included the following activities:

- Cleaned well pad
- Removed rust on latches and replaced expansion caps (as needed)
- Drilled weep holes
- Added universal reflective signs containing the well names

Monitoring well/piezometer inspection and maintenance will continue during each monitoring event.

### 2.2 Assessment Monitoring

AP-1 is currently in assessment monitoring. An assessment monitoring program was initiated in 2018 following statistically significant increases (SSIs) of Appendix III parameters during the first detection monitoring event conducted in October 2017. Analytical results and statistical evaluation of those results were provided in the *2017 Annual Groundwater Monitoring and Corrective Action Report* (Environmental Resources Management [ERM], 2018). Three groundwater monitoring events were conducted in 2018. The initial assessment event was conducted in March 2018, and two semiannual assessment events were conducted in June and October 2018. Analytical results and statistical evaluation of those results were provided in the *2018 Annual Groundwater Monitoring and Corrective Action Report* (GEI, 2019).

Groundwater samples were collected during three groundwater monitoring events in 2019. The initial 2019 assessment event was conducted in January 2019. All wells were sampled and analyzed for Appendix IV monitoring parameters pursuant to 40 CFR §257.95(b). Groundwater samples collected during the subsequent semiannual assessment events in March and September 2019 were analyzed for Appendix III parameters and Appendix IV detections during the January 2019 event in accordance with 40 CFR §257.95(d). Antimony, beryllium, chromium, lead, mercury, molybdenum, selenium, and thallium were not detected above the laboratory reporting limit (RL) during the January 2019 event; and therefore, were not analyzed during the subsequent semiannual sampling events in March and September 2019. Analytical methods used for groundwater monitoring parameters are provided in laboratory reports in Appendix A.

## 2.3 Other Sampling

Monitoring wells MGWA-6A and MGWA-24, following installation and development, were sampled in January 2019 to characterize groundwater conditions upgradient of the Site. MGWA-6A was sampled for the following parameters:

- Appendix III: boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS)
- Appendix IV: antimony, arsenic, barium, beryllium, cadmium, cobalt, chromium, lead, lithium, molybdenum, selenium, thallium, radium 226, radium 228, and radium 226+228
- Other cations/anions: bicarbonate alkalinity as CaCO<sub>3</sub>, carbonate alkalinity as CaCO<sub>3</sub>, total alkalinity as CaCO<sub>3</sub>, magnesium, potassium, and sodium

MGWA-24 was sampled for the following parameters:

- Appendix III: calcium, chloride, fluoride, pH, sulfate, and TDS
- Appendix IV: arsenic
- Other cations/anions: bicarbonate alkalinity as CaCO<sub>3</sub>, carbonate alkalinity as CaCO<sub>3</sub>, total alkalinity as CaCO<sub>3</sub>, magnesium, potassium, and sodium

The results of these analyses are included in Table 3.

### 3. Sampling Methodology and Analyses

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GEI conducted all the field work described herein. The field activities and results of the groundwater sampling events are summarized in the following sections. Copies of the laboratory analytical and field sampling reports are included in Appendix A.

#### 3.1 Groundwater Level Measurement

Prior to conducting each groundwater sampling event, groundwater elevations were collected from monitoring wells and piezometers at AP-1 with an electronic water level indicator and measured to the nearest 0.01 foot. Groundwater elevations ranged from approximately 21.96 feet NAVD 88 at PZ-16 (downgradient of AP-1) to 49.05 feet NAVD 88 at MGWA-10 (upgradient of AP-1). The groundwater elevations measured during the 2019 assessment monitoring events are summarized in Table 4.

Potentiometric surface elevation contours and estimated groundwater flow direction were developed using the groundwater elevation data collected in January, March, and September 2019 (Figures 3, 4, and 5, respectively). Interpretation of the potentiometric surface elevation contours indicates that groundwater flow across AP-1 is generally toward the east but shifts to the southeast and northeast in the northern portion of AP-1 (Figures 3 through 5). This is generally consistent with previous events.

#### 3.2 Groundwater Gradient and Flow Velocity

Horizontal groundwater flow velocity at AP-1 was calculated using a derivation of Darcy's Law. Specifically,

$$v = \text{linear velocity} = \frac{Ki}{\eta_e}$$

where :

$K$  = hydraulic conductivity

$$i = \text{hydraulic gradient} = \frac{(h_1 - h_2)}{L}$$

$\eta_e$  = effective porosity

$h_1$  and  $h_2$  = groundwater elevation at locations 1 and 2

$L$  = distance between locations 1 and 2

As presented in previous reports and originally detailed in the July 2002 *Savannah Electric Plant McIntosh Proposed Ash Monofill Site Acceptability Report* (SCS ES&EE, 2002), the sandy Unit 3 aquifer was identified as the shallowest, water-bearing unit at the Site and

hydrogeologic properties are observed to be very similar throughout the Site. Most wells at the Site are primarily screened in this aquifer, including wells at AP-1. The average hydraulic conductivity of the Unit 3 aquifer was used in the calculations, which is 0.962 feet per day (ft/day) based on slug testing conducted at AP-1 in December 2015. This value is slightly higher than those calculated in previous years due to the evaluation of additional slug test data identified for AP-1. Soils at the screened intervals of the wells are generally classified as silty sands (SM). The default value for effective porosity for this type soil is 0.20 (USEPA 530/SW-89-031, 1989). To calculate an average gradient across AP-1, the hydraulic gradient was calculated between three separate well/piezometer pairs: MGWA-10 and PZ-15, MGWA-6 and PZ-16, and MGWA-9 and PZ-17 (Table 5). The calculated average groundwater flow velocity at AP-1 in March 2019 is 0.044 ft/day or 16.06 feet per year (ft/year) and in September 2019, 0.041 ft/day or 14.97 ft/year.

### 3.3 Groundwater Sampling

Groundwater samples were collected in accordance with 40 CFR §257.93(a). Wells were purged using a peristaltic pump or submersible bladder pump with disposable tubing. The disposal tubing or pumps were lowered into each well so that the intake was at the midpoint of the well screen (or as appropriate determined by the water level). All non-disposable equipment was decontaminated before use and between well locations. Monitoring wells were purged and sampled using low-flow sampling procedures. While the well was being purged, water level data and purge volumes were recorded electronically and by hand, and the following field parameters were collected:

pH (field)	Oxidation Reduction Potential (ORP)	Temperature
Specific Conductivity	Dissolved Oxygen (DO)	Turbidity

A SmarTroll (In-Situ field instrument) was used to monitor and record field water quality parameters during well purging to verify stabilization prior to sampling. Turbidity was monitored using a LaMotte 1970-USEPA Compliant Model 2020we or HANNA Instruments Model HI93703 USEPA and International Organization for Standardization (ISO) Compliant turbidity meter. Groundwater samples were collected when the following stabilization criteria were met:

- $\pm 0.1$  standard units for pH
- $\pm 5\%$  for specific conductivity
- $\pm 0.2$  milligrams per liter (mg/L) or 10 percent for DO > 0.5 mg/L (whichever is greater). No criterion applies if DO < 0.5 mg/L

- Turbidity measurements less than 10 Nephelometric Turbidity Units (NTU)

Once stabilization was achieved, unfiltered samples were collected in laboratory-supplied bottles, placed in ice-packed coolers, and submitted to Eurofins TestAmerica (Eurofins) in Pittsburgh, Pennsylvania, following chain-of-custody protocol. Field sampling data sheets are included in Appendix A.

### **3.4 Laboratory Analyses**

Laboratory analytical reports for groundwater monitoring events conducted in January, March, and September 2019 are included in Appendix A. A summary of Appendix III and IV groundwater analytical data is included in Table 3.

Laboratory analyses were performed by Eurofins, which is accredited by the National Environmental Laboratory Accreditation Program (NELAP) and maintains a NELAP certification for all parameters analyzed during the three groundwater monitoring events in 2019 at AP-1. In addition, Eurofins is certified by the State of Georgia to perform analysis. Laboratory reports and chain-of-custody records for the monitoring events are presented in Appendix A.

### **3.5 Quality Assurance and Quality Control**

During each sampling event, quality assurance/quality control samples (QA/QC) were collected at a rate of one sample per every 10 samples. QA/QC samples included field equipment rinse blanks (FERB), field blanks (FB), and duplicate (DUP) samples. QA/QC sample data were evaluated during data validation (as discussed below) and are included in Appendix A.

Groundwater quality data in this report was validated in accordance with USEPA guidance (USEPA, 2011) and the analytical methods. Data validation consisted of reviewing holding times, field and equipment blanks, field duplicates, and laboratory control samples, including: matrix spikes/matrix spike duplicate recoveries and relative percent differences (RPDs), post digestions spikes, laboratory duplicate RPDs, and reporting limits to verify sample integrity. Where appropriate, validation qualifiers and flags were applied to the data using USEPA procedures as guidance (USEPA, 2017). The tables provided in the data validation reports included in Appendix A summarize the validation actions and applicable interpretation.

A value followed by a "J" flag in Table 3 and laboratory reports indicate that the value is an estimated analyte concentration detected between the method detection limit (MDL) and the laboratory RL. The estimated value is positively identified but is below the lowest level that can be reliably achieved within specified limits of precision and accuracy under routine laboratory operating conditions.

## 4. Statistical Analyses

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Groundwater monitoring data collected during the semiannual monitoring events in March and September 2019 were statistically analyzed pursuant to 40 CFR §257.95. Appendix III detection monitoring parameters were statistically analyzed to determine if constituents have returned to background levels. Appendix IV assessment monitoring parameters were analyzed to determine if concentrations statistically exceeded the established groundwater protection standards (GWPS). The following subsections provide an overview of the statistical methods used to evaluate Appendix III and IV parameters and statistical analyses results.

### 4.1 Statistical Methods

The Sanitas groundwater statistical software was used to perform the statistical analyses (Sanitas, 2007). Sanitas is a decision support software package, developed in 1991, that incorporates the statistical tests required of Subtitle C and D facilities by USEPA regulations and guidance as recommended in the USEPA Unified Guidance (USEPA, 2009) document.

#### 4.1.1 Appendix III Statistical Methods

In March 2019, the statistical test used to evaluate the Appendix III groundwater monitoring data consisted of both interwell (boron, chloride, fluoride, and sulfate) and intrawell (calcium, pH, and total dissolved solids) prediction limit (PL) methods combined with the option of a 1-of-2 resample plan. The statistical evaluation of the September 2019 sampling results utilized interwell statistical methods combined with the option of a 1-of-2 resample plan for all Appendix III parameters based on guidance from Georgia EPD. The interwell PLs pool background data from the network of upgradient wells to calculate a PL, while the intrawell PLs use historical data from within a given well to establish a statistical limit for comparison of compliance data at the same well. An initial exceedance occurs when any downgradient groundwater data exceed the PL.

If data from a sampling event initially exceeds the PL, the resampling strategy may be used to verify the result. In 1-of-2 resampling, one independent resample may be collected and evaluated within 90 days to verify the initial exceedance. If the resample exceeds the PL, the initial exceedance is verified, and an SSI is identified. When a resample result does not verify the initial result, and does not exceed the PL, the resample value will replace the initial result and there is no SSI. If resampling is not performed, the initial exceedance is a confirmed exceedance.



## 4.1.2 Appendix IV Statistical Methods

Appendix IV constituents detected during the initial assessment event (January 2019) were sampled during the subsequent semiannual sampling events (March and September 2019). To statistically compare groundwater data to GWPS, confidence intervals are constructed for each of the detected Appendix IV parameters in each downgradient well. Those confidence intervals are compared to both the state and federal GWPS. Only when the entire confidence interval is above a GWPS is the well/constituent considered to exceed its GWPS. If there is an exceedance of the GWPS, a statistically significant level (SSL) is identified.

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

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

- (1) The maximum contaminant level established under §§141.62 and 141.66 of this title (the “MCL”).
- (2) Where an MCL has not been established:
  - (i) Cobalt 0.006 mg/L
  - (ii) Lead 0.015 mg/L
  - (iii) Lithium 0.040 mg/L
  - (iv) Molybdenum 0.100 mg/L
- (3) Background levels for constituents where the background level is higher than the MCL or rule-specified GWPS.

USEPA’s updated GWPS have not yet been incorporated under Georgia EPD’s CCR Rule. Georgia EPD’s CCR Rules are:

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

Pursuant to the above requirements, GWPS have been established for statistical comparisons of Appendix IV constituents. Table 6 summarizes the federal and state background limits established at each monitoring well and the GWPS.

## 4.2 Statistical Analyses Results for the First and Second Semiannual Assessment Events

Appendix III and Appendix IV data from the March and September 2019 semiannual assessment monitoring events were statistically analyzed in accordance with the Certified Statistical Methods, Unified Guidance (USEPA, 2009), and guidance from the Georgia EPD. The results of the Appendix III and IV assessment monitoring statistics are summarized below. The Sanitas statistical outputs for Appendix III and IV parameters are provided in Appendix B and C, respectively. Note that the September Appendix III data were evaluated using only interwell evaluation methods (Appendix C2).

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

Appendix IV constituents were identified at SSLs above the established GWPS during the March and September 2019 semiannual assessment monitoring events.

Using the GWPS established under the federal CCR Rule, statistical analysis of Appendix IV data identified an SSL for cobalt and lithium at monitoring well MGWC-7 in March and September 2019. Cobalt and lithium at MGWC-7 exceed the federal GWPS of 0.006 mg/L and 0.04 mg/L, respectively.

Using the GWPS established under the state CCR Rule, statistical analysis of Appendix IV data identified SSLs for cobalt and lithium in three groundwater monitoring wells in March and September 2019. Cobalt statistically exceeded the respective March and September 2019 GWPS in MGWC-2, MGWC-7, and MGWC-8. Lithium statistically exceeded the state GWPS of 0.03 mg/L in MGWC-7.

The statistical evaluation results of the March and September 2019 data are consistent with the 2018 reporting year statistical results. The SSLs identified during the first and second semiannual 2019 events can be addressed by the previously submitted Alternative Source Demonstrations (ASDs) described in Section 5. A groundwater exceedance notification identifying the constituents in Appendix IV that have exceeded the groundwater protection standard will be placed in the operating record pursuant to 40 CFR §257.95(g).

## 5. Alternate Source Demonstrations

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In accordance with 40 CFR §257.95, ASDs were completed for cobalt and lithium at AP-1 and were included in the *2018 Semiannual Groundwater Monitoring and Corrective Action Report* (GEI, 2019). The ASDs concluded that the SSLs for cobalt and lithium in wells MGWC-2, MGWC-7, and MGWC-8 are attributed to natural groundwater variability due to soil heterogeneity and mineralogy containing these naturally occurring trace elements. Small part per billion-level differences in cobalt and lithium concentrations in groundwater would be expected in the geologic setting near Plant McIntosh and the Savannah River having been influenced by Piedmont Region erosion and sediment transport and deposition.

Results of additional sampling and analysis conducted at AP-1 were provided in *Supplemental Information for the Ash Pond 1 Alternate Source Demonstration*, dated November 21, 2019, as requested by the Georgia EPD Solid Waste Management Program in their correspondence to GPC dated May 7, 2019, *Alternate Source Demonstration - Review Comments* (Appendix D).

## **6. Groundwater Monitoring Program Status**

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SSIs of Appendix III parameters and SSLs of Appendix IV parameters were identified at AP-1 during the March and September 2019 sampling events. In accordance with 40 CFR §257.95(g)(3), ASDs were completed for the cobalt and lithium SSLs. Since Appendix III parameters exhibit SSIs and ASDs were completed for Appendix IV SSLs, cobalt and lithium, AP-1 will remain in assessment monitoring.

## 7. Conclusions and Future Actions

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This *2019 Annual Groundwater Monitoring and Corrective Action Report* for GPC's Plant McIntosh AP-1 was prepared to fulfill the requirements of USEPA's CCR Rule and Georgia EPD Rules for Solid Waste Management §391-3-4-.10.

Statistical evaluations of the groundwater monitoring data for AP-1 identified SSIs of Appendix III groundwater monitoring parameters above background and SSLs of Appendix IV groundwater monitoring parameters above GWPS. ASDs were completed for SSLs of cobalt and lithium; therefore, AP-1 will remain in assessment monitoring.

The 2020 initial assessment event is scheduled to be conducted in the first quarter of 2020.

## 8. References

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ERM, 2018. *2017 Annual Groundwater Monitoring and Corrective Action Report, Plant McIntosh, Ash Pond 1 (AP-1)*, January 31, 2018.

GEI, 2019. *2018 Annual Groundwater Monitoring and Corrective Action Report, Plant McIntosh, AP-1*, prepared by GEI, January 2019.

GPC, 2019. *Supplemental Information for the Ash Pond 1 Alternate Source Demonstration*, prepared by Georgia Power Company, November 21, 2019.

Sanitas, 2007. *Groundwater Statistical Software*, Sanitas Technologies, Shawnee, KS, 2007. [www.sanitastech.com](http://www.sanitastech.com)

Southern Company Services - Earth Science and Environmental Engineering (SCS ES&EE), 2002. *Savannah Electric Plant McIntosh Proposed Ash Monofill Site Acceptability Report*. July 2002.

USEPA, 1989. *RCRA Facility Investigation (RFI) Guidance, Volume II of IV: Soil, Groundwater, Subsurface Gas Releases*. EPA/530/SW-89-031. Office of Solid Waste Management Division, U.S. Environmental Protection Agency, Washington, D.C.

USEPA, 2009. *Unified Guidance, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities*. Office of Solid Waste Management Division, U.S. Environmental Protection Agency, Washington, D.C. March 2009.

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

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

# Tables

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**Table 1. Monitoring Network**  
**2019 Annual Groundwater Monitoring and Corrective Action Report**  
**Georgia Power Company**  
**Plant McIntosh Ash Pond 1**  
**Effingham County, Georgia**

Well ID	Installation Date	Northing	Easting	Total Depth (ft bTOC)	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Top of Screen Elevation (ft)	Bottom of Screen Elevation (ft)	Location and Purpose
MGWC-1	11/10/2015	856813.32	964287.17	56.08	62.00	65.08	19.30	9.30	Downgradient Monitoring Well
MGWC-2	11/11/2015	856400.70	963958.28	37.36	44.90	48.26	21.20	11.20	Downgradient Monitoring Well
MGWC-3	11/11/2015	856033.91	963658.13	38.74	49.60	52.34	23.90	13.90	Downgradient Monitoring Well
MGWC-4	11/18/2015	855555.10	963139.29	67.35	60.70	64.05	7.00	-3.00	Downgradient Piezometer
MGWA-5	11/12/2015	855860.77	962763.08	63.09	61.00	64.09	11.30	1.30	Upgradient Monitoring Well
MGWA-6	11/12/2015	856527.64	963130.05	41.93	57.90	60.83	29.20	19.20	Upgradient Monitoring Well
MGWA-6A	01/16/2019	856521.05	963113.15	39.70	56.79	59.67	30.27	20.27	Upgradient Monitoring Well
MGWC-7	11/13/2015	857417.67	964007.37	42.29	50.90	54.19	22.20	12.20	Downgradient Monitoring Well
MGWC-8	11/10/2015	857177.15	964141.60	52.56	59.30	62.36	20.10	10.10	Downgradient Monitoring Well
MGWA-9	11/17/2015	857129.76	963164.52	43.05	56.00	59.05	26.30	16.30	Upgradient Piezometer
MGWA-10	11/17/2015	855934.18	961406.35	53.09	61.60	64.69	21.90	11.90	Upgradient Monitoring Well
MGWA-11	05/27/2016	855985.27	962070.17	55.81	64.70	67.51	21.90	11.90	Upgradient Monitoring Well
MGWC-12	05/26/2016	855545.62	963110.10	52.90	63.90	66.80	24.10	14.10	Downgradient Monitoring Well
PZ-13	06/3/2016	856124.06	964192.33	26.76	37.80	40.66	24.30	14.30	Downgradient Piezometer
PZ-14	06/4/2016	855727.29	963896.00	41.50	43.80	46.90	15.80	5.80	Downgradient Piezometer
PZ-15	06/26/2018	856157.15	964192.87	28.87	39.01	42.28	23.71	13.71	Downgradient Piezometer
PZ-16	06/26/2018	857077.20	964956.17	42.39	51.23	54.62	22.53	12.53	Downgradient Piezometer
PZ-17	06/27/2018	857656.21	964525.25	45.12	54.04	57.46	22.64	12.64	Downgradient Piezometer
PZ-18	06/27/2018	857542.85	963505.27	41.70	50.11	53.31	21.91	11.91	Upgradient Piezometer
MGWC-19	10/4/2018	857405.11	963973.11	72.70	50.66	53.86	-8.54	-18.54	Downgradient Deep Piezometer
MGWC-20	10/3/2018	857597.80	964282.17	54.77	48.72	51.49	7.02	-2.98	Downgradient Piezometer
MGWC-21	11/28/2018	857158.68	964154.74	82.68	59.81	62.49	-9.89	-19.89	Downgradient Deep Piezometer
MGWC-22	11/29/2018	856382.16	963947.73	67.56	45.02	47.38	-9.88	-19.88	Downgradient Deep Piezometer
MGWC-23	11/30/2018	856939.86	964618.27	42.90	54.75	57.35	24.75	14.75	Downgradient Piezometer
MGWC-24	01/17/2019	856600.35	962884.73	47.00	57.47	60.40	24.60	14.60	Upgradient Piezometer

**Notes:**

bTOC - below top of casing  
ft - feet

All monitoring wells and piezometers are 2 inches in diameter and casing material is polyvinyl chloride (PVC)

Elevations are in feet relative to North American Vertical Datum 88 (NAVD 88)

Northing and easting are in feet North American Datum 83 (NAD 83), State Plane Georgia East Zone

During each groundwater monitoring event, monitoring wells are gauged for water levels and sampled for laboratory analysis and piezometers are gauged for water level only.

Well construction information taken from installation logs and the October 2017 Ash Pond Well Design, Installation, Development, and Decommissioning Report (revised in February 2018).

Created by: CJB

Checked by: LLG



**Table 2. Groundwater Sampling Event Summary for 2019**  
**2019 Annual Groundwater Monitoring and Corrective Action Report**  
**Georgia Power Company**  
**Plant McIntosh Ash Pond 1**  
**Effingham County, Georgia**

Well ID	Hydraulic Location and Purpose	Summary of Sampling Events		
		Sampling Event	Initial Assessment	Assessment 1
	Sampling Dates	January 28-29, 2019	March 25-26, 2019	September 10, 2019
MGWC-1	Downgradient Monitoring Well	✓	✓	✓
MGWC-2	Downgradient Monitoring Well	✓	✓	✓
MGWC-3	Downgradient Monitoring Well	✓	✓	✓
MGWA-5	Upgradient Monitoring Well	✓	✓	✓
MGWA-6	Upgradient Monitoring Well	✓	✓	✓
MGWA-6A	Upgradient Monitoring Well	✓	✓	✓
MGWC-7	Downgradient Monitoring Well	✓	✓	✓
MGWC-8	Downgradient Monitoring Well	✓	✓	✓
MGWA-10	Upgradient Monitoring Well	✓	✓	✓
MGWA-11	Upgradient Monitoring Well	✓	✓	✓
MGWC-12	Downgradient Monitoring Well	✓	✓	✓
MGWA-24	Upgradient Piezometer		✓	

Created by: CJB

Checked by: LLG

**Table 3. Summary of 2019 Assessment Groundwater Analytical Data**  
 2019 Annual Groundwater Monitoring and Corrective Action Report  
 Georgia Power Company  
 Plant McIntosh Ash Pond 1  
 Effingham County, Georgia

Location Name			MGWC-1						MGWC-2			MGWC-3			MGWA-5			MGWA-6						
Analyte	Units	Sample Date CAS No.	1/29/2019	DUP-Jan.19	03/26/19	DUP-Mar.19	9/10/2019	DUP-Sept.19	1/29/2019	3/26/2019	9/10/2019	1/29/2019	3/26/2019	9/10/2019	1/29/2019	3/25/2019	9/10/2019	1/29/2019	DUP-Jan.19	03/26/19	DUP-Mar.19	9/10/2019	DUP-Sept.19	
<b>Field Parameters</b>																								
Specific Conductance	µS/cm	COND	563.42		553.00		603.12		804.42	750.03	756.36	587.19	534.64	559.73	278.17	253.60	249.03	514.95		511.34		508.19		
Dissolved Oxygen	mg/L	DO	4.25		0.38		0.32		0.24	0.45	0.22	0.20	0.47	0.18	0.43	0.24	3.97	0.16		0.37		0.11		
ORP	mV	ORP	47.33		-25.10		2.36		-8.36	36.18	33.37	20.20	68.59	96.64	41.30	-136.80	105.13	-5.85		24.52		-8.47		
pH	SU	pH	6.87		7.01		7.09		7.03	7.29	7.26	6.42	6.68	6.67	7.63	7.44	7.41	6.55		6.57		6.99		
Temperature	deg c	TEMP	19.94		19.99		23.57		18.92	19.83	26.19	17.94	19.13	23.11	19.04	23.13	26.40	19.49		19.4		25.20		
Turbidity	NTU	TURB	1.89		1.27		0.86		2.03	2.67	0.89	1.07	0.69	0.61	1.11	0.68	0.90	1.79		1.55		1.81		
<b>Appendix III Parameters</b>																								
Boron	mg/L	7440-42-8	--	--	1.3	1.3	1.5	1.5	--	2.6	2.4	--	1.5	1.5	--	< 0.021	< 0.039	--	--	0.079	0.15	0.097	0.096	
Calcium	mg/L	7440-70-2	--	--	100 ^	100 ^	110	110	--	110	110	--	99 ^	99	--	27	27	--	--	100 ^	100 ^	110	100	
Chloride	mg/L	16887-00-6	--	--	13	13	13	14	--	14	13	--	14	13	--	4.7	5.1	--	--	5.8	6.5	6.0	6.1	
Fluoride	mg/L	16984-48-8	--	--	0.16	0.14 J	0.098 J	0.10	--	0.076 J	0.070 J	--	0.072 J	0.073 J	--	0.072 J	0.068 J	--	--	0.065 J	0.048 J	0.076 J	0.071 J	
pH	SU	pH	6.87		7.01		7.09		7.03	6.68	7.26	6.42	5.96	6.67	7.63	7.44	7.41	6.55		6.57		6.99		
Sulfate	mg/L	14808-79-8	--	--	130	130	140	140	--	190	180	--	110	110	--	3.4	4.7	--	--	6.3	7.9	5.6	5.7	
Total Dissolved Solids	mg/L	TDS	--	--	370	370	360	410	--	530	470	--	370	360	--	150	110	--	--	290	290	260	290	
<b>Appendix IV Parameters</b>																								
Antimony	mg/L	7440-36-0	< 0.00250	< 0.00250	--	--	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	< 0.00250	--	--	--	--	
Arsenic	mg/L	7440-38-2	0.00255	0.00300	0.0020	0.0021	0.0018	0.0016	< 0.00125	< 0.00046	0.00036 J	0.00143	0.0012 J	0.0017	< 0.00125	0.00069 J	0.00039 J	0.00972	0.00969	0.0097	0.010	0.0085	0.0084	
Barium	mg/L	7440-39-3	0.107	0.0993	0.096	0.097	0.11	0.11	0.0496	0.048	0.053	0.138	0.13	0.15	0.0363	0.035	0.035	0.0393	0.0384	0.033	0.034	0.040	0.039	
Beryllium	mg/L	7440-41-7	< 0.00250	< 0.00250	--	--	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	< 0.00250	--	--	--	--	
Cadmium	mg/L	7440-43-9	< 0.00250	< 0.00250	< 0.00034	< 0.00034	0.00017 J	< 0.00013	0.00315	0.0019 J	0.0011	< 0.00250	< 0.00034	< 0.00013	< 0.00250	< 0.00034	< 0.00013	< 0.00250	< 0.00250	< 0.00034	< 0.00034	< 0.00013	< 0.00013	
Chromium	mg/L	7440-47-3	< 0.00250	0.00261	--	--	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	< 0.00250	--	--	--	--	
Cobalt	mg/L	7440-48-4	< 0.00250	< 0.00250	< 0.00040	< 0.00040	0.00032 J	0.00029 J	0.00293	0.0030	0.0027	< 0.00250	< 0.00040	0.00065	< 0.00250	< 0.00040	< 0.000075	< 0.00250	< 0.00250	< 0.00040	< 0.00040	0.00037 J	0.00034 J	
Lead	mg/L	7439-92-1	< 0.00100	< 0.00100	--	--	--	--	< 0.00100	--	--	< 0.00100	--	--	< 0.00100	< 0.00100	< 0.00100	< 0.00100	< 0.00100	< 0.00100	< 0.00100	--	--	
Lithium	mg/L	7439-93-2	0.0109	0.0106	0.010	0.011	0.012	0.010	0.00537	0.0051	0.0074	0.0106	0.012	0.015	0.00987	0.010	0.011	< 0.00200	< 0.00200	< 0.0011	< 0.0011	0.0051	< 0.0034	
Mercury	mg/L	7439-97-6	< 0.000200	< 0.000200	--	--	--	--	< 0.000200	--	--	< 0.000200	--	--	< 0.000200	--	--	< 0.000200	< 0.000200	--	--	--	--	
Molybdenum	mg/L	7439-98-7	< 0.0150	< 0.0150	--	--	--	--	< 0.0150	--	--	< 0.0150	--	--	< 0.0150	--	--	< 0.0150	< 0.0150	--	--	--	--	
Radium 226 and 228	pci/L	7740-14-4	1.11	1.30	1.00	1.01	1.26	1.50	0.719	< 0.41	0.548	1.34	1.25	1.60	< 0.275	0.629	< 0.35	0.591	< 0.317	0.400	< 0.16	0.481	0.474	
Selenium	mg/L	7782-49-2	< 0.00125	< 0.00125	--	--	--	--	< 0.00125	--	--	< 0.00125	--	--	< 0.00125	--	--	< 0.00125	< 0.00125	--	--	--	--	
Sulfate	mg/L	14808-79-8	--	--	130	130	140	140	--	190	180	--	110	110	--	3.4	4.7	--	--	6.3	7.9	5.6	5.7	
Thallium	mg/L	7440-28-0	< 0.000500	< 0.000500	--	--	--	--	< 0.000500	--	--	< 0.000500	--	--	< 0.000500	--	--	< 0.000500	< 0.000500	--	--	--	--	
<b>Additional Cations/Anions</b>																								
Alkalinity	mg/L	ALK	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Bicarbonate alkalinity as CaCO3	mg/L	HCO3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Carbonate Alkalinity as CaCO3	mg/L	CO3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Magnesium	mg/L	7439-95-4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Potassium	mg/L	7440-09-7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sodium	mg/L	7440-23-5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

**General Notes:**

CAS No. - Chemical Abstracts Service Registry Number

**Bolded** - detected value

-- - not analyzed for this constituent

µS/cm - microsiemens per centimeter

mg/L - milligrams per liter

mV - millivolts

NTU - nephelometric turbidity units

pci/L - picocuries per liter

SU- Standard Units

Total metals analysis was performed. Temperature, specific conductance, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity were measured and recorded in the field.

**Lab Qualifiers:**

^ - Instrument related QC is outside acceptance limits

< - The analyte was not detected at a concentration above the specified laboratory reporting limit.

J - The result is an estimated value.

Table 3. Summary of 2019 Assessment Groundwater Analytical Data  
 2019 Annual Groundwater Monitoring and Corrective Action Report  
 Georgia Power Company  
 Plant McIntosh Ash Pond 1  
 Effingham County, Georgia

Analyte	Units	Location Name Sample Date CAS No.	MGWA-6A				MGWC-7			MGWC-8			MGWA-10			MGWA-11			MGWC-12			MGWA-24		
			1/29/19- RUSH	1/29/2019	3/25/2019	9/10/2019	1/29/2019	3/26/2019	9/10/2019	1/29/2019	3/26/2019	9/10/2019	1/28/2019	3/25/2019	9/10/2019	1/28/2019	3/25/2019	9/10/2019	1/29/2019	3/26/2019	9/10/2019	1/29/2019	1/29/2019	3/25/2019
<b>Field Parameters</b>																								
Specific Conductance	µS/cm	COND	471.27	471.27	458.37	447.18	521.01	479.63	479.70	871.33	830.74	866.46	63.54	64.41	73.44	230.68	297.04	291.31	295.24	281.9	331.39	295.55	295.55	384.20
Dissolved Oxygen	mg/L	DO	0.16	0.16	0.11	0.25	0.27	0.61	0.51	0.29	0.19	2.47	1.86	1.86	4.90	0.16	0.31	0.31	0.17	0.19	7.03	0.26	0.26	0.10
ORP	mV	ORP	-137.46	-137.46	-161.87	-177.46	41.20	72.23	54.66	74.76	128.28	97.91	93.99	175.85	134.86	32.79	-21.22	-23.60	-160.92	-103.7	90.59	-271.47	-271.47	-225.80
pH	SU	pH	6.93	6.93	7.10	7.15	5.93	5.96	6.03	5.46	5.19	5.10	5.49	5.27	5.97	7.40	7.29	7.54	8.02	7.14	10.96	8.49	8.49	7.90
Temperature	deg c	TEMP	19.23	19.23	23.46	25.51	16.56	20.6	25.68	17.31	21.86	26.05	19.88	22.91	24.19	19.65	22.55	23.23	18.77	18.83	23.56	19.10	19.10	22.71
Turbidity	NTU	TURB	4.97	4.97	5.16	4.62	1.01	1.11	1.39	0.12	0.45	0.05	1.64	0.89	1.14	0.72	0.43	0.81	0.64	0.71	0.88	4.19	4.19	4.55
<b>Appendix III Parameters</b>																								
Boron	mg/L	7440-42-8	--	< 0.0500	< 0.021	0.040 J	--	1.5	1.5	--	5.1	4.8	--	< 0.021	< 0.039	--	< 0.021	< 0.039	--	0.032 J	0.060 J	--	--	< 0.021
Calcium	mg/L	7440-70-2	--	95.1	89 ^	86	--	52 ^	53	--	96 ^	97	--	4.6	4.9	--	37	36	--	33 ^	33	--	41.8	44
Chloride	mg/L	16887-00-6	--	4.51	4.4	4.2	--	11	9.9	--	11	10	--	6.8	7.0	--	3.4	3.5	--	3.8	4.1	--	8.7	7.2
Fluoride	mg/L	16984-48-8	--	< 0.200	0.067 J	0.052 J	--	0.19 J	0.15	--	0.088 J	0.083 J	--	< 0.026	0.044 J	--	0.087 J	0.075 J	--	0.22	0.20	--	0.23	0.16
pH	SU	pH	6.93		7.10	7.15	5.93	5.19	6.03	5.46	7.14	5.10	5.49	5.27	5.97	7.40	7.29	7.54	8.02	7.29	10.96	8.49	8.49	7.90
Sulfate	mg/L	14808-79-8	--	7.08	1.8	0.60 J	--	180	180	--	420	420	--	1.1	1.1	--	1.3	1.8	--	2.9	2.5	--	19	30
Total Dissolved Solids	mg/L	TDS	--	280	250	230	--	320	260	--	630	660	--	54	14	--	210	160	--	180	140	--	190	200
<b>Appendix IV Parameters</b>																								
Antimony	mg/L	7440-36-0	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	--	--	--
Arsenic	mg/L	7440-38-2	0.0097	0.0118	0.0012 J	0.0021	< 0.00125	< 0.00046	0.00074 J	< 0.00125	< 0.00046	0.00056 J	< 0.00125	< 0.00046	< 0.00032	< 0.00125	0.0022	0.0018	< 0.00125	0.00079 J	0.0011	0.0014	--	0.0016
Barium	mg/L	7440-39-3	--	0.0421	0.044	0.042	0.00873	0.0086	0.012	0.0344	0.032	0.035	0.0249	0.023	0.031	0.0834	0.11	0.13	0.0600	0.060	0.073	--	--	0.035
Beryllium	mg/L	7440-41-7	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	--	--	--
Cadmium	mg/L	7440-43-9	--	< 0.00250	< 0.00034	< 0.00013	< 0.00250	< 0.00034	< 0.00013	< 0.00250	0.00050 J	0.00079 J	< 0.00250	< 0.00034	< 0.00013	< 0.00250	< 0.00034	< 0.00013	< 0.00250	< 0.00034	< 0.00013	--	--	< 0.00034
Chromium	mg/L	7440-47-3	--	< 0.00250	--	--	< 0.00250	--	--	< 0.00250	--	--	0.00545	--	--	< 0.00250	--	--	< 0.00250	--	--	--	--	--
Cobalt	mg/L	7440-48-4	--	< 0.00250	< 0.00040	0.00020 J	0.0103	0.0090	0.011	0.0159	0.020	0.019	< 0.00250	< 0.00040	0.00011 J	< 0.00250	< 0.00040	< 0.000075	< 0.00250	< 0.00040	0.00016 J	--	--	< 0.00040
Lead	mg/L	7439-92-1	--	< 0.00100	--	--	< 0.00100	--	--	< 0.00100	--	--	< 0.00100	--	--	< 0.00100	--	--	< 0.00100	--	--	--	--	--
Lithium	mg/L	7439-93-2	--	0.0184	0.0052	0.0062	0.112	0.12	0.11	0.0361	0.043	0.042	0.00821	0.0068	0.011	0.0124	0.026	0.026	0.0172	0.020	0.023	--	--	0.0086
Mercury	mg/L	7439-97-6	--	< 0.00020	--	--	< 0.000200	--	--	< 0.000200	--	--	< 0.000200	--	--	< 0.000200	--	--	< 0.000200	--	--	--	--	--
Molybdenum	mg/L	7439-98-7	--	< 0.0150	--	--	< 0.0150	--	--	< 0.0150	--	--	< 0.0150	--	--	< 0.0150	--	--	< 0.0150	--	--	--	--	--
Radium 226 and 228	pci/L	7740-14-4	--	0.874	0.646	0.988	1.70	0.784	0.958	1.93	1.79	1.78	0.872	0.526	0.612	0.478	0.717	< 0.377	0.639	0.607	0.939	--	--	0.631
Selenium	mg/L	7782-49-2	--	< 0.00125	--	--	< 0.00125	--	--	< 0.00125	--	--	< 0.00125	--	--	< 0.00125	--	--	< 0.00125	--	--	--	--	--
Sulfate	mg/L	14808-79-8	--	7.08	1.8	0.60 J	--	180	180	--	420	420	--	1.1	1.1	--	1.3	1.8	--	2.9	2.5	--	19	30
Thallium	mg/L	7440-28-0	--	< 0.000500	--	--	< 0.000500	--	--	< 0.000500	--	--	< 0.000500	--	--	< 0.000500	--	--	< 0.000500	--	--	--	--	--
<b>Additional Cations/Anions</b>																								
Alkalinity	mg/L	ALK	--	270	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	130	--
Bicarbonate alkalinity as CaCO3	mg/L	HCO3	--	270	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	120	--
Carbonate Alkalinity as CaCO3	mg/L	CO3	--	<5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	--
Magnesium	mg/L	7439-95-4	--	2.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.00	--
Potassium	mg/L	7440-09-7	--	0.732	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.65	--
Sodium	mg/L	7440-23-5	--	8.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18.4	--

Created by: LLG  
 Checked by: LMC

**General Notes:**

CAS No. - Chemical Abstracts Service Registry Number

**Bolded** - detected value

-- - not analyzed for this constituent

µS/cm - microsiemens per centimeter

mg/L - milligrams per liter

mV - millivolts

NTU - nephelometric turbidity units

pci/L - picocuries per liter

SU- Standard Units

Total metals analysis was performed. Temperature, specific conductance, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity were measured and recorded in the field.

**Lab Qualifiers:**

^ - Instrument related QC is outside acceptance limits

< - The analyte was not detected at a concentration above the specified laboratory reporting limit.

J - The result is an estimated value.

**Table 4. Summary of Groundwater Elevations**  
**2019 Annual Groundwater Monitoring and Corrective Action Report**  
**Georgia Power Company**  
**Plant McIntosh Ash Pond 1**  
**Effingham County, Georgia**

Well ID	Top of Casing Elevation (ft NAVD 88)	Groundwater Elevations (ft NAVD 88)		
		January 28, 2019	March 25, 2019	September 9, 2019
<b>Monitoring Wells</b>				
MGWC-1	65.08	28.63	28.42	27.41
MGWC-2	48.26	27.81	28.43	27.56
MGWC-3	52.34	36.74	35.98	34.74
MGWA-5	64.09	43.48	42.62	41.58
MGWA-6	60.83	43.69	42.21	40.83
MGWA-6A	59.67	43.88	42.39	41.02
MGWC-7	54.19	35.93	34.74	33.22
MGWC-8	62.36	33.56	33.14	31.88
MGWA-10	64.69	49.05	47.81	46.66
MGWA-11	67.51	48.55	47.53	46.41
MGWC-12	66.80	42.80	42.30	41.44
<b>Piezometers</b>				
MGWC-4	64.05	39.70	39.20	38.35
MGWA-9	59.05	40.75	38.92	37.61
PZ-13	40.66	23.99	23.73	23.03
PZ-14	46.90	30.55	30.25	29.36
PZ-15	42.28	24.04	23.83	23.16
PZ-16	54.62	22.04	22.24	21.96
PZ-17	57.46	26.91	26.93	26.75
PZ-18	53.31	36.45	34.41	33.16
MGWC-19	53.86	33.92	32.93	31.84
MGWC-20	51.49	30.81	30.16	29.60
MGWC-21	62.49	32.43	31.80	30.75
MGWC-22	47.38	31.42	30.87	29.86
MGWC-23	57.35	24.27	24.42	23.95
MGWA-24	60.40	44.10	42.50	41.35

**Notes:**

ft-feet

Elevations are in feet relative to North American Vertical Datum 88 (NAVD 88)

Created by: LMC

Checked by: LLG

**Table 5. Groundwater Velocity Calculations - 2019**  
**2019 Annual Groundwater Monitoring and Corrective Action Report**  
**Georgia Power Company**  
**Plant McIntosh Ash Pond 1**  
**Effingham County, Georgia**

March 2019									
Monitoring Wells and Piezometers	h <sub>1</sub>	h <sub>2</sub>	K (ft/day)	n <sub>e</sub>	dh (ft)	L (ft)	i (ft/ft)	Velocity (ft/day)	Velocity (ft/year)
MGWA-10 and PZ-15	47.81	23.83	0.962	0.20	23.98	2,795	0.0086	0.041	14.97
MGWA-6 and PZ-16	42.21	22.24			19.97	1,907	0.0105	0.051	18.62
MGWA-9 and PZ-17	38.92	26.93			11.99	1,459	0.0082	0.039	14.24
								Avg. (ft/day)	Avg. (ft/year)
								0.044	16.06

September 2019									
Monitoring Wells and Piezometers	h <sub>1</sub>	h <sub>2</sub>	K (ft/day)	n <sub>e</sub>	dh (ft)	L (ft)	i (ft/ft)	Velocity (ft/day)	Velocity (ft/year)
MGWA-10 and PZ-15	46.66	23.16	0.962	0.20	23.50	2,795	0.0084	0.040	14.60
MGWA-6 and PZ-16	40.83	21.96			18.87	1,907	0.0099	0.048	17.52
MGWA-9 and PZ-17	37.61	26.75			10.86	1,459	0.0074	0.036	13.14
								Avg. (ft/day)	Avg. (ft/year)
								0.041	14.97

**Notes:**

ft - feet

h<sub>1</sub> and h<sub>2</sub> - groundwater elevation at location 1 and 2

K - hydraulic conductivity

n<sub>e</sub> - effective porosity

dh - difference between h<sub>1</sub> and h<sub>2</sub>

L - distance between locations 1 and 2

i - hydraulic gradient (dh/L)

Velocity = linear velocity = Ki/n<sub>e</sub>

Groundwater elevations measured on March 25, 2019 and September 9, 2019.

Elevations are in feet relative to North American Vertical Datum 88 (NAVD 88).

Created by: LMC

Checked by: CJB

**Table 6. Summary of Background Levels and Groundwater Protection Standards**  
**2019 Annual Groundwater Monitoring and Corrective Action Report**  
**Georgia Power Company**  
**Plant McIntosh Ash Pond 1**  
**Effingham County, Georgia**

March 2019					
Analyte	Units	CAS No.	Background	Federal GWPS	State GWPS
<b>Appendix IV Parameters</b>					
Arsenic	mg/L	7440-38-2	0.0352	0.0352	0.0352
Barium	mg/L	7440-39-3	0.12	2	2
Cadmium	mg/L	7440-43-9	0.0034	0.005	0.005
Cobalt	mg/L	7440-48-4	0.0007	0.006	0.0007
Fluoride	mg/L	16984-48-8	0.2	4	4
Lithium	mg/L	7439-93-2	0.03	0.04	0.03
Total Radium-226/228	pci/L	TRa226_228	1.143	5	5

September 2019					
Analyte	Units	CAS No.	Background	Federal GWPS	State GWPS
<b>Appendix IV Parameters</b>					
Arsenic	mg/L	7440-38-2	0.0352	0.0352	0.0352
Barium	mg/L	7440-39-3	0.12	2	2
Cadmium	mg/L	7440-43-9	0.0025 <sup>4</sup>	0.005	0.005
Cobalt	mg/L	7440-48-4	0.0025 <sup>4</sup>	0.006	0.0025
Fluoride	mg/L	16984-48-8	0.18	4	4
Lithium	mg/L	7439-93-2	0.03	0.04	0.03
Total Radium-226/228	pci/L	TRa226_228	1.129	5	5

**Notes:**

CAS - Chemical Abstracts Service  
 GWPS - Groundwater Protection Standard  
 mg/L - milligrams per liter  
 pci/L - picocuries per liter

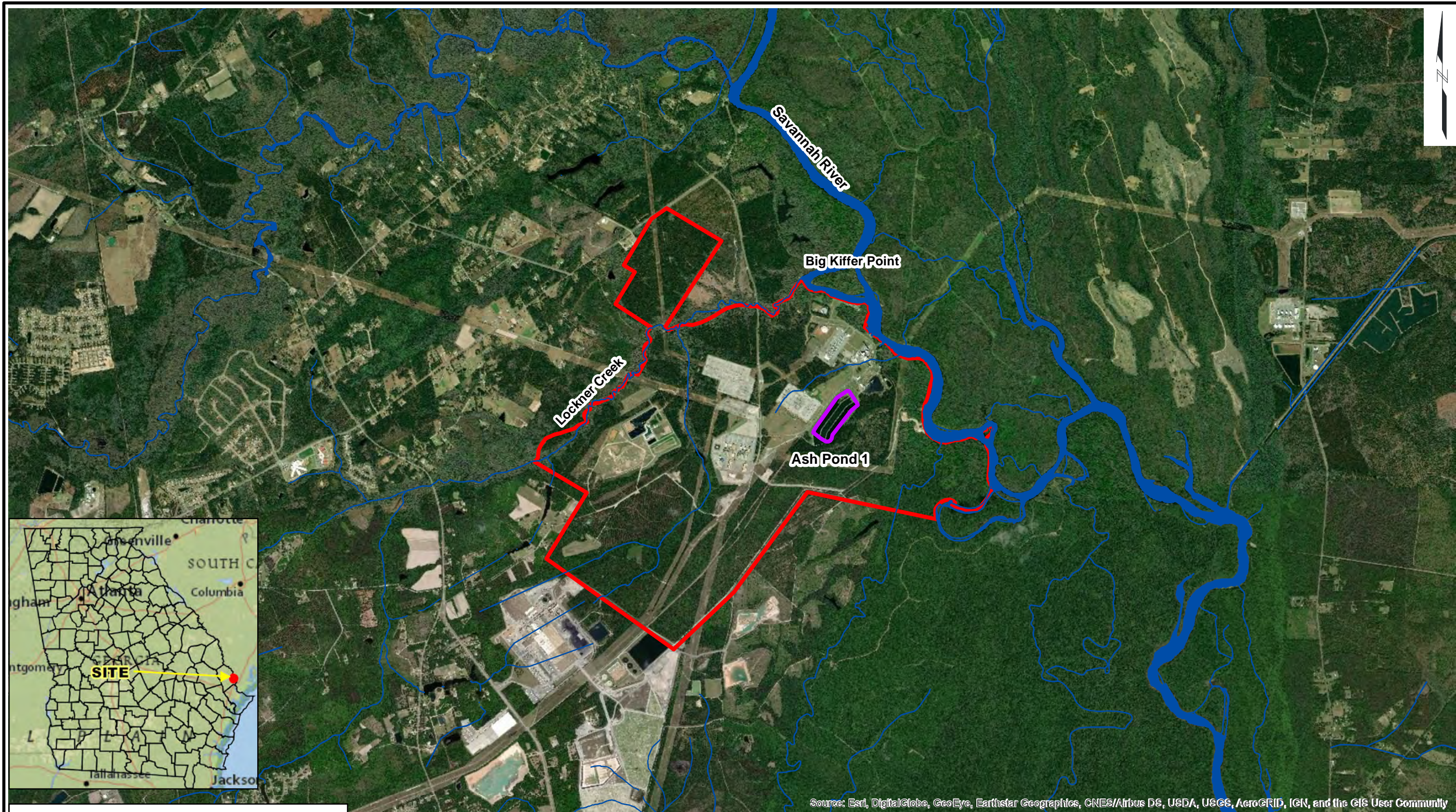
Created by: MAC  
 Checked by: CJB

1. The background limits were then used when determining the GWPS under 40 CFR §257.95(h) and Georgia Environmental Protection Division (EPD) Rule 391-3-4-.10(6)(a).
2. Under 40 CFR §257.95(h)(1-3) the GWPS is: (i) the maximum contaminant level (MCL) established under §§141.62 and 141.66 of this title; (ii) where an MCL has not been established a rule-specific GWPS or regional screen level (RSL) is used; or (iii) background levels for constituents where the background level is higher than the MCL or rule-specified GWPS.
3. Under the existing EPD rules, the GWPS is: (i) the MCL, (ii) where the MCL is not established, the background concentration, or (iii) background levels for constituents where the background level is higher than the MCL.
4. The background tolerance limit (TL) used to evaluate GWPS for this analyte equals the laboratory specified reporting limit (RL). Per the SAP, and in accordance with the Unified Guidance, a non-parametric limit approach was used since the data set contains greater than 50% non-detect results for this analyte. Under this approach, the TL equals the highest value reported, which is the laboratory RL.

## Figures

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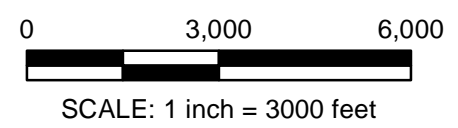


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**LEGEND**

- Plant McIntosh Approximate Property Boundary
- Ash Pond 1
- Savannah River and Associated Tributaries

Aerial Photograph:  
5/29/2017 by DigitalGlobe



2019 Annual Groundwater Monitoring and Corrective  
Action Report, Plant McIntosh Ash Pond 1  
Effingham County, Georgia

Georgia Power Company  
Atlanta, Georgia





**GEI**   
Consultants  
Project No. 1901973

**SITE LOCATION MAP**  
Prepared November 2019 Fig. 1

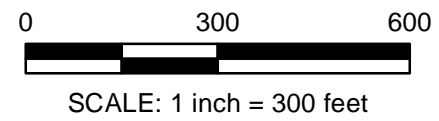





**LEGEND**

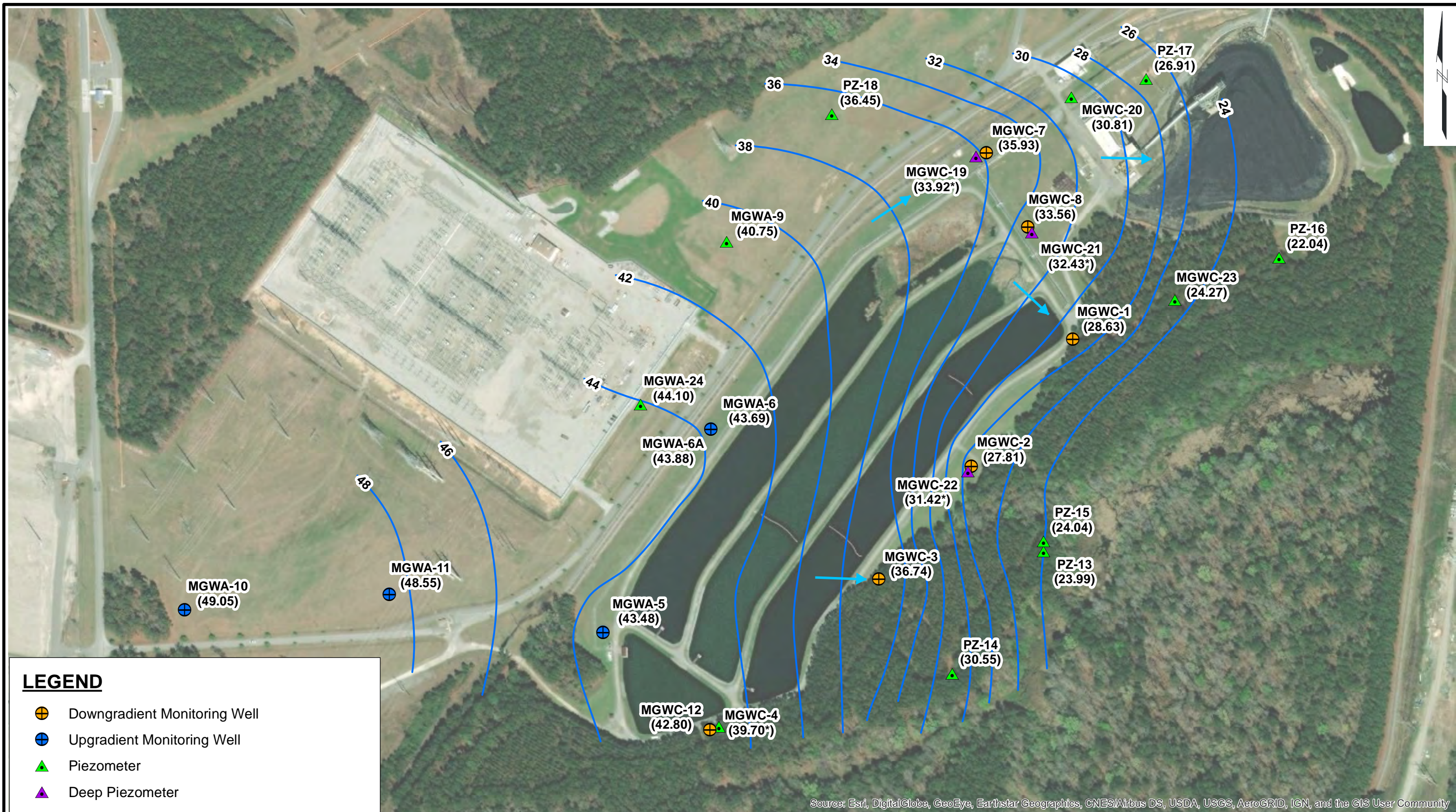
-  Downgradient Monitoring Well
-  Upgradient Monitoring Well
-  Piezometer
-  Deep Piezometer

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community









2019 Annual Groundwater Monitoring and Corrective Action Report - Plant McIntosh Ash Pond 1 Effingham County, Georgia		WELL LOCATION MAP
Georgia Power Company Atlanta, Georgia	Project No. 1901973 Prepared February 2019 Fig. 2	



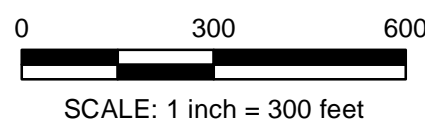


**LEGEND**

-  Downgradient Monitoring Well
-  Upgradient Monitoring Well
-  Piezometer
-  Deep Piezometer
-  Apparent Groundwater Flow Direction
-  Apparent Potentiometric Surface Contour (feet)

(49.05) = Groundwater elevations measured in feet relative to NAVD 88 on 01/28/19

NOTE:  
 \* MGWC-4, MGWC-19, MGWC-21, and MGWC-22 not used in contouring.



2019 Annual Groundwater Monitoring and Corrective Action Report, Plant McIntosh Ash Pond 1  
 Effingham County, Georgia

Georgia Power Company  
 Atlanta, Georgia



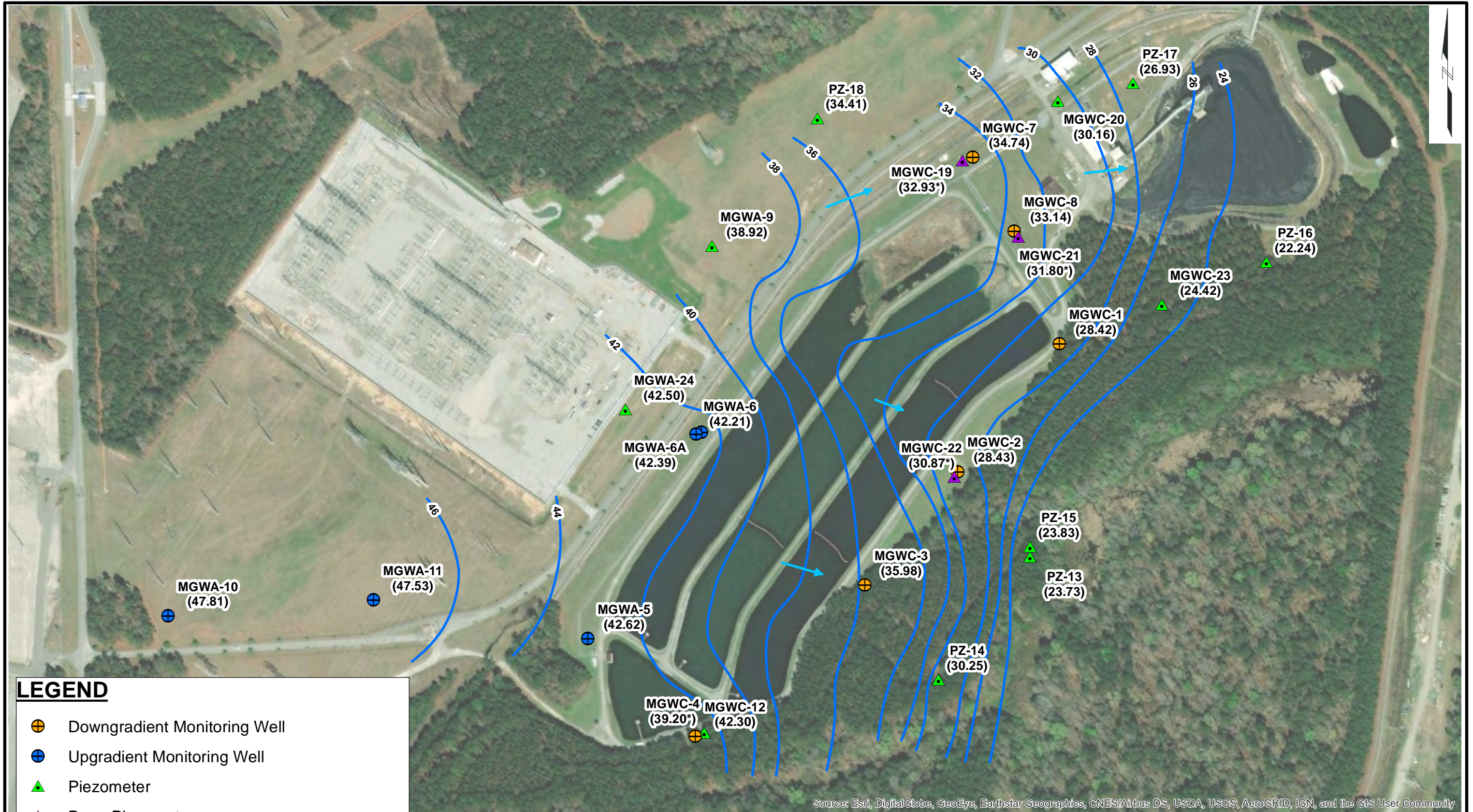
Project No. 1800205

POTENTIOMETRIC SURFACE CONTOUR MAP  
 JANUARY 2019

Prepared December 2019 Fig. 3

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**LEGEND**

- Downgradient Monitoring Well
- Upgradient Monitoring Well
- Piezometer
- Deep Piezometer
- Apparent Groundwater Flow
- Apparent Potentiometric Surface Contour (feet)

(47.81) = Groundwater elevations measured in feet relative to NAVD 88 on 03/25/19

NOTE:

\* MGWC-4, MGWC-19, MGWC-21, and MGWC-22 not used in contouring.

0 300 600

SCALE: 1 inch = 300 feet

2019 Annual Groundwater Monitoring and Corrective Action Report, Plant McIntosh Ash Pond 1 Effingham County, Georgia

Georgia Power Company  
Atlanta, Georgia

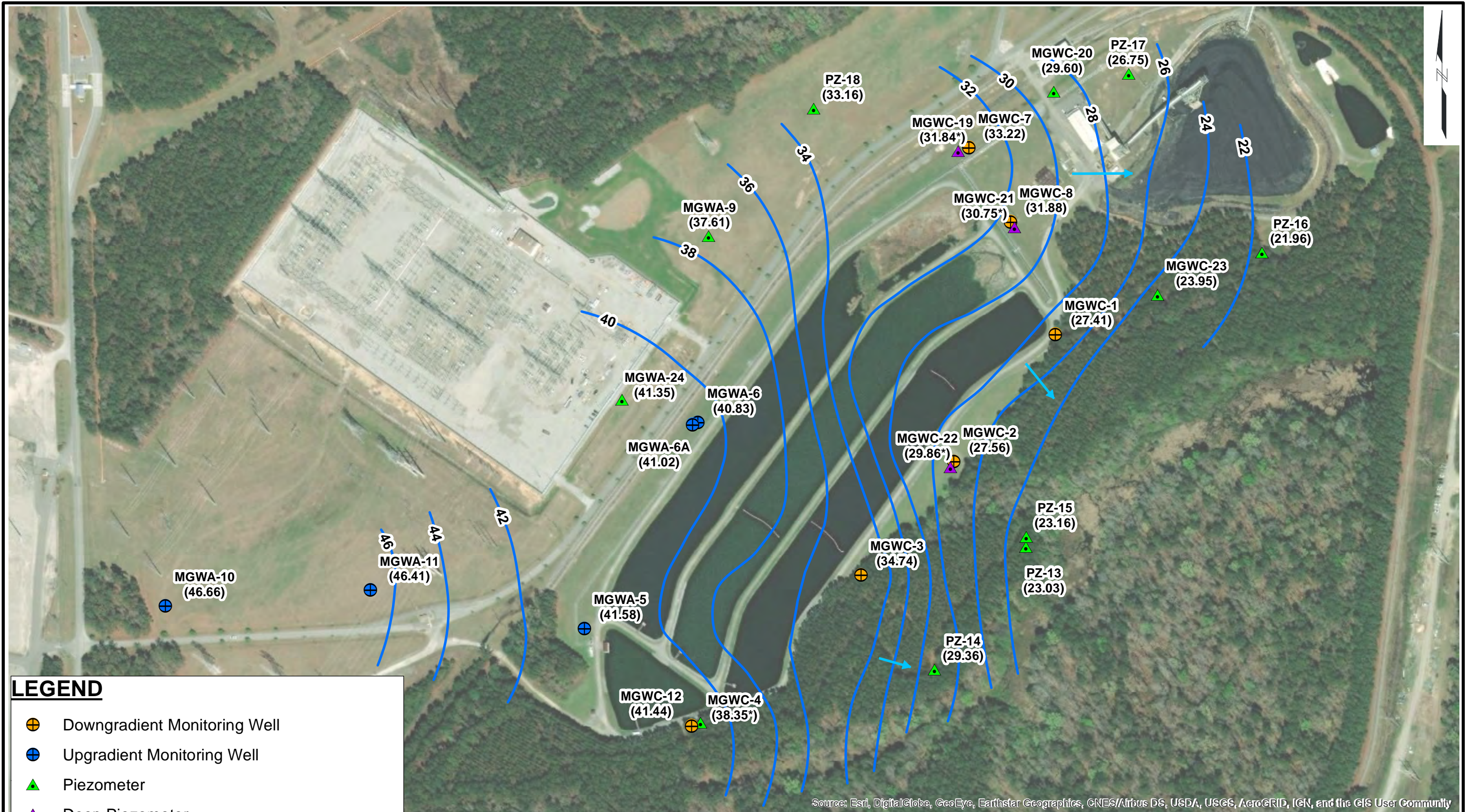


Project No. 1901973

POTENTIOMETRIC SURFACE CONTOUR MAP  
MARCH 2019

Prepared December 2019 Fig. 4





**LEGEND**

- Downgradient Monitoring Well
- Upgradient Monitoring Well
- Piezometer
- Deep Piezometer
- Apparent Groundwater Flow
- Apparent Potentiometric Surface Contour (feet)

(46.41) = Groundwater elevations measured in feet relative to NAVD 88 on 09/09/2019

**NOTE:**

\* MGWC-4, MGWC-19, MGWC-21, and MGWC-22 not used in contouring.



SCALE: 1 inch = 300 feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

2019 Annual Groundwater Monitoring and Corrective Action Report, Plant McIntosh Ash Pond 1 Effingham County, Georgia

Georgia Power Company  
Atlanta, Georgia



POTENTIOMETRIC SURFACE CONTOUR MAP  
SEPTEMBER 2019

Project No. 1901973

Prepared January 2020

Fig. 5



## **Appendix A**

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### **Laboratory Analytical, Field Sampling, and Data Validation Reports**

**Water Level Measurement Data Sheet**

**Plant McIntosh**

**Georgia Power Company**

**Date:** 1/28/2019

**Gauged by:** P. Adams, J. Noles, L. Coker



Area	Well ID	Installed Total Depth (ft btoc)	Measured Depth to Water (ft btoc)	Measured Depth to Bottom (ft btoc)	Provided for reference		Installed Depth to Top of Screen (ft btoc)	Notes
					July 2018 Depth to Water (ft btoc)	July 2018 Depth to Bottom (ft btoc)		
Ash Pond	MGWC-1	56.08	36.45	56.17	37.05	56.11	45.78	
	MGWC-2	37.36	20.45	37.30	20.29	37.29	27.06	
	MGWC-3	38.74	15.60	39.19	16.30	39.13	28.44	
	MGWC-4	67.35	24.35	67.90	24.02	67.80	57.05	
	MGWA-5	63.09	20.61	63.45	21.60	63.40	52.79	
	MGWA-6	41.93	17.14	42.66	18.41	42.16	31.63	
	MGWA-6A		15.79	43.21	--	--		not yet surveyed
	MGWC-7	42.29	18.26	42.32	19.84	42.22	31.99	
	MGWC-8	52.56	28.80	52.89	29.40	52.85	42.26	
	MGWA-9	43.05	18.30	43.18	20.39	43.10	32.75	
	MGWA-10	53.09	15.64	53.00	17.33	52.97	42.79	
	MGWA-11	55.81	18.96	56.61	20.25	56.60	45.61	
	MGWC-12	52.90	24.00	53.87	24.42	53.76	42.70	
	PZ-13	26.76	16.67	27.35	17.49	27.30	16.36	
	PZ-14	41.50	16.35	41.80	16.94	41.79	31.10	
	PZ-15	28.87	18.24	29.00	19.02	28.90	18.57	
	PZ-16	42.39	32.58	42.50	32.94	42.56	32.09	
	PZ-17	45.12	30.55	45.24	31.11	45.20	34.82	
	PZ-18	41.70	16.86	41.90	19.30	41.90	31.40	
	MGWC-19	72.70	19.94	72.85	--	--	62.40	
	MGWC-20	54.77	20.68	55.00	--	--	44.47	
	MGWC-21	82.68	30.06	83.30	--	--	72.38	
	MGWC-22	67.56	15.96	68.00	--	--	57.26	
	MGWC-23	42.90	33.08	43.42	--	--	32.60	
MGWA-24		16.30	48.82	--	--		not yet surveyed	

**Notes:** ft = feet      NM = Not Measured      btoc = below top of casing

Product Name: Low-Flow System

Date: 2019-01-29 11:22:21

Project Information:

Operator Name L Coker  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369370  
Turbidity Make/Model Lamotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWC-1  
Well diameter 2 in  
Well Total Depth 56.71 ft  
Screen Length 10 ft  
Depth to Water 36.45 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3131711 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 16.32 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	10:59:09	600.03	19.85	6.75	521.63	3.41	37.71	3.34	10.59
Last 5	11:04:09	900.02	19.90	6.77	543.44	2.58	37.81	3.63	24.40
Last 5	11:09:09	1200.02	20.01	6.80	550.96	2.00	37.75	4.02	32.60
Last 5	11:14:09	1500.02	20.02	6.84	557.56	1.85	37.76	4.25	34.26
Last 5	11:19:09	1800.02	19.94	6.87	563.42	1.89	37.80	4.25	47.33
Variance 0			0.11	0.04	7.52			0.38	8.20
Variance 1			0.01	0.04	6.61			0.23	1.66
Variance 2			-0.09	0.02	5.85			-0.00	13.07

Notes

Sampled at 1130 DUP-AP-02 taken here

Grab Samples

Product Name: Low-Flow System

Date: 2019-01-29 11:34:51

Project Information:

Operator Name P Adams  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 445707  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 45 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWC-2  
Well diameter 2 in  
Well Total Depth 37.30 ft  
Screen Length 10 ft  
Depth to Water 20.45 ft

Pumping Information:

Final Pumping Rate 0 mL/min  
Total System Volume 0.290854 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	11:13:30	600.02	18.70	6.96	812.46	3.41	20.30	0.28	0.52
Last 5	11:18:30	900.02	18.90	6.99	808.16	3.22	20.35	0.29	-4.63
Last 5	11:23:30	1200.02	18.88	7.02	811.20	2.26	20.38	0.27	-6.22
Last 5	11:28:30	1500.02	18.92	7.02	804.60	2.17	20.41	0.24	-7.13
Last 5	11:33:30	1800.02	18.92	7.03	804.42	2.03	20.41	0.24	-8.36
Variance 0			-0.02	0.03	3.04			-0.02	-1.60
Variance 1			0.04	0.01	-6.60			-0.03	-0.91
Variance 2			0.00	0.01	-0.17			-0.00	-1.23

Notes

Sampled at 1140

Grab Samples



Product Name: Low-Flow System

Date: 2019-01-29 10:33:56

Project Information:

Operator Name P Adams  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 445707  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 45 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWC-3  
Well diameter 2 in  
Well Total Depth 39.19 ft  
Screen Length 10 ft  
Depth to Water 15.6 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.290854 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 4 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	10:12:21	600.03	17.37	6.46	588.74	1.37	15.97	0.25	71.44
Last 5	10:17:21	900.15	17.57	6.42	591.69	1.22	15.97	0.24	34.79
Last 5	10:22:21	1200.15	17.83	6.42	588.69	1.23	15.97	0.22	28.60
Last 5	10:27:21	1500.15	17.83	6.42	586.57	1.09	15.97	0.21	22.73
Last 5	10:32:21	1800.15	17.94	6.42	587.19	1.07	15.97	0.20	20.20
Variance 0			0.26	-0.00	-3.00			-0.02	-6.18
Variance 1			-0.00	0.00	-2.12			-0.01	-5.87
Variance 2			0.11	0.00	0.62			-0.01	-2.54

Notes

Sampled at 1045

Grab Samples

Product Name: Low-Flow System

Date: 2019-01-29 09:30:42

Project Information:

Operator Name J Adcock  
Company Name GEI  
Project Name AP1  
Site Name Plant McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369555  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 61 ft

Pump placement from TOC 3 ft

Well Information:

Well ID mgwa-5  
Well diameter 2 in  
Well Total Depth 63.09 ft  
Screen Length 10 ft  
Depth to Water 20.60 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3622688 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 13.68 in  
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 5%	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10%
Last 5	09:02:17	1199.93	18.77	7.96	280.32	0.80	21.68	2.84	51.81
Last 5	09:07:17	1499.93	18.90	7.84	279.02	0.79	21.69	1.79	49.07
Last 5	09:12:17	1799.93	18.91	7.73	279.86	0.96	21.70	1.03	46.03
Last 5	09:17:17	2099.93	18.86	7.68	278.11	1.07	21.72	0.74	42.60
Last 5	09:22:17	2399.93	19.04	7.63	278.17	1.11	21.73	0.43	41.30
Variance 0			0.01	-0.11	0.84			-0.76	-3.04
Variance 1			-0.04	-0.05	-1.75			-0.28	-3.43
Variance 2			0.17	-0.05	0.06			-0.31	-1.30

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-01-29 09:39:55

Project Information:

Operator Name L Coker  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369370  
Turbidity Make/Model Lamotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 37 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWA-6  
Well diameter 2 in  
Well Total Depth 42.66 ft  
Screen Length 10 ft  
Depth to Water 17.14 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.2551467 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 3.72 in  
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	09:17:57	900.02	18.60	6.43	527.13	2.95	17.40	0.18	-7.47
Last 5	09:22:57	1200.02	19.01	6.41	522.25	2.06	17.41	0.16	-7.06
Last 5	09:27:57	1500.02	19.35	6.48	519.86	1.60	17.43	0.14	-4.16
Last 5	09:32:57	1800.02	19.49	6.52	518.01	2.03	17.45	0.13	-3.09
Last 5	09:37:57	2100.02	19.49	6.55	514.95	1.79	17.46	0.16	-5.85
Variance 0			0.34	0.06	-2.39			-0.02	2.90
Variance 1			0.14	0.05	-1.85			-0.01	1.07
Variance 2			-0.00	0.03	-3.06			0.03	-2.76

Notes

Sampled at 0945 DUP-AP-01 taken here

Grab Samples

Product Name: Low-Flow System

Date: 2019-01-28 17:22:08

Project Information:

Operator Name L. Coker  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369370  
Turbidity Make/Model Lamotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 34.4 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWA-6A  
Well diameter 2 in  
Well Total Depth 43.21 ft  
Screen Length 10 ft  
Depth to Water 15.74 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.2435418 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 17.04 in  
Total Volume Pumped 7.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	16:57:49	2100.02	19.57	6.84	473.01	5.39	17.05	0.18	-147.75
Last 5	17:02:49	2400.02	19.45	6.86	472.11	5.82	17.07	0.18	-147.49
Last 5	17:07:49	2700.02	19.48	6.89	474.59	5.31	17.10	0.18	-139.58
Last 5	17:12:49	3000.02	19.28	6.91	468.75	5.05	17.11	0.16	-135.87
Last 5	17:17:49	3300.02	19.23	6.93	471.27	4.97	17.12	0.16	-137.46
Variance 0			0.03	0.03	2.48			0.01	7.91
Variance 1			-0.20	0.02	-5.84			-0.03	3.71
Variance 2			-0.05	0.02	2.52			0.00	-1.59

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-01-29 09:55:23

Project Information:

Operator Name J. Noles  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 601533  
Turbidity Make/Model Lamotte 2020we

Pump Information:

Pump Model/Type Alexis  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 40 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWC-7  
Well diameter 2 in  
Well Total Depth 42.22 ft  
Screen Length 10 ft  
Depth to Water 18.24 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.2685369 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 3.36 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10%	+/- 0.1	+/- 5%	+/- 10%		+/- 10%	+/- 10
Last 5	09:32:06	600.02	15.88	5.92	525.46	1.48	18.50	0.51	45.79
Last 5	09:37:06	900.02	16.43	5.91	520.66	1.60	18.50	0.37	42.74
Last 5	09:42:06	1200.02	16.50	5.91	520.57	1.30	18.52	0.31	42.39
Last 5	09:47:06	1500.02	16.61	5.91	522.40	0.91	18.52	0.31	42.36
Last 5	09:52:06	1800.02	16.56	5.93	521.01	1.01	18.52	0.27	41.20
Variance 0			0.07	-0.00	-0.09			-0.06	-0.35
Variance 1			0.11	-0.01	1.84			-0.00	-0.03
Variance 2			-0.05	0.02	-1.39			-0.04	-1.16

Notes

Sampled at 0955 1/29/19

Grab Samples

Product Name: Low-Flow System

Date: 2019-01-29 11:41:55

Project Information:

Operator Name J. Noles  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 601533  
Turbidity Make/Model Lamotte 2020we

Pump Information:

Pump Model/Type Alexis  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 47 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWC-8  
Well diameter 2 in  
Well Total Depth 52.85 ft  
Screen Length 10 ft  
Depth to Water 28.80 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.2997809 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C +/- 10%	pH +/- 0.1	SpCond $\mu$ S/cm +/- 5%	Turb NTU +/- 10%	DTW ft	RDO mg/L +/- 10%	ORP mV +/- 10
Stabilization									
Last 5	11:18:42	1199.83	16.60	5.29	735.51	0.30	28.85	0.47	80.10
Last 5	11:23:42	1499.83	16.74	5.31	811.73	0.25	28.85	0.35	81.45
Last 5	11:28:42	1799.83	16.82	5.39	841.10	0.38	28.85	0.36	78.18
Last 5	11:33:42	2099.83	16.98	5.44	856.58	0.14	28.85	0.31	77.40
Last 5	11:38:42	2399.83	17.31	5.46	871.33	0.12	28.85	0.29	74.76
Variance 0			0.09	0.08	29.37			0.01	-3.27
Variance 1			0.16	0.05	15.48			-0.05	-0.78
Variance 2			0.33	0.02	14.74			-0.02	-2.64

Notes

Sampled at 1143 on 1/29/19.

Grab Samples

Product Name: Low-Flow System

Date: 2019-01-28 15:52:14

Project Information:

Operator Name J Adcock  
Company Name GEI  
Project Name AP1  
Site Name Plant McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369555  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWA-10  
Well diameter 2 in  
Well Total Depth 52.92 ft  
Screen Length 10 ft  
Depth to Water 15.67 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3131711 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 46.44 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 5%	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10%
Last 5	15:22:57	300.13	18.33	6.04	72.01	1.53	16.80	2.01	129.64
Last 5	15:27:56	600.03	19.61	5.64	64.69	1.79	17.65	1.60	106.75
Last 5	15:37:57	1201.03	19.75	5.54	64.23	1.54	18.95	1.66	96.04
Last 5	15:42:57	1501.03	19.86	5.52	63.88	1.69	19.25	1.71	93.73
Last 5	15:47:57	1801.02	19.88	5.49	63.54	1.64	19.54	1.86	93.99
Variance 0			0.14	-0.10	-0.46			0.06	-10.71
Variance 1			0.11	-0.02	-0.35			0.05	-2.31
Variance 2			0.02	-0.02	-0.34			0.15	0.26

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-01-28 15:41:21

Project Information:

Operator Name P Adams  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 445707  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWA-11  
Well diameter 2 in  
Well Total Depth 56.61ft  
Screen Length 10 ft  
Depth to Water 18.96 ft

Pumping Information:

Final Pumping Rate 0 mL/min  
Total System Volume 0.3131711 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 0 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	15:19:52	600.57	19.64	7.17	234.07	1.07	19.77	0.35	88.06
Last 5	15:24:52	900.57	19.81	7.23	232.38	0.99	19.90	0.24	65.22
Last 5	15:29:52	1200.57	19.82	7.29	230.84	0.90	19.95	0.19	56.91
Last 5	15:34:54	1502.57	19.83	7.34	231.98	0.80	19.99	0.17	51.12
Last 5	15:39:54	1802.57	19.65	7.40	230.68	0.72	20.01	0.16	32.79
Variance 0			0.01	0.06	-1.54			-0.05	-8.31
Variance 1			0.01	0.05	1.14			-0.01	-5.80
Variance 2			-0.18	0.05	-1.30			-0.01	-18.32

Notes

Sampled at 1550

Grab Samples



Product Name: Low-Flow System

Date: 2019-01-29 11:45:34

Project Information:

Operator Name J Adcock  
Company Name GEI  
Project Name AP1  
Site Name Plant McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369555  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 51 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWC-12  
Well diameter 2 in  
Well Total Depth 52.90 ft  
Screen Length 10 ft  
Depth to Water 24.01 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3176346 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 8.76 in  
Total Volume Pumped 18 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 5%	+/- 0.1	+/- 5%	+/- 5		+/- 0.2	+/- 10%
Last 5	11:23:49	4200.46	18.64	8.33	309.72	0.77	24.74	0.20	-184.24
Last 5	11:28:49	4500.46	18.73	8.24	307.76	0.68	24.74	0.19	-189.98
Last 5	11:33:49	4800.46	18.79	8.16	300.45	0.64	24.74	0.18	-174.53
Last 5	11:38:49	5100.46	18.70	8.08	298.70	0.57	24.74	0.18	-171.96
Last 5	11:43:49	5400.46	18.77	8.02	295.24	0.64	24.74	0.17	-160.92
Variance 0			0.06	-0.09	-7.31			-0.01	15.44
Variance 1			-0.09	-0.07	-1.75			0.00	2.58
Variance 2			0.07	-0.06	-3.46			-0.01	11.04

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-01-28 16:59:01

Project Information:

Operator Name P Adams  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 445707  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWA-24  
Well diameter 2 in  
Well Total Depth 48.82 ft  
Screen Length 10 ft  
Depth to Water 16.30 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.3131711 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 6 in  
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	16:35:37	600.02	19.99	8.32	250.75	3.78	16.80	0.40	-225.44
Last 5	16:40:37	900.02	19.80	8.36	259.16	4.02	16.82	0.34	-254.03
Last 5	16:45:37	1200.02	19.33	8.42	288.70	4.17	16.82	0.32	-275.25
Last 5	16:50:37	1500.03	19.32	8.47	293.24	4.57	16.82	0.34	-275.96
Last 5	16:55:37	1800.03	19.10	8.49	295.55	4.19	16.82	0.26	-271.47
Variance 0			-0.48	0.06	29.54			-0.02	-21.22
Variance 1			-0.00	0.05	4.54			0.02	-0.71
Variance 2			-0.22	0.02	2.31			-0.08	4.49

Notes

Sampled at

Grab Samples

**Water Level Measurement Data Sheet**

**Plant McIntosh**

**Georgia Power Company**

**Date:** 25-Mar-19



**Gauged by:** J. Adcock, L. Coker, J. Noles

Provided for reference

Area	Well ID	Installed Total Depth (ft btoc)	Measured Depth to Water (ft btoc)	Measured Depth to Bottom (ft btoc)	January 2019 Depth to Water (ft btoc)	January 2019 Depth to Bottom (ft btoc)	Installed Depth to Top of Screen (ft btoc)	Notes
Ash Pond	MGWC-1	56.08	36.66	56.10	36.45	56.17	45.78	
	MGWC-2	37.36	19.83	37.25	20.45	37.30	27.06	
	MGWC-3	38.74	16.36	39.16	15.60	39.19	28.44	
	MGWC-4	67.35	24.85	67.80	24.35	67.90	57.05	
	MGWA-5	63.09	21.47	63.38	20.61	63.45	52.79	
	MGWA-6	41.93	18.62	42.45	17.14	42.66	31.63	
	MGWA-6A	42.58	17.28	42.81	15.79	43.21	32.28	
	MGWC-7	42.29	19.45	42.30	18.26	42.32	31.99	
	MGWC-8	52.56	29.22	52.84	28.80	52.89	42.26	
	MGWA-9	43.05	20.13	43.13	18.30	43.18	32.75	
	MGWA-10	53.09	16.88	53.11	15.64	53.00	42.79	
	MGWA-11	55.81	19.98	56.67	18.96	56.61	45.61	
	MGWC-12	52.90	24.50	53.80	24.00	53.87	42.70	
	PZ-13	26.76	16.93	27.32	16.67	27.35	16.36	
	PZ-14	41.50	16.65	41.75	16.35	41.80	31.10	
	PZ-15	28.87	18.45	28.53	18.24	29.00	18.57	
	PZ-16	42.39	32.38	42.55	32.58	42.50	32.09	
	PZ-17	45.12	30.53	45.22	30.55	45.24	34.82	
	PZ-18	41.70	18.90	41.87	16.86	41.90	31.40	
	MGWC-19	72.70	20.93	72.81	19.94	72.85	62.40	
	MGWC-20	54.77	21.33	55.01	20.68	55.00	44.47	
	MGWC-21	82.68	30.69	83.15	30.06	83.30	72.38	
	MGWC-22	67.56	16.51	67.95	15.96	68.00	57.26	
	MGWC-23	42.90	32.93	43.29	33.08	43.42	32.60	
MGWA-24	49.03	17.90	48.67	16.30	48.82	38.73		

**Notes:** ft = feet      NM = Not Measured      btoc = below top of casing

Product Name: Low-Flow System

Date: 2019-03-26 11:25:30

Project Information:

Operator Name L. Coker  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 408206  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWC-1  
Well diameter 2 in  
Well Total Depth 56.10 ft  
Screen Length 10 ft  
Depth to Water 36.66 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.2685369 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 11.3 in  
Total Volume Pumped 3.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 0
Last 5	11:35:50	600.06	19.64	6.98	506.80	2.51	37.40	0.65	-36.90
Last 5	11:40:50	900.06	19.96	6.97	524.20	1.61	37.55	0.47	-35.60
Last 5	11:45:50	1200.06	20.08	6.98	538.90	1.37	37.56	0.48	-32.20
Last 5	11:50:50	1500.06	20.02	7.00	548.60	1.35	37.56	0.38	-28.70
Last 5	11:55:50	1800.06	19.99	7.01	553.00	1.27	37.60	0.38	-25.10
Variance 0			0.12	0.00	-1.90			-0.00	-44.27
Variance 1			-0.14	0.02	-2.07			0.10	-14.76
Variance 2			-0.09	-0.00	1.23			-0.11	-16.96

Notes

Sampled at 1200

Grab Samples

Product Name: Low-Flow System

Date: 2019-03-26 11:20:39

Project Information:

Operator Name J. Adcock  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 598939  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 30 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWC-2  
Well diameter 2 in  
Well Total Depth 37.36 ft  
Screen Length 10 ft  
Depth to Water 19.87 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.2239027 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 11.76 in  
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	10:58:05	600.02	19.35	7.27	749.96	3.29	20.59	1.35	53.33
Last 5	11:03:05	900.02	19.67	7.29	750.07	3.40	20.74	1.02	48.09
Last 5	11:08:12	1207.02	19.72	7.30	749.51	3.32	20.82	0.70	42.90
Last 5	11:13:12	1507.02	19.78	7.31	748.78	3.20	20.84	0.46	38.08
Last 5	11:18:12	1807.01	19.83	7.29	750.03	2.67	20.85	0.45	36.18
Variance 0			0.05	0.01	-0.56			-0.31	-5.19
Variance 1			0.06	0.00	-0.74			-0.24	-4.82
Variance 2			0.06	-0.02	1.25			-0.01	-1.90

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-03-26 09:58:13

Project Information:

Operator Name J. Adcock  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 598939  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 36 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWC-3  
Well diameter 2 in  
Well Total Depth 38.74 ft  
Screen Length 10 ft  
Depth to Water 16.36 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.2506832 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 4.2 in  
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	09:35:32	600.01	18.92	6.53	501.74	0.98	16.68	1.20	96.06
Last 5	09:40:32	900.01	19.05	6.57	511.80	1.25	16.68	0.87	85.60
Last 5	09:45:40	1208.01	19.06	6.60	518.76	0.67	16.71	0.75	79.21
Last 5	09:50:40	1508.00	19.01	6.66	530.22	0.54	16.71	0.57	72.19
Last 5	09:55:40	1808.00	19.13	6.68	534.64	0.69	16.71	0.47	68.59
Variance 0			0.00	0.03	6.97			-0.12	-6.39
Variance 1			-0.05	0.06	11.45			-0.18	-7.02
Variance 2			0.11	0.02	4.42			-0.10	-3.59

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-03-05 15:16:30

Project Information:

Operator Name L. Coker  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 408206  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 57 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWA-5  
Well diameter 2 in  
Well Total Depth 63.38 ft  
Screen Length 10 ft  
Depth to Water 21.47 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.2685369 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 8.8 in  
Total Volume Pumped 3.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 0
Last 5	16:45:50	600.02	22.69	7.58	253.10	0.80	22.15	0.35	-138.40
Last 5	16:50:50	900.02	22.48	7.51	255.60	0.87	22.20	0.28	-138.10
Last 5	16:55:50	1200.02	23.34	7.48	254.60	0.62	22.20	0.27	-139.30
Last 5	17:00:50	1500.02	23.29	7.45	254.70	0.95	22.19	0.25	-138.20
Last 5	17:05:50	1800.02	23.13	7.44	253.60	0.68	22.20	0.24	-136.80
Variance 0			0.13	0.00	-1.90			-0.35	-44.27
Variance 1			-0.12	0.02	-2.07			0.12	-14.76
Variance 2			-0.05	-0.00	1.23			-0.26	-16.96

Notes

Sampled at 1710

Grab Samples

Product Name: Low-Flow System

Date: 2019-03-05 15:16:30

Project Information:

Operator Name J.Noles  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369370  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 40 ft

Pump placement from TOC ft

Well Information:

Well ID MGWA-6  
Well diameter 2 in  
Well Total Depth 42.45 ft  
Screen Length 10 ft  
Depth to Water 17.69 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.2685369 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 2.16 in  
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 0
Last 5	14:52:50	1800.02	19.46	6.53	510.40	1.87	18.87	1.12	108.08
Last 5	14:57:50	2100.02	19.45	6.55	514.08	2.10	18.87	0.86	100.50
Last 5	15:02:50	2400.02	19.58	6.56	512.18	1.38	18.87	0.51	56.24
Last 5	15:07:50	2700.02	19.46	6.58	510.11	1.04	18.87	0.63	41.48
Last 5	15:12:50	3000.02	19.40	6.57	511.34	1.55	18.87	0.37	24.52
Variance 0			0.13	0.00	-1.90			-0.35	-44.27
Variance 1			-0.12	0.02	-2.07			0.12	-14.76
Variance 2			-0.05	-0.00	1.23			-0.26	-16.96

Notes

Sampled at 1025. Last reading: turb=1.55, water level=18.87.

Grab Samples



Product Name: Low-Flow System

Date: 2019-03-04 22:49:21

Project Information:

Operator Name J.Noles  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369370  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 42 ft

Pump placement from TOC ft

Well Information:

Well ID MGWA-6A  
Well diameter 2 in  
Well Total Depth 42.81 ft  
Screen Length 10 ft  
Depth to Water 17.10 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.2774638 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 12.84 in  
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 0
Last 5	22:26:40	4200.02	22.79	7.10	451.95	8.33	18.17	0.13	-154.80
Last 5	22:31:40	4500.02	22.98	7.11	450.86	8.78	18.17	0.12	-159.65
Last 5	22:36:40	4800.02	23.13	7.11	452.38	5.86	18.17	0.12	-159.74
Last 5	22:41:40	5100.02	23.20	7.11	453.39	5.37	18.17	0.11	-162.15
Last 5	22:46:40	5400.02	23.46	7.10	458.37	5.16	18.17	0.11	-161.87
Variance 0			0.15	0.00	1.52			-0.00	-0.09
Variance 1			0.07	-0.00	1.00			-0.00	-2.41
Variance 2			0.26	-0.00	4.98			0.00	0.28

Notes

Sampled at 1800

Grab Samples

Product Name: Low-Flow System

Date: 2019-03-05 17:45:54

Project Information:

Operator Name J.Noles  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369370  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 40 ft

Pump placement from TOC ft

Well Information:

Well ID MGWC-7  
Well diameter 2 in  
Well Total Depth 42.30 ft  
Screen Length 10 ft  
Depth to Water 19.56 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.2685369 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 4.2 in  
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 0
Last 5	17:23:48	1800.02	21.09	6.06	479.63	1.11	19.91	1.20	108.35
Last 5	17:28:48	2100.02	21.28	6.01	478.91	1.40	19.91	0.96	104.63
Last 5	17:33:48	2400.02	20.96	5.97	480.76	1.27	19.91	0.74	92.78
Last 5	17:38:48	2700.02	20.78	5.97	481.96	1.54	19.91	0.70	82.90
Last 5	17:43:48	3000.02	20.60	5.96	485.47	1.11	19.91	0.61	72.23
Variance 0			-0.32	-0.04	1.85			-0.22	-11.86
Variance 1			-0.18	-0.01	1.20			-0.04	-9.88
Variance 2			-0.18	-0.01	3.51			-0.09	-10.67

Notes

Sampled at 1255.

Grab Samples

Product Name: Low-Flow System

Date: 2019-03-26 12:47:32

Project Information:

Operator Name J. Adcock  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 598939  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWC-8  
Well diameter 2 in  
Well Total Depth 52.56 ft  
Screen Length 10 ft  
Depth to Water 29.29 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.3131711 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 2.4 in  
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	12:24:51	600.02	21.53	5.16	787.71	0.66	29.47	0.34	130.58
Last 5	12:29:51	900.01	21.87	5.12	820.69	0.34	29.47	0.27	127.75
Last 5	12:34:51	1200.02	22.04	5.13	836.65	0.47	29.49	0.22	126.68
Last 5	12:39:51	1500.01	21.82	5.12	839.31	0.65	29.49	0.20	128.97
Last 5	12:44:51	1800.02	21.86	5.19	830.74	0.45	29.49	0.19	128.28
Variance 0			0.18	0.01	15.95			-0.04	-1.07
Variance 1			-0.22	-0.01	2.66			-0.03	2.30
Variance 2			0.04	0.06	-8.57			-0.01	-0.69

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-03-25 15:09:27

Project Information:

Operator Name J. Adcock  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 408206  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWA-10  
Well diameter 2 in  
Well Total Depth 53.09 ft  
Screen Length 10 ft  
Depth to Water 16.85 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3131711 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 33.12 in  
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5	+/- 0		+/- 10	+/- 0
Last 5	14:31:46	300.07	24.16	5.74	63.53	0.92	17.51	2.14	186.69
Last 5	14:36:46	600.02	22.89	5.37	62.40	1.19	18.18	2.04	180.09
Last 5	14:41:46	900.02	22.76	5.29	62.97	0.67	18.72	2.00	177.88
Last 5	14:48:05	1279.03	22.98	5.28	63.30	0.88	19.03	1.94	187.02
Last 5	15:07:26	2439.90	22.91	5.27	64.41	0.89	19.61	1.86	175.85
Variance 0			-0.13	-0.08	0.56			-0.03	-2.21
Variance 1			0.22	-0.02	0.33			-0.06	9.14
Variance 2			-0.07	-0.00	1.11			-0.09	-11.17

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-03-25 16:47:18

Project Information:

Operator Name J. Adcock  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 408206  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 52 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWA-11  
Well diameter 2 in  
Well Total Depth 55.81 ft  
Screen Length 10 ft  
Depth to Water 19.97 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.322098 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 2.28 in  
Total Volume Pumped 5.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5	+/- 0		+/- 10	+/- 0
Last 5	16:25:21	1133.80	22.49	7.14	287.79	0.69	20.15	0.41	-37.82
Last 5	16:30:21	1433.79	22.67	7.19	294.45	0.79	20.15	0.37	-26.96
Last 5	16:35:21	1733.79	22.52	7.23	300.61	0.62	20.16	0.34	-23.81
Last 5	16:40:21	2033.80	22.86	7.27	298.32	0.36	20.16	0.33	-24.36
Last 5	16:45:25	2337.80	22.55	7.29	297.04	0.43	20.16	0.31	-21.22
Variance 0			-0.15	0.04	6.16			-0.03	3.15
Variance 1			0.34	0.04	-2.29			-0.01	-0.55
Variance 2			-0.31	0.02	-1.28			-0.02	3.14

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2019-03-26 09:40:20

Project Information:

Operator Name L. Coker  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 408206  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 47 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWC-12  
Well diameter 2 in  
Well Total Depth 53.80 ft  
Screen Length 10 ft  
Depth to Water 24.50 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.2685369 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 7.2 in  
Total Volume Pumped 4.7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 0
Last 5	09:55:50	900.03	18.83	7.59	280.20	0.99	25.05	0.25	-110.10
Last 5	10:00:50	1200.03	18.80	7.36	280.80	1.27	25.08	0.22	-108.50
Last 5	10:05:50	1500.03	18.88	7.24	280.50	1.12	25.08	0.21	-106.70
Last 5	10:10:50	1800.03	18.88	7.18	281.00	0.80	25.10	0.19	-105.60
Last 5	10:15:50	2100.03	18.83	7.14	281.90	0.71	25.10	0.19	-103.70
Variance 0			0.11	0.00	-1.81			-0.00	-41.17
Variance 1			-0.17	0.02	-1.06			0.11	-13.76
Variance 2			-0.10	-0.00	-0.55			-0.10	-15.96

Notes

Sampled at 1020

Grab Samples

Product Name: Low-Flow System

Date: 2019-03-25 14:35:30

Project Information:

Operator Name L. Coker  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 408206  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 40 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWA-24  
Well diameter 2 in  
Well Total Depth 48.67 ft  
Screen Length 10 ft  
Depth to Water 17.90 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.2685369 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 5.04 in  
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 0
Last 5	15:25:50	3000.06	22.67	8.05	288.80	1.89	18.30	0.11	-196.00
Last 5	15:30:50	3300.06	22.76	7.92	372.30	4.81	18.30	0.10	-218.70
Last 5	15:35:50	3600.06	22.62	7.92	394.50	4.60	18.32	0.10	-219.90
Last 5	15:40:50	3900.06	24.74	7.89	394.70	4.79	18.32	0.10	-221.00
Last 5	15:45:50	4200.06	22.71	7.90	384.20	4.55	18.32	0.10	-225.80
Variance 0			0.12	0.00	-1.90			-0.35	-44.27
Variance 1			-0.14	0.02	-2.07			0.12	-14.76
Variance 2			-0.09	-0.00	1.23			-0.26	-16.96

Notes

Sampled at 1550

Grab Samples

**Water Level Measurement Data Sheet**

Plant McIntosh

Georgia Power Company

Date: 9-Sep-19

Gauged by: J. Adcock, L. Coker, J. Noles



Area	Well ID	Installed Total Depth (ft btoc)	Measured Depth to Water (ft btoc)	Measured Depth to Bottom (ft btoc)	Provided for reference			Notes
					March 2019 Depth to Water (ft btoc)	March 2019 Depth to Bottom (ft btoc)	Installed Depth to Top of Screen (ft btoc)	
Ash Pond	MGWC-1	56.08	37.67	56.20	36.66	56.10	45.78	
	MGWC-2	37.36	20.70	37.30	19.83	37.25	27.06	
	MGWC-3	38.74	17.60	39.19	16.36	39.16	28.44	
	MGWC-4	67.35	25.70	67.92	24.85	67.80	57.05	
	MGWA-5	63.09	22.51	63.41	21.47	63.38	52.79	
	MGWA-6	41.93	20.00	42.23	18.62	42.45	31.63	
	MGWA-6A	42.58	18.65	42.58	17.28	42.81	32.28	
	MGWC-7	42.29	20.97	42.31	19.45	42.30	31.99	
	MGWC-8	52.56	30.48	52.88	29.22	52.84	42.26	
	MGWA-9	43.05	21.44	43.15	20.13	43.13	32.75	
	MGWA-10	53.09	18.03	53.09	16.88	53.11	42.79	
	MGWA-11	55.81	21.10	56.65	19.98	56.67	45.61	
	MGWC-12	52.90	25.36	53.80	24.50	53.80	42.70	
	PZ-13	26.76	17.63	27.35	16.93	27.32	16.36	
	PZ-14	41.50	17.54	41.82	16.65	41.75	31.10	
	PZ-15	28.87	19.12	28.92	18.45	28.53	18.57	
	PZ-16	42.39	32.66	42.58	32.38	42.55	32.09	
	PZ-17	45.12	30.71	45.24	30.53	45.22	34.82	
	PZ-18	41.70	20.15	41.90	18.90	41.87	31.40	
	MGWC-19	72.70	22.02	72.80	20.93	72.81	62.40	
	MGWC-20	54.77	21.89	55.00	21.33	55.01	44.47	
	MGWC-21	82.68	31.74	84.33	30.69	83.15	72.38	
	MGWC-22	67.56	17.52	67.98	16.51	67.95	57.26	
	MGWC-23	42.90	33.40	43.33	32.93	43.29	32.60	
MGWA-24	49.03	19.05	48.69	17.90	48.67	38.73		

Notes: ft = feet      NM = Not Measured      btoc = below top of casing



Product Name: Low-Flow System

Date: 2019-09-10 12:43:03

Project Information:

Operator Name L.Coker  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 445707  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED bladder  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWC-1  
Well diameter 2 in  
Well Total Depth 56.20 ft  
Screen Length 10 ft  
Depth to Water 37.67 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3131711 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 19.56 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 0.2	+/- 0
Last 5	12:19:44	300.12	23.88	7.10	558.68	1.10	39.10	0.80	8.82
Last 5	12:24:44	600.02	23.65	7.07	591.36	0.88	39.14	0.53	6.96
Last 5	12:29:44	900.02	23.58	7.09	597.92	0.91	39.21	0.42	5.48
Last 5	12:34:44	1200.85	23.56	7.07	601.30	0.71	39.25	0.36	5.97
Last 5	12:39:44	1500.85	23.57	7.09	603.12	0.86	39.30	0.32	2.36
Variance 0			-0.07	0.02	6.56			-0.11	-1.48
Variance 1			-0.01	-0.02	3.38			-0.06	0.49
Variance 2			0.00	0.02	1.82			-0.04	-3.61

Notes

Samples at 1250 DUP-02 take here

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-10 13:26:50

Project Information:

Operator Name J.Noles  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369557  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 37 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWC-2  
Well diameter 2 in  
Well Total Depth 37 ft  
Screen Length 10 ft  
Depth to Water 20.71 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.2551467 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 8.28 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	13:05:06	600.02	26.16	7.26	764.37	1.26	21.36	0.32	25.46
Last 5	13:10:06	900.02	25.91	7.27	763.62	1.28	21.40	0.28	25.82
Last 5	13:15:06	1200.02	26.41	7.26	761.51	1.19	21.40	0.26	29.88
Last 5	13:20:06	1500.02	26.09	7.26	757.37	0.59	21.40	0.25	34.14
Last 5	13:25:06	1800.02	26.19	7.26	756.36	0.89	21.40	0.22	33.37
Variance 0			0.50	-0.00	-2.11			-0.02	4.06
Variance 1			-0.32	-0.01	-4.14			-0.01	4.26
Variance 2			0.10	0.01	-1.01			-0.02	-0.76

Notes

Sampled at 1330

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-10 12:41:19

Project Information:

Operator Name J.Adcock  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 596190  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 35 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWC-3  
Well diameter 2 in  
Well Total Depth 39.19 ft  
Screen Length 10 ft  
Depth to Water 17.64 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.2462198 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 3.96 in  
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	12:19:19	900.02	23.34	6.92	561.33	0.97	17.97	0.39	109.49
Last 5	12:24:19	1200.02	23.11	6.80	560.87	1.32	17.97	0.27	105.14
Last 5	12:29:19	1500.02	23.20	6.72	561.78	0.82	17.97	0.21	100.81
Last 5	12:34:19	1800.02	23.16	6.68	560.11	0.81	17.97	0.19	98.14
Last 5	12:39:19	2099.88	23.11	6.67	559.73	0.61	17.97	0.18	96.64
Variance 0			0.08	-0.08	0.91			-0.06	-4.33
Variance 1			-0.04	-0.03	-1.67			-0.02	-2.66
Variance 2			-0.05	-0.02	-0.38			-0.01	-1.51

Notes Sampled at 12:40

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-10 10:00:58

Project Information:

Operator Name J.Adcock  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 596190  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 60 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWA-5  
Well diameter 2 in  
Well Total Depth 63.41 ft  
Screen Length 10 ft  
Depth to Water 22.58 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3578054 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 8.28 in  
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	09:37:35	1500.02	26.70	7.31	247.89	0.87	23.20	4.12	118.91
Last 5	09:42:35	1799.89	26.42	7.36	234.90	0.72	23.24	4.01	115.93
Last 5	09:47:35	2099.89	26.33	7.39	247.69	0.92	23.26	4.00	112.60
Last 5	09:52:35	2399.89	26.42	7.40	246.75	0.69	23.26	3.96	108.63
Last 5	09:57:35	2699.89	26.40	7.41	249.03	0.90	23.27	3.97	105.13
Variance 0			-0.09	0.02	12.79			-0.01	-3.33
Variance 1			0.10	0.01	-0.93			-0.04	-3.97
Variance 2			-0.03	0.01	2.28			0.01	-3.50

Notes Sampled at 10:00

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-10 10:47:47

Project Information:

Operator Name L.Coker  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 445707  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 37 ft

Pump placement from TOC 3 ft

Well Information:

Well ID MGWA-6  
Well diameter 2 in  
Well Total Depth 42.23 ft  
Screen Length 10 ft  
Depth to Water 20 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.2551467 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 6.96 in  
Total Volume Pumped 5.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 2	+/- 0
Last 5	10:26:10	600.02	25.78	7.00	513.38	2.11	20.50	0.25	29.01
Last 5	10:31:10	900.02	25.41	7.00	510.32	1.90	20.53	0.19	22.35
Last 5	10:36:11	1200.23	25.33	6.98	510.86	2.53	20.56	0.15	13.84
Last 5	10:41:11	1500.23	25.23	6.97	511.96	2.37	20.57	0.13	5.74
Last 5	10:46:11	1800.23	25.20	6.99	508.19	1.81	20.58	0.11	-8.47
Variance 0			-0.09	-0.02	0.54			-0.04	-8.52
Variance 1			-0.09	-0.01	1.10			-0.02	-8.10
Variance 2			-0.03	0.02	-3.77			-0.02	-14.20

Notes

Samples at 1050

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-10 09:46:22

Project Information:

Operator Name L.Coker  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 445707  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 37 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWA-6A  
Well diameter 2 in  
Well Total Depth 42.58 ft  
Screen Length 10 ft  
Depth to Water 18.65 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.2551467 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 14.4 in  
Total Volume Pumped 4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	09:24:12	600.02	26.14	7.18	447.26	4.10	19.24	0.46	-170.92
Last 5	09:29:12	900.02	25.67	7.17	449.93	4.98	19.69	0.35	-170.90
Last 5	09:34:12	1200.02	25.78	7.15	449.58	4.56	19.73	0.31	-171.56
Last 5	09:39:12	1500.02	25.72	7.16	447.24	4.78	19.82	0.27	-177.16
Last 5	09:44:12	1800.02	25.51	7.15	447.18	4.62	19.85	0.25	-177.46
Variance 0			0.11	-0.02	-0.35			-0.04	-0.66
Variance 1			-0.06	0.01	-2.33			-0.04	-5.60
Variance 2			-0.21	-0.01	-0.07			-0.02	-0.30

Notes

Sampled at 0950

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-10 09:59:20

Project Information:

Operator Name J.Noles  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369557  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 42 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWC-7  
Well diameter 2 in  
Well Total Depth 42 ft  
Screen Length 10 ft  
Depth to Water 21.05 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.2774638 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 4.44 in  
Total Volume Pumped 3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	09:37:18	900.02	24.64	6.09	481.94	1.11	21.42	0.34	54.66
Last 5	09:42:18	1200.02	24.77	6.04	481.12	1.95	21.42	0.32	56.70
Last 5	09:47:18	1500.02	24.80	6.02	479.44	1.71	21.42	0.49	56.66
Last 5	09:52:18	1800.02	25.18	6.02	482.03	1.63	21.41	0.54	55.52
Last 5	09:57:18	2100.02	25.68	6.03	479.70	1.39	21.42	0.51	54.66
Variance 0			0.02	-0.01	-1.68			0.17	-0.04
Variance 1			0.39	-0.00	2.59			0.05	-1.14
Variance 2			0.50	0.01	-2.33			-0.02	-0.86

Notes

Sampled at 1010

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-10 12:02:22

Project Information:

Operator Name J.Noles  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369557  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 53 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWC-8  
Well diameter 2 in  
Well Total Depth 53 ft  
Screen Length 10 ft  
Depth to Water 30.54 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.3265614 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 1.32 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	11:39:48	2400.02	25.64	5.13	807.28	0.03	30.65	2.85	107.88
Last 5	11:44:48	2700.02	25.32	5.13	828.18	0.10	30.65	2.21	105.50
Last 5	11:49:48	3000.02	25.52	5.11	845.93	0.02	30.65	2.59	103.16
Last 5	11:54:48	3300.02	25.92	5.10	860.02	0.04	30.65	2.60	100.93
Last 5	11:59:48	3600.02	26.05	5.10	866.46	0.05	30.65	2.47	97.91
Variance 0			0.20	-0.02	17.75			0.38	-2.34
Variance 1			0.40	-0.01	14.09			0.01	-2.23
Variance 2			0.13	-0.00	6.44			-0.12	-3.01

Notes

Sampled at 1215

Grab Samples



Product Name: Low-Flow System

Date: 2019-09-10 08:25:13

Project Information:

Operator Name J.Adcock  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 596190  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWA-10  
Well diameter 2 in  
Well Total Depth 53.09 ft  
Screen Length 10 ft  
Depth to Water 18.06 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3131711 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 25.44 in  
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	08:01:40	900.02	23.81	6.03	73.98	1.02	19.73	5.10	138.03
Last 5	08:06:40	1200.02	24.06	6.00	79.32	0.78	19.84	5.14	137.66
Last 5	08:11:40	1500.02	24.15	6.02	73.66	0.69	19.95	5.03	136.13
Last 5	08:16:40	1800.02	24.11	6.01	73.72	0.69	20.07	5.02	135.31
Last 5	08:21:40	2100.02	24.19	5.97	73.44	1.14	20.18	4.90	134.86
Variance 0			0.09	0.02	-5.65			-0.11	-1.54
Variance 1			-0.04	-0.01	0.05			-0.01	-0.82
Variance 2			0.09	-0.03	-0.27			-0.12	-0.45

Notes Sampled at 0826

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-10 08:14:24

Project Information:

Operator Name J.Noles  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 369557  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 55 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWA-11  
Well diameter 2 in  
Well Total Depth 55.18 ft  
Screen Length 10 ft  
Depth to Water 21.16 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.3354883 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 3 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	07:52:08	600.02	23.26	7.60	280.55	0.84	21.39	0.37	-31.80
Last 5	07:57:08	900.02	23.24	7.57	290.40	0.47	21.41	0.31	-27.82
Last 5	08:02:08	1200.02	23.24	7.54	292.86	1.20	21.41	0.27	-25.82
Last 5	08:07:08	1500.02	23.33	7.53	293.40	1.60	21.41	0.26	-23.96
Last 5	08:12:08	1800.02	23.23	7.54	291.31	0.81	21.41	0.31	-23.60
Variance 0			-0.00	-0.03	2.46			-0.03	2.00
Variance 1			0.09	-0.00	0.54			-0.01	1.85
Variance 2			-0.11	0.01	-2.10			0.05	0.36

Notes

Sampled at 0812

Grab Samples

Product Name: Low-Flow System

Date: 2019-09-10 11:19:31

Project Information:

Operator Name J.Adcock  
Company Name GEI  
Project Name AP1  
Site Name McIntosh  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 596190  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Alexis Peristaltic  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 2 ft

Well Information:

Well ID MGWC-12  
Well diameter 2 in  
Well Total Depth 53.80 ft  
Screen Length 10 ft  
Depth to Water 25.37 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3131711 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 6 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 0	+/- 0.1	+/- 5%	+/- 0		+/- 10%	+/- 0
Last 5	10:57:58	600.02	24.62	10.88	336.33	1.62	25.81	7.12	87.40
Last 5	11:02:58	900.02	24.35	10.95	337.53	2.16	25.85	7.22	88.40
Last 5	11:07:58	1200.02	23.61	10.94	339.62	2.21	25.88	7.27	89.25
Last 5	11:12:58	1500.02	23.71	10.99	336.73	1.97	25.88	7.26	89.06
Last 5	11:17:58	1800.02	23.56	10.96	331.39	0.88	25.88	7.03	90.59
Variance 0			-0.74	-0.01	2.09			0.05	0.85
Variance 1			0.10	0.05	-2.89			-0.01	-0.19
Variance 2			-0.15	-0.03	-5.34			-0.23	1.53

Notes

Sampled at 11:20

Grab Samples

## ANALYTICAL REPORT

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

Laboratory Job ID: 180-86183-1

Laboratory Sample Delivery Group: Ash Pond  
Client Project/Site: CCR - Plant McIntosh Ash Pond 1  
Revision: 2

**For:**

Southern Company  
PO BOX 2641 GSC8  
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty



Authorized for release by:  
4/8/2019 4:47:32 PM

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86183-1  
SDG: Ash Pond

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**Job ID: 180-86183-1**

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**Laboratory: Eurofins TestAmerica, Pittsburgh**

## Narrative

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### Job Narrative 180-86183-1

Revised: Set Lithium RL to historical limits  
Revised : formatter change; no flags

### Comments

No additional comments.

### Receipt

The samples were received on 1/29/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

### Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. There are no sample collection dates on the COC: however they are on the labels.

### Metals

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



## Definitions/Glossary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86183-1  
SDG: Ash Pond

### 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 McIntosh Ash Pond 1

Job ID: 180-86183-1  
 SDG: Ash Pond

## Laboratory: Eurofins TestAmerica, Pittsburgh

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

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

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



# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86183-1  
SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-86183-1	MGWA-10	Water	01/28/19 16:00	01/29/19 09:30
180-86183-2	MGWA-11	Water	01/28/19 15:50	01/29/19 09:30
180-86183-3	FB-AP-01	Water	01/28/19 16:40	01/29/19 09:30
180-86183-4	FERB-AP-01	Water	01/28/19 16:40	01/29/19 09:30

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

# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86183-1  
SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
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:**

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 McIntosh Ash Pond 1

Job ID: 180-86183-1  
 SDG: Ash Pond

## Client Sample ID: MGWA-10

## Lab Sample ID: 180-86183-1

Date Collected: 01/28/19 16:00

Matrix: Water

Date Received: 01/29/19 09:30

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	269371	02/01/19 12:08	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269919	02/07/19 15:14	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	269371	02/01/19 12:08	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269983	02/08/19 11:29	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269600	02/05/19 10:24	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269770	02/06/19 14:52	KAK	TAL PIT
Instrument ID: HGZ										

## Client Sample ID: MGWA-11

## Lab Sample ID: 180-86183-2

Date Collected: 01/28/19 15:50

Matrix: Water

Date Received: 01/29/19 09:30

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	269371	02/01/19 12:08	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269919	02/07/19 15:18	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	269371	02/01/19 12:08	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269983	02/08/19 11:33	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269600	02/05/19 10:24	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269770	02/06/19 14:55	KAK	TAL PIT
Instrument ID: HGZ										

## Client Sample ID: FB-AP-01

## Lab Sample ID: 180-86183-3

Date Collected: 01/28/19 16:40

Matrix: Water

Date Received: 01/29/19 09:30

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	269371	02/01/19 12:08	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269919	02/07/19 15:21	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	269371	02/01/19 12:08	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269983	02/08/19 11:36	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269600	02/05/19 10:24	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269770	02/06/19 14:56	KAK	TAL PIT
Instrument ID: HGZ										

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86183-1  
 SDG: Ash Pond

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-86183-4**

**Date Collected: 01/28/19 16:40**

**Matrix: Water**

**Date Received: 01/29/19 09:30**

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	269371	02/01/19 12:08	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269919	02/07/19 15:24	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	269371	02/01/19 12:08	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269983	02/08/19 11:46	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269600	02/05/19 10:24	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269770	02/06/19 14:57	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

NAM = Nicole Marfisi

RJR = Ron Rosenbaum

Batch Type: Analysis

KAK = Kayla Kalamasz

RSK = Robert Kurtz

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86183-1  
SDG: Ash Pond

**Client Sample ID: MGWA-10**

**Lab Sample ID: 180-86183-1**

Date Collected: 01/28/19 16:00

Matrix: Water

Date Received: 01/29/19 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/01/19 12:08	02/07/19 15:14	1
<b>Barium</b>	<b>0.0249</b>		0.00250		mg/L		02/01/19 12:08	02/07/19 15:14	1
Beryllium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:14	1
Cobalt	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:14	1
<b>Chromium</b>	<b>0.00545</b>		0.00250		mg/L		02/01/19 12:08	02/07/19 15:14	1
Molybdenum	<0.0150		0.0150		mg/L		02/01/19 12:08	02/07/19 15:14	1
Lead	<0.00100		0.00100		mg/L		02/01/19 12:08	02/07/19 15:14	1
Antimony	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:14	1
Selenium	<0.00125		0.00125		mg/L		02/01/19 12:08	02/07/19 15:14	1
Thallium	<0.000500		0.000500		mg/L		02/01/19 12:08	02/07/19 15:14	1
<b>Lithium</b>	<b>0.00821</b>		0.00200		mg/L		02/01/19 12:08	02/08/19 11:29	1
Cadmium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:14	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/05/19 10:24	02/06/19 14:52	1

**Client Sample ID: MGWA-11**

**Lab Sample ID: 180-86183-2**

Date Collected: 01/28/19 15:50

Matrix: Water

Date Received: 01/29/19 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/01/19 12:08	02/07/19 15:18	1
<b>Barium</b>	<b>0.0834</b>		0.00250		mg/L		02/01/19 12:08	02/07/19 15:18	1
Beryllium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:18	1
Cobalt	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:18	1
Chromium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:18	1
Molybdenum	<0.0150		0.0150		mg/L		02/01/19 12:08	02/07/19 15:18	1
Lead	<0.00100		0.00100		mg/L		02/01/19 12:08	02/07/19 15:18	1
Antimony	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:18	1
Selenium	<0.00125		0.00125		mg/L		02/01/19 12:08	02/07/19 15:18	1
Thallium	<0.000500		0.000500		mg/L		02/01/19 12:08	02/07/19 15:18	1
<b>Lithium</b>	<b>0.0124</b>		0.00200		mg/L		02/01/19 12:08	02/08/19 11:33	1
Cadmium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:18	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/05/19 10:24	02/06/19 14:55	1

**Client Sample ID: FB-AP-01**

**Lab Sample ID: 180-86183-3**

Date Collected: 01/28/19 16:40

Matrix: Water

Date Received: 01/29/19 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/01/19 12:08	02/07/19 15:21	1
Barium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:21	1
Beryllium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:21	1
Cobalt	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:21	1
Chromium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:21	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86183-1  
 SDG: Ash Pond

**Client Sample ID: FB-AP-01**

**Lab Sample ID: 180-86183-3**

Date Collected: 01/28/19 16:40

Matrix: Water

Date Received: 01/29/19 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	<0.0150		0.0150		mg/L		02/01/19 12:08	02/07/19 15:21	1
Lead	<0.00100		0.00100		mg/L		02/01/19 12:08	02/07/19 15:21	1
Antimony	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:21	1
Selenium	<0.00125		0.00125		mg/L		02/01/19 12:08	02/07/19 15:21	1
Thallium	<0.000500		0.000500		mg/L		02/01/19 12:08	02/07/19 15:21	1
Lithium	<0.00200		0.00200		mg/L		02/01/19 12:08	02/08/19 11:36	1
Cadmium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:21	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/05/19 10:24	02/06/19 14:56	1

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-86183-4**

Date Collected: 01/28/19 16:40

Matrix: Water

Date Received: 01/29/19 09:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/01/19 12:08	02/07/19 15:24	1
Barium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:24	1
Beryllium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:24	1
Cobalt	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:24	1
Chromium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:24	1
Molybdenum	<0.0150		0.0150		mg/L		02/01/19 12:08	02/07/19 15:24	1
Lead	<0.00100		0.00100		mg/L		02/01/19 12:08	02/07/19 15:24	1
Antimony	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:24	1
Selenium	<0.00125		0.00125		mg/L		02/01/19 12:08	02/07/19 15:24	1
Thallium	<0.000500		0.000500		mg/L		02/01/19 12:08	02/07/19 15:24	1
Lithium	<0.00200		0.00200		mg/L		02/01/19 12:08	02/08/19 11:46	1
Cadmium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 15:24	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/05/19 10:24	02/06/19 14:57	1

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86183-1  
 SDG: Ash Pond

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

**Lab Sample ID: MB 180-269371/1-A**  
**Matrix: Water**  
**Analysis Batch: 269919**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269371**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/01/19 12:08	02/07/19 14:11	1
Barium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 14:11	1
Beryllium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 14:11	1
Cobalt	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 14:11	1
Chromium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 14:11	1
Molybdenum	<0.0150		0.0150		mg/L		02/01/19 12:08	02/07/19 14:11	1
Lead	<0.00100		0.00100		mg/L		02/01/19 12:08	02/07/19 14:11	1
Antimony	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 14:11	1
Selenium	<0.00125		0.00125		mg/L		02/01/19 12:08	02/07/19 14:11	1
Thallium	<0.000500		0.000500		mg/L		02/01/19 12:08	02/07/19 14:11	1
Cadmium	<0.00250		0.00250		mg/L		02/01/19 12:08	02/07/19 14:11	1

**Lab Sample ID: MB 180-269371/1-A**  
**Matrix: Water**  
**Analysis Batch: 269983**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269371**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<0.00200		0.00200		mg/L		02/01/19 12:08	02/08/19 10:27	1

**Lab Sample ID: LCS 180-269371/2-A**  
**Matrix: Water**  
**Analysis Batch: 269919**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269371**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0400	0.04139		mg/L		103	80 - 120
Barium	2.00	2.062		mg/L		103	80 - 120
Beryllium	0.0500	0.04358		mg/L		87	80 - 120
Cobalt	0.500	0.5192		mg/L		104	80 - 120
Chromium	0.200	0.2062		mg/L		103	80 - 120
Molybdenum	1.00	1.060		mg/L		106	80 - 120
Lead	0.0200	0.02104		mg/L		105	80 - 120
Antimony	0.500	0.5183		mg/L		104	80 - 120
Selenium	0.0100	0.01002		mg/L		100	80 - 120
Thallium	0.0500	0.05137		mg/L		103	80 - 120
Calcium	50.0	50.72		mg/L		101	80 - 120
Cadmium	0.0500	0.05191		mg/L		104	80 - 120

**Lab Sample ID: LCS 180-269371/2-A**  
**Matrix: Water**  
**Analysis Batch: 269983**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269371**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.0500	0.05481		mg/L		110	80 - 120

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86183-1  
 SDG: Ash Pond

## Method: EPA 7470A - Mercury (CVAA)

**Lab Sample ID: MB 180-269600/1-A**  
**Matrix: Water**  
**Analysis Batch: 269770**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 269600**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/05/19 10:24	02/06/19 14:50	1

**Lab Sample ID: LCS 180-269600/2-A**  
**Matrix: Water**  
**Analysis Batch: 269770**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 269600**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00250	0.002488		mg/L		100	80 - 120

**Lab Sample ID: 180-86183-1 MS**  
**Matrix: Water**  
**Analysis Batch: 269770**

**Client Sample ID: MGWA-10**  
**Prep Type: Total/NA**  
**Prep Batch: 269600**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	<0.000200		0.00100	0.0009970		mg/L		100	75 - 125

**Lab Sample ID: 180-86183-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 269770**

**Client Sample ID: MGWA-10**  
**Prep Type: Total/NA**  
**Prep Batch: 269600**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	<0.000200		0.00100	0.0009680		mg/L		97	75 - 125	3	20



# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86183-1  
SDG: Ash Pond

## Metals

### Prep Batch: 269371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86183-1	MGWA-10	Total Recoverable	Water	3005A	
180-86183-2	MGWA-11	Total Recoverable	Water	3005A	
180-86183-3	FB-AP-01	Total Recoverable	Water	3005A	
180-86183-4	FERB-AP-01	Total Recoverable	Water	3005A	
MB 180-269371/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-269371/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Prep Batch: 269600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86183-1	MGWA-10	Total/NA	Water	7470A	
180-86183-2	MGWA-11	Total/NA	Water	7470A	
180-86183-3	FB-AP-01	Total/NA	Water	7470A	
180-86183-4	FERB-AP-01	Total/NA	Water	7470A	
MB 180-269600/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-269600/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-86183-1 MS	MGWA-10	Total/NA	Water	7470A	
180-86183-1 MSD	MGWA-10	Total/NA	Water	7470A	

### Analysis Batch: 269770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86183-1	MGWA-10	Total/NA	Water	EPA 7470A	269600
180-86183-2	MGWA-11	Total/NA	Water	EPA 7470A	269600
180-86183-3	FB-AP-01	Total/NA	Water	EPA 7470A	269600
180-86183-4	FERB-AP-01	Total/NA	Water	EPA 7470A	269600
MB 180-269600/1-A	Method Blank	Total/NA	Water	EPA 7470A	269600
LCS 180-269600/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	269600
180-86183-1 MS	MGWA-10	Total/NA	Water	EPA 7470A	269600
180-86183-1 MSD	MGWA-10	Total/NA	Water	EPA 7470A	269600

### Analysis Batch: 269919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86183-1	MGWA-10	Total Recoverable	Water	EPA 6020	269371
180-86183-2	MGWA-11	Total Recoverable	Water	EPA 6020	269371
180-86183-3	FB-AP-01	Total Recoverable	Water	EPA 6020	269371
180-86183-4	FERB-AP-01	Total Recoverable	Water	EPA 6020	269371
MB 180-269371/1-A	Method Blank	Total Recoverable	Water	EPA 6020	269371
LCS 180-269371/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	269371


### Analysis Batch: 269983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86183-1	MGWA-10	Total Recoverable	Water	EPA 6020	269371
180-86183-2	MGWA-11	Total Recoverable	Water	EPA 6020	269371
180-86183-3	FB-AP-01	Total Recoverable	Water	EPA 6020	269371
180-86183-4	FERB-AP-01	Total Recoverable	Water	EPA 6020	269371
MB 180-269371/1-A	Method Blank	Total Recoverable	Water	EPA 6020	269371
LCS 180-269371/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	269371

**TestAmerica Pittsburgh**  
 301 Alpha Drive RIDC Park  
 Pittsburgh, PA 15238  
 Phone (412) 963-7058 Fax (412) 963-2468

### Chain of Custody Record

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information</b> Client Contact: Peter A., Jake A., Lauren C. Phone: 4045920096 Lab PM: Bortot, Veronica E-Mail: veronica.bortot@testamericainc.com				Carrier Tracking No(s): Job # of 1			
<b>Company:</b> Southern Company Address: 241 Ralph McGill Blvd SE City: Atlanta State, Zip: GA, 30308 Phone: Email: jabraham@southernco.com, jimpetty@southernco.com Project Name: CCR - Plant McIntosh Ash Pond 1 Site:				<b>Analysis Requested</b>			
Due Date Requested: TAT Requested (days): Standard PO #: SCS10347656 WO #: Project #: 18019956 SSO/W#:				Preservation Codes: M - Hexane 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:			
<b>Sample Identification</b>				Total Number of Containers			
MGWA-10 MGWA-11 FB-AP-01 FERB-AP-01		Sample Date 16:00 15:50 16:40 16:40		Sample Type (C=Comp, G=grab) G ↓ ↓ ↓		Field Filled Sample (Yes or No) N ↓ ↓ ↓	
						Perform MS/MSD (Yes or No) D X ↓ ↓ ↓	
						Special Instructions/Note: SCAN ↓ cooler	
				 180-86183 Chain of Custody			
<b>Possible Hazard Identification</b> <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological							
Deliverable Requested: I, II, III, IV, Other (specify)							
Empty Kit Relinquished by:				Method of Shipment:			
Relinquished by: Peter Adams		Date/Time: 1/23/19 18:00		Company: GET		Received by: Jellu Watson	
Relinquished by:		Date/Time:		Company:		Received by:	
Relinquished by:		Date/Time:		Company:		Received by:	
Custody Seals Intact: Δ Yes Δ No				Custody Seal No.:			

**Sample 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/QC Requirements:

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

- 1
- 2
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- 11
- 12
- 13

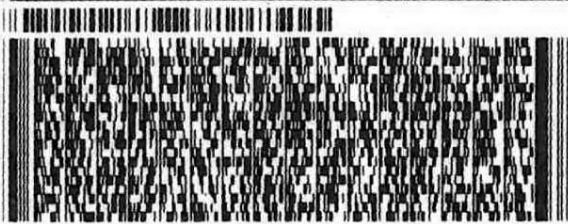
ORIGIN ID:SAVA (412) 963-7058  
 PETER ADAMS  
 301 ALPHA DR  
 PITTSBURGH, PA 15238  
 UNITED STATES US

SHIP DATE: 28JAN19  
 ACTWGT: 52.70 LB  
 CAD: 006994919/SSFE1922  
 DIMS: 24x13x14 IN  
 BILL THIRD PARTY

555/2/0E3B/2340  
 51-01 0X3 01005 567-6090: # 1Kg

0 VERONICA BORTOT  
 TEST AMERICA  
 301 ALPHA DR  
 RIDC PARK  
 PITTSBURGH PA 15238

(555) 656-6565 REF:  
 INU: DEPT:  
 PD:



FedEx  
 Express



J191019010701W



TRK# 7851 8882 1157  
 0201

TUE - 29 JAN 10:30A  
 PRIORITY OVERNIGHT

**XH AGCA**

15238  
 PA-US PIT

Uncorrected temp	<u>11.3</u> °C
Thermometer ID	<u>10</u>
CF <u>0</u> Initials	<u>JB</u>

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

## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-86183-1

SDG Number: Ash Pond

**Login Number: 86183**

**List Number: 1**

**Creator: Watson, Debbie**

**List Source: Eurofins TestAmerica, Pittsburgh**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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.	False	
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

TestAmerica Laboratories, Inc.

TestAmerica Pittsburgh

301 Alpha Drive

RIDC Park

Pittsburgh, PA 15238

Tel: (412)963-7058

TestAmerica Job ID: 180-86183-2

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR - Plant McIntosh Ash Pond 1

For:

Southern Company

PO BOX 2641 GSC8

Birmingham, Alabama 35291

Attn: Ms. Lauren Petty



Authorized for release by:

2/28/2019 1:27:47 PM

Veronica Bortot, Senior Project Manager

(412)963-2435

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

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
SDG: Ash Pond

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**Job ID: 180-86183-2**

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**Laboratory: TestAmerica Pittsburgh**

## Narrative

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**Job Narrative**  
**180-86183-2**

## Comments

No additional comments.

## Receipt

The samples were received on 1/29/2019 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

## Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. There are no sample collection dates on the COC: however they are on the labels.

## RAD

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 McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
SDG: Ash Pond

## 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 McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
 SDG: Ash Pond

## Laboratory: TestAmerica Pittsburgh

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

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

## Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD / DOE		L2305	04-06-19 *
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19 *
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19 *
North Dakota	State Program	8	R207	06-30-19
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-19 *
South Carolina	State Program	4	85002001	06-30-19

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

# Accreditation/Certification Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
SDG: Ash Pond

## Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Texas	NELAP	6	T104704193-18-12	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-86183-1	MGWA-10	Water	01/28/19 16:00	01/29/19 09:30
180-86183-2	MGWA-11	Water	01/28/19 15:50	01/29/19 09:30
180-86183-3	FB-AP-01	Water	01/28/19 16:40	01/29/19 09:30
180-86183-4	FERB-AP-01	Water	01/28/19 16:40	01/29/19 09:30

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# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
SDG: Ash Pond

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

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
SDG: Ash Pond

**Client Sample ID: MGWA-10**  
**Date Collected: 01/28/19 16:00**  
**Date Received: 01/29/19 09:30**

**Lab Sample ID: 180-86183-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.19 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417028	02/27/19 07:32	JLW	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.19 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414837	02/13/19 08:42	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: MGWA-11**  
**Date Collected: 01/28/19 15:50**  
**Date Received: 01/29/19 09:30**

**Lab Sample ID: 180-86183-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.97 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417028	02/27/19 07:32	JLW	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			999.97 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414837	02/13/19 08:42	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: FB-AP-01**  
**Date Collected: 01/28/19 16:40**  
**Date Received: 01/29/19 09:30**

**Lab Sample ID: 180-86183-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.60 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417028	02/27/19 07:32	JLW	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.60 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414837	02/13/19 08:42	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: FERB-AP-01**  
**Date Collected: 01/28/19 16:40**  
**Date Received: 01/29/19 09:30**

**Lab Sample ID: 180-86183-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.62 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL

TestAmerica Pittsburgh

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
 SDG: Ash Pond

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-86183-4**

**Date Collected: 01/28/19 16:40**

**Matrix: Water**

**Date Received: 01/29/19 09:30**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9315		1			417028	02/27/19 07:33	JLW	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			999.62 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414837	02/13/19 08:42	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Laboratory References:**

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

**Analyst References:**

Lab: TAL SL

Batch Type: Prep

CLP = Cassandra Park

Batch Type: Analysis

ALS = Aaron Schroder

JLW = Jody Watson

KLS = Kody Saulters

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
SDG: Ash Pond

**Client Sample ID: MGWA-10**

**Date Collected: 01/28/19 16:00**

**Date Received: 01/29/19 09:30**

**Lab Sample ID: 180-86183-1**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.434		0.113	0.120	1.00	0.0813	pCi/L	02/05/19 09:46	02/27/19 07:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					02/05/19 09:46	02/27/19 07:32	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.438		0.243	0.246	1.00	0.361	pCi/L	02/05/19 10:16	02/13/19 08:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					02/05/19 10:16	02/13/19 08:42	1
Y Carrier	86.4		40 - 110					02/05/19 10:16	02/13/19 08:42	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	0.872		0.268	0.274	5.00	0.361	pCi/L		02/28/19 03:51	1

**Client Sample ID: MGWA-11**

**Date Collected: 01/28/19 15:50**

**Date Received: 01/29/19 09:30**

**Lab Sample ID: 180-86183-2**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.134		0.0740	0.0750	1.00	0.0882	pCi/L	02/05/19 09:46	02/27/19 07:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.2		40 - 110					02/05/19 09:46	02/27/19 07:32	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.344	U	0.293	0.295	1.00	0.469	pCi/L	02/05/19 10:16	02/13/19 08:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	83.2		40 - 110					02/05/19 10:16	02/13/19 08:42	1
Y Carrier	83.0		40 - 110					02/05/19 10:16	02/13/19 08:42	1

TestAmerica Pittsburgh

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
 SDG: Ash Pond

**Client Sample ID: MGWA-11**

**Date Collected: 01/28/19 15:50**

**Date Received: 01/29/19 09:30**

**Lab Sample ID: 180-86183-2**

**Matrix: Water**

**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	0.478		0.302	0.304	5.00	0.469	pCi/L		02/28/19 03:51	1

**Client Sample ID: FB-AP-01**

**Date Collected: 01/28/19 16:40**

**Date Received: 01/29/19 09:30**

**Lab Sample ID: 180-86183-3**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0309	U	0.0426	0.0427	1.00	0.0719	pCi/L	02/05/19 09:46	02/27/19 07:32	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	90.6		40 - 110					02/05/19 09:46	02/27/19 07:32	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.496		0.293	0.296	1.00	0.446	pCi/L	02/05/19 10:16	02/13/19 08:42	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	90.6		40 - 110					02/05/19 10:16	02/13/19 08:42	1
Y Carrier	79.3		40 - 110					02/05/19 10:16	02/13/19 08:42	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	0.527		0.296	0.299	5.00	0.446	pCi/L		02/28/19 03:51	1

**Client Sample ID: FERB-AP-01**

**Date Collected: 01/28/19 16:40**

**Date Received: 01/29/19 09:30**

**Lab Sample ID: 180-86183-4**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0369	U	0.0469	0.0470	1.00	0.0770	pCi/L	02/05/19 09:46	02/27/19 07:33	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	80.2		40 - 110					02/05/19 09:46	02/27/19 07:33	1



# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
 SDG: Ash Pond

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-86183-4**

**Date Collected: 01/28/19 16:40**

**Matrix: Water**

**Date Received: 01/29/19 09:30**

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.326	U	0.275	0.277	1.00	0.437	pCi/L	02/05/19 10:16	02/13/19 08:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.2		40 - 110					02/05/19 10:16	02/13/19 08:42	1
Y Carrier	81.5		40 - 110					02/05/19 10:16	02/13/19 08:42	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	0.363	U	0.279	0.281	5.00	0.437	pCi/L		02/28/19 03:51	1

# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
SDG: Ash Pond

## Method: 9315 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-413713/23-A**  
**Matrix: Water**  
**Analysis Batch: 417050**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 413713**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.02314	U	0.0275	0.0276	1.00	0.0838	pCi/L	02/05/19 09:46	02/27/19 09:55	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					02/05/19 09:46	02/27/19 09:55	1

**Lab Sample ID: LCS 160-413713/1-A**  
**Matrix: Water**  
**Analysis Batch: 417028**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 413713**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	9.000		0.962	1.00	0.0909	pCi/L	79	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	79.1		40 - 110						

## Method: 9320 - Radium-228 (GFPC)

**Lab Sample ID: MB 160-413718/23-A**  
**Matrix: Water**  
**Analysis Batch: 414688**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 413718**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1522	U	0.176	0.177	1.00	0.351	pCi/L	02/05/19 10:16	02/13/19 08:46	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					02/05/19 10:16	02/13/19 08:46	1
Y Carrier	86.0		40 - 110					02/05/19 10:16	02/13/19 08:46	1

**Lab Sample ID: LCS 160-413718/1-A**  
**Matrix: Water**  
**Analysis Batch: 414837**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 413718**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.49	9.744		1.19	1.00	0.462	pCi/L	103	56 - 140
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	79.1		40 - 110						
Y Carrier	78.1		40 - 110						

# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86183-2  
SDG: Ash Pond

## Rad

### Prep Batch: 413713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86183-1	MGWA-10	Total/NA	Water	PrecSep-21	
180-86183-2	MGWA-11	Total/NA	Water	PrecSep-21	
180-86183-3	FB-AP-01	Total/NA	Water	PrecSep-21	
180-86183-4	FERB-AP-01	Total/NA	Water	PrecSep-21	
MB 160-413713/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-413713/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

### Prep Batch: 413718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86183-1	MGWA-10	Total/NA	Water	PrecSep_0	
180-86183-2	MGWA-11	Total/NA	Water	PrecSep_0	
180-86183-3	FB-AP-01	Total/NA	Water	PrecSep_0	
180-86183-4	FERB-AP-01	Total/NA	Water	PrecSep_0	
MB 160-413718/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-413718/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

# Chain of Custody Record

<b>Client Information</b>		Sampler: Peter A., Jake A., Lauren C.		Lab PM: Bortot, Veronica		
Client Contact: Joju Abraham		Phone: 4045920096		E-Mail: veronica.bortot@testamericainc.com		
Company: Southern Company		Address: 241 Ralph McGill Blvd SE		City: Atlanta		
State, Zip: GA, 30308		Phone:		PO #: SCS10347656		
Email: jabraham@southerco.com, jimpetty@southernco.com		Project #: 18019956		SSO/W#:		
Site: CCR - Plant McIntosh Ash Pond 1		Due Date Requested:		TAT Requested (days): Standard		
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Matrix (Water, Solid, Organic, BT-Tissue, A=Al)
MGWA-10	16:00	G	W			
MGWA-11	15:50					
FB-AP-01	16:40					
FEB-AP-01	16:40					
Special Instructions/Note:		Total Number of Containers		Special Instructions/Note:		
SCAN		2		1 cooler		
180-86183 Chain of Custody						
Possible Hazard Identification		Deliverable Requested: I, II, III, IV, Other (specify)		Empty Kit Relinquished by:		
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Date: 1/23/19 18:00		Relinquished by: Peter Adams		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Relinquished by:		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Relinquished by:		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Relinquished by:		

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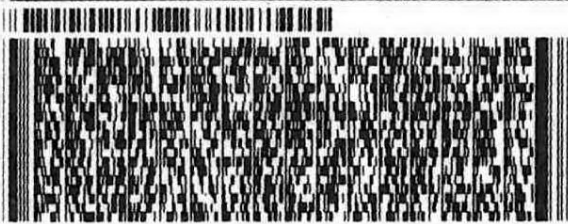
ORIGIN ID:SAVA (412) 963-7058  
 PETER ADAMS  
 301 ALPHA DR  
 PITTSBURGH, PA 15238  
 UNITED STATES US

SHIP DATE: 28JAN19  
 ACTWGT: 52.70 LB  
 CAD: 006994919/SSFE1922  
 DIMS: 24x13x14 IN  
 BILL THIRD PARTY

555/12/0230/2340  
 51-01 0X3 01005 567-6090: # 1Kg

0 VERONICA BORTOT  
 TEST AMERICA  
 301 ALPHA DR  
 RIDC PARK  
 PITTSBURGH PA 15238

(555) 656-6565 REF: INU: PO: DEPT:



**FedEx**  
Express



J191019010701W



TRK# 0201 7851 8882 1157

TUE - 29 JAN 10:30A  
 PRIORITY OVERNIGHT

**XH AGCA**

15238  
 PA-US PIT

Uncorrected temp 11.3 °C  
 Thermometer ID 10  
 CF 0 Initials JB  
 PT-WI-SR-001 effective 11/8/18



**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>		Sampler: Lab PM: Bortot, Veronica	Carrier Tracking No(s): 180-353854.1								
Client Contact: Earth City		Phone: State of Origin: Georgia	COC No: 180-353854.1								
Shipping/Receiving: TestAmerica Laboratories, Inc.		E-Mail: veronica.bortot@testamericainc.com	Page: Page 1 of 1								
Address: 13715 Rider Trail North, MO, 63045		Accreditations Required (See note):	Job #: 180-86183-2								
City: Earth City		Due Date Requested: 2/22/2019	Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - MeOH F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:								
State, Zip: MO, 63045		TAT Requested (days):	M - Hexane N - None O - AsNsO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)								
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		PO #:									
Email:		WO #:									
Project Name: CCR - Plant McIntosh Ash Pond 1		Project #:									
Site:		18019956									
SSOW#:											
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9320 Ra228/PreSep_0 Standard Target List	9315 Ra226/PreSep_21 (MOD) Copy Analytes	Ra226Ra228_AS/ (MOD) Copy Analytes	Total Number of containers	Special Instructions/Note:
MGWA-10 (180-86183-1)	1/28/19	16:00 Eastern	Water	Water	X	X	X	X	X	1	
MGWA-11 (180-86183-2)	1/28/19	15:50 Eastern	Water	Water	X	X	X	X	X	1	
FB-AP-01 (180-86183-3)	1/28/19	16:40 Eastern	Water	Water	X	X	X	X	X	1	
FERB-AP-01 (180-86183-4)	1/28/19	16:40 Eastern	Water	Water	X	X	X	X	X	1	

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.

**Possible Hazard Identification**  
Unconfirmed  
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2  
Sample 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/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>[Signature]</i>	2/1/19	1700	Company: <i>[Signature]</i>
Relinquished by:	Date:	Time:	Company:
Relinquished by:	Date:	Time:	Company:
Custody Seals intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:		



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-86183-2

SDG Number: Ash Pond

**Login Number: 86183**

**List Number: 1**

**Creator: Watson, Debbie**

**List Source: TestAmerica Pittsburgh**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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.	False	
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: 180-86183-2

SDG Number: Ash Pond

**Login Number: 86183**

**List Number: 2**

**Creator: Press, Nicholas B**

**List Source: TestAmerica St. Louis**

**List Creation: 02/02/19 01:43 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.	True	
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	20.0
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?	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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

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

Laboratory Job ID: 180-86194-1

Laboratory Sample Delivery Group: Ash Pond  
Client Project/Site: CCR - Plant McIntosh Ash Pond 1  
Revision: 2

**For:**

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

Attn: Joju Abraham



Authorized for release by:  
4/8/2019 2:40:52 PM

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

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**Job ID: 180-86194-1**

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**Laboratory: Eurofins TestAmerica, Pittsburgh**

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**Narrative**

**Job Narrative  
180-86194-1**

Revised: to set Metals RLs to those that were historically reported

**Comments**

No additional comments.

**Receipt**

The samples were received on 1/30/2019 10:20 AM; the samples arrived in good condition. The temperatures of the 5 coolers at receipt time were 0.7° C, 2.4° C, 2.4° C, 10.9° C and 11.1° C.

**Metals**

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 McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

### 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 McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

## Laboratory: Eurofins TestAmerica, Pittsburgh

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

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

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

Eurofins TestAmerica, Pittsburgh

# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-86194-1	MGWA-5	Water	01/29/19 09:30	01/30/19 10:20
180-86194-2	MGWA-6	Water	01/29/19 09:45	01/30/19 10:20
180-86194-3	MGWC-3	Water	01/29/19 10:45	01/30/19 10:20
180-86194-4	MGWC-12	Water	01/29/19 11:45	01/30/19 10:20
180-86194-5	MGWC-2	Water	01/29/19 11:40	01/30/19 10:20
180-86194-6	MGWC-7	Water	01/29/19 09:55	01/30/19 10:20
180-86194-7	MGWC-8	Water	01/29/19 11:43	01/30/19 10:20
180-86194-8	MGWC-1	Water	01/29/19 11:30	01/30/19 10:20
180-86194-9	DUP-AP-01	Water	01/29/19 00:00	01/30/19 10:20
180-86194-10	DUP-AP-02	Water	01/29/19 00:00	01/30/19 10:20
180-86194-11	FB-AP-02	Water	01/29/19 12:05	01/30/19 10:20
180-86194-12	FERB-AP-02	Water	01/29/19 12:01	01/30/19 10:20



# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
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:**

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 McIntosh Ash Pond 1

Job ID: 180-86194-1  
 SDG: Ash Pond

## Client Sample ID: MGWA-5

Date Collected: 01/29/19 09:30

Date Received: 01/30/19 10:20

## Lab Sample ID: 180-86194-1

Matrix: Water

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 12:24	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:11	RJR	TAL PIT
Instrument ID: HGZ										

## Client Sample ID: MGWA-6

Date Collected: 01/29/19 09:45

Date Received: 01/30/19 10:20

## Lab Sample ID: 180-86194-2

Matrix: Water

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 12:37	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:12	RJR	TAL PIT
Instrument ID: HGZ										

## Client Sample ID: MGWC-3

Date Collected: 01/29/19 10:45

Date Received: 01/30/19 10:20

## Lab Sample ID: 180-86194-3

Matrix: Water

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 12:40	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:16	RJR	TAL PIT
Instrument ID: HGZ										

## Client Sample ID: MGWC-12

Date Collected: 01/29/19 11:45

Date Received: 01/30/19 10:20

## Lab Sample ID: 180-86194-4

Matrix: Water

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 12:44	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:18	RJR	TAL PIT
Instrument ID: HGZ										

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
 SDG: Ash Pond

## Client Sample ID: MGWC-2

Date Collected: 01/29/19 11:40

Date Received: 01/30/19 10:20

## Lab Sample ID: 180-86194-5

Matrix: Water

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 12:54	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:19	RJR	TAL PIT
Instrument ID: HGZ										

## Client Sample ID: MGWC-7

Date Collected: 01/29/19 09:55

Date Received: 01/30/19 10:20

## Lab Sample ID: 180-86194-6

Matrix: Water

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 12:57	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:20	RJR	TAL PIT
Instrument ID: HGZ										

## Client Sample ID: MGWC-8

Date Collected: 01/29/19 11:43

Date Received: 01/30/19 10:20

## Lab Sample ID: 180-86194-7

Matrix: Water

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 13:00	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:21	RJR	TAL PIT
Instrument ID: HGZ										

## Client Sample ID: MGWC-1

Date Collected: 01/29/19 11:30

Date Received: 01/30/19 10:20

## Lab Sample ID: 180-86194-8

Matrix: Water

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 13:04	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:22	RJR	TAL PIT
Instrument ID: HGZ										

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

**Client Sample ID: DUP-AP-01**

**Lab Sample ID: 180-86194-9**

**Date Collected: 01/29/19 00:00**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 13:07	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:23	RJR	TAL PIT
Instrument ID: HGZ										

**Client Sample ID: DUP-AP-02**

**Lab Sample ID: 180-86194-10**

**Date Collected: 01/29/19 00:00**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 13:10	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:24	RJR	TAL PIT
Instrument ID: HGZ										

**Client Sample ID: FB-AP-02**

**Lab Sample ID: 180-86194-11**

**Date Collected: 01/29/19 12:05**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 13:14	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:25	RJR	TAL PIT
Instrument ID: HGZ										

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-86194-12**

**Date Collected: 01/29/19 12:01**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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	269497	02/04/19 12:25	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			269685	02/05/19 13:17	RSK	TAL PIT
Instrument ID: A										
Total/NA	Prep	7470A			50 mL	50 mL	269802	02/07/19 08:27	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A		1			269950	02/08/19 09:26	RJR	TAL PIT
Instrument ID: HGZ										

**Laboratory References:**

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

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

## Analyst References:

Lab: TAL PIT

Batch Type: Prep

NAM = Nicole Marfisi

RJR = Ron Rosenbaum

Batch Type: Analysis

RJR = Ron Rosenbaum

RSK = Robert Kurtz

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

**Client Sample ID: MGWA-5**

**Lab Sample ID: 180-86194-1**

Date Collected: 01/29/19 09:30

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:24	1
<b>Barium</b>	<b>0.0363</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 12:24	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:24	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:24	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:24	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:24	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 12:24	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 12:24	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:24	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:24	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 12:24	1
<b>Lithium</b>	<b>0.00987</b>		0.00200		mg/L		02/04/19 12:25	02/05/19 12:24	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:11	1

**Client Sample ID: MGWA-6**

**Lab Sample ID: 180-86194-2**

Date Collected: 01/29/19 09:45

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.00972</b>		0.00125		mg/L		02/04/19 12:25	02/05/19 12:37	1
<b>Barium</b>	<b>0.0393</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 12:37	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:37	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:37	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:37	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:37	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 12:37	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 12:37	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:37	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:37	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 12:37	1
Lithium	<0.00200		0.00200		mg/L		02/04/19 12:25	02/05/19 12:37	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:12	1

**Client Sample ID: MGWC-3**

**Lab Sample ID: 180-86194-3**

Date Collected: 01/29/19 10:45

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.00143</b>		0.00125		mg/L		02/04/19 12:25	02/05/19 12:40	1
<b>Barium</b>	<b>0.138</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 12:40	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:40	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:40	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:40	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

**Client Sample ID: MGWC-3**

**Lab Sample ID: 180-86194-3**

Date Collected: 01/29/19 10:45

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:40	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 12:40	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 12:40	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:40	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:40	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 12:40	1
<b>Lithium</b>	<b>0.0106</b>		0.00200		mg/L		02/04/19 12:25	02/05/19 12:40	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:16	1

**Client Sample ID: MGWC-12**

**Lab Sample ID: 180-86194-4**

Date Collected: 01/29/19 11:45

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:44	1
<b>Barium</b>	<b>0.0600</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 12:44	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:44	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:44	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:44	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:44	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 12:44	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 12:44	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:44	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:44	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 12:44	1
<b>Lithium</b>	<b>0.0172</b>		0.00200		mg/L		02/04/19 12:25	02/05/19 12:44	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:18	1

**Client Sample ID: MGWC-2**

**Lab Sample ID: 180-86194-5**

Date Collected: 01/29/19 11:40

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:54	1
<b>Barium</b>	<b>0.0496</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 12:54	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:54	1
<b>Cadmium</b>	<b>0.00315</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 12:54	1
<b>Cobalt</b>	<b>0.00293</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 12:54	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:54	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 12:54	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 12:54	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:54	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:54	1

Eurofins TestAmerica, Pittsburgh



# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

## Client Sample ID: MGWC-2

## Lab Sample ID: 180-86194-5

Date Collected: 01/29/19 11:40

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 12:54	1
<b>Lithium</b>	<b>0.00537</b>		0.00200		mg/L		02/04/19 12:25	02/05/19 12:54	1

### Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:19	1

## Client Sample ID: MGWC-7

## Lab Sample ID: 180-86194-6

Date Collected: 01/29/19 09:55

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:57	1
<b>Barium</b>	<b>0.00873</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 12:57	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:57	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:57	1
<b>Cobalt</b>	<b>0.0103</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 12:57	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:57	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 12:57	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 12:57	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:57	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:57	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 12:57	1
<b>Lithium</b>	<b>0.112</b>		0.00200		mg/L		02/04/19 12:25	02/05/19 12:57	1

### Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:20	1

## Client Sample ID: MGWC-8

## Lab Sample ID: 180-86194-7

Date Collected: 01/29/19 11:43

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 13:00	1
<b>Barium</b>	<b>0.0344</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 13:00	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:00	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:00	1
<b>Cobalt</b>	<b>0.0159</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 13:00	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:00	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 13:00	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 13:00	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:00	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 13:00	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 13:00	1
<b>Lithium</b>	<b>0.0361</b>		0.00200		mg/L		02/04/19 12:25	02/05/19 13:00	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

**Client Sample ID: MGWC-8**

**Lab Sample ID: 180-86194-7**

Date Collected: 01/29/19 11:43

Matrix: Water

Date Received: 01/30/19 10:20

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:21	1

**Client Sample ID: MGWC-1**

**Lab Sample ID: 180-86194-8**

Date Collected: 01/29/19 11:30

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.00255</b>		0.00125		mg/L		02/04/19 12:25	02/05/19 13:04	1
<b>Barium</b>	<b>0.107</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 13:04	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:04	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:04	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:04	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:04	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 13:04	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 13:04	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:04	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 13:04	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 13:04	1
<b>Lithium</b>	<b>0.0109</b>		0.00200		mg/L		02/04/19 12:25	02/05/19 13:04	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:22	1

**Client Sample ID: DUP-AP-01**

**Lab Sample ID: 180-86194-9**

Date Collected: 01/29/19 00:00

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.00969</b>		0.00125		mg/L		02/04/19 12:25	02/05/19 13:07	1
<b>Barium</b>	<b>0.0384</b>		0.00250		mg/L		02/04/19 12:25	02/05/19 13:07	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:07	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:07	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:07	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:07	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 13:07	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 13:07	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:07	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 13:07	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 13:07	1
Lithium	<0.00200		0.00200		mg/L		02/04/19 12:25	02/05/19 13:07	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:23	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
SDG: Ash Pond

**Client Sample ID: DUP-AP-02**

**Lab Sample ID: 180-86194-10**

Date Collected: 01/29/19 00:00

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00300		0.00125		mg/L		02/04/19 12:25	02/05/19 13:10	1
Barium	0.0993		0.00250		mg/L		02/04/19 12:25	02/05/19 13:10	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:10	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:10	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:10	1
Chromium	0.00261		0.00250		mg/L		02/04/19 12:25	02/05/19 13:10	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 13:10	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 13:10	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:10	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 13:10	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 13:10	1
Lithium	0.0106		0.00200		mg/L		02/04/19 12:25	02/05/19 13:10	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:24	1

**Client Sample ID: FB-AP-02**

**Lab Sample ID: 180-86194-11**

Date Collected: 01/29/19 12:05

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 13:14	1
Barium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:14	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:14	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:14	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:14	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:14	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 13:14	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 13:14	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:14	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 13:14	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 13:14	1
Lithium	<0.00200		0.00200		mg/L		02/04/19 12:25	02/05/19 13:14	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:25	1

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-86194-12**

Date Collected: 01/29/19 12:01

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 13:17	1
Barium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:17	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:17	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:17	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:17	1

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# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
 SDG: Ash Pond

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-86194-12**

Date Collected: 01/29/19 12:01

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:17	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 13:17	1
<b>Lead</b>	<b>0.00117</b>		0.00100		mg/L		02/04/19 12:25	02/05/19 13:17	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 13:17	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 13:17	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 13:17	1
Lithium	<0.00200		0.00200		mg/L		02/04/19 12:25	02/05/19 13:17	1

**Method: EPA 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:26	1

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
 SDG: Ash Pond

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

**Lab Sample ID: MB 180-269497/1-A**  
**Matrix: Water**  
**Analysis Batch: 269685**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269497**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:01	1
Barium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:01	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:01	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:01	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:01	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:01	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:25	02/05/19 12:01	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:25	02/05/19 12:01	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:25	02/05/19 12:01	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:25	02/05/19 12:01	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:25	02/05/19 12:01	1
Lithium	<0.00200		0.00200		mg/L		02/04/19 12:25	02/05/19 12:01	1

**Lab Sample ID: LCS 180-269497/2-A**  
**Matrix: Water**  
**Analysis Batch: 269685**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269497**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.0400	0.03745		mg/L		94	80 - 120
Barium	2.00	1.926		mg/L		96	80 - 120
Beryllium	0.0500	0.04938		mg/L		99	80 - 120
Cadmium	0.0500	0.05118		mg/L		102	80 - 120
Cobalt	0.500	0.4612		mg/L		92	80 - 120
Chromium	0.200	0.2030		mg/L		102	80 - 120
Molybdenum	1.00	1.018		mg/L		102	80 - 120
Lead	0.0200	0.02013		mg/L		101	80 - 120
Antimony	0.500	0.5004		mg/L		100	80 - 120
Selenium	0.0100	0.009176		mg/L		92	80 - 120
Thallium	0.0500	0.05169		mg/L		103	80 - 120
Lithium	0.0500	0.04550		mg/L		91	80 - 120

**Lab Sample ID: 180-86194-1 MS**  
**Matrix: Water**  
**Analysis Batch: 269685**

**Client Sample ID: MGWA-5**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269497**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	<0.00125		0.0400	0.03850		mg/L		95	75 - 125
Barium	0.0363		2.00	2.056		mg/L		101	75 - 125
Beryllium	<0.00250		0.0500	0.05117		mg/L		102	75 - 125
Cadmium	<0.00250		0.0500	0.05324		mg/L		106	75 - 125
Cobalt	<0.00250		0.500	0.4800		mg/L		96	75 - 125
Chromium	<0.00250		0.200	0.2105		mg/L		105	75 - 125
Molybdenum	<0.0150		1.00	1.050		mg/L		105	75 - 125
Lead	<0.00100		0.0200	0.02114		mg/L		106	75 - 125
Antimony	<0.00250		0.500	0.5214		mg/L		104	75 - 125
Selenium	<0.00125		0.0100	0.009290		mg/L		93	75 - 125
Thallium	<0.000500		0.0500	0.05404		mg/L		108	75 - 125
Lithium	0.00987		0.0500	0.05734		mg/L		95	75 - 125

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# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
 SDG: Ash Pond

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

**Lab Sample ID: 180-86194-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 269685**

**Client Sample ID: MGWA-5**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269497**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Arsenic	<0.00125		0.0400	0.03905		mg/L		97	75 - 125	1	20
Barium	0.0363		2.00	2.080		mg/L		102	75 - 125	1	20
Beryllium	<0.00250		0.0500	0.05105		mg/L		102	75 - 125	0	20
Cadmium	<0.00250		0.0500	0.05424		mg/L		108	75 - 125	2	20
Cobalt	<0.00250		0.500	0.4864		mg/L		97	75 - 125	1	20
Chromium	<0.00250		0.200	0.2172		mg/L		108	75 - 125	3	20
Molybdenum	<0.0150		1.00	1.081		mg/L		108	75 - 125	3	20
Lead	<0.00100		0.0200	0.02148		mg/L		107	75 - 125	2	20
Antimony	<0.00250		0.500	0.5326		mg/L		107	75 - 125	2	20
Selenium	<0.00125		0.0100	0.01010		mg/L		101	75 - 125	8	20
Thallium	<0.000500		0.0500	0.05516		mg/L		110	75 - 125	2	20
Lithium	0.00987		0.0500	0.05765		mg/L		96	75 - 125	1	20

## Method: EPA 7470A - Mercury (CVAA)

**Lab Sample ID: MB 180-269802/1-A**  
**Matrix: Water**  
**Analysis Batch: 269950**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 269802**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	<0.000200		0.000200		mg/L		02/07/19 08:27	02/08/19 09:05	1

**Lab Sample ID: LCS 180-269802/2-A**  
**Matrix: Water**  
**Analysis Batch: 269950**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 269802**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Mercury	0.00250	0.002374		mg/L		95	80 - 120

# QC Association Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
 SDG: Ash Pond

## Metals

### Prep Batch: 269497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86194-1	MGWA-5	Total Recoverable	Water	3005A	
180-86194-2	MGWA-6	Total Recoverable	Water	3005A	
180-86194-3	MGWC-3	Total Recoverable	Water	3005A	
180-86194-4	MGWC-12	Total Recoverable	Water	3005A	
180-86194-5	MGWC-2	Total Recoverable	Water	3005A	
180-86194-6	MGWC-7	Total Recoverable	Water	3005A	
180-86194-7	MGWC-8	Total Recoverable	Water	3005A	
180-86194-8	MGWC-1	Total Recoverable	Water	3005A	
180-86194-9	DUP-AP-01	Total Recoverable	Water	3005A	
180-86194-10	DUP-AP-02	Total Recoverable	Water	3005A	
180-86194-11	FB-AP-02	Total Recoverable	Water	3005A	
180-86194-12	FERB-AP-02	Total Recoverable	Water	3005A	
MB 180-269497/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-269497/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-86194-1 MS	MGWA-5	Total Recoverable	Water	3005A	
180-86194-1 MSD	MGWA-5	Total Recoverable	Water	3005A	

### Analysis Batch: 269685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86194-1	MGWA-5	Total Recoverable	Water	EPA 6020	269497
180-86194-2	MGWA-6	Total Recoverable	Water	EPA 6020	269497
180-86194-3	MGWC-3	Total Recoverable	Water	EPA 6020	269497
180-86194-4	MGWC-12	Total Recoverable	Water	EPA 6020	269497
180-86194-5	MGWC-2	Total Recoverable	Water	EPA 6020	269497
180-86194-6	MGWC-7	Total Recoverable	Water	EPA 6020	269497
180-86194-7	MGWC-8	Total Recoverable	Water	EPA 6020	269497
180-86194-8	MGWC-1	Total Recoverable	Water	EPA 6020	269497
180-86194-9	DUP-AP-01	Total Recoverable	Water	EPA 6020	269497
180-86194-10	DUP-AP-02	Total Recoverable	Water	EPA 6020	269497
180-86194-11	FB-AP-02	Total Recoverable	Water	EPA 6020	269497
180-86194-12	FERB-AP-02	Total Recoverable	Water	EPA 6020	269497
MB 180-269497/1-A	Method Blank	Total Recoverable	Water	EPA 6020	269497
LCS 180-269497/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	269497
180-86194-1 MS	MGWA-5	Total Recoverable	Water	EPA 6020	269497
180-86194-1 MSD	MGWA-5	Total Recoverable	Water	EPA 6020	269497

### Prep Batch: 269802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86194-1	MGWA-5	Total/NA	Water	7470A	
180-86194-2	MGWA-6	Total/NA	Water	7470A	
180-86194-3	MGWC-3	Total/NA	Water	7470A	
180-86194-4	MGWC-12	Total/NA	Water	7470A	
180-86194-5	MGWC-2	Total/NA	Water	7470A	
180-86194-6	MGWC-7	Total/NA	Water	7470A	
180-86194-7	MGWC-8	Total/NA	Water	7470A	
180-86194-8	MGWC-1	Total/NA	Water	7470A	
180-86194-9	DUP-AP-01	Total/NA	Water	7470A	
180-86194-10	DUP-AP-02	Total/NA	Water	7470A	
180-86194-11	FB-AP-02	Total/NA	Water	7470A	
180-86194-12	FERB-AP-02	Total/NA	Water	7470A	
MB 180-269802/1-A	Method Blank	Total/NA	Water	7470A	

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# QC Association Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86194-1  
 SDG: Ash Pond

## Metals (Continued)

### Prep Batch: 269802 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-269802/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Analysis Batch: 269950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86194-1	MGWA-5	Total/NA	Water	EPA 7470A	269802
180-86194-2	MGWA-6	Total/NA	Water	EPA 7470A	269802
180-86194-3	MGWC-3	Total/NA	Water	EPA 7470A	269802
180-86194-4	MGWC-12	Total/NA	Water	EPA 7470A	269802
180-86194-5	MGWC-2	Total/NA	Water	EPA 7470A	269802
180-86194-6	MGWC-7	Total/NA	Water	EPA 7470A	269802
180-86194-7	MGWC-8	Total/NA	Water	EPA 7470A	269802
180-86194-8	MGWC-1	Total/NA	Water	EPA 7470A	269802
180-86194-9	DUP-AP-01	Total/NA	Water	EPA 7470A	269802
180-86194-10	DUP-AP-02	Total/NA	Water	EPA 7470A	269802
180-86194-11	FB-AP-02	Total/NA	Water	EPA 7470A	269802
180-86194-12	FERB-AP-02	Total/NA	Water	EPA 7470A	269802
MB 180-269802/1-A	Method Blank	Total/NA	Water	EPA 7470A	269802
LCS 180-269802/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	269802

# Chain of Custody Record

301 Alpha Drive RIDC Park  
Pittsburgh, PA 15238  
Phone (412) 963-7058 Fax (412) 963-2468

<b>Client Information</b> Client Contact: Jolu Abraham Company: Southern Company Address: 241 Ralph McGill Blvd SE City: Atlanta State, Zip: GA, 30308 Phone: Email: jabraham@southernco.com, jimpetty@southernco.com Project Name: CCR - Plant McIntosh Ash Pond 1 Site:		Sampler: Peter A., Jake A., Lauren C. Lab PM: Bortot, Veronica Phone: 4045920096 E-Mail: veronica.bortot@testamericainc.com		Carrier Tracking No(s): Page 2 of 2 Job #	
Due Date Requested: TAT Requested (days): Standard PO #: SCS10347656 WO #: Project #: 18019956 SSO#:		<b>Analysis Requested</b>			
Sample Identification MGWA-5 MGWA-6 MGWA-3 MGWC-12 MGWC-2 MGWC-7 MGWC-6 MGWC-1 DUP-AP-01 DUP-AP-02		Matrix (W=water, S=solid, O=water/oil, BT=Tissue, A=Air) Sample Type (C=comp, G=grab) Preservation Code: G W		Sample Date 1/29/19 9:30 9:45 10:45 11:45 11:40 9:55 11:43 11:30	
Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 9316_Ra226, 9320_Ra228 6020_7470A - Sp, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 9316_Ra226, 9320_Ra228 6020_7470A - Sp, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl		Total Number of Containers 2 SCAM EVENT	
Special Instructions/Note: Special Instructions/Note: 180-86194 Chain of Custody		Special Instructions/Note: Special Instructions/Note: 180-86194 Chain of Custody			
<b>Possible Hazard Identification</b> <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)					
<b>Sample Disposal (A fee may be assessed if samples are retained longer)</b> <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For					
Special Instructions/QC Requirements:					
Empty Kit Relinquished by: Peter A		Date: 1/29 19:00		Method of Shipment:	
Relinquished by:		Date/Time:		Received by: Julie Watson	
Relinquished by:		Date/Time:		Received by:	
Relinquished by:		Date/Time:		Received by:	
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	





Chain of Custody Record

<b>Client Information</b> Client Contact: Joju Abraham Southern Company Address: 241 Ralph McGill Blvd SE Atlanta, GA 30308 Email: jabraham@southernco.com Project Name: CCR - Plant McIntosh Ash Pond 1 Site:		Sampler: Peter A., Jake A., Lauren C. Lab PM: Bortot, Veronica E-Mail: veronica.bortot@testamericainc.com		Carrier Tracking No(s): COC No: Page 2 of 2 Job #	
Due Date Requested: TAT Requested (days): PO #: SCS10347656 WO #:		Analysis Requested		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:	
Sample Identification FB-AP-02 FEB-AP-02		Sample Date 1/29/19 1/29/19		Sample Type (C=Comp, G=grab) G G	
Sample Time 12:05 12:01		Matrix (W=water, S=solid, O=oil, B=BT-tissue, A=Air) W W		Field Filtered Sample (Yes or No) N N	
Perform MS/MSD (Yes or No) N N		916_Ra226, 9120_Ra228 6020_7470A - Sb, As, Ba, Bi, Br, Cd, Cr, Co, Pb, Li, Hg, Mo.		Total Number of Containers 2 2	
Special Instructions/Note: SCAN Event					
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)					
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: Peter A.		Date: 1/29/19 15:00		Method of Shipment: FedEx	
Relinquished by:		Date/Time:		Date/Time:	
Relinquished by:		Date/Time:		Date/Time:	
Relinquished by:		Date/Time:		Date/Time:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	





SHIP DATE: 29  
ACTWGT: 43.20  
CAD: 006994819  
DIMS: 24x13x15  
BILL THIRD PARTY

ORIGIN ID: SAVA (412) 963-7058  
LAUREN COKER  
TEST AMERICA  
301 ALPHA DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

SHIP DATE: 29 JAN 19  
ACTWGT: 56.10 LB  
CAD: 006994819/SSFE1922  
DIMS: 24x13x15 IN  
BILL THIRD PARTY

TO VERONICA BORTOT  
TEST AMERICA  
301 ALPHA DR

PITTSBURGH PA 15238

(555) 555-5555  
INUI  
PG:

REF:  
DEPT:

15238



WED - 30 JAN 10:30A  
PRIORITY OVERNIGHT

6809  
772

0201

CA

Uncorrected temp  
Thermometer ID

CF

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

Initials

B



AGCA XH CA

6 6794  
6772

0201

WED - 30 JAN 10:30A  
PRIORITY OVERNIGHT

15238

PA-US PIT

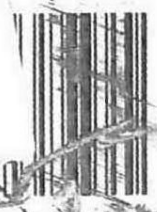
15238  
PA-US

WED - 30 JAN 10:30A  
PRIORITY OVERNIGHT

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

Initials

B



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



ORIGIN ID:SAVA (412) 963-7058  
LAUREN COKER  
TEST AMERICA  
301 ALPHA DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

SHIP DATE: 29JAN19  
ACTWGT: 19.80 LB  
CAD: 006894819/SSFE1922  
DIMS: 14x11x11 IN  
BILL THIRD PARTY

TO VERONICA BORTOT  
TEST AMERICA  
301 ALPHA DR

PITTSBURGH PA 15238

(655) 655-6555  
INU:  
PO:

REF:

DEPT:

ORIGIN ID:SAVA (412) 963-  
LAUREN COKER  
TEST AMERICA  
301 ALPHA DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

TO VERONICA BORTO  
TEST AMERICA  
301 ALPHA DR

PITTSBURGH PA

(655) 655-6555  
INU:  
PO:

MPS# 2  
0263 7852  
Mstr# 7852

DEPT:

Uncorrected temp 24 °C  
Thermometer ID 10

CF 0 Initials JS

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

FedEx  
Express



15238  
PA-US PIT



1 of 5  
TRK# 7852 1226 6772  
0201  
## MASTER ##  
**XH AGCA**

WED - 30 JAN 1  
PRIORITY OVERN

15  
PA-US

Uncorrected temp 24 °C  
Thermometer ID 10  
CF -0 Initials JS  
PT-WI-SR-001 effective 11/8/18





ORIGIN ID:SAVA (412) 963-7058  
 LAUREN COKER  
 TEST AMERICA  
 301 ALPHA DR  
 301 ALPHA DR  
 PITTSBURGH, PA 15238  
 UNITED STATES US

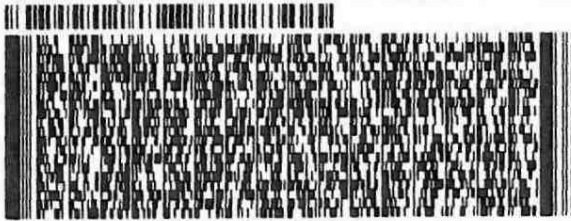
SHIP DATE: 29 JAN 19  
 ACTWGT: 29.30 LB  
 CAD: 006994919/SSFE1922  
 DIMS: 24x13x15 IN  
 BILL THIRD PARTY

6110-318 9100-511-8395-11104 56512/9130/2300

TO **VERONICA BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

**PITTSBURGH PA 15238**

(565) 565-5656 REF: DEPT:



FedEx  
Express



5 of 5  
 MPS# 7852 1226 6810  
 0263  
 Metr# 7852 1226 6772 0201

**WED - 30 JAN 10:30A**  
**PRIORITY OVERNIGHT**

**XH AGCA**

**15238**  
**PA-US PIT**

Uncorrected temp 12.9 C  
 Thermometer ID 10  
 CF  Initials JS  
 PT-WI SR-001 effective 11/8/18

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- 11
- 12
- 13

## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-86194-1

SDG Number: Ash Pond

**Login Number: 86194**

**List Source: Eurofins TestAmerica, Pittsburgh**

**List Number: 1**

**Creator: Watson, Debbie**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	TWO COOLERS WITH RAD CONTAINERS HAD NO ICE
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.	False	
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

TestAmerica Laboratories, Inc.

TestAmerica Pittsburgh

301 Alpha Drive

RIDC Park

Pittsburgh, PA 15238

Tel: (412)963-7058

TestAmerica Job ID: 180-86194-2

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR - Plant McIntosh Ash Pond 1

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

2/28/2019 1:51:28 PM

Veronica Bortot, Senior Project Manager

(412)963-2435

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

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

**Job ID: 180-86194-2**

**Laboratory: TestAmerica Pittsburgh**

## Narrative

### Job Narrative 180-86194-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 1/30/2019 10:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.7° C, 2.4° C, 2.4° C, 10.9° C and 11.1° C.

#### Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. One of the COC's does not have a relinquished by year listed.

#### RAD

Method(s) PrecSep\_0: Radium 228 Prep Batch 160-413718:

The following samples had matrices that deviated from the typical water matrix: MGWC-1 (180-86194-8) and DUP-AP-02 (180-86194-10). Samples 180-86194-8, 180-86194-10 had suspended white solids.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-413713:

The following samples had matrices that deviated from the typical water matrix: MGWC-1 (180-86194-8) and DUP-AP-02 (180-86194-10). Samples 180-86194-8, 180-86194-10, had suspended white solids.

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 McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

## 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 McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

## Laboratory: TestAmerica Pittsburgh

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

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

## Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD / DOE		L2305	04-06-19 *
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19 *
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19 *
North Dakota	State Program	8	R207	06-30-19
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-19 *
South Carolina	State Program	4	85002001	06-30-19

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

# Accreditation/Certification Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

## Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Texas	NELAP	6	T104704193-18-12	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19



# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-86194-1	MGWA-5	Water	01/29/19 09:30	01/30/19 10:20
180-86194-2	MGWA-6	Water	01/29/19 09:45	01/30/19 10:20
180-86194-3	MGWC-3	Water	01/29/19 10:45	01/30/19 10:20
180-86194-4	MGWC-12	Water	01/29/19 11:45	01/30/19 10:20
180-86194-5	MGWC-2	Water	01/29/19 11:40	01/30/19 10:20
180-86194-6	MGWC-7	Water	01/29/19 09:55	01/30/19 10:20
180-86194-7	MGWC-8	Water	01/29/19 11:43	01/30/19 10:20
180-86194-8	MGWC-1	Water	01/29/19 11:30	01/30/19 10:20
180-86194-9	DUP-AP-01	Water	01/29/19 00:00	01/30/19 10:20
180-86194-10	DUP-AP-02	Water	01/29/19 00:00	01/30/19 10:20
180-86194-11	FB-AP-02	Water	01/29/19 12:05	01/30/19 10:20
180-86194-12	FERB-AP-02	Water	01/29/19 12:01	01/30/19 10:20

# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

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

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
 SDG: Ash Pond

**Client Sample ID: MGWA-5**  
**Date Collected: 01/29/19 09:30**  
**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.01 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417028	02/27/19 07:33	JLW	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.01 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414837	02/13/19 08:42	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: MGWA-6**  
**Date Collected: 01/29/19 09:45**  
**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.21 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417028	02/27/19 07:33	JLW	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.21 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414837	02/13/19 08:42	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: MGWC-3**  
**Date Collected: 01/29/19 10:45**  
**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.44 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417028	02/27/19 07:33	JLW	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			999.44 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414837	02/13/19 08:43	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: MGWC-12**  
**Date Collected: 01/29/19 11:45**  
**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.93 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL

TestAmerica Pittsburgh

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
 SDG: Ash Pond

**Client Sample ID: MGWC-12**

**Lab Sample ID: 180-86194-4**

**Date Collected: 01/29/19 11:45**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9315		1			417050	02/27/19 07:36	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Prep	PrecSep_0			999.93 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414837	02/13/19 08:43	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: MGWC-2**

**Lab Sample ID: 180-86194-5**

**Date Collected: 01/29/19 11:40**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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			999.66 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417050	02/27/19 07:36	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Prep	PrecSep_0			999.66 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414837	02/13/19 08:43	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: MGWC-7**

**Lab Sample ID: 180-86194-6**

**Date Collected: 01/29/19 09:55**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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			999.79 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417050	02/27/19 07:36	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Prep	PrecSep_0			999.79 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414837	02/13/19 08:43	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: MGWC-8**

**Lab Sample ID: 180-86194-7**

**Date Collected: 01/29/19 11:43**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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			1000.68 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
 SDG: Ash Pond

**Client Sample ID: MGWC-8**

**Lab Sample ID: 180-86194-7**

**Date Collected: 01/29/19 11:43**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9315		1			417050	02/27/19 07:36	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Prep	PrecSep_0			1000.68 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414688	02/13/19 08:45	KLS	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: MGWC-1**

**Lab Sample ID: 180-86194-8**

**Date Collected: 01/29/19 11:30**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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			1000.45 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417050	02/27/19 07:36	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Prep	PrecSep_0			1000.45 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414688	02/13/19 08:45	KLS	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: DUP-AP-01**

**Lab Sample ID: 180-86194-9**

**Date Collected: 01/29/19 00:00**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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			1000.37 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417050	02/27/19 07:36	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Prep	PrecSep_0			1000.37 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414688	02/13/19 08:45	KLS	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: DUP-AP-02**

**Lab Sample ID: 180-86194-10**

**Date Collected: 01/29/19 00:00**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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			1000.33 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL

TestAmerica Pittsburgh

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

**Client Sample ID: DUP-AP-02**

**Lab Sample ID: 180-86194-10**

**Date Collected: 01/29/19 00:00**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9315		1			417050	02/27/19 07:36	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Prep	PrecSep_0			1000.33 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414688	02/13/19 08:45	KLS	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: FB-AP-02**

**Lab Sample ID: 180-86194-11**

**Date Collected: 01/29/19 12:05**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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			999.86 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417050	02/27/19 07:50	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Prep	PrecSep_0			999.86 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414688	02/13/19 08:45	KLS	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-86194-12**

**Date Collected: 01/29/19 12:01**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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			1000.67 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417050	02/27/19 09:54	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Prep	PrecSep_0			1000.67 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414688	02/13/19 08:45	KLS	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:51	ALS	TAL SL
Instrument ID: NOEQUIP										

**Laboratory References:**

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



# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

## Analyst References:

Lab: TAL SL

Batch Type: Prep

CLP = Cassandra Park

Batch Type: Analysis

ALS = Aaron Schroder

JLW = Jody Watson

KLS = Kody Saulters

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

**Client Sample ID: MGWA-5**

**Date Collected: 01/29/19 09:30**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-1**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0466	U	0.0500	0.0502	1.00	0.0778	pCi/L	02/05/19 09:46	02/27/19 07:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.6		40 - 110					02/05/19 09:46	02/27/19 07:33	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.228	U	0.234	0.235	1.00	0.381	pCi/L	02/05/19 10:16	02/13/19 08:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.6		40 - 110					02/05/19 10:16	02/13/19 08:42	1
Y Carrier	85.6		40 - 110					02/05/19 10:16	02/13/19 08:42	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	0.275	U	0.239	0.240	5.00	0.381	pCi/L		02/28/19 03:51	1

**Client Sample ID: MGWA-6**

**Date Collected: 01/29/19 09:45**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-2**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>0.304</b>		0.0969	0.101	1.00	0.0772	pCi/L	02/05/19 09:46	02/27/19 07:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					02/05/19 09:46	02/27/19 07:33	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.287	U	0.216	0.218	1.00	0.336	pCi/L	02/05/19 10:16	02/13/19 08:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					02/05/19 10:16	02/13/19 08:42	1
Y Carrier	83.0		40 - 110					02/05/19 10:16	02/13/19 08:42	1

TestAmerica Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

**Client Sample ID: MGWA-6**

**Date Collected: 01/29/19 09:45**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-2**

**Matrix: Water**

**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	0.591		0.237	0.240	5.00	0.336	pCi/L		02/28/19 03:51	1

**Client Sample ID: MGWC-3**

**Date Collected: 01/29/19 10:45**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-3**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.23		0.190	0.220	1.00	0.0836	pCi/L	02/05/19 09:46	02/27/19 07:33	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>	88.8		40 - 110					02/05/19 09:46	02/27/19 07:33	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.112	U	0.238	0.238	1.00	0.407	pCi/L	02/05/19 10:16	02/13/19 08:43	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>	88.8		40 - 110					02/05/19 10:16	02/13/19 08:43	1
<i>Y Carrier</i>	85.2		40 - 110					02/05/19 10:16	02/13/19 08:43	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	1.34		0.305	0.324	5.00	0.407	pCi/L		02/28/19 03:51	1

**Client Sample ID: MGWC-12**

**Date Collected: 01/29/19 11:45**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-4**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.226		0.0951	0.0973	1.00	0.103	pCi/L	02/05/19 09:46	02/27/19 07:36	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>	93.8		40 - 110					02/05/19 09:46	02/27/19 07:36	1

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
 SDG: Ash Pond

**Client Sample ID: MGWC-12**

**Date Collected: 01/29/19 11:45**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-4**

**Matrix: Water**

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-228</b>	<b>0.413</b>		0.266	0.269	1.00	0.410	pCi/L	02/05/19 10:16	02/13/19 08:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					02/05/19 10:16	02/13/19 08:43	1
Y Carrier	83.4		40 - 110					02/05/19 10:16	02/13/19 08:43	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
<b>Combined Radium 226 + 228</b>	<b>0.639</b>		0.282	0.286	5.00	0.410	pCi/L		02/28/19 03:51	1

**Client Sample ID: MGWC-2**

**Date Collected: 01/29/19 11:40**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-5**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>0.223</b>		0.0968	0.0988	1.00	0.106	pCi/L	02/05/19 09:46	02/27/19 07:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.9		40 - 110					02/05/19 09:46	02/27/19 07:36	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-228</b>	<b>0.495</b>		0.258	0.262	1.00	0.378	pCi/L	02/05/19 10:16	02/13/19 08:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.9		40 - 110					02/05/19 10:16	02/13/19 08:43	1
Y Carrier	83.0		40 - 110					02/05/19 10:16	02/13/19 08:43	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
<b>Combined Radium 226 + 228</b>	<b>0.719</b>		0.276	0.280	5.00	0.378	pCi/L		02/28/19 03:51	1

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
 SDG: Ash Pond

**Client Sample ID: MGWC-7**

**Date Collected: 01/29/19 09:55**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-6**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.07		0.182	0.205	1.00	0.107	pCi/L	02/05/19 09:46	02/27/19 07:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.1		40 - 110					02/05/19 09:46	02/27/19 07:36	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.631		0.290	0.296	1.00	0.425	pCi/L	02/05/19 10:16	02/13/19 08:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.1		40 - 110					02/05/19 10:16	02/13/19 08:43	1
Y Carrier	85.2		40 - 110					02/05/19 10:16	02/13/19 08:43	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	1.70		0.342	0.360	5.00	0.425	pCi/L		02/28/19 03:51	1

**Client Sample ID: MGWC-8**

**Date Collected: 01/29/19 11:43**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-7**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.11		0.186	0.211	1.00	0.0928	pCi/L	02/05/19 09:46	02/27/19 07:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					02/05/19 09:46	02/27/19 07:36	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.817		0.290	0.299	1.00	0.398	pCi/L	02/05/19 10:16	02/13/19 08:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					02/05/19 10:16	02/13/19 08:45	1
Y Carrier	85.2		40 - 110					02/05/19 10:16	02/13/19 08:45	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

**Client Sample ID: MGWC-8**

**Date Collected: 01/29/19 11:43**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-7**

**Matrix: Water**

**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	1.93		0.345	0.366	5.00	0.398	pCi/L		02/28/19 03:51	1

**Client Sample ID: MGWC-1**

**Date Collected: 01/29/19 11:30**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-8**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.901		0.169	0.188	1.00	0.0872	pCi/L	02/05/19 09:46	02/27/19 07:36	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	87.9		40 - 110					02/05/19 09:46	02/27/19 07:36	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.206	U	0.261	0.262	1.00	0.433	pCi/L	02/05/19 10:16	02/13/19 08:45	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	87.9		40 - 110					02/05/19 10:16	02/13/19 08:45	1
Y Carrier	82.2		40 - 110					02/05/19 10:16	02/13/19 08:45	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	1.11		0.311	0.322	5.00	0.433	pCi/L		02/28/19 03:51	1

**Client Sample ID: DUP-AP-01**

**Date Collected: 01/29/19 00:00**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-9**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.367		0.121	0.125	1.00	0.112	pCi/L	02/05/19 09:46	02/27/19 07:36	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	77.6		40 - 110					02/05/19 09:46	02/27/19 07:36	1

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
 SDG: Ash Pond

**Client Sample ID: DUP-AP-01**

**Date Collected: 01/29/19 00:00**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-9**

**Matrix: Water**

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0504	U	0.281	0.281	1.00	0.510	pCi/L	02/05/19 10:16	02/13/19 08:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	77.6		40 - 110					02/05/19 10:16	02/13/19 08:45	1
Y Carrier	82.2		40 - 110					02/05/19 10:16	02/13/19 08:45	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	0.317	U	0.306	0.308	5.00	0.510	pCi/L		02/28/19 03:51	1

**Client Sample ID: DUP-AP-02**

**Date Collected: 01/29/19 00:00**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86194-10**

**Matrix: Water**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.913		0.169	0.188	1.00	0.0980	pCi/L	02/05/19 09:46	02/27/19 07:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.4		40 - 110					02/05/19 09:46	02/27/19 07:36	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.389	U	0.256	0.258	1.00	0.393	pCi/L	02/05/19 10:16	02/13/19 08:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.4		40 - 110					02/05/19 10:16	02/13/19 08:45	1
Y Carrier	83.4		40 - 110					02/05/19 10:16	02/13/19 08:45	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	1.30		0.307	0.319	5.00	0.393	pCi/L		02/28/19 03:51	1



# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
 SDG: Ash Pond

**Client Sample ID: FB-AP-02**

**Lab Sample ID: 180-86194-11**

**Date Collected: 01/29/19 12:05**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0200	U	0.0376	0.0376	1.00	0.0948	pCi/L	02/05/19 09:46	02/27/19 07:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.7		40 - 110					02/05/19 09:46	02/27/19 07:50	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0640	U	0.217	0.217	1.00	0.402	pCi/L	02/05/19 10:16	02/13/19 08:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.7		40 - 110					02/05/19 10:16	02/13/19 08:45	1
Y Carrier	84.1		40 - 110					02/05/19 10:16	02/13/19 08:45	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	-0.0841	U	0.220	0.220	5.00	0.402	pCi/L		02/28/19 03:51	1

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-86194-12**

**Date Collected: 01/29/19 12:01**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0135	U	0.0542	0.0542	1.00	0.105	pCi/L	02/05/19 09:46	02/27/19 09:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110					02/05/19 09:46	02/27/19 09:54	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.114	U	0.210	0.210	1.00	0.358	pCi/L	02/05/19 10:16	02/13/19 08:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110					02/05/19 10:16	02/13/19 08:45	1
Y Carrier	84.9		40 - 110					02/05/19 10:16	02/13/19 08:45	1

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
 SDG: Ash Pond

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-86194-12**

**Date Collected: 01/29/19 12:01**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

**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	0.127	U	0.217	0.217	5.00	0.358	pCi/L		02/28/19 03:51	1

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# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
 SDG: Ash Pond

## Method: 9315 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-413713/23-A**  
**Matrix: Water**  
**Analysis Batch: 417050**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 413713**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.02314	U	0.0275	0.0276	1.00	0.0838	pCi/L	02/05/19 09:46	02/27/19 09:55	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					02/05/19 09:46	02/27/19 09:55	1

**Lab Sample ID: LCS 160-413713/1-A**  
**Matrix: Water**  
**Analysis Batch: 417028**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 413713**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	9.000		0.962	1.00	0.0909	pCi/L	79	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	79.1		40 - 110						

## Method: 9320 - Radium-228 (GFPC)

**Lab Sample ID: MB 160-413718/23-A**  
**Matrix: Water**  
**Analysis Batch: 414688**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 413718**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1522	U	0.176	0.177	1.00	0.351	pCi/L	02/05/19 10:16	02/13/19 08:46	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					02/05/19 10:16	02/13/19 08:46	1
Y Carrier	86.0		40 - 110					02/05/19 10:16	02/13/19 08:46	1

**Lab Sample ID: LCS 160-413718/1-A**  
**Matrix: Water**  
**Analysis Batch: 414837**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 413718**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.49	9.744		1.19	1.00	0.462	pCi/L	103	56 - 140
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	79.1		40 - 110						
Y Carrier	78.1		40 - 110						

# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86194-2  
SDG: Ash Pond

## Rad

### Prep Batch: 413713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86194-1	MGWA-5	Total/NA	Water	PrecSep-21	
180-86194-2	MGWA-6	Total/NA	Water	PrecSep-21	
180-86194-3	MGWC-3	Total/NA	Water	PrecSep-21	
180-86194-4	MGWC-12	Total/NA	Water	PrecSep-21	
180-86194-5	MGWC-2	Total/NA	Water	PrecSep-21	
180-86194-6	MGWC-7	Total/NA	Water	PrecSep-21	
180-86194-7	MGWC-8	Total/NA	Water	PrecSep-21	
180-86194-8	MGWC-1	Total/NA	Water	PrecSep-21	
180-86194-9	DUP-AP-01	Total/NA	Water	PrecSep-21	
180-86194-10	DUP-AP-02	Total/NA	Water	PrecSep-21	
180-86194-11	FB-AP-02	Total/NA	Water	PrecSep-21	
180-86194-12	FERB-AP-02	Total/NA	Water	PrecSep-21	
MB 160-413713/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-413713/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

### Prep Batch: 413718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86194-1	MGWA-5	Total/NA	Water	PrecSep_0	
180-86194-2	MGWA-6	Total/NA	Water	PrecSep_0	
180-86194-3	MGWC-3	Total/NA	Water	PrecSep_0	
180-86194-4	MGWC-12	Total/NA	Water	PrecSep_0	
180-86194-5	MGWC-2	Total/NA	Water	PrecSep_0	
180-86194-6	MGWC-7	Total/NA	Water	PrecSep_0	
180-86194-7	MGWC-8	Total/NA	Water	PrecSep_0	
180-86194-8	MGWC-1	Total/NA	Water	PrecSep_0	
180-86194-9	DUP-AP-01	Total/NA	Water	PrecSep_0	
180-86194-10	DUP-AP-02	Total/NA	Water	PrecSep_0	
180-86194-11	FB-AP-02	Total/NA	Water	PrecSep_0	
180-86194-12	FERB-AP-02	Total/NA	Water	PrecSep_0	
MB 160-413718/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-413718/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

**Chain of Custody Record**

<b>Client Information</b> Client Contact: Jolu Abraham Company: Southern Company Address: 241 Ralph McGill Blvd SE City: Atlanta State, Zip: GA, 30308 Phone: Email: jabraham@southernco.com, jimpetty@southernco.com Project Name: CCR - Plant McIntosh Ash Pond 1 Site:		Sampler: Peter A., Jake A., Lauren C. Lab PM: Bortot, Veronica Phone: 4045920096 E-Mail: veronica.bortot@testamericainc.com		Carrier Tracking No(s): Page 2 of 2 Job #	
Due Date Requested: TAT Requested (days): Standard PO #: SCS10347656 WO #: Project #: 18019956 SSO#:		<b>Analysis Requested</b>			
Sample Identification MGWA-5 MGWA-6 MGWA-3 MGWC-12 MGWC-2 MGWC-7 MGWC-6 MGWC-1 DUP-AP-01 DUP-AP-02		Sample Date 1/29/19 9:45 10:45 11:45 11:40 9:55 11:43 11:30		Sample Time 09:30 9:45 10:45 11:45 11:40 9:55 11:43 11:30	
Matrix (W=water, S=solid, O=water/oil, BT=Tissue, A=air) Sample Type (C=comp, G=grab) Preservation Code: G W		Field Filtered Sample (Yes or No) N X X		Perform MS/MSD (Yes or No) D D	
Total Number of Containers 2		Special Instructions/Note: SCAN EVENT		Barcode: 180-86194 Chain of Custody	
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Archlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: 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 Z - other (specify)					
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)					
Sample Disposal (A fee may be assessed if samples are retained longer) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For					
Special Instructions/QC Requirements:					
Empty Kit Relinquished by: Peter A		Date: 1/29 19:00		Method of Shipment:	
Relinquished by:		Date/Time:		Received by:	
Relinquished by:		Date/Time:		Received by:	
Relinquished by:		Date/Time:		Received by:	
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	





**Chain of Custody Record**

301 Alpha Drive RIDC Park  
Pittsburgh, PA 15238  
Phone (412) 963-7058 Fax (412) 963-2468

<b>Client Information</b> Client Contact: Joju Abraham Southern Company Address: 241 Ralph McGill Blvd SE Atlanta, GA 30308 Email: jabraham@southernco.com Project Name: CCR - Plant McIntosh Ash Pond 1 Site:		Sampler: Peter A., Jake A., Lauren C. Lab PM: Bortot, Veronica E-Mail: veronica.bortot@testamericainc.com Phone: 4045920096		Carrier Tracking No(s): COC No: Page 2 of 2 Job #:	
Due Date Requested: TAT Requested (days): PO #: SCS10347656 WO #:		Analysis Requested		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:	
Sample Date Sample Time Sample Type (C=Comp, G=grab) Preservation Code: Matrix (W=water, S=solid, O=oil, B=BT-tissue, A=Air)		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Total Number of Containers		Special Instructions/Note: SCAN Event	
FB-AP-02 FEB-AP-02 1/29/19 12:05 1/29/19 12:01 G W G W		X X X X N N X X N N X X 2 2		X X X X N N X X N N X X 2 2	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit Relinquished by:					
Relinquished by: Peter A. Date: 1/29/19 15:00 Company: GET		Relinquished by: Fuller Watson Date/Time: 1-30-19 Company: TAPIC		Relinquished by:                 Date/Time: 10/20 Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	



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SHIP DATE: 29  
 ACTWGT: 43.20  
 CAD: 006994819  
 DIMS: 24x13x15  
 BILL THIRD PARTY

ORIGIN ID: SAVA (412) 963-7058  
 LAUREN COKER  
 TEST AMERICA  
 301 ALPHA DR  
 301 ALPHA DR  
 PITTSBURGH, PA 15238  
 UNITED STATES US

SHIP DATE: 29 JAN 19  
 ACTWGT: 56.10 LB  
 CAD: 006994819/SSFE1922  
 DIMS: 24x13x15 IN  
 BILL THIRD PARTY

TO VERONICA BORTOT  
 TEST AMERICA  
 301 ALPHA DR

PITTSBURGH PA 15238

(555) 555-5555  
 INUI  
 PG:

REF:  
 DEPT:

15238



WED - 30 JAN 10:30A  
 PRIORITY OVERNIGHT

6809  
 772

0201

CA

Uncorrected temp  
 Thermometer ID

CF 0 Initials B  
 PT-WI-SR-001 effective 11/8/18



AGCA XH CA

6 6794  
 6772

0201

WED - 30 JAN 10:30A  
 PRIORITY OVERNIGHT

15238  
 PA-US PIT

15238  
 PA-US

WED - 30 JAN 10:30A  
 PRIORITY OVERNIGHT

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



ORIGIN ID:SAVA (412) 963-7058  
LAUREN COKER  
TEST AMERICA  
301 ALPHA DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

SHIP DATE: 29JAN19  
ACTWGT: 19.80 LB  
CAD: 006894819/SSFE1922  
DIMS: 14x11x11 IN  
BILL THIRD PARTY

TO VERONICA BORTOT  
TEST AMERICA  
301 ALPHA DR

PITTSBURGH PA 15238

(555) 655-5555  
INU:  
PO:

REF:

DEPT:

ORIGIN ID:SAVA (412) 963-  
LAUREN COKER  
TEST AMERICA  
301 ALPHA DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

TO VERONICA BORTO  
TEST AMERICA  
301 ALPHA DR

PITTSBURGH PA

(555) 655-5555  
INU:  
PO:

MPS# 2  
0263 7852  
Mstr# 7852

DEPT:

Uncorrected temp 24 °C  
Thermometer ID 10

CF 0 Initials JS

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

FedEx  
Express



15238  
PA-US PIT



1 of 5  
TRK# 7852 1226 6772  
0201  
## MASTER ##

XH AGCA

WED - 30 JAN 1  
PRIORITY OVERN

15  
PA-US

Uncorrected temp 24 °C  
Thermometer ID 10  
CF -0 Initials JS  
PT-WI-SR-001 effective 11/8/18





ORIGIN ID:SAVA (412) 963-7058  
LAUREN COCKER  
TEST AMERICA  
301 ALPHA DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

SHIP DATE: 29 JAN 19  
ACTWGT: 29.30 LB  
CAD: 006994919/SSFE1922  
DIMS: 24x13x15 IN  
BILL THIRD PARTY

Part # 56512/0630/2300  
6.10.19 3:51:50 PM EST

TO **VERONICA BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

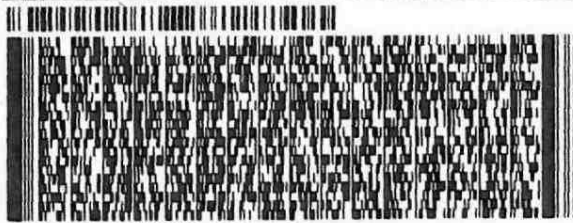
**PITTSBURGH PA 15238**

(555) 555-5555

REF:

NUM:

DEPT:



**FedEx**  
Express



5 of 5

MPS# **7852 1226 6810**

0263

Mstr# **7852 1226 6772**

0201

**WED - 30 JAN 10:30A**  
**PRIORITY OVERNIGHT**

**XH AGCA**

**15238**  
**PA-US PIT**

Uncorrected temp	<u>12.9</u> C
Thermometer ID	<u>10</u>
CF <input checked="" type="checkbox"/> Initials	<u>JS</u>

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



### Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Shipping/Receiving		Phone:	Bortol, Veronica	State of Origin: Georgia	180-353854.1
Company: TestAmerica Laboratories, Inc.		E-Mail: veronica.bortol@testamericainc.com		Page: Page 1 of 2	
Address: 13715 Rider Trail North,		Accreditations Required (See note):		Job #:	180-86194-2
City: Earth City	State, Zip: MO, 63045	Due Date Requested: 2/22/2019	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:		
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	Email:	TAT Requested (days):	Analysis Requested		
Project #: CCR - Plant McIntosh Ash Pond 1	SSOW#:	PO #:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9320_Ra228/PreSep_0 Standard Target List
Site:		WO #:	9315_Ra228/PreSep_21 (MOD) Copy Analytes	Ra228Ra228_AS (MOD) Copy Analytes	
<b>Sample Identification - Client ID (Lab ID)</b>		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastoli, BT=tissue, A=Air)
MGWA-5 (180-86194-1)	1/29/19	09:30 Eastern	Water		
MGWA-6 (180-86194-2)	1/29/19	09:45 Eastern	Water		
MGWC-3 (180-86194-3)	1/29/19	10:45 Eastern	Water		
MGWC-12 (180-86194-4)	1/29/19	11:45 Eastern	Water		
MGWC-2 (180-86194-5)	1/29/19	11:40 Eastern	Water		
MGWC-7 (180-86194-6)	1/29/19	09:55 Eastern	Water		
MGWC-8 (180-86194-7)	1/29/19	11:43 Eastern	Water		
MGWC-1 (180-86194-8)	1/29/19	11:30 Eastern	Water		
DUP-AP-01 (180-86194-9)	1/29/19	Eastern	Water		
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/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.					
<b>Possible Hazard Identification</b>					
Unconfirmed					
Deliverable Requested: I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2					
Empty Kit Relinquished by: _____ Date: _____ Time: _____					
Relinquished by: _____ Date: 2/19/19 Time: 1200					
Relinquished by: _____ Date: _____ Time: _____					
Relinquished by: _____ Date: _____ Time: _____					
Custody Seals Intact: _____ Custody Seal No.: _____					
Δ Yes Δ No					
Cooler Temperature(s) °C and Other Remarks:					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Special Instructions/QC Requirements:					
Received by: _____ Date/Time: 2-2-19/0850 Company: TASC					
Received by: _____ Date/Time: _____ Company: _____					
Received by: _____ Date/Time: _____ Company: _____					
Special Instructions/Note:					
Total Number of containers					



**Chain of Custody Record**

<b>Client Information (Sub Contract Lab)</b>		Sampler: Lab PM: Bortol, Veronica		Carrier Tracking No(s): COC No: 180-353854.2																	
Shipping/Receiving		Phone: E-Mail: veronica.bortol@testamericainc.com		Page: Page 2 of 2																	
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-86194-2																	
Address: 13715 Rider Trail North,		Due Date Requested: 2/22/2019		Preservation Codes:																	
City: Earth City		TAT Requested (days):		M - Hexane N - None O - AshNaO2 P - Na2O/S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA L - EDA Z - other (specify)																	
State, Zip: MO, 63045		PO #:		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:																	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		WO #:		Total Number of Containers																	
Email:		Project #: 18019956		Analysis Requested																	
Site: CCR - Plant McIntosh Ash Pond 1		SSOW#:		9320_Raz28/PreSep_0 Standard Target List																	
<b>Sample Identification - Client ID (Lab ID)</b>		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=Water, S=solid, O=wastefall, BT=tissue, Asph)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Raz26228_ASI (MOD) Copy Analytes		9315_Raz26/PreSep_21 (MOD) Copy Analytes		Raz26228_ASI (MOD) Copy Analytes		Special Instructions/Note:	
DUP-AP-02 (180-86194-10)		1/29/19		Eastern		Water		Water		X		X		X		X		X		1	
FB-AP-02 (180-86194-11)		1/29/19		12:05 Eastern		Water		Water		X		X		X		X		X		1	
FERB-AP-02 (180-86194-12)		1/29/19		12:01 Eastern		Water		Water		X		X		X		X		X		1	
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte &amp; accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody.  </p>																					
<p><b>Possible Hazard Identification</b></p> <p>Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2</p> <p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  <input type="checkbox"/> Return To Client    <input type="checkbox"/> Disposal By Lab    <input type="checkbox"/> Archive For _____ Months</p>																					
<p>Empty Kit Relinquished by: _____ Date: _____ Time: _____</p> <p>Relinquished by: _____ Date/Time: 2/11/19 1200 Company: <i>Quanda</i></p> <p>Relinquished by: _____ Date/Time: _____ Company: <i>THSLC</i></p> <p>Relinquished by: _____ Date/Time: _____ Company: _____</p>																					
<p>Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    Cooler Temperature(s) °C and Other Remarks:</p>																					



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-86194-2

SDG Number: Ash Pond

**Login Number: 86194**

**List Number: 1**

**Creator: Watson, Debbie**

**List Source: TestAmerica Pittsburgh**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	TWO COOLERS WITH RAD CONTAINERS HAD NO ICE
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.	False	
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: 180-86194-2

SDG Number: Ash Pond

**Login Number: 86194**

**List Number: 2**

**Creator: Press, Nicholas B**

**List Source: TestAmerica St. Louis**

**List Creation: 02/02/19 01:40 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.	True	
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	20.0
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?	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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





## ANALYTICAL REPORT

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

Laboratory Job ID: 180-86197-1

Laboratory Sample Delivery Group: Ash Pond  
Client Project/Site: CCR - Plant McIntosh Ash Pond 1  
Revision: 1

**For:**

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

Attn: Joju Abraham



Authorized for release by:

4/8/2019 3:45:48 PM

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86197-1  
SDG: Ash Pond

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**Job ID: 180-86197-1**

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**Laboratory: Eurofins TestAmerica, Pittsburgh**

## Narrative

### Job Narrative 180-86197-1

Revised: to set Arsenic RL to historical limits

## Comments

No additional comments.

## Receipt

The samples were received on 1/30/2019 10:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.7° C, 2.4° C, 2.4° C, 10.9° C and 11.1° C.

## Metals

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 McIntosh Ash Pond 1

Job ID: 180-86197-1  
SDG: Ash Pond

### 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 McIntosh Ash Pond 1

Job ID: 180-86197-1  
 SDG: Ash Pond

## Laboratory: Eurofins TestAmerica, Pittsburgh

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

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

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

# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86197-1  
SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-86197-1	MGWA-6A-RUSH	Water	01/29/19 08:40	01/30/19 10:20
180-86197-2	MGWA-24-RUSH	Water	01/29/19 09:00	01/30/19 10:20

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# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86197-1  
SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

**Protocol References:**

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 McIntosh Ash Pond 1

Job ID: 180-86197-1  
SDG: Ash Pond

**Client Sample ID: MGWA-6A-RUSH**

**Lab Sample ID: 180-86197-1**

**Date Collected: 01/29/19 08:40**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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	269114	01/30/19 11:36	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	269269	01/30/19 21:51	WTR	TAL PIT

Instrument ID: M

**Client Sample ID: MGWA-24-RUSH**

**Lab Sample ID: 180-86197-2**

**Date Collected: 01/29/19 09:00**

**Matrix: Water**

**Date Received: 01/30/19 10:20**

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	269114	01/30/19 11:36	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1	1.0 mL	1.0 mL	269269	01/30/19 22:09	WTR	TAL PIT

Instrument ID: M

### 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

NAM = Nicole Marfisi

Batch Type: Analysis

WTR = Bill Reinheimer

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86197-1  
SDG: Ash Pond

**Client Sample ID: MGWA-6A-RUSH**

**Lab Sample ID: 180-86197-1**

Date Collected: 01/29/19 08:40

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0097		0.0013	0.00032	mg/L		01/30/19 11:36	01/30/19 21:51	1

**Client Sample ID: MGWA-24-RUSH**

**Lab Sample ID: 180-86197-2**

Date Collected: 01/29/19 09:00

Matrix: Water

Date Received: 01/30/19 10:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0014		0.0013	0.00032	mg/L		01/30/19 11:36	01/30/19 22:09	1

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86197-1  
 SDG: Ash Pond

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

**Lab Sample ID: MB 180-269114/1-A**  
**Matrix: Water**  
**Analysis Batch: 269269**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269114**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00032		0.0013	0.00032	mg/L		01/30/19 11:36	01/30/19 21:32	1

**Lab Sample ID: LCS 180-269114/2-A**  
**Matrix: Water**  
**Analysis Batch: 269269**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269114**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.0400	0.0394		mg/L		98	80 - 120

**Lab Sample ID: 180-86197-1 MS**  
**Matrix: Water**  
**Analysis Batch: 269269**

**Client Sample ID: MGWA-6A-RUSH**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269114**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.0097		0.0400	0.0477		mg/L		95	75 - 125

**Lab Sample ID: 180-86197-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 269269**

**Client Sample ID: MGWA-6A-RUSH**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269114**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.0097		0.0400	0.0496		mg/L		100	75 - 125	4	20

# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86197-1  
SDG: Ash Pond

## Metals

### Prep Batch: 269114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86197-1	MGWA-6A-RUSH	Total Recoverable	Water	3005A	
180-86197-2	MGWA-24-RUSH	Total Recoverable	Water	3005A	
MB 180-269114/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-269114/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-86197-1 MS	MGWA-6A-RUSH	Total Recoverable	Water	3005A	
180-86197-1 MSD	MGWA-6A-RUSH	Total Recoverable	Water	3005A	

### Analysis Batch: 269269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86197-1	MGWA-6A-RUSH	Total Recoverable	Water	EPA 6020	269114
180-86197-2	MGWA-24-RUSH	Total Recoverable	Water	EPA 6020	269114
MB 180-269114/1-A	Method Blank	Total Recoverable	Water	EPA 6020	269114
LCS 180-269114/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	269114
180-86197-1 MS	MGWA-6A-RUSH	Total Recoverable	Water	EPA 6020	269114
180-86197-1 MSD	MGWA-6A-RUSH	Total Recoverable	Water	EPA 6020	269114

**TestAmerica Pittsburgh**

301 Alpha Drive RIDC Park  
Pittsburgh, PA 15238  
Phone (412) 963-7058 Fax (412) 963-2468

**Chain of Custody Record**



<b>Client Information</b> Client Contact: Joju Abraham Company: Southern Company Address: 241 Ralph McGill Blvd SE City: Atlanta State, Zip: GA, 30308 Phone: [Redacted] Email: jabraham@southerco.com, jimpetty@southernco.com Project Name: CCR - Plant McIntosh Ash Pond 1 Site: [Redacted]		Sampler: Peter A., Jake A., Lauren C. Lab PM: Bortot, Veronica Phone: 4045920096 E-Mail: veronica.bortot@testamericainc.com		Carrier Tracking No(s): Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): <b>RUSH - 24 HOURS</b> PO #: SCS10347656 WO #: [Redacted] Project #: 18019956 SSO#: [Redacted]		<b>Analysis Requested</b>			
Sample Identification <del>MGWA-BA-RUSH</del>		Sample Date 1/29/19 1/29/19		Sample Time 8:40 9:00	
Sample Type (C=comp, G=grab) Preservation Code: G		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 6020 - As		Total Number of Containers 1 1	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		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/Note: Arsenic only Arsenic only Arsenic only	
Empty Kit Relinquished by: Peter A. Relinquished by: [Redacted] Relinquished by: [Redacted]		Date: 1/29/19 19:00 Date/Time: [Redacted] Date/Time: [Redacted]		Method of Shipment: FedEx overnight Date/Time: 1-30-19 Date/Time: 10:40	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			





## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-86197-1

SDG Number: Ash Pond

**Login Number: 86197**

**List Source: Eurofins TestAmerica, Pittsburgh**

**List Number: 1**

**Creator: Watson, Debbie**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	TWO COOLERS WITH RAD CONTAINERS HAD NO ICE
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: 180-86200-1

Laboratory Sample Delivery Group: Ash Pond  
Client Project/Site: CCR - Plant McIntosh Ash Pond 1  
Revision: 4

**For:**

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

Attn: Joju Abraham



Authorized for release by:  
4/8/2019 3:31:22 PM

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86200-1  
SDG: Ash Pond

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**Job ID: 180-86200-1**

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**Laboratory: Eurofins TestAmerica, Pittsburgh**

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## Narrative

### Job Narrative 180-86200-1

Revised: changing RL for Li  
Revised : changing formatter to no qualifier  
Revised : added calcium to MGWA-24  
Revised: revising RLs for metals

## Comments

No additional comments.

## Receipt

The samples were received on 1/30/2019 10:20 AM; the samples arrived in good condition. The temperatures of the 5 coolers at receipt time were 0.7° C, 2.4° C, 2.4° C, 10.9° C and 11.1° C.

## Anions

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.

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86200-1  
SDG: Ash Pond

## 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 McIntosh Ash Pond 1

Job ID: 180-86200-1  
SDG: Ash Pond

## Laboratory: Eurofins TestAmerica, Pittsburgh

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

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

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

Eurofins TestAmerica, Pittsburgh



# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86200-1  
SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-86200-1	MGWA-6A	Water	01/29/19 08:55	01/30/19 10:20
180-86200-2	MGWA-24	Water	01/29/19 09:05	01/30/19 10:20

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# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86200-1  
SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
EPA 7470A	Mercury (CVAA)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT

#### Protocol References:

EPA = US Environmental Protection Agency

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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 McIntosh Ash Pond 1

Job ID: 180-86200-1  
 SDG: Ash Pond

## Client Sample ID: MGWA-6A

## Lab Sample ID: 180-86200-1

Date Collected: 01/29/19 08:55

Matrix: Water

Date Received: 01/30/19 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			269428	02/02/19 18:47	CMR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	269501	02/04/19 12:30	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			269983	02/08/19 16:41	RSK	TAL PIT
Total/NA	Prep	7470A			50 mL	50 mL	269600	02/05/19 10:24	RJR	TAL PIT
Total/NA	Analysis	EPA 7470A Instrument ID: HGZ		1			269770	02/06/19 14:58	KAK	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	269406	02/01/19 17:19	TAM	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: NOEQUIP		1	50 mL	50 mL	269783	02/07/19 10:10	CLL	TAL PIT

## Client Sample ID: MGWA-24

## Lab Sample ID: 180-86200-2

Date Collected: 01/29/19 09:05

Matrix: Water

Date Received: 01/30/19 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			269428	02/02/19 19:03	CMR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	269501	02/04/19 12:30	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			269983	02/08/19 16:44	RSK	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	269406	02/01/19 17:19	TAM	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: NOEQUIP		1	50 mL	50 mL	269783	02/07/19 10:10	CLL	TAL PIT

### 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

NAM = Nicole Marfisi

RJR = Ron Rosenbaum

Batch Type: Analysis

CLL = Cheryl Loheyde

CMR = Carl Reagle

KAK = Kayla Kalamasz

RSK = Robert Kurtz

TAM = Tessa Mastalski

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86200-1  
SDG: Ash Pond

**Client Sample ID: MGWA-6A**

**Lab Sample ID: 180-86200-1**

Date Collected: 01/29/19 08:55

Matrix: Water

Date Received: 01/30/19 10:20

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>4.51</b>		1.00		mg/L			02/02/19 18:47	1
Fluoride	<0.200		0.200		mg/L			02/02/19 18:47	1
<b>Sulfate</b>	<b>7.08</b>		1.00		mg/L			02/02/19 18:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.0118</b>		0.00125		mg/L		02/04/19 12:30	02/08/19 16:41	1
Boron	<0.0500		0.0500		mg/L		02/04/19 12:30	02/08/19 16:41	1
<b>Barium</b>	<b>0.0421</b>		0.00250		mg/L		02/04/19 12:30	02/08/19 16:41	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:30	02/08/19 16:41	1
<b>Calcium</b>	<b>95.1</b>		0.250		mg/L		02/04/19 12:30	02/08/19 16:41	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:30	02/08/19 16:41	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:30	02/08/19 16:41	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:30	02/08/19 16:41	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:30	02/08/19 16:41	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:30	02/08/19 16:41	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:30	02/08/19 16:41	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:30	02/08/19 16:41	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:30	02/08/19 16:41	1
<b>Lithium</b>	<b>0.0184</b>		0.00200		mg/L		02/04/19 12:30	02/08/19 16:41	1
<b>Sodium</b>	<b>8.51</b>		0.500		mg/L		02/04/19 12:30	02/08/19 16:41	1
<b>Potassium</b>	<b>0.732</b>		0.500		mg/L		02/04/19 12:30	02/08/19 16:41	1
<b>Magnesium</b>	<b>2.69</b>		0.500		mg/L		02/04/19 12:30	02/08/19 16:41	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		02/05/19 10:24	02/06/19 14:58	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>280</b>		10	10	mg/L			02/01/19 17:19	1
<b>Total Alkalinity as CaCO3 to pH 4.1</b>	<b>270</b>		5.0	5.0	mg/L			02/07/19 10:10	1
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>270</b>		5.0	5.0	mg/L			02/07/19 10:10	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			02/07/19 10:10	1

**Client Sample ID: MGWA-24**

**Lab Sample ID: 180-86200-2**

Date Collected: 01/29/19 09:05

Matrix: Water

Date Received: 01/30/19 10:20

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>8.7</b>		1.0	0.71	mg/L			02/02/19 19:03	1
<b>Fluoride</b>	<b>0.23</b>		0.20	0.026	mg/L			02/02/19 19:03	1
<b>Sulfate</b>	<b>19</b>		1.0	0.38	mg/L			02/02/19 19:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Calcium</b>	<b>41.8</b>		0.250		mg/L		02/04/19 12:30	02/08/19 16:44	1
<b>Potassium</b>	<b>1.65</b>		0.500		mg/L		02/04/19 12:30	02/08/19 16:44	1
<b>Magnesium</b>	<b>5.00</b>		0.500		mg/L		02/04/19 12:30	02/08/19 16:44	1
<b>Sodium</b>	<b>18.4</b>		0.500		mg/L		02/04/19 12:30	02/08/19 16:44	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86200-1  
SDG: Ash Pond

**Client Sample ID: MGWA-24**

**Lab Sample ID: 180-86200-2**

Date Collected: 01/29/19 09:05

Matrix: Water

Date Received: 01/30/19 10:20

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	190		10	10	mg/L			02/01/19 17:19	1
Total Alkalinity as CaCO3 to pH 4.!	130		5.0	5.0	mg/L			02/07/19 10:10	1
Bicarbonate Alkalinity as CaCO3	120		5.0	5.0	mg/L			02/07/19 10:10	1
Carbonate Alkalinity as CaCO3	12		5.0	5.0	mg/L			02/07/19 10:10	1

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86200-1  
 SDG: Ash Pond

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

**Lab Sample ID: MB 180-269428/6**  
**Matrix: Water**  
**Analysis Batch: 269428**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			02/02/19 11:07	1
Fluoride	<0.200		0.200		mg/L			02/02/19 11:07	1
Sulfate	<1.00		1.00		mg/L			02/02/19 11:07	1

**Lab Sample ID: LCS 180-269428/5**  
**Matrix: Water**  
**Analysis Batch: 269428**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	24.12		mg/L		96	90 - 110
Fluoride	1.25	1.222		mg/L		98	90 - 110
Sulfate	25.0	23.86		mg/L		95	90 - 110

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

**Lab Sample ID: MB 180-269501/1-A**  
**Matrix: Water**  
**Analysis Batch: 269983**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269501**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00125		0.00125		mg/L		02/04/19 12:30	02/08/19 15:17	1
Boron	<0.0500		0.0500		mg/L		02/04/19 12:30	02/08/19 15:17	1
Barium	<0.00250		0.00250		mg/L		02/04/19 12:30	02/08/19 15:17	1
Beryllium	<0.00250		0.00250		mg/L		02/04/19 12:30	02/08/19 15:17	1
Calcium	<0.250		0.250		mg/L		02/04/19 12:30	02/08/19 15:17	1
Cadmium	<0.00250		0.00250		mg/L		02/04/19 12:30	02/08/19 15:17	1
Cobalt	<0.00250		0.00250		mg/L		02/04/19 12:30	02/08/19 15:17	1
Chromium	<0.00250		0.00250		mg/L		02/04/19 12:30	02/08/19 15:17	1
Molybdenum	<0.0150		0.0150		mg/L		02/04/19 12:30	02/08/19 15:17	1
Lead	<0.00100		0.00100		mg/L		02/04/19 12:30	02/08/19 15:17	1
Antimony	<0.00250		0.00250		mg/L		02/04/19 12:30	02/08/19 15:17	1
Selenium	<0.00125		0.00125		mg/L		02/04/19 12:30	02/08/19 15:17	1
Thallium	<0.000500		0.000500		mg/L		02/04/19 12:30	02/08/19 15:17	1
Lithium	<0.00200		0.00200		mg/L		02/04/19 12:30	02/08/19 15:17	1
Sodium	<0.500		0.500		mg/L		02/04/19 12:30	02/08/19 15:17	1
Potassium	<0.500		0.500		mg/L		02/04/19 12:30	02/08/19 15:17	1
Magnesium	<0.500		0.500		mg/L		02/04/19 12:30	02/08/19 15:17	1

**Lab Sample ID: LCS 180-269501/2-A**  
**Matrix: Water**  
**Analysis Batch: 269983**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 269501**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0400	0.03810		mg/L		95	80 - 120
Boron	1.00	1.050		mg/L		105	80 - 120
Barium	2.00	2.132		mg/L		107	80 - 120
Beryllium	0.0500	0.05117		mg/L		102	80 - 120
Calcium	50.0	56.39		mg/L		113	80 - 120
Cadmium	0.0500	0.05136		mg/L		103	80 - 120

Eurofins TestAmerica, Pittsburgh



# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86200-1  
SDG: Ash Pond

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

Lab Sample ID: LCS 180-269501/2-A  
Matrix: Water  
Analysis Batch: 269983

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 269501

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cobalt	0.500	0.4702		mg/L		94	80 - 120
Chromium	0.200	0.2142		mg/L		107	80 - 120
Molybdenum	1.00	1.030		mg/L		103	80 - 120
Lead	0.0200	0.02114		mg/L		106	80 - 120
Antimony	0.500	0.5251		mg/L		105	80 - 120
Selenium	0.0100	0.01128		mg/L		113	80 - 120
Thallium	0.0500	0.05216		mg/L		104	80 - 120
Lithium	0.0500	0.04992		mg/L		100	80 - 120
Sodium	50.0	51.42		mg/L		103	80 - 120
Potassium	50.0	50.86		mg/L		102	80 - 120
Magnesium	50.0	51.95		mg/L		104	80 - 120

## Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-269600/1-A  
Matrix: Water  
Analysis Batch: 269770

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 269600

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00010		0.00020	0.00010	mg/L		02/05/19 10:24	02/06/19 14:50	1

Lab Sample ID: LCS 180-269600/2-A  
Matrix: Water  
Analysis Batch: 269770

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 269600

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

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-269406/2  
Matrix: Water  
Analysis Batch: 269406

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			02/01/19 17:19	1

Lab Sample ID: LCS 180-269406/1  
Matrix: Water  
Analysis Batch: 269406

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Dissolved Solids	204	210		mg/L		103	80 - 120

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86200-1  
 SDG: Ash Pond

## Method: SM2320 B - Alkalinity, Total

**Lab Sample ID: MB 180-269783/2**  
**Matrix: Water**  
**Analysis Batch: 269783**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.0		5.0	5.0	mg/L			02/07/19 10:10	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			02/07/19 10:10	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			02/07/19 10:10	1

**Lab Sample ID: LCS 180-269783/1**  
**Matrix: Water**  
**Analysis Batch: 269783**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	250	248		mg/L		99	90 - 110

**Lab Sample ID: 180-86200-1 DU**  
**Matrix: Water**  
**Analysis Batch: 269783**

**Client Sample ID: MGWA-6A**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	270		275		mg/L		2	20
Bicarbonate Alkalinity as CaCO3	270		275		mg/L		2	20
Carbonate Alkalinity as CaCO3	<5.0		<5.0		mg/L		NC	20

# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-86200-1  
SDG: Ash Pond

## HPLC/IC

### Analysis Batch: 269428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86200-1	MGWA-6A	Total/NA	Water	EPA 300.0 R2.1	
180-86200-2	MGWA-24	Total/NA	Water	EPA 300.0 R2.1	
MB 180-269428/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-269428/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

## Metals

### Prep Batch: 269501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86200-1	MGWA-6A	Total Recoverable	Water	3005A	
180-86200-2	MGWA-24	Total Recoverable	Water	3005A	
MB 180-269501/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-269501/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Prep Batch: 269600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86200-1	MGWA-6A	Total/NA	Water	7470A	
MB 180-269600/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-269600/2-A	Lab Control Sample	Total/NA	Water	7470A	

### Analysis Batch: 269770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86200-1	MGWA-6A	Total/NA	Water	EPA 7470A	269600
MB 180-269600/1-A	Method Blank	Total/NA	Water	EPA 7470A	269600
LCS 180-269600/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	269600

### Analysis Batch: 269983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86200-1	MGWA-6A	Total Recoverable	Water	EPA 6020	269501
180-86200-2	MGWA-24	Total Recoverable	Water	EPA 6020	269501
MB 180-269501/1-A	Method Blank	Total Recoverable	Water	EPA 6020	269501
LCS 180-269501/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	269501

## General Chemistry

### Analysis Batch: 269406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86200-1	MGWA-6A	Total/NA	Water	SM 2540C	
180-86200-2	MGWA-24	Total/NA	Water	SM 2540C	
MB 180-269406/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-269406/1	Lab Control Sample	Total/NA	Water	SM 2540C	

### Analysis Batch: 269783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86200-1	MGWA-6A	Total/NA	Water	SM2320 B	
180-86200-2	MGWA-24	Total/NA	Water	SM2320 B	
MB 180-269783/2	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-269783/1	Lab Control Sample	Total/NA	Water	SM2320 B	
180-86200-1 DU	MGWA-6A	Total/NA	Water	SM2320 B	

Eurofins TestAmerica, Pittsburgh

**Chain of Custody Record**

<b>Client Information</b> Client Contact: Joju Abraham Company: Southern Company Address: 241 Ralph McGill Blvd SE City: Atlanta State, Zip: GA, 30308 Phone: [blank] Email: jabraham@southernco.com, Impetty@southernco.com Project Name: CCR - Plant McIntosh Ash Pond 1 Site: [blank]		Sampler: Peter A., Jake A., Lauren C. Lab PMI: Bortot, Veronica Phone: 4045920096 E-Mail: veronica.bortot@testamericainc.com		Carrier Tracking No(s): [blank]		Page [blank] of [blank] Job # [blank]	
<b>Due Date Requested:</b> TAT Requested (days): Standard PO #: SCS10347656 WO #: [blank]		<b>Analysis Requested</b>		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Ice V - Acetone W - MCAA X - pH 4.5 Y - EDTA Z - other (specify)		Total Number of containers: [blank]	
<b>Sample Identification</b> MGWA-6A MGWA-24 <del>MGWA-6A</del>		Sample Date: 1/29/19 Sample Time: 8:55 Sample Type (C=Comp, G=grab): G Preservation Code: W		Perform MS/MSD (Yes or No): N Field Filtered Sample (Yes or No): N 9316 Ra226, 9320 Ra228 6020, 7470A - Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl 6020 - Ca, B TDS, 300_ORGM_280 chloride, Fluoride, Sulfate 6020 - Mg, K 2320B (carb and bicarb)		Special Ir: [blank]	
<b>Possible Hazard Identification</b> <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		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 Archive For: [blank] Months		Special Instructions/QC Requirements: [blank]		Barcode: 180-86200 Chain of Custody	
<b>Empty Kit Relinquished by:</b> Peter A		Date: 1/29/19 9:00 Company: GEI		Method of Shipment: FedEx		Date/Time: 1-30-19 Company: APIT	
<b>Relinquished by:</b> [blank]		Date/Time: [blank] Company: [blank]		Date/Time: 10:20 Company: [blank]		Date/Time: [blank] Company: [blank]	
Custody Seals Intact Δ Yes Δ No		Custody Seal No.: [blank]		Cooler Temperature(s) °C and Other Remarks: [blank]		[blank]	







ORIGIN ID:SAVA (412) 963-7058  
LAUREN COKER  
TEST AMERICA  
301 ALPHA DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

SHIP DATE: 29JAN19  
ACTWGT: 19.80 LB  
CAD: 006894919/SSFE1922  
DIMS: 14x11x11 IN  
BILL THIRD PARTY

TO VERONICA BORTOT  
TEST AMERICA  
301 ALPHA DR

PITTSBURGH PA 15238

(555) 656-5555  
INU:  
PO:

REF:

DEPT:

ORIGIN ID:SAVA (412) 963-  
LAUREN COKER  
TEST AMERICA  
301 ALPHA DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

TO VERONICA BORTO  
TEST AMERICA  
301 ALPHA DR

PITTSBURGH PA

(555) 656-5555  
INU:  
PO:

MPS# 2  
0263 7852  
Mstr# 7852

Y  
DEPT:

Uncorrected temp 24 °C

Thermometer ID 10

CF 0

Initials JS

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

FedEx  
Express



AN 0107106101617

15238  
PA-US PIT



1 of 5  
TRK# 7852 1226 6772  
0201  
## MASTER ##

XH AGCA

WED - 30 JAN 1  
PRIORITY OVERN

15  
PA-US

Uncorrected temp 24 °C  
Thermometer ID 10  
CF 0 Initials JS  
PT-WI-SR-001 effective 11/8/18



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SHIP DATE: 29  
 ACTWGT: 43.20  
 CAD: 006894919/  
 DIMS: 24x13x15  
 BILL THIRD PARTY

ORIGIN ID: SAVA (412) 963-7058  
 LAUREN COKER  
 TEST AMERICA  
 301 ALPHA DR  
 301 ALPHA DR  
 PITTSBURGH, PA 15238  
 UNITED STATES US

SHIP DATE: 29 JAN 19  
 ACTWGT: 56.10 LB  
 CAD: 006894919/SSFE1922  
 DIMS: 24x13x15 IN  
 BILL THIRD PARTY

TO VERONICA BORTOT  
 TEST AMERICA  
 301 ALPHA DR  
 PITTSBURGH PA 15238

(555) 555-5555 REF:  
 INU: DEPT:

15238

DEPT:



**FedEx Express**



WED - 30 JAN 10:30A  
 PRIORITY OVERNIGHT



**FedEx Express**



WED - 30 JAN 10:30A  
 PRIORITY OVERNIGHT

6809  
 772

0201

**ICA**

Uncorrected temp  
 Thermometer ID

CF 0 Initials B

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



6 6794  
 8772

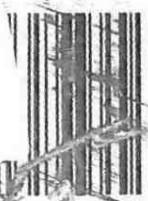
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WED - 30 JAN 10:30A  
 PRIORITY OVERNIGHT

15238  
 PA-US PIT

Initials B

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



15238  
 PA-US  
 WED - 30 JAN 10:30A  
 PRIORITY OVERNIGHT





ORIGIN ID: SAVA (412) 963-7058  
 LAUREN COKER  
 TEST AMERICA  
 301 ALPHA DR  
 301 ALPHA DR  
 PITTSBURGH, PA 15238  
 UNITED STATES US

SHIP DATE: 29JAN19  
 ACTWGT: 29.30 LB  
 CAD: 006994919/SSFE1922  
 DIMS: 24x13x15 IN  
 BILL THIRD PARTY

Part # 5629 435 PDU 5X 10:19  
 56512/0630/2340 56515

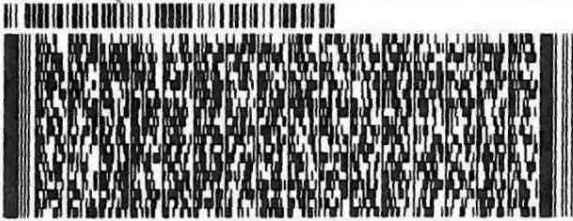
TO **VERONICA BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

**PITTSBURGH PA 15238**

(565) 665-6656  
 INVT  
 PG1

REF:

DEPT:



**FedEx**  
Express



10107010610161F

5 of 5

MPS# 7852 1226 6810  
 0263

Mstr# 7852 1226 6772

0201

**WED - 30 JAN 10:30A**  
**PRIORITY OVERNIGHT**

**XH AGCA**

**15238**  
 PA-US **PIT**

Uncorrected temp \_\_\_\_\_  
 Thermometer ID 10.9 C  
10  
 CF  Initials JB  
 PT-WI-SR-001 effective 11/8/18

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## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-86200-1

SDG Number: Ash Pond

**Login Number: 86200**

**List Source: Eurofins TestAmerica, Pittsburgh**

**List Number: 1**

**Creator: Watson, Debbie**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	TWO COOLERS WITH RAD CONTAINERS HAD NO ICE
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

TestAmerica Laboratories, Inc.

TestAmerica Pittsburgh

301 Alpha Drive

RIDC Park

Pittsburgh, PA 15238

Tel: (412)963-7058

TestAmerica Job ID: 180-86200-2

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR - Plant McIntosh Ash Pond 1

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

2/28/2019 12:50:07 PM

Veronica Bortot, Senior Project Manager

(412)963-2435

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

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86200-2  
SDG: Ash Pond

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**Job ID: 180-86200-2**

---

**Laboratory: TestAmerica Pittsburgh**

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**Narrative**

**Job Narrative**  
**180-86200-2**

**Comments**

No additional comments.

**Receipt**

The samples were received on 1/30/2019 10:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.7° C, 2.4° C, 2.4° C, 10.9° C and 11.1° C.

**RAD**

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 McIntosh Ash Pond 1

TestAmerica Job ID: 180-86200-2  
SDG: Ash Pond

## 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 McIntosh Ash Pond 1

TestAmerica Job ID: 180-86200-2  
SDG: Ash Pond

## Laboratory: TestAmerica Pittsburgh

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

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

## Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD / DOE		L2305	04-06-19 *
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-19
Connecticut	State Program	1	PH-0241	03-31-19 *
Florida	NELAP	4	E87689	06-30-19
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19
New York	NELAP	2	11616	03-31-19 *
North Dakota	State Program	8	R207	06-30-19
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-19 *
South Carolina	State Program	4	85002001	06-30-19

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

TestAmerica Pittsburgh

# Accreditation/Certification Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86200-2  
SDG: Ash Pond

## Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Texas	NELAP	6	T104704193-18-12	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86200-2  
SDG: Ash Pond

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-86200-1	MGWA-6A	Water	01/29/19 08:55	01/30/19 10:20

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# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86200-2  
SDG: Ash Pond

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

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86200-2  
 SDG: Ash Pond

**Client Sample ID: MGWA-6A**

**Date Collected: 01/29/19 08:55**

**Date Received: 01/30/19 10:20**

**Lab Sample ID: 180-86200-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.67 mL	1.0 g	413713	02/05/19 09:46	CLP	TAL SL
Total/NA	Analysis	9315		1			417050	02/27/19 09:55	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Prep	PrecSep_0			999.67 mL	1.0 g	413718	02/05/19 10:16	CLP	TAL SL
Total/NA	Analysis	9320		1			414688	02/13/19 08:45	KLS	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			417258	02/28/19 03:53	ALS	TAL SL
Instrument ID: NOEQUIP										

**Laboratory References:**

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

**Analyst References:**

Lab: TAL SL

Batch Type: Prep

CLP = Cassandra Park

Batch Type: Analysis

ALS = Aaron Schroder

KLS = Kody Saulters

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86200-2  
 SDG: Ash Pond

**Client Sample ID: MGWA-6A**

**Lab Sample ID: 180-86200-1**

Date Collected: 01/29/19 08:55

Matrix: Water

Date Received: 01/30/19 10:20

### Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.627		0.145	0.156	1.00	0.103	pCi/L	02/05/19 09:46	02/27/19 09:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					02/05/19 09:46	02/27/19 09:55	1

### Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.246	U	0.268	0.269	1.00	0.439	pCi/L	02/05/19 10:16	02/13/19 08:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					02/05/19 10:16	02/13/19 08:45	1
Y Carrier	81.5		40 - 110					02/05/19 10:16	02/13/19 08:45	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	0.874		0.305	0.311	5.00	0.439	pCi/L		02/28/19 03:53	1



# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86200-2  
 SDG: Ash Pond

## Method: 9315 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-413713/23-A**  
**Matrix: Water**  
**Analysis Batch: 417050**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 413713**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.02314	U	0.0275	0.0276	1.00	0.0838	pCi/L	02/05/19 09:46	02/27/19 09:55	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					02/05/19 09:46	02/27/19 09:55	1

**Lab Sample ID: LCS 160-413713/1-A**  
**Matrix: Water**  
**Analysis Batch: 417028**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 413713**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	9.000		0.962	1.00	0.0909	pCi/L	79	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	79.1		40 - 110						

## Method: 9320 - Radium-228 (GFPC)

**Lab Sample ID: MB 160-413718/23-A**  
**Matrix: Water**  
**Analysis Batch: 414688**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 413718**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1522	U	0.176	0.177	1.00	0.351	pCi/L	02/05/19 10:16	02/13/19 08:46	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					02/05/19 10:16	02/13/19 08:46	1
Y Carrier	86.0		40 - 110					02/05/19 10:16	02/13/19 08:46	1

**Lab Sample ID: LCS 160-413718/1-A**  
**Matrix: Water**  
**Analysis Batch: 414837**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 413718**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.49	9.744		1.19	1.00	0.462	pCi/L	103	56 - 140
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	79.1		40 - 110						
Y Carrier	78.1		40 - 110						

# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

TestAmerica Job ID: 180-86200-2  
SDG: Ash Pond

## Rad

### Prep Batch: 413713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86200-1	MGWA-6A	Total/NA	Water	PrecSep-21	
MB 160-413713/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-413713/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

### Prep Batch: 413718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-86200-1	MGWA-6A	Total/NA	Water	PrecSep_0	
MB 160-413718/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-413718/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

**Chain of Custody Record**

<b>Client Information</b> Client Contact: Joju Abraham Company: Southern Company Address: 241 Ralph McGill Blvd SE City: Atlanta State, Zip: GA, 30308 Phone: [blank] Email: jabraham@southernco.com, Impetty@southernco.com Project Name: CCR - Plant McIntosh Ash Pond 1 Site: [blank]		Sampler: Peter A., Jake A., Lauren C. Lab PMI: Bortot, Veronica Phone: 4045920096 E-Mail: veronica.bortot@testamericainc.com		Carrier Tracking No(s): [blank]		Page [blank] of [blank] Job # [blank]	
<b>Due Date Requested:</b> TAT Requested (days): Standard PO #: SCS10347656 WO #: [blank]		<b>Analysis Requested</b> Perform MS/MSD (Yes or No) [X] [N] Field Filtered Sample (Yes or No) [X] [N] 9316 Ra226, 9320 Ra228 [X] [X] 6020, 7470A - Sb, As, Ba, Be, Cd, Cr, Co, Pb, Li, Hg, Mo, Se, Tl [X] [X] 6020 - Ca, B [X] [X] TDS, 300_ORGM_280 chloride, Fluoride, Sulfate [X] [X] 6020 - Mg, K [X] [X] 2320B (carb and bicarb) [X] [X]		Total Number of containers: [blank]		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Ice V - MCAA W - pH 4.5 Z - other (specify) [blank]	
<b>Sample Identification</b> MGWA-6A MGWA-24 <del>MGWA-6A</del>		Matrix (W=water, S=solid, O=soil, BT=tissue, A=air) Sample Type (C=Comp, G=grab) [G] [G] Sample Date [1/29/19] [1/29/19] Sample Time [8:55] [9:05]		Special Ir [blank]		Barcode: 180-86200 Chain of Custody	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological							
Deliverable Requested: I, II, III, IV, Other (specify) [blank]							
Empty Kit Relinquished by: [blank] Date: [blank]							
Relinquished by: Peter A. Date/Time: 1/29/19 9:00 Company: GEI							
Relinquished by: [blank] Date/Time: [blank] Company: [blank]							
Relinquished by: [blank] Date/Time: [blank] Company: [blank]							
Custody Seals Intact: [blank] Custody Seal No.: [blank]							
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 [blank] Months Special Instructions/QC Requirements: [blank]							
Method of Shipment: FedEx Received by: Julie Watson Date/Time: 1-30-19 Company: APIT Received by: [blank] Date/Time: 10:20 Company: [blank]							
Cooler Temperature(s) °C and Other Remarks: [blank]							







ORIGIN ID:SAVA (412) 963-7058  
LAUREN COKER  
TEST AMERICA  
301 ALPHA DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

SHIP DATE: 29JAN19  
ACTWGT: 19.80 LB  
CAD: 006894919/SSFE1922  
DIMS: 14x11x11 IN  
BILL THIRD PARTY

TO VERONICA BORTOT  
TEST AMERICA  
301 ALPHA DR

PITTSBURGH PA 15238

(555) 656-5555  
INU:  
PO:

REF:

DEPT:

ORIGIN ID:SAVA (412) 963-  
LAUREN COKER  
TEST AMERICA  
301 ALPHA DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

TO VERONICA BORTO  
TEST AMERICA  
301 ALPHA DR

PITTSBURGH PA

(555) 656-5555  
INU:  
PO:

MPS# 2  
0263 7852  
Mstr# 7852

DEPT:

Uncorrected temp 24 °C  
Thermometer ID 10

CF 0 Initials JS

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

FedEx  
Express



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15238  
PA-US PIT



1 of 5  
TRK# 7852 1226 6772  
0201  
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PA-US

Uncorrected temp 24 °C  
Thermometer ID 10  
CF 0 Initials JS

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



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SHIP DATE: 29  
 ACTWGT: 43.20  
 CAD: 006894919/  
 DIMS: 24x13x15  
 BILL THIRD PARTY

ORIGIN ID: SAVA (412) 963-7058  
 LAUREN COKER  
 TEST AMERICA  
 301 ALPHA DR  
 301 ALPHA DR  
 PITTSBURGH, PA 15238  
 UNITED STATES US

SHIP DATE: 29 JAN 19  
 ACTWGT: 56.10 LB  
 CAD: 006894919/SSFE1922  
 DIMS: 24x13x15 IN  
 BILL THIRD PARTY

TO VERONICA BORTOT  
 TEST AMERICA  
 301 ALPHA DR  
 PITTSBURGH PA 15238

(656) 655-6566 REF:  
 INU: DEPT:

15238

DEPT:



**FedEx Express**



WED - 30 JAN 10:30A  
 PRIORITY OVERNIGHT



**FedEx Express**



WED - 30 JAN 10:30A  
 PRIORITY OVERNIGHT

6809  
 772

0201

**ICA**

Uncorrected temp  
 Thermometer ID

CF 0 Initials B

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



7852 1226 6809

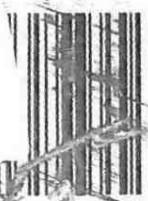
6 6794  
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WED - 30 JAN 10:30A  
 PRIORITY OVERNIGHT

15238  
 PA-US PIT

0.7 °C  
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PT-WI-SR-001 effective 11/8/18

15238  
 PA-US  
 WED - 30 JAN 10:30A  
 PRIORITY OVERNIGHT





ORIGIN ID: SAVA (412) 963-7058  
LAUREN COKER  
TEST AMERICA  
301 ALPHA DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

SHIP DATE: 29JAN19  
ACTWGT: 29.30 LB  
CAD: 006994919/SSFE1922  
DIMS: 24x13x15 IN  
BILL THIRD PARTY

Part # 5629 135 PDU 5X 10:19  
56512/0630/2340 56512/0630/2340

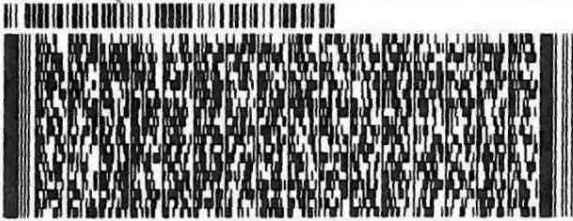
TO **VERONICA BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

**PITTSBURGH PA 15238**

(565) 665-6656  
INVT  
PG1

REF:

DEPT:



**FedEx**  
Express



10107010610161F

5 of 5

MPS# 7852 1226 6810  
0263

Mstr# 7852 1226 6772

0201

**WED - 30 JAN 10:30A**  
**PRIORITY OVERNIGHT**

**XH AGCA**

**15238**  
**PA-US PIT**

Uncorrected temp Thermometer ID 10.9 C  
10  
 CF  Initials JB  
 PT-WI-SR-001 effective 11/8/18

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# Chain of Custody Record

<b>Client Information (Sub Contract Lab)</b> Client Contact: Bortol, Veronica Shipping/Receiving: veronica.bortol@testamericainc.com Company: TestAmerica Laboratories, Inc. Address: 13715 Rider Trail North, Earth City, MO, 63045 Phone: 314-298-8566(Tel) 314-298-8757(Fax) Email: Project Name: CCR - Plant McIntosh Ash Pond 1 Site:		Lab PM: Bortol, Veronica E-Mail: veronica.bortol@testamericainc.com Carrier Tracking No(s): State of Origin: Georgia Job #: 180-86200-2 Accreditations Required (See note):		COC No: 180-353854.1 Page: Page 1 of 1	
Due Date Requested: 2/25/2019 TAT Requested (days): PO #: WO #: Project #: 18019956 SSOW#:		<b>Analysis Requested</b> Perform M/MSMD (Yes or No) <input checked="" type="checkbox"/> Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> 9320 Ra228/PreSep_0 Standard Target List <input checked="" type="checkbox"/> 9315 Ra226/PreSep_21 (MOD) Copy Analyses <input checked="" type="checkbox"/> R226Ra228_AS (MOD) Copy Analyses <input checked="" type="checkbox"/>			
<b>Sample Identification - Client ID (Lab ID)</b> MGWA-6A (180-86200-1)		Sample Date: 1/29/19 Sample Time: 08:55 Eastern Matrix (W=water, S=solid, O=wastewater, BT=tissue, A=air): Water		Total Number of Containers: 1	
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 - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		Special Instructions/Note:			
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/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.					
<b>Possible Hazard Identification</b> Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Requisitioned by: <i>[Signature]</i> Date/Time: 1/15 1200 Company: <i>[Signature]</i> Company		Received by: <i>[Signature]</i> Date/Time: 2-2-19/0850 Company: <i>[Signature]</i> Company			
Requisitioned by: Date/Time: Company:		Received by: Date/Time: Company:			
Relinquished by: Date/Time: Company:		Received by: Date/Time: Company:			
Custody Seals Intact: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks:			



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-86200-2

SDG Number: Ash Pond

**Login Number: 86200**

**List Number: 1**

**Creator: Watson, Debbie**

**List Source: TestAmerica Pittsburgh**

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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	TWO COOLERS WITH RAD CONTAINERS HAD NO ICE
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 <6mm (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: 180-86200-2

SDG Number: Ash Pond

**Login Number: 86200**

**List Number: 2**

**Creator: Press, Nicholas B**

**List Source: TestAmerica St. Louis**

**List Creation: 02/02/19 01:24 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.	True	
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	20.0
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?	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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Georgia Power Ash Pond, 1800205-1.3

**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Pittsburgh, PA  
**Report Nos.:** 180-86183-1  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** April 9, 2019

**Samples Reviewed and Evaluation Summary**

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWA-10	180-86183-01	Metals
MGWA-11	180-86183-02	Metals
FB-AP-01	180-86183-03	Metals
FERB-AP-01	180-86183-04	Metals

QC Samples: Field/Equipment blanks: FB-AP-01, FERB-AP-01

The above-listed aqueous samples, field, and equipment blanks were collected on January 28, 2019 and were analyzed for select total recoverable metals by SW-846 methods 6020/7470A. The data were reviewed based on the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (USEPA-540-R-2017-001), as well as by the methods referenced and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method and Field Blanks
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Field Duplicate Results
- Quantitation Limits

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

### **Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, MS/MSD, laboratory duplicate, and LCS results with the following exception: the reporting limits for select metals were incorrect and sample results were to be reported down to reporting limits only. A revision was requested and received for review.

### **Holding Times and Sample Preservation**

All criteria were met.

### **Method and Field Blanks**

Contaminants were not detected in the method and field blanks.

### **MS/MSD Results**

MS/MSD analyses were performed on sample MGWA-10 for mercury. All recovery and precision criteria were met.

### **Laboratory Duplicate Results**

An MSD analysis was performed in lieu of the laboratory duplicate.

### **LCS Results**

All criteria were met.

### **Quantitation Limits**

Detected results were reported down to the laboratory reporting limits only.

### DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified “J” data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The ‘J’ data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified “UJ” data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The ‘UJ’ data may be biased low.
- NJ - The analysis indicates the presence of a compound that has been “tentatively identified” (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.



Georgia Power McIntosh Plant Ash Pond, 1800205-1.3

**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Earth City, MO  
**Report Nos.:** 180-86183-2  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** March 3, 2019

### **Samples Reviewed and Evaluation Summary**

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWA-10	180-86183-01	Radium-226, Radium-228, Radium226-228
MGWA-11	180-86183-02	Radium-226, Radium-228, Radium226-228
FB-AP-01	180-86183-03	Radium-226, Radium-228, Radium226-228
FERB-AP-01	180-86183-04	Radium-226, Radium-228, Radium226-228

QC Samples: Field/Equipment blanks: FB-AP-01, FERB-AP-01

The above-listed aqueous samples and field blanks were collected on January 28, 2019 and were analyzed for Radium-226 by SW-846 method 9315, Radium-228 by SW-46 method 9320, and combined Radium-226 and Radium-228. The data were reviewed based on the US Department of Energy Evaluation of Radiochemical Data Usability, 1997, as well as by the pertinent methods referenced by the data package and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method and Field Blanks
- Carrier Yields
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Quantitation Limits

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

### **Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, carrier yields, laboratory duplicate, and LCS results. It

should be noted that the laboratory noted that sample collection dates were not recorded on the field chain of custody. The collection date of 01/28/19 was recorded on the sample bottles and this date was used by the laboratory.

**Holding Times and Sample Preservation**

All criteria were met.

**Method and Field Blanks**

Radium-226 and Radium-228 were not detected above the minimum detectable concentration (MDC) in the associated laboratory method blank sample. Radium-228 was detected above the minimum detectable concentration (MDC) in field blank sample FB-AP-01. The following table summarizes the contamination and validation actions taken.

Analyte	Blank ID/ Associated Samples	Maximum Blank Concentration (pCi/L)	10x Action Level (pCi/L)	Validation Actions
Radium-228	FB-AP-01: All samples	0.496 (+0.293 Count Uncert.)	7.89	Qualify the result for Radium-228 in sample MGWA-10 as nondetect (U) at the reported value.
Radium-226/228		0.527 (+0.296 Count Uncert.)	8.23	Qualify the result for Radium-226/228 in sample MGWA-10 as estimated (J); Biased high.

**Blank Actions:**

If the sample result is < method blank and count uncertainty; report the result as nondetect (U) at the reported value.

If the sample result is > blank/uncertainty concentration and < 10x Action Level; professional judgment was taken to report the sample result as estimated (J); biased high.

If the sample result is nondetect or > 10x Action Level; validation action is not required.

As the combined Radium-226/228 result in sample MGWA-11 was due to the detection of Radium-226 only, the combined result (which was below the 10x action level) was not qualified due to field blank contamination which was due to Radium-228 only.

**Carrier Yields**

All criteria were met.

**Laboratory Duplicate Results**

Laboratory duplicate analyses were not associated with this sample set.

**LCS Results**

Georgia Power McIntosh Plant Ash Pond, 1800205-1.3

All criteria were met.

**Quantitation Limits**

Dilutions were not required.

### DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified “J” data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The ‘J’ data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified “UJ” data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The ‘UJ’ data may be biased low.
- NJ - The analysis indicates the presence of a compound that has been “tentatively identified” (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

Georgia Power Ash Pond, 1800205-1.3

**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Pittsburgh, PA  
**Report Nos.:** 180-86194-1  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** April 9, 2019

**Samples Reviewed and Evaluation Summary**

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWA-5	180-86194-01	Metals
MGWA-6	180-86194-02	Metals
MGWC-3	180-86194-03	Metals
MGWC-12	180-86194-04	Metals
MGWC-2	180-86194-05	Metals
MGWC-7	180-86194-06	Metals
MGWC-8	180-86194-07	Metals
MGWC-1	180-86194-08	Metals
DUP-AP-01	180-86194-09	Metals
DUP-AP-02	180-86194-10	Metals
FB-AP-02	180-86194-11	Metals
FERB-AP-02	180-86194-12	Metals

QC Samples: Field/Equipment blanks: FB-AP-02, FERB-AP-02  
 Field Duplicate pairs: MGWA-6/DUP-AP-01 and MGWC-1/DUP-AP-02

The above-listed aqueous samples and field blanks were collected on January 29, 2019 and were analyzed for select total recoverable metals by SW-846 methods 6020/7470A. The data were reviewed based on the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (USEPA-540-R-2017-001), as well as by the methods referenced and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method and Field Blanks
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Field Duplicate Results
- Quantitation Limits

All results are usable as reported.

The validation findings were based on the following information.

**Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, MS/MSD, laboratory duplicate, and LCS results with the following exception: the reporting limits for select metals were incorrect and sample results were to be reported down to reporting limits only. A revision was requested and received for review.

**Holding Times and Sample Preservation**

All criteria were met.

**Method and Field Blanks**

Contamination was not detected in the laboratory method blank samples. Lead was detected in the field blank sample. The following table summarizes the contamination and validation actions required.

Analyte	Blank ID/ Associated Samples	Concentration (mg/L)	10x Action Level (mg/L)	Validation Actions
Lead	FERB-AP-02: All samples	0.0012	0.012	Validations actions were not required as lead was not detected in the project samples.

Blank Actions:

If the sample result is < reporting limit (RL); report the result as nondetect (U) at the RL or reported value.

If the sample result is ≥ RL and < blank contamination detected; report the result as nondetect (U) at the reported value.

If the sample result is ≥ RL and < 10x Action Level; report the sample result as estimated (J); biased high.

If the sample result is nondetect or > 10x Action Level; validation action is not required.

**MS/MSD Results**

MS/MSD analyses were performed on sample MGWA-5 for ICP metals. All recovery and precision criteria were met.

**Laboratory Duplicate Results**

An MSD analysis was performed in lieu of the laboratory duplicate.

**LCS Results**



All criteria were met.

**Field Duplicate Results**

Samples MGWA-6 and DUP-AP-01 were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair, which were within the acceptance criteria.

Analyte	MGWA-6 (mg/L)	DUP-AP-01 (mg/L)	RPD (%)
Arsenic	0.00972	0.00969	0.3
Barium	0.0393	0.0384	2.3
NC – Not calculable Criteria: When both results are $\geq 5x$ the RL, RPDs must be $< 30\%$ . When results are $< 5x$ the RL, professional judgement was taken to estimate results if the absolute difference between the original and field duplicate $> RL$ .			

Samples MGWC-1 and DUP-AP-02 were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair, which were within the acceptance criteria.

Analyte	MGWC-1 (mg/L)	DUP-AP-02 (mg/L)	RPD (%)
Arsenic	0.00255	0.00300	16.2
Barium	0.107	0.0993	7.5
Lithium	0.0109	0.0106	2.8
NC – Not calculable Criteria: When both results are $\geq 5x$ the RL, RPDs must be $< 30\%$ . When results are $< 5x$ the RL, professional judgement was taken to estimate results if the absolute difference between the original and field duplicate $> RL$ .			

**Quantitation Limits**

Detected results were reported down to the laboratory reporting limits only.

### DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified “J” data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The ‘J’ data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified “UJ” data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The ‘UJ’ data may be biased low.
- NJ - The analysis indicates the presence of a compound that has been “tentatively identified” (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

Georgia Power McIntosh Plant Ash Pond, 1800205-1.3

**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Earth City, MO  
**Report Nos.:** 180-86194-2  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** March 3, 2019

**Samples Reviewed and Evaluation Summary**

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWA-5	180-86194-01	Radium-226, Radium-228, Radium226-228
MGWA-6	180-86194-02	Radium-226, Radium-228, Radium226-228
MGWC-3	180-86194-03	Radium-226, Radium-228, Radium226-228
MGWC-12	180-86194-04	Radium-226, Radium-228, Radium226-228
MGWC-2	180-86194-05	Radium-226, Radium-228, Radium226-228
MGWC-7	180-86194-06	Radium-226, Radium-228, Radium226-228
MGWC-8	180-86194-07	Radium-226, Radium-228, Radium226-228
MGWC-1	180-86194-08	Radium-226, Radium-228, Radium226-228
DUP-AP-01	180-86194-09	Radium-226, Radium-228, Radium226-228
DUP-AP-02	180-86194-10	Radium-226, Radium-228, Radium226-228
FB-AP-02	180-86194-11	Radium-226, Radium-228, Radium226-228
FERB-AP-02	180-86194-12	Radium-226, Radium-228, Radium226-228

QC Samples: Field/Equipment blanks: FB-AP-02, FERB-AP-02  
 Field Duplicate pair: MGWA-6/DUP-AP-01, MGWC-1/DUP-AP-02

The above-listed aqueous samples and field blanks were collected on January 29, 2019 and were analyzed for Radium-226 by SW-846 method 9315, Radium-228 by SW-46 method 9320, and combined Radium-226 and Radium-228. The data were reviewed based on the US Department of Energy Evaluation of Radiochemical Data Usability, 1997, as well as by the pertinent methods referenced by the data package and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method and Field Blanks
- Carrier Yields
- Laboratory Duplicate Results
- Field Duplicate Results
- Laboratory Control Sample (LCS) Results
- Quantitation Limits

All results are usable as reported.

The validation findings were based on the following information.

**Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, carrier yields, laboratory duplicate, and LCS results.

**Holding Times and Sample Preservation**

All criteria were met.

**Method and Field Blanks**

Radium-226 and Radium-228 were not detected above the minimum detectable concentrations (MDC) in the laboratory method blank samples and field blank samples.

**Carrier Yields**

All criteria were met.

**Laboratory Duplicate Results**

Laboratory duplicate analyses were not associated with this sample set. Validation action was not taken on this basis.

**Field Duplicate Results**

Samples MGWA-6 and DUP-AP-01 were submitted as the field duplicate pair with this sample set. The following table summarizes the evaluation of the analytes in the field duplicate pair, which were within the acceptance criteria.

Analyte	MGWA-6 (pCi/L)	DUP-AP-01 (pCi/L)	DER
Radium-226	0.304	0.367	0.39
Radium-228	0.287 U	-0.0504 U	No action, both results <MDC
Combined Radium 226 + 228	0.591	0.317 U	0.70
Criteria: Duplicate Error Ratio (DER) ≤ 2 MDC – Minimum Detectable Concentration			

Georgia Power McIntosh Plant Ash Pond, 1800205-1.3

Samples MGWC-1 and DUP-AP-02 were submitted as the field duplicate pair with this sample set. The following table summarizes the evaluation of the analytes in the field duplicate pair, which were within the acceptance criteria.

Analyte	MGWC-1 (pCi/L)	DUP-AP-02 (pCi/L)	DER
Radium-226	0.901	0.913	0.06
Radium-228	0.206 U	0.389 U	No action, both results <MDC
Combined Radium 226 + 228	1.11	1.30	0.44
Criteria: Duplicate Error Ratio (DER) $\leq$ 2 MDC – Minimum Detectable Concentration			

### **LCS Results**

All criteria were met.

### **Quantitation Limits**

Dilutions were not required.

### DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified “J” data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The ‘J’ data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified “UJ” data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The ‘UJ’ data may be biased low.
- NJ - The analysis indicates the presence of a compound that has been “tentatively identified” (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.



Georgia Power Ash Pond, 1800205-1.3

**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Pittsburgh, PA  
**Report Nos.:** 180-86197  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** April 9, 2019

**Samples Reviewed and Evaluation Summary**

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWA-6A-RUSH	180-86197-01	Arsenic
MGWA-24-RUSH	180-86197-02	Arsenic

The above-listed aqueous samples were collected on January 29, 2019 and were analyzed for total recoverable arsenic by SW-846 method 6020. The data were reviewed based on the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (USEPA-540-R-2017-001), as well as by the method referenced and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method Blanks
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- Quantitation Limits

All results are usable as reported.

The validation findings were based on the following information.

**Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, MS/MSD, and LCS results.

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, MS/MSD, laboratory duplicate, and LCS results with the following exception: the reporting limit for arsenic was incorrect. A revision was requested and received for review.

Georgia Power Ash Pond, 1800205-1.3

### **Holding Times and Sample Preservation**

All criteria were met.

### **Method Blanks**

The laboratory method blanks were free from contaminants.

### **MS/MSD Results**

MS/MSD analyses were performed on sample MGWA-6A-RUSH for arsenic. All recovery and precision criteria were met.

### **LCS Results**

All criteria were met.

### **Quantitation Limits**

Detected results were reported down to the laboratory reporting limits only.

Georgia Power McIntosh Plant, 1800205-1.1

**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Pittsburgh, PA  
**Report No.:** 180-86200-1  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** April 9, 2019

**Samples Reviewed and Evaluation Summary**

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWA-6A	180-86200-01	Metals, Anions, TDS, Alkalinity
MGWA-24	180-86200-02	Metals, Anions, TDS, Alkalinity

The above-listed aqueous samples were collected on January 29, 2019 and were analyzed for select total recoverable metals by SW-846 method 6020/7470A, total dissolved solids (TDS) by Standard Methods SM 2540C, alkalinity by SM 2320B, and anions (chloride, fluoride, and sulfate) by EPA method 300. The data were reviewed based on the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (USEPA-540-R-2017-001), as well as by the methods referenced and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Laboratory Blanks
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Quantitation Limits

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

**Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, MS/MSD, laboratory duplicate, and LCS results with the following exception: the reporting limits for select metals were incorrect. Additionally, per request of the client, calcium was added to the required analyte list for sample MGWA-24 and a

Georgia Power McIntosh Plant, 1800205-1.1

revision was requested to report detected results down to reporting limits only. A revision was requested and received for review.

### **Holding Times and Sample Preservation**

All criteria were met.

### **Laboratory Blanks**

Contamination was not detected in the laboratory blank samples.

### **MS/MSD Results**

Project MS/MSD analyses were not associated with this sample set.

### **Laboratory Duplicate Results**

A laboratory duplicate analysis was performed on sample MGWA-6A for alkalinity. Criteria were met.

### **LCS Results**

All criteria were met.

### **Quantitation Limits**

Detected results were reported down to the laboratory reporting limits only.

## DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified “J” data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The ‘J’ data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified “UJ” data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The ‘UJ’ data may be biased low.
- NJ - The analysis indicates the presence of a compound that has been “tentatively identified” (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

Georgia Power McIntosh Plant Ash Pond, 1800205-1.3

**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Earth City, MO  
**Report Nos.:** 180-86200-2  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** March 3, 2019

### **Samples Reviewed and Evaluation Summary**

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWA-6A	180-86200-01	Radium-226, Radium-228, Radium226-228

QC Samples: Field/Equipment blanks: FB-AP-01, FERB-AP-01 (reported in 180-86183-2)

The above-listed aqueous sample was collected on January 29, 2019 and was analyzed for Radium-226 by SW-846 method 9315, Radium-228 by SW-46 method 9320, and combined Radium-226 and Radium-228. The data were reviewed based on the US Department of Energy Evaluation of Radiochemical Data Usability, 1997, as well as by the pertinent methods referenced by the data package and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method and Field Blanks
- Carrier Yields
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Quantitation Limits

All results are usable as reported.

The validation findings were based on the following information.

### **Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, carrier yields, laboratory duplicate, and LCS results.

### **Holding Times and Sample Preservation**

All criteria were met.



**Method and Field Blanks**

Radium-226 and Radium-228 were not detected above the minimum detectable concentration (MDC) in the associated laboratory method blank sample. Radium-228 was detected above the minimum detectable concentration (MDC) in the associated field blank sample FB-AP-01 reported in 180-86183-2. The following table summarizes the contamination and validation actions taken.

Analyte	Blank ID/ Associated Samples	Maximum Blank Concentration (pCi/L)	10x Action Level (pCi/L)	Validation Actions
Radium-228	FB-AP-01: MGWA-6A	0.496 (+0.293 Count Uncert.)	7.89	Validation action was not required.
Radium-226/228		0.527 (+0.296 Count Uncert.)	8.23	As the combined Radium-226/228 result in sample MGWA-6A was due to the detection of Radium-226 only, the combined result (which was below the 10x action level) was not qualified due to the field blank contamination which was due to Radium-228 only.

Blank Actions:

If the sample result is < method blank and count uncertainty; report the result as nondetect (U) at the reported value.

If the sample result is > blank/uncertainty concentration and < 10x Action Level; professional judgment was taken to report the sample result as estimated (J); biased high.

If the sample result is nondetect or > 10x Action Level; validation action is not required.

**Carrier Yields**

All criteria were met.

**Laboratory Duplicate Results**

Laboratory duplicate analyses were not associated with this sample set.

**LCS Results**

All criteria were met.

**Quantitation Limits**

Dilutions were not required.

### DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified “J” data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The ‘J’ data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified “UJ” data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The ‘UJ’ data may be biased low.
- NJ - The analysis indicates the presence of a compound that has been “tentatively identified” (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

## ANALYTICAL REPORT

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

Laboratory Job ID: 180-88108-1

Client Project/Site: CCR - Plant McIntosh Ash Pond 1

**For:**

Southern Company  
PO BOX 2641 GSC8  
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty



Authorized for release by:  
4/12/2019 3:57:09 PM

Veronica Bortot, Senior Project Manager  
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### LINKS

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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 McIntosh Ash Pond 1

Job ID: 180-88108-1

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**Job ID: 180-88108-1**

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**Laboratory: Eurofins TestAmerica, Pittsburgh**

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**Narrative**

**Job Narrative  
180-88108-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 3/26/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7° C.

**GC Semi VOA**

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

**Metals**

Method(s) 6020, SM 2340B: The continuing calibration blank (CCB) for analytical batch 400-435553 contained Calcium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

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

**General Chemistry**

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



# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-1

## 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
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
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 McIntosh Ash Pond 1

Job ID: 180-88108-1

## Laboratory: Eurofins TestAmerica, Pittsburgh

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

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

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

Eurofins TestAmerica, Pittsburgh

# Accreditation/Certification Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-1

## Laboratory: Eurofins TestAmerica, Pensacola

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-20
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-19
Iowa	State Program	7	367	08-01-20
Kansas	NELAP	7	E-10253	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-19
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-20
Rhode Island	State Program	1	LAO00307	12-30-19
South Carolina	State Program	4	96026	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-15	09-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	07-31-19

# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-88108-1	MGWA-10	Water	03/25/19 15:12	03/26/19 09:00
180-88108-2	MGWA-11	Water	03/25/19 16:45	03/26/19 09:00
180-88108-3	MGWA-24	Water	03/25/19 15:50	03/26/19 09:00
180-88108-4	MGWA-5	Water	03/25/19 17:10	03/26/19 09:00
180-88108-5	MGWA-6A	Water	03/25/19 18:00	03/26/19 09:00

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# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
6020	Metals (ICP/MS)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PEN

#### Protocol References:

EPA = US Environmental Protection Agency

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.

#### Laboratory References:

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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 McIntosh Ash Pond 1

Job ID: 180-88108-1

## Client Sample ID: MGWA-10

Lab Sample ID: 180-88108-1

Date Collected: 03/25/19 15:12

Matrix: Water

Date Received: 03/26/19 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	EPA 300.0 R2.1		1			274458	04/01/19 17:17	MJH	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/01/19 22:53	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274129	03/27/19 14:16	AVS	TAL PIT
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-11

Lab Sample ID: 180-88108-2

Date Collected: 03/25/19 16:45

Matrix: Water

Date Received: 03/26/19 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	EPA 300.0 R2.1		1			274458	04/01/19 17:33	MJH	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/01/19 23:12	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274129	03/27/19 14:16	AVS	TAL PIT
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-24

Lab Sample ID: 180-88108-3

Date Collected: 03/25/19 15:50

Matrix: Water

Date Received: 03/26/19 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	EPA 300.0 R2.1		1			274458	04/01/19 17:48	MJH	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/01/19 23:16	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274129	03/27/19 14:16	AVS	TAL PIT
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-5

Lab Sample ID: 180-88108-4

Date Collected: 03/25/19 17:10

Matrix: Water

Date Received: 03/26/19 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	EPA 300.0 R2.1		1			274458	04/01/19 18:03	MJH	TAL PIT
Instrument ID: CHIC2100A										

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-1

## Client Sample ID: MGWA-5

Date Collected: 03/25/19 17:10

Date Received: 03/26/19 09:00

## Lab Sample ID: 180-88108-4

Matrix: Water

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	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/01/19 23:20	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274129	03/27/19 14:16	AVS	TAL PIT
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-6A

Date Collected: 03/25/19 18:00

Date Received: 03/26/19 09:00

## Lab Sample ID: 180-88108-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1		1			274458	04/01/19 18:19	MJH	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/01/19 23:43	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274129	03/27/19 14:16	AVS	TAL PIT
Instrument ID: NOEQUIP										

### Laboratory References:

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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

### Analyst References:

Lab: TAL PEN

Batch Type: Prep

AC = Alexis Castaing

Batch Type: Analysis

DRE = Daniel Etscheid

Lab: TAL PIT

Batch Type: Analysis

AVS = Abbey Smith

MJH = Matthew Hartman



# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-1

**Client Sample ID: MGWA-10**

**Lab Sample ID: 180-88108-1**

Date Collected: 03/25/19 15:12

Matrix: Water

Date Received: 03/26/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.8		1.0	0.71	mg/L			04/01/19 17:17	1
Fluoride	<0.026		0.10	0.026	mg/L			04/01/19 17:17	1
Sulfate	1.1		1.0	0.38	mg/L			04/01/19 17:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		03/30/19 11:31	04/01/19 22:53	5
Boron	<0.021		0.050	0.021	mg/L		03/30/19 11:31	04/01/19 22:53	5
Barium	0.023		0.0025	0.00049	mg/L		03/30/19 11:31	04/01/19 22:53	5
Calcium	4.6		0.25	0.13	mg/L		03/30/19 11:31	04/01/19 22:53	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/01/19 22:53	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/01/19 22:53	5
Lithium	0.0068		0.0050	0.0011	mg/L		03/30/19 11:31	04/01/19 22:53	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	54		10	10	mg/L			03/27/19 14:16	1

**Client Sample ID: MGWA-11**

**Lab Sample ID: 180-88108-2**

Date Collected: 03/25/19 16:45

Matrix: Water

Date Received: 03/26/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.4		1.0	0.71	mg/L			04/01/19 17:33	1
Fluoride	0.087	J	0.10	0.026	mg/L			04/01/19 17:33	1
Sulfate	1.3		1.0	0.38	mg/L			04/01/19 17:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0022		0.0013	0.00046	mg/L		03/30/19 11:31	04/01/19 23:12	5
Boron	<0.021		0.050	0.021	mg/L		03/30/19 11:31	04/01/19 23:12	5
Barium	0.11		0.0025	0.00049	mg/L		03/30/19 11:31	04/01/19 23:12	5
Calcium	37		0.25	0.13	mg/L		03/30/19 11:31	04/01/19 23:12	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/01/19 23:12	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/01/19 23:12	5
Lithium	0.026		0.0050	0.0011	mg/L		03/30/19 11:31	04/01/19 23:12	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	210		10	10	mg/L			03/27/19 14:16	1

**Client Sample ID: MGWA-24**

**Lab Sample ID: 180-88108-3**

Date Collected: 03/25/19 15:50

Matrix: Water

Date Received: 03/26/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.2		1.0	0.71	mg/L			04/01/19 17:48	1
Fluoride	0.16		0.10	0.026	mg/L			04/01/19 17:48	1
Sulfate	30		1.0	0.38	mg/L			04/01/19 17:48	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-1

**Client Sample ID: MGWA-24**

**Lab Sample ID: 180-88108-3**

Date Collected: 03/25/19 15:50

Matrix: Water

Date Received: 03/26/19 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.0016</b>		0.0013	0.00046	mg/L		03/30/19 11:31	04/01/19 23:16	5
Boron	<0.021		0.050	0.021	mg/L		03/30/19 11:31	04/01/19 23:16	5
<b>Barium</b>	<b>0.035</b>		0.0025	0.00049	mg/L		03/30/19 11:31	04/01/19 23:16	5
<b>Calcium</b>	<b>44</b>		0.25	0.13	mg/L		03/30/19 11:31	04/01/19 23:16	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/01/19 23:16	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/01/19 23:16	5
<b>Lithium</b>	<b>0.0086</b>		0.0050	0.0011	mg/L		03/30/19 11:31	04/01/19 23:16	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>200</b>		10	10	mg/L			03/27/19 14:16	1

**Client Sample ID: MGWA-5**

**Lab Sample ID: 180-88108-4**

Date Collected: 03/25/19 17:10

Matrix: Water

Date Received: 03/26/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>4.7</b>		1.0	0.71	mg/L			04/01/19 18:03	1
<b>Fluoride</b>	<b>0.072</b>	<b>J</b>	0.10	0.026	mg/L			04/01/19 18:03	1
<b>Sulfate</b>	<b>3.4</b>		1.0	0.38	mg/L			04/01/19 18:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.00069</b>	<b>J</b>	0.0013	0.00046	mg/L		03/30/19 11:31	04/01/19 23:20	5
Boron	<0.021		0.050	0.021	mg/L		03/30/19 11:31	04/01/19 23:20	5
<b>Barium</b>	<b>0.035</b>		0.0025	0.00049	mg/L		03/30/19 11:31	04/01/19 23:20	5
<b>Calcium</b>	<b>27</b>		0.25	0.13	mg/L		03/30/19 11:31	04/01/19 23:20	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/01/19 23:20	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/01/19 23:20	5
<b>Lithium</b>	<b>0.010</b>		0.0050	0.0011	mg/L		03/30/19 11:31	04/01/19 23:20	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>150</b>		10	10	mg/L			03/27/19 14:16	1

**Client Sample ID: MGWA-6A**

**Lab Sample ID: 180-88108-5**

Date Collected: 03/25/19 18:00

Matrix: Water

Date Received: 03/26/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>4.4</b>		1.0	0.71	mg/L			04/01/19 18:19	1
<b>Fluoride</b>	<b>0.067</b>	<b>J</b>	0.10	0.026	mg/L			04/01/19 18:19	1
<b>Sulfate</b>	<b>1.8</b>		1.0	0.38	mg/L			04/01/19 18:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.0012</b>	<b>J</b>	0.0013	0.00046	mg/L		03/30/19 11:31	04/01/19 23:43	5
Boron	<0.021		0.050	0.021	mg/L		03/30/19 11:31	04/01/19 23:43	5
<b>Barium</b>	<b>0.044</b>		0.0025	0.00049	mg/L		03/30/19 11:31	04/01/19 23:43	5

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-1

**Client Sample ID: MGWA-6A**

**Lab Sample ID: 180-88108-5**

Date Collected: 03/25/19 18:00

Matrix: Water

Date Received: 03/26/19 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Calcium</b>	<b>89</b>	<b>^</b>	0.25	0.13	mg/L		03/30/19 11:31	04/01/19 23:43	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/01/19 23:43	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/01/19 23:43	5
<b>Lithium</b>	<b>0.0052</b>		0.0050	0.0011	mg/L		03/30/19 11:31	04/01/19 23:43	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>250</b>		10	10	mg/L			03/27/19 14:16	1

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# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

**Lab Sample ID: MB 180-274458/41**  
**Matrix: Water**  
**Analysis Batch: 274458**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			04/01/19 14:59	1
Fluoride	<0.026		0.10	0.026	mg/L			04/01/19 14:59	1
Sulfate	<0.38		1.0	0.38	mg/L			04/01/19 14:59	1

**Lab Sample ID: LCS 180-274458/38**  
**Matrix: Water**  
**Analysis Batch: 274458**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.3		mg/L		101	90 - 110
Fluoride	1.25	1.25		mg/L		100	90 - 110
Sulfate	25.0	25.3		mg/L		101	90 - 110

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

**Lab Sample ID: MB 400-435281/1-A ^5**  
**Matrix: Water**  
**Analysis Batch: 435553**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 435281**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		03/30/19 11:31	04/01/19 22:42	5
Boron	<0.021		0.050	0.021	mg/L		03/30/19 11:31	04/01/19 22:42	5
Barium	<0.00049		0.0025	0.00049	mg/L		03/30/19 11:31	04/01/19 22:42	5
Calcium	<0.13		0.25	0.13	mg/L		03/30/19 11:31	04/01/19 22:42	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/01/19 22:42	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/01/19 22:42	5
Lithium	<0.0011		0.0050	0.0011	mg/L		03/30/19 11:31	04/01/19 22:42	5

**Lab Sample ID: LCS 400-435281/2-A**  
**Matrix: Water**  
**Analysis Batch: 435553**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 435281**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0500	0.0500		mg/L		100	80 - 120
Boron	0.100	0.102		mg/L		102	80 - 120
Barium	0.0500	0.0483		mg/L		97	80 - 120
Calcium	5.00	5.10		mg/L		102	80 - 120
Cadmium	0.0500	0.0475		mg/L		95	80 - 120
Cobalt	0.0500	0.0471		mg/L		94	80 - 120
Lithium	0.0500	0.0500		mg/L		100	80 - 120

**Lab Sample ID: 180-88108-1 MS**  
**Matrix: Water**  
**Analysis Batch: 435553**

**Client Sample ID: MGWA-10**  
**Prep Type: Total Recoverable**  
**Prep Batch: 435281**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	<0.00046		0.0500	0.0508		mg/L		102	75 - 125
Boron	<0.021		0.100	0.0940		mg/L		94	75 - 125
Barium	0.023		0.0500	0.0681		mg/L		90	75 - 125
Calcium	4.6		5.00	9.13		mg/L		91	75 - 125

Eurofins TestAmerica, Pittsburgh

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-1

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

**Lab Sample ID: 180-88108-1 MS**  
**Matrix: Water**  
**Analysis Batch: 435553**

**Client Sample ID: MGWA-10**  
**Prep Type: Total Recoverable**  
**Prep Batch: 435281**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	<0.00034		0.0500	0.0486		mg/L		97	75 - 125
Cobalt	<0.00040		0.0500	0.0481		mg/L		96	75 - 125
Lithium	0.0068		0.0500	0.0575		mg/L		101	75 - 125

**Lab Sample ID: 180-88108-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 435553**

**Client Sample ID: MGWA-10**  
**Prep Type: Total Recoverable**  
**Prep Batch: 435281**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	<0.00046		0.0500	0.0556		mg/L		111	75 - 125	9	20
Boron	<0.021		0.100	0.0885		mg/L		89	75 - 125	6	20
Barium	0.023		0.0500	0.0745		mg/L		103	75 - 125	9	20
Calcium	4.6		5.00	9.95		mg/L		107	75 - 125	9	20
Cadmium	<0.00034		0.0500	0.0520		mg/L		104	75 - 125	7	20
Cobalt	<0.00040		0.0500	0.0522		mg/L		104	75 - 125	8	20
Lithium	0.0068		0.0500	0.0574		mg/L		101	75 - 125	0	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 180-274129/2**  
**Matrix: Water**  
**Analysis Batch: 274129**

**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			03/27/19 14:16	1

**Lab Sample ID: LCS 180-274129/1**  
**Matrix: Water**  
**Analysis Batch: 274129**

**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	304	248		mg/L		82	80 - 120

# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-1

## HPLC/IC

### Analysis Batch: 274458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88108-1	MGWA-10	Total/NA	Water	EPA 300.0 R2.1	
180-88108-2	MGWA-11	Total/NA	Water	EPA 300.0 R2.1	
180-88108-3	MGWA-24	Total/NA	Water	EPA 300.0 R2.1	
180-88108-4	MGWA-5	Total/NA	Water	EPA 300.0 R2.1	
180-88108-5	MGWA-6A	Total/NA	Water	EPA 300.0 R2.1	
MB 180-274458/41	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-274458/38	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

## Metals

### Prep Batch: 435281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88108-1	MGWA-10	Total Recoverable	Water	3005A	
180-88108-2	MGWA-11	Total Recoverable	Water	3005A	
180-88108-3	MGWA-24	Total Recoverable	Water	3005A	
180-88108-4	MGWA-5	Total Recoverable	Water	3005A	
180-88108-5	MGWA-6A	Total Recoverable	Water	3005A	
MB 400-435281/1-A ^5	Method Blank	Total Recoverable	Water	3005A	
LCS 400-435281/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-88108-1 MS	MGWA-10	Total Recoverable	Water	3005A	
180-88108-1 MSD	MGWA-10	Total Recoverable	Water	3005A	

### Analysis Batch: 435553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88108-1	MGWA-10	Total Recoverable	Water	6020	435281
180-88108-2	MGWA-11	Total Recoverable	Water	6020	435281
180-88108-3	MGWA-24	Total Recoverable	Water	6020	435281
180-88108-4	MGWA-5	Total Recoverable	Water	6020	435281
180-88108-5	MGWA-6A	Total Recoverable	Water	6020	435281
MB 400-435281/1-A ^5	Method Blank	Total Recoverable	Water	6020	435281
LCS 400-435281/2-A	Lab Control Sample	Total Recoverable	Water	6020	435281
180-88108-1 MS	MGWA-10	Total Recoverable	Water	6020	435281
180-88108-1 MSD	MGWA-10	Total Recoverable	Water	6020	435281

## General Chemistry

### Analysis Batch: 274129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88108-1	MGWA-10	Total/NA	Water	SM 2540C	
180-88108-2	MGWA-11	Total/NA	Water	SM 2540C	
180-88108-3	MGWA-24	Total/NA	Water	SM 2540C	
180-88108-4	MGWA-5	Total/NA	Water	SM 2540C	
180-88108-5	MGWA-6A	Total/NA	Water	SM 2540C	
MB 180-274129/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-274129/1	Lab Control Sample	Total/NA	Water	SM 2540C	



<b>Client Information</b> Client Contact: <u>Lauren Coker</u> Company: <u>GEI Consultants, Inc.</u> Address: <u>1375 Peachtree Street NE Suite A15</u> City: <u>Atlanta</u> State: <u>GA</u> Zip: <u>30309</u> Phone: <u>205-992-5417(Tel)</u> Email: <u>lcoker@geiconsultants.com</u> Project Name: <u>CCR - Plant McIntosh Ash Pond 1</u> Site:		Sampler: <u>L. Coker, J. Adcock, J. Nicks</u> Lab PM: <u>Bortot, Veronica</u> Phone: <u>404-592-0094</u> E-Mail: <u>veronica.bortot@testamericainc.com</u>		COC No: <u>180-50377-10410.1</u> Page: <u>1 of 3</u> Job #:	
Due Date Requested: TAT Requested (days): <u>Standard</u> PO #: <u>SCS10347656</u> WO #:		Carrier Tracking Note(s):		Analysis Requested	
Sample Identification <u>MGWA-10</u> <u>MGWA-11</u> <u>MGWA-24</u> <u>MGWA-S</u> <u>MGWA-6A</u>		Sample Date <u>3/25/19</u> <u>3/25/19</u> <u>3/25/19</u> <u>3/25/19</u> <u>3/25/19</u>	Sample Time <u>1512</u> <u>1645</u> <u>1550</u> <u>1710</u> <u>1800</u>	Sample Type (C=Comp, G=grab) <u>G</u> <u>G</u> <u>G</u> <u>G</u> <u>G</u>	Matrix (W=water, S=solid, O=other, BT=Tabac, A=Air) <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u>
Field Filtered Sample (Yes or No)		Field Filled Sample (Yes or No)		Total Number of Containers	
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:		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 Z - other (specify)		Special Instructions/Note: <u>Assessment</u> <u>Event #1</u>	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		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:		Date:		Method of Shipment:	
Relinquished by: <u>James Coker</u> Relinquished by:		Date/Time: <u>3/25/19 1700</u> Date/Time:		Received by: <u>FoLEX</u> Date/Time: <u>3/25 1900</u> Company: <u>FoLEX</u>	
Relinquished by:		Date/Time:		Received by: <u>Michelle Watson</u> Date/Time: <u>3-26-19 9:00</u> Company: <u>AP:FA</u>	
Relinquished by:		Date/Time:		Received by:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	





ORIGIN ID: SAVA (919) 724-7237  
JAKE ADCOCK

SEE CHEERS 5 BEFORE BILL  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

0 JAKE ADCOCK

RIDC PK  
301 ALPHA DR  
PITTSBURGH PA 15238

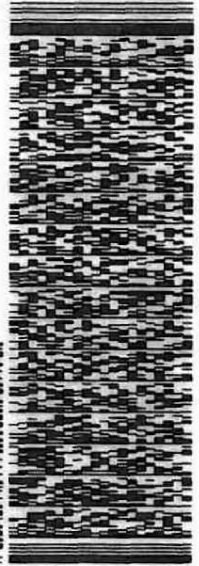
(412) 868-7058  
REF:

DEPT:

SHIP DATE: 25MAR19  
56.30 LB  
4819/SSFE2002  
03 26  
9520  
A

10:30  
1  
A

97  
FZ



TUE - 26 MAR 10:30A  
PRIORITY OVERNIGHT

TRK# 7862 4454 9520

XH AGCA

15238  
PA-US PIT

Uncorrected temp  
Thermometer ID

1.7  
10 °C

CF Initials

JS

PT-WL-SR-001 effective 1/18/18



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

ORIGIN ID: SAVA (919) 724-7237  
JAKE ADCOCK

SEE CHEERS 5 BEFORE BILL  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

TO JAKE ADCOCK

RIDC PK  
301 ALPHA DR  
PITTSBURGH PA 15238

(412) 963-7068 REF.  
INV# PO# DEPT#

SHIP DATE: 25MAR19  
P 9:26  
9520  
10:30  
A

1  
76



TUE - 26 MAR 10:30A  
PRIORITY OVERNIGHT

TRK# 7862 4454 9520

**XH AGCA**

15238  
PA-US PIT

Uncorrected temp Thermometer ID

CF   Q   Initials   JS  

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

1.7 / 10 °C



- 1
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- 3
- 4
- 5
- 6
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- 10
- 11
- 12
- 13



Chain of Custody Record

<b>Client Information (Sub Contract Lab)</b> Client Contact: Shipping/Receiving Company: TestAmerica Laboratories, Inc. Address: 3355 McLemore Drive, Pensacola, FL, 32514 Phone: 850-474-1001(Tel) 850-478-2671(Fax) Email:		Lab PM: Bortol, Veronica E-Mail: veronica.bortol@testamericainc.com State of Origin: Georgia Carrier Tracking No(s): Page: Page 1 of 1 Job #: 180-88108-1	
Due Date Requested: 4/5/2019 TAT Requested (days): PO #: WO #: Project #: 18019956 SOW#:		Accreditations Required (See note) Analysis Requested Preservation Codes: M - Hexamine N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA L - EDA Other:	
Sample Information Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (W=water, S=solid, O=wastewater, BT=tissue, A=air)		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) Total Number of Containers Special Instructions/Note:	
Sample Identification - Client ID (Lab ID) MGWA-10 (180-88108-1) MGWA-11 (180-88108-2) MGWA-24 (180-88108-3) MGWA-5 (180-88108-4) MGWA-6A (180-88108-5)	Sample Date 3/25/19 3/25/19 3/25/19 3/25/19 3/25/19	Sample Time 15:12 Eastern 16:45 Eastern 15:50 Eastern 17:10 Eastern 18:00 Eastern	Sample Type Water Water Water Water Water
Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No)		Total Number of Containers Special Instructions/Note:	
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.			
<b>Possible Hazard Identification</b> Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2 Empty Kit Relinquished by: Relinquished by: Relinquished by: Relinquished by: Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:			
Date/Time: 3/27/19 17:05 Date/Time: Date/Time:		Date/Time: Date/Time: Date/Time: 3-28-19 9:07 Cooler Temperature(s) °C and Other Remarks: 0.1°C 187	



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-88108-1

**Login Number: 88108**

**List Source: Eurofins TestAmerica, Pittsburgh**

**List Number: 1**

**Creator: Watson, Debbie**

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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 <6mm (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: 180-88108-1

**Login Number: 88108**

**List Number: 3**

**Creator: Shannon, Jonathon W**

**List Source: Eurofins TestAmerica, Pensacola**

**List Creation: 03/28/19 03:00 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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.	N/A	
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	5.1°C IR7
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").	N/A	
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: 180-88108-2

Laboratory Sample Delivery Group: Ash  
Client Project/Site: CCR - Plant McIntosh Ash Pond 1

**For:**

Southern Company  
PO BOX 2641 GSC8  
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty



Authorized for release by:  
5/1/2019 4:52:47 PM

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

PA Lab ID: 02-00416





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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

**Job ID: 180-88108-2**

**Laboratory: Eurofins TestAmerica, Pittsburgh**

## Narrative

### Job Narrative 180-88108-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 3/26/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7° C.

#### RAD

Method(s) 903.0, 9315: Ra-226 Prep Batch 160-422783

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.

MGWA-10 (180-88108-1), MGWA-11 (180-88108-2), MGWA-24 (180-88108-3), (LCS 160-422783/1-A), (LCSD 160-422783/2-A) and (MB 160-422783/23-A)

Method(s) 903.0, 9315: Ra-226 Prep Batch 160-422964

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.

MGWA-5 (180-88108-4), MGWA-6A (180-88108-5), (LCS 160-422964/1-A), (MB 160-422964/18-A), (400-167635-A-2-C) and (400-167635-A-2-B DU)

Method(s) 904.0, 9320: Ra-228 Prep Batch 160-422966

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.

MGWA-5 (180-88108-4), MGWA-6A (180-88108-5), (LCS 160-422966/1-A), (MB 160-422966/18-A), (400-167635-A-2-D) and (400-167635-A-2-E DU)

Method(s) 904.0, 9320: Radium-228 Prep Batch 160-422784

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.

MGWA-10 (180-88108-1), MGWA-11 (180-88108-2), MGWA-24 (180-88108-3), (LCS 160-422784/1-A), (LCSD 160-422784/2-A) and (MB 160-422784/23-A)

Method(s) PrecSep\_0: Radium-228 Prep Batch 160-422784:

The following sample was reduced due to sedimentation:

MGWA-24 (180-88108-3)

# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

---

## Job ID: 180-88108-2 (Continued)

---

### Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

Method(s) PrecSep-21: Radium-226 Prep Batch 160-422783:

The following sample was reduced due to sedimentation:

MGWA-24 (180-88108-3)

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

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# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

## 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.
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 McIntosh Ash Pond 1

Job ID: 180-88108-2  
 SDG: Ash

## Laboratory: Eurofins TestAmerica, Pittsburgh

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

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

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



# Accreditation/Certification Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
 SDG: Ash

## 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	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD / DOE		L2305	04-06-22
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-19 *
Connecticut	State Program	1	PH-0241	03-31-21
Florida	NELAP	4	E87689	06-30-19 *
Hawaii	State Program	9	NA	06-30-19
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19 *
New York	NELAP	2	11616	03-31-20
North Dakota	State Program	8	R207	06-30-19 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-20
South Carolina	State Program	4	85002001	06-30-19
Texas	NELAP	6	T104704193-18-13	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19 *
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

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



# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-88108-1	MGWA-10	Water	03/25/19 15:12	03/26/19 09:00
180-88108-2	MGWA-11	Water	03/25/19 16:45	03/26/19 09:00
180-88108-3	MGWA-24	Water	03/25/19 15:50	03/26/19 09:00
180-88108-4	MGWA-5	Water	03/25/19 17:10	03/26/19 09:00
180-88108-5	MGWA-6A	Water	03/25/19 18:00	03/26/19 09:00

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

# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

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 McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

## Client Sample ID: MGWA-10

## Lab Sample ID: 180-88108-1

Date Collected: 03/25/19 15:12

Matrix: Water

Date Received: 03/26/19 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			1000.02 mL	1.0 g	422783	04/04/19 18:54	CLP	TAL SL
Total/NA	Analysis	9315		1			426246	04/30/19 07:25	CDR	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Prep	PrecSep_0			1000.02 mL	1.0 g	422784	04/04/19 18:58	CLP	TAL SL
Total/NA	Analysis	9320		1			424435	04/19/19 08:49	BLH	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			426330	05/01/19 09:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-11

## Lab Sample ID: 180-88108-2

Date Collected: 03/25/19 16:45

Matrix: Water

Date Received: 03/26/19 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			1000.03 mL	1.0 g	422783	04/04/19 18:54	CLP	TAL SL
Total/NA	Analysis	9315		1			426246	04/30/19 07:25	CDR	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Prep	PrecSep_0			1000.03 mL	1.0 g	422784	04/04/19 18:58	CLP	TAL SL
Total/NA	Analysis	9320		1			424435	04/19/19 08:49	BLH	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			426330	05/01/19 09:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-24

## Lab Sample ID: 180-88108-3

Date Collected: 03/25/19 15:50

Matrix: Water

Date Received: 03/26/19 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			750.01 mL	1.0 g	422783	04/04/19 18:54	CLP	TAL SL
Total/NA	Analysis	9315		1			426246	04/30/19 07:25	CDR	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Prep	PrecSep_0			750.01 mL	1.0 g	422784	04/04/19 18:58	CLP	TAL SL
Total/NA	Analysis	9320		1	1.0 mL	1.0 mL	424435	04/19/19 08:49	BLH	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			426330	05/01/19 09:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-5

## Lab Sample ID: 180-88108-4

Date Collected: 03/25/19 17:10

Matrix: Water

Date Received: 03/26/19 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			1000.03 mL	1.0 g	422964	04/07/19 14:31	MMO	TAL SL
Total/NA	Analysis	9315		1			426116	04/30/19 07:36	CDR	TAL SL
Instrument ID: GFPCPROTEAN										

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
 SDG: Ash

## Client Sample ID: MGWA-5

## Lab Sample ID: 180-88108-4

Date Collected: 03/25/19 17:10

Matrix: Water

Date Received: 03/26/19 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_0			1000.03 mL	1.0 g	422966	04/07/19 14:31	MMO	TAL SL
Total/NA	Analysis	9320		1			424351	04/18/19 08:40	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			426330	05/01/19 09:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-6A

## Lab Sample ID: 180-88108-5

Date Collected: 03/25/19 18:00

Matrix: Water

Date Received: 03/26/19 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			999.97 mL	1.0 g	422964	04/07/19 14:31	MMO	TAL SL
Total/NA	Analysis	9315		1			426116	04/30/19 07:36	CDR	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Prep	PrecSep_0			999.97 mL	1.0 g	422966	04/07/19 14:31	MMO	TAL SL
Total/NA	Analysis	9320		1			424351	04/18/19 08:40	KLS	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			426330	05/01/19 09:26	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

CLP = Cassandra Park

MMO = Molly Olson

Batch Type: Analysis

BLH = Brandi Hayes

CDR = Conrad Reuscher

KLS = Kody Saulters

SMP = Siobhan Perry

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

**Client Sample ID: MGWA-10**

**Lab Sample ID: 180-88108-1**

Date Collected: 03/25/19 15:12

Matrix: Water

Date Received: 03/26/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.285		0.0990	0.102	1.00	0.0984	pCi/L	04/04/19 18:54	04/30/19 07:25	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	98.8		40 - 110					04/04/19 18:54	04/30/19 07:25	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.241	U	0.210	0.211	1.00	0.335	pCi/L	04/04/19 18:58	04/19/19 08:49	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	98.8		40 - 110					04/04/19 18:58	04/19/19 08:49	1
Y Carrier	87.5		40 - 110					04/04/19 18:58	04/19/19 08:49	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	0.526		0.232	0.234	5.00	0.335	pCi/L		05/01/19 09:26	1

**Client Sample ID: MGWA-11**

**Lab Sample ID: 180-88108-2**

Date Collected: 03/25/19 16:45

Matrix: Water

Date Received: 03/26/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.147		0.0729	0.0741	1.00	0.0799	pCi/L	04/04/19 18:54	04/30/19 07:25	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	94.1		40 - 110					04/04/19 18:54	04/30/19 07:25	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.569		0.239	0.245	1.00	0.333	pCi/L	04/04/19 18:58	04/19/19 08:49	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	94.1		40 - 110					04/04/19 18:58	04/19/19 08:49	1
Y Carrier	89.3		40 - 110					04/04/19 18:58	04/19/19 08:49	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

**Client Sample ID: MGWA-11**

**Lab Sample ID: 180-88108-2**

Date Collected: 03/25/19 16:45

Matrix: Water

Date Received: 03/26/19 09:00

**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	0.717		0.250	0.256	5.00	0.333	pCi/L		05/01/19 09:26	1

**Client Sample ID: MGWA-24**

**Lab Sample ID: 180-88108-3**

Date Collected: 03/25/19 15:50

Matrix: Water

Date Received: 03/26/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.246		0.113	0.115	1.00	0.125	pCi/L	04/04/19 18:54	04/30/19 07:25	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	90.9		40 - 110					04/04/19 18:54	04/30/19 07:25	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.385	U	0.308	0.310	1.00	0.488	pCi/L	04/04/19 18:58	04/19/19 08:49	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	90.9		40 - 110					04/04/19 18:58	04/19/19 08:49	1
Y Carrier	95.3		40 - 110					04/04/19 18:58	04/19/19 08:49	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	0.631		0.328	0.331	5.00	0.488	pCi/L		05/01/19 09:26	1

**Client Sample ID: MGWA-5**

**Lab Sample ID: 180-88108-4**

Date Collected: 03/25/19 17:10

Matrix: Water

Date Received: 03/26/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.158		0.0899	0.0910	1.00	0.116	pCi/L	04/07/19 14:31	04/30/19 07:36	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	88.5		40 - 110					04/07/19 14:31	04/30/19 07:36	1



# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

**Client Sample ID: MGWA-5**

**Lab Sample ID: 180-88108-4**

Date Collected: 03/25/19 17:10

Matrix: Water

Date Received: 03/26/19 09:00

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.471		0.252	0.256	1.00	0.375	pCi/L	04/07/19 14:31	04/18/19 08:40	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	88.5		40 - 110					04/07/19 14:31	04/18/19 08:40	1
Y Carrier	88.6		40 - 110					04/07/19 14:31	04/18/19 08:40	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	0.629		0.268	0.272	5.00	0.375	pCi/L		05/01/19 09:26	1

**Client Sample ID: MGWA-6A**

**Lab Sample ID: 180-88108-5**

Date Collected: 03/25/19 18:00

Matrix: Water

Date Received: 03/26/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.244		0.105	0.107	1.00	0.107	pCi/L	04/07/19 14:31	04/30/19 07:36	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	74.9		40 - 110					04/07/19 14:31	04/30/19 07:36	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.401	U	0.291	0.293	1.00	0.456	pCi/L	04/07/19 14:31	04/18/19 08:40	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	74.9		40 - 110					04/07/19 14:31	04/18/19 08:40	1
Y Carrier	88.6		40 - 110					04/07/19 14:31	04/18/19 08:40	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	0.646		0.309	0.312	5.00	0.456	pCi/L		05/01/19 09:26	1

# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

## Method: 9315 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-422783/23-A**  
**Matrix: Water**  
**Analysis Batch: 426248**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 422783**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.0006481	U	0.0304	0.0304	1.00	0.0689	pCi/L	04/04/19 18:54	04/30/19 07:30	1
Carrier	MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	%Yield	MB Qualifier	40 - 110					04/04/19 18:54	04/30/19 07:30	1
	96.8									

**Lab Sample ID: LCS 160-422783/1-A**  
**Matrix: Water**  
**Analysis Batch: 426246**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 422783**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.4	9.307		0.976	1.00	0.0829	pCi/L	82	75 - 125
Carrier	LCS		Limits						
Ba Carrier	%Yield	LCS Qualifier	40 - 110						
	103								

**Lab Sample ID: LCSD 160-422783/2-A**  
**Matrix: Water**  
**Analysis Batch: 426246**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 422783**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits	RER	Limit
				Uncert. (2σ+/-)							
Radium-226	11.4	9.460		0.989	1.00	0.0798	pCi/L	83	75 - 125	0.08	1
Carrier	LCSD		Limits								
Ba Carrier	%Yield	LCSD Qualifier	40 - 110								
	98.2										

**Lab Sample ID: MB 160-422964/18-A**  
**Matrix: Water**  
**Analysis Batch: 426116**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 422964**

Analyte	MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	MB Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-0.007536	U	0.0355	0.0355	1.00	0.0835	pCi/L	04/07/19 14:31	04/30/19 14:55	1
Carrier	MB		Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	%Yield	MB Qualifier	40 - 110					04/07/19 14:31	04/30/19 14:55	1
	103									

**Lab Sample ID: LCS 160-422964/1-A**  
**Matrix: Water**  
**Analysis Batch: 426116**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 422964**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.4	9.722		1.03	1.00	0.0960	pCi/L	86	75 - 125

Eurofins TestAmerica, Pittsburgh

# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

## Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-422964/1-A  
Matrix: Water  
Analysis Batch: 426116

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 422964

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	98.5		40 - 110

## Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-422784/23-A  
Matrix: Water  
Analysis Batch: 424434

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 422784

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.09924	U	0.205	0.205	1.00	0.351	pCi/L	04/04/19 18:58	04/19/19 08:54	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110	04/04/19 18:58	04/19/19 08:54	1
Y Carrier	87.9		40 - 110	04/04/19 18:58	04/19/19 08:54	1

Lab Sample ID: LCS 160-422784/1-A  
Matrix: Water  
Analysis Batch: 424435

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 422784

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.29	8.785		0.996	1.00	0.320	pCi/L	95	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	96.1		40 - 110

Lab Sample ID: LCSD 160-422784/2-A  
Matrix: Water  
Analysis Batch: 424435

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 422784

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	9.29	8.834		1.01	1.00	0.330	pCi/L	95	75 - 125	0.02	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	98.2		40 - 110
Y Carrier	95.3		40 - 110

Lab Sample ID: MB 160-422966/18-A  
Matrix: Water  
Analysis Batch: 424353

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 422966

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1009	U	0.165	0.165	1.00	0.279	pCi/L	04/07/19 14:31	04/18/19 08:43	1

Eurofins TestAmerica, Pittsburgh

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
 SDG: Ash

## Method: 9320 - Radium-228 (GFPC) (Continued)

**Lab Sample ID: MB 160-422966/18-A**  
**Matrix: Water**  
**Analysis Batch: 424353**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 422966**

Carrier	MB MB		Limits
	%Yield	Qualifier	
Ba Carrier	103		40 - 110
Y Carrier	91.2		40 - 110

Prepared	Analyzed	Dil Fac
04/07/19 14:31	04/18/19 08:43	1
04/07/19 14:31	04/18/19 08:43	1

**Lab Sample ID: LCS 160-422966/1-A**  
**Matrix: Water**  
**Analysis Batch: 424351**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 422966**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec.
									Limits
Radium-228	9.29	10.20		1.14	1.00	0.352	pCi/L	110	75 - 125

Carrier	LCS LCS		Limits
	%Yield	Qualifier	
Ba Carrier	98.5		40 - 110
Y Carrier	86.7		40 - 110

# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88108-2  
SDG: Ash

## Rad

### Prep Batch: 422783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88108-1	MGWA-10	Total/NA	Water	PrecSep-21	
180-88108-2	MGWA-11	Total/NA	Water	PrecSep-21	
180-88108-3	MGWA-24	Total/NA	Water	PrecSep-21	
MB 160-422783/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-422783/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCS D 160-422783/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

### Prep Batch: 422784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88108-1	MGWA-10	Total/NA	Water	PrecSep_0	
180-88108-2	MGWA-11	Total/NA	Water	PrecSep_0	
180-88108-3	MGWA-24	Total/NA	Water	PrecSep_0	
MB 160-422784/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-422784/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCS D 160-422784/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

### Prep Batch: 422964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88108-4	MGWA-5	Total/NA	Water	PrecSep-21	
180-88108-5	MGWA-6A	Total/NA	Water	PrecSep-21	
MB 160-422964/18-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-422964/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

### Prep Batch: 422966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88108-4	MGWA-5	Total/NA	Water	PrecSep_0	
180-88108-5	MGWA-6A	Total/NA	Water	PrecSep_0	
MB 160-422966/18-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-422966/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	



Chain of Custody Record

681-Atlanta

<b>Client Information</b> Client Contact: <u>Lauren Coker</u> Company: <u>GEI Consultants, Inc.</u> Address: <u>1375 Peachtree Street NE Suite A15</u> City: <u>Atlanta</u> State: <u>GA</u> Zip: <u>30309</u> Phone: <u>205-992-5417(Tel)</u> Email: <u>lcoker@geiconsultants.com</u> Project Name: <u>CCR - Plant McIntosh Ash Pond 1</u> Site:		Sampler: <u>L. Coker, J. Adcock, J. Nicks</u> Lab PM: <u>Bortot, Veronica</u> Phone: <u>404-592-0094</u> E-Mail: <u>veronica.bortot@testamericainc.com</u>		COC No: <u>180-50377-10410.1</u> Page: <u>1 of 3</u> Job #:	
Due Date Requested: TAT Requested (days): <u>Standard</u> PO #: <u>SCS10347656</u> WO #:		Carrier Tracking Note(s):		Analysis Requested	
Sample Identification <u>MGWA-10</u> <u>MGWA-11</u> <u>MGWA-24</u> <u>MGWA-S</u> <u>MGWA-6A</u>		Sample Date <u>3/25/19</u> <u>3/25/19</u> <u>3/25/19</u> <u>3/25/19</u> <u>3/25/19</u>	Sample Time <u>1512</u> <u>1645</u> <u>1550</u> <u>1710</u> <u>1800</u>	Sample Type (C=Comp, G=grab) <u>G</u> <u>G</u> <u>G</u> <u>G</u> <u>G</u>	Matrix (W=water, S=solid, O=other, BT=Tabac, A=Air) <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u> <u>Water</u>
Field Filtered Sample (Yes or No) Preform Rinse (Yes or No)		Field Filtered Sample (Yes or No) Preform Rinse (Yes or No)		Total Number of Containers	
Special Instructions/Note: <u>Assessment</u> <u>Event #1</u>		Special Instructions/Note: 180-88108 Chain of Custody		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:	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		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: <u>James Coker</u> Relinquished by: <u>James Coker</u> Relinquished by:		Date: <u>3/25/19</u> Date: <u>3/25/19</u> Date:		Method of Shipment:	
Custody Seals Intact: Δ Yes Δ No		Company: <u>GEI</u> Company: <u>FELEX</u> Company:		Date/Time: <u>3/25/19 1900</u> Date/Time: <u>3-26-19 9:00</u> Date/Time:	
Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		Company: <u>FELEX</u> Company: <u>FELEX</u> Company:	





ORIGIN ID: SAVA (919) 724-7237  
JAKE ADCOCK

SEE CHEERS 5 BEFORE BILL  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

0 JAKE ADCOCK

RIDC PK  
301 ALPHA DR  
PITTSBURGH PA 15238

(412) 868-7058  
REF: 0201

DEPT:



TUE - 26 MAR 10:30A  
PRIORITY OVERNIGHT

TRK# 7862 4454 9520

**XH AGCA**

15238  
PA-US PIT

Uncorrected temp  
Thermometer ID

1.7 / 10 °C

CF Initials

JS

PT-WL-SR-001 effective 1/18/18



SHIP DATE: 25MAR19  
56.30 LB  
4819/SSFE2002  
03 26 1 IN  
9520

10:30 A  
1

97



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

ORIGIN ID: SAVA (919) 724-7237  
JAKE ADCOCK

SEE CHECKS 5 BEFORE BILL  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

TO JAKE ADCOCK

RIDC PK  
301 ALPHA DR  
PITTSBURGH PA 15238

(412) 863-7058 REF.  
INV# PO# DEPT#

SHIP DATE: 25-MAR-19  
P 9:27:00 03/26/19  
9520  
10:30 A  
1  
97  
98



TUE - 26 MAR 10:30A  
PRIORITY OVERNIGHT

TRK# 7862 4454 9520

**XH AGCA**

15238  
PA-US PIT

Uncorrected temp Thermometer ID

CF Q Initials JS

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

1.7 / 10 °C



- 1
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- 13



# Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Lab PM: Bortol, Veronica	Carrier Tracking No(s):
Client Contact: Shipping/Receiving		E-Mail: veronica.bortol@testamericainc.com	State of Origin: Georgia
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):	
Address: 13715 Rider Trail North, Earth City, MO, 63045		COC No: 180-358344.1	
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		Page: Page 1 of 1	
Email:		Job #: 180-88108-1	
Project Name: CCR - Plant McIntosh Ash Pond 1		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 - ASN02 P - Na2OAS Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)	
Site:		Other:	
Due Date Requested: 4/5/2019		Analysis Requested:	
TAT Requested (days):		Total Number of containers:	
PO #:		9320_Ra228/PrecSep_0 Standard Target List	
WO #:		9315_Ra226/PrecSep_21 (MOD) Copy Analyses	
Project #: 18019956		Ra226Ra228 GFPC	
SSOW#:		Perform MS/MSD (Yes or No)	
		Field Filtered Sample (Yes or No)	
		Preservation Code:	
		Sample Date	
		Sample Time	
		Sample Type (C=Comp, G=grab) BT-Tissue, Analyt	
		Matrix (W=water, S=solid, O=water/Oil)	
Sample Identification - Client ID (Lab ID)		Special Instructions/Note:	
MGWA-10 (180-88108-1)	3/25/19 15:12 Eastern	Water	1
MGWA-11 (180-88108-2)	3/25/19 16:45 Eastern	Water	1
MGWA-24 (180-88108-3)	3/25/19 15:50 Eastern	Water	1
MGWA-5 (180-88108-4)	3/25/19 17:10 Eastern	Water	1
MGWA-6A (180-88108-5)	3/25/19 18:00 Eastern	Water	1
<p>Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte &amp; 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/testing/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>			
<b>Possible Hazard Identification</b>			
Unconfirmed			
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2			
Empty Kit Relinquished by: _____ Date: _____ Time: _____			
Relinquished by: _____ Date/Time: 3/27/19 17:00 Company: _____			
Relinquished by: _____ Date/Time: _____ Company: _____			
Relinquished by: _____ Date/Time: _____ Company: _____			
Custody Seals Intact: _____ Custody Seal No.: _____			
Δ Yes Δ No			
Cooler Temperature(s) °C and Other Remarks:			
Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month )			
Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Special Instructions/QC Requirements:			
Method of Shipment:			

**TestAmerica Pittsburgh**  
 301 Alpha Drive RIDC Park  
 Pittsburgh, PA 15238  
 Phone (412) 963-7058 Fax (412) 963-2468

**Chain of Custody Record**



**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

<b>Client Information (Sub Contract Lab)</b>		Sampler:	Lab PM:		COC No:				
Client Contact:		Phone:	Bortol, Veronica		180-358344.1				
Shipping/Receiving:		Email:	veronica.bortol@testamericainc.com		Page: 1 of 1				
Company:		Accreditations Required (See note):		Page 1 of 1		Job #:			
TestAmerica Laboratories, Inc.						180-88108-1			
Address:		Due Date Requested:	Analysis Requested						
13715 Rider Trail North,		4/5/2019							
City:		TAT Requested (days):							
Earth City									
State/Zip:									
MO, 63045									
Phone:		PO #:							
314-298-8566(Tel) 314-298-8757(Fax)									
Email:		WO #:							
Project Name:		Project #:							
CCR - Plant McInosh Ash Pond 1		18019956							
Site:		SSOW#:							
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>	<b>Sample Time</b>	<b>Sample Type (C=Comp, G=grab)</b>	<b>Matrix (W=Water, S=solid, O=Organic, A=Analyte)</b>	<b>Field Filtered Sample (Yes or No)</b>	<b>Perform MS/MSD (Yes or No)</b>	<b>Total Number of containers</b>	<b>Special Instructions/Note:</b>
MGWA-10 (180-88108-1)		3/25/19	15:12 Eastern	Water	Water	X	X	X	
MGWA-11 (180-88108-2)		3/25/19	16:45 Eastern	Water	Water	X	X	X	
MGWA-24 (180-88108-3)		3/25/19	15:50 Eastern	Water	Water	X	X	X	
MGWA-5 (180-88108-4)		3/25/19	17:10 Eastern	Water	Water	X	X	X	
MGWA-6A (180-88108-5)		3/25/19	18:00 Eastern	Water	Water	X	X	X	
<b>Possible Hazard Identification</b>		<b>Unconfirmed</b>		<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>		<input type="checkbox"/> Return To Client		<input type="checkbox"/> Disposal By Lab	
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2		Special Instructions/QC Requirements:		<input type="checkbox"/> Archive For		Months	
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:					
Relinquished by:		Date/Time:	3/27/19 17:00	Company:	MPH	Received by:	Michael Sturm	Date/Time:	3-28-19 09:20
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-88108-2

SDG Number: Ash

**Login Number: 88108**

**List Source: Eurofins TestAmerica, Pittsburgh**

**List Number: 1**

**Creator: Watson, Debbie**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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: 180-88108-2

SDG Number: Ash

**Login Number: 88108**

**List Number: 2**

**Creator: Hellm, Michael**

**List Source: Eurofins TestAmerica, St. Louis**

**List Creation: 03/28/19 02:03 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	20.0
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	





## ANALYTICAL REPORT

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

Laboratory Job ID: 180-88159-1

Laboratory Sample Delivery Group: Ash

Client Project/Site: CCR - Plant McIntosh Ash Pond 1

**For:**

Southern Company  
PO BOX 2641 GSC8  
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty



Authorized for release by:  
4/11/2019 6:11:19 PM

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

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

**Job ID: 180-88159-1**

**Laboratory: Eurofins TestAmerica, Pittsburgh**

## Narrative

### Job Narrative 180-88159-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 3/27/2019 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 2.0° C, 2.2° C

#### Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. There is no relinquished by time listed on the COC.

#### .Anions

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

#### Metals

Method(s) 6020, SM 2340B: The continuing calibration blank (CCB) for analytical batch 400-435553 contained Calcium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method(s) 6020, The following samples were diluted to bring the concentration of target analytes within the calibration range: MGWC-2 (180-88159-4) and MGWC-8 (180-88159-6). Elevated reporting limits (RLs) are provided.

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

#### General Chemistry

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

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
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 McIntosh Ash Pond 1

Job ID: 180-88159-1  
 SDG: Ash

## Laboratory: Eurofins TestAmerica, Pittsburgh

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

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

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

# Accreditation/Certification Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
 SDG: Ash

## Laboratory: Eurofins TestAmerica, Pensacola

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alabama	State Program	4	40150	06-30-19
ANAB	ISO/IEC 17025		L2471	02-22-20
Arizona	State Program	9	AZ0710	01-12-20
Arkansas DEQ	State Program	6	88-0689	09-01-19
California	State Program	9	2510	06-30-19
Florida	NELAP	4	E81010	06-30-19
Georgia	State Program	4	E81010 (FL)	06-30-19
Illinois	NELAP	5	200041	10-09-19
Iowa	State Program	7	367	08-01-20
Kansas	NELAP	7	E-10253	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
Maryland	State Program	3	233	09-30-19
Massachusetts	State Program	1	M-FL094	06-30-19
Michigan	State Program	5	9912	06-30-19
New Jersey	NELAP	2	FL006	06-30-19
North Carolina (WW/SW)	State Program	4	314	12-31-19
Oklahoma	State Program	6	9810	08-31-19
Pennsylvania	NELAP	3	68-00467	01-31-20
Rhode Island	State Program	1	LAO00307	12-30-19
South Carolina	State Program	4	96026	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-15	09-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-18-00148	05-17-21
Virginia	NELAP	3	460166	06-14-19
Washington	State Program	10	C915	05-15-19
West Virginia DEP	State Program	3	136	07-31-19



# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-88159-1	MGWC-3	Water	03/26/19 10:00	03/27/19 09:00
180-88159-2	MGWC-12	Water	03/26/19 10:20	03/27/19 09:00
180-88159-3	MGWA-6	Water	03/26/19 10:25	03/27/19 09:00
180-88159-4	MGWC-2	Water	03/26/19 11:23	03/27/19 09:00
180-88159-5	MGWC-1	Water	03/26/19 12:00	03/27/19 09:00
180-88159-6	MGWC-8	Water	03/26/19 12:50	03/27/19 09:00
180-88159-7	MGWC-7	Water	03/26/19 12:55	03/27/19 09:00
180-88159-8	AP-DUP-01	Water	03/26/19 00:00	03/27/19 09:00
180-88159-9	AP-DUP-02	Water	03/26/19 00:00	03/27/19 09:00
180-88159-10	FB-AP-01	Water	03/26/19 13:15	03/27/19 09:00
180-88159-11	FB-AP-02	Water	03/26/19 13:20	03/27/19 09:00
180-88159-12	FERB-AP-01	Water	03/26/19 13:30	03/27/19 09:00
180-88159-13	FERB-AP-02	Water	03/26/19 13:40	03/27/19 09:00

# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
6020	Metals (ICP/MS)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PEN

#### Protocol References:

EPA = US Environmental Protection Agency

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.

#### Laboratory References:

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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 McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

## Client Sample ID: MGWC-3

## Lab Sample ID: 180-88159-1

Date Collected: 03/26/19 10:00

Matrix: Water

Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274661	04/03/19 07:34	MJH	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/01/19 23:47	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274448	03/30/19 13:18	AVS	TAL PIT
Instrument ID: NOEQUIP										

## Client Sample ID: MGWC-12

## Lab Sample ID: 180-88159-2

Date Collected: 03/26/19 10:20

Matrix: Water

Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274532	04/02/19 13:01	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/01/19 23:51	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274448	03/30/19 13:18	AVS	TAL PIT
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-6

## Lab Sample ID: 180-88159-3

Date Collected: 03/26/19 10:25

Matrix: Water

Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274532	04/02/19 13:16	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/01/19 23:54	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274448	03/30/19 13:18	AVS	TAL PIT
Instrument ID: NOEQUIP										

## Client Sample ID: MGWC-2

## Lab Sample ID: 180-88159-4

Date Collected: 03/26/19 11:23

Matrix: Water

Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274532	04/02/19 13:32	MJH	TAL PIT
Instrument ID: CHICS2100B										

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

**Client Sample ID: MGWC-2**

**Lab Sample ID: 180-88159-4**

**Date Collected: 03/26/19 11:23**

**Matrix: Water**

**Date Received: 03/27/19 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	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/01/19 23:58	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total Recoverable	Prep	3005A	DL		50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020	DL	25			435553	04/02/19 11:17	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274448	03/30/19 13:18	AVS	TAL PIT
Instrument ID: NOEQUIP										

**Client Sample ID: MGWC-1**

**Lab Sample ID: 180-88159-5**

**Date Collected: 03/26/19 12:00**

**Matrix: Water**

**Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274532	04/02/19 14:04	MJH	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/02/19 00:02	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274448	03/30/19 13:18	AVS	TAL PIT
Instrument ID: NOEQUIP										

**Client Sample ID: MGWC-8**

**Lab Sample ID: 180-88159-6**

**Date Collected: 03/26/19 12:50**

**Matrix: Water**

**Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274661	04/03/19 07:49	MJH	TAL PIT
Instrument ID: CHIC2100A										
Total/NA	Analysis	EPA 300.0 R2.1		5			274661	04/03/19 10:39	MJH	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/02/19 00:06	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total Recoverable	Prep	3005A	DL		50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020	DL	50			435553	04/02/19 11:21	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274448	03/30/19 13:18	AVS	TAL PIT
Instrument ID: NOEQUIP										

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
 SDG: Ash

## Client Sample ID: MGWC-7

## Lab Sample ID: 180-88159-7

Date Collected: 03/26/19 12:55

Matrix: Water

Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274661	04/03/19 11:10	MJH	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/02/19 00:09	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274448	03/30/19 13:18	AVS	TAL PIT
Instrument ID: NOEQUIP										

## Client Sample ID: AP-DUP-01

## Lab Sample ID: 180-88159-8

Date Collected: 03/26/19 00:00

Matrix: Water

Date Received: 03/27/19 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	EPA 300.0 R2.1		1			275006	04/06/19 19:25	JBF	TAL PIT
Instrument ID: CHICS2100B										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/02/19 00:13	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274448	03/30/19 13:18	AVS	TAL PIT
Instrument ID: NOEQUIP										

## Client Sample ID: AP-DUP-02

## Lab Sample ID: 180-88159-9

Date Collected: 03/26/19 00:00

Matrix: Water

Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274661	04/03/19 07:17	MJH	TAL PIT
Instrument ID: CHIC2100A										
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/02/19 00:17	DRE	TAL PEN
Instrument ID: ICPMS7700										
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274449	03/30/19 13:52	AVS	TAL PIT
Instrument ID: NOEQUIP										

## Client Sample ID: FB-AP-01

## Lab Sample ID: 180-88159-10

Date Collected: 03/26/19 13:15

Matrix: Water

Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274661	04/03/19 09:37	MJH	TAL PIT
Instrument ID: CHIC2100A										

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
 SDG: Ash

## Client Sample ID: FB-AP-01

## Lab Sample ID: 180-88159-10

Date Collected: 03/26/19 13:15

Matrix: Water

Date Received: 03/27/19 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	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/02/19 00:40	DRE	TAL PEN
		Instrument ID: ICPMS7700								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274449	03/30/19 13:52	AVS	TAL PIT
		Instrument ID: NOEQUIP								

## Client Sample ID: FB-AP-02

## Lab Sample ID: 180-88159-11

Date Collected: 03/26/19 13:20

Matrix: Water

Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274661	04/03/19 09:52	MJH	TAL PIT
		Instrument ID: CHIC2100A								
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/02/19 00:44	DRE	TAL PEN
		Instrument ID: ICPMS7700								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274449	03/30/19 13:52	AVS	TAL PIT
		Instrument ID: NOEQUIP								

## Client Sample ID: FERB-AP-01

## Lab Sample ID: 180-88159-12

Date Collected: 03/26/19 13:30

Matrix: Water

Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274661	04/03/19 10:08	MJH	TAL PIT
		Instrument ID: CHIC2100A								
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/02/19 00:48	DRE	TAL PEN
		Instrument ID: ICPMS7700								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274449	03/30/19 13:52	AVS	TAL PIT
		Instrument ID: NOEQUIP								

## Client Sample ID: FERB-AP-02

## Lab Sample ID: 180-88159-13

Date Collected: 03/26/19 13:40

Matrix: Water

Date Received: 03/27/19 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	EPA 300.0 R2.1		1			274661	04/03/19 10:24	MJH	TAL PIT
		Instrument ID: CHIC2100A								
Total Recoverable	Prep	3005A			50 mL	50 mL	435281	03/30/19 11:31	AC	TAL PEN
Total Recoverable	Analysis	6020		5			435553	04/02/19 00:51	DRE	TAL PEN
		Instrument ID: ICPMS7700								
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274449	03/30/19 13:52	AVS	TAL PIT
		Instrument ID: NOEQUIP								



# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

## Laboratory References:

TAL PEN = Eurofins TestAmerica, Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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

## Analyst References:

Lab: TAL PEN

Batch Type: Prep

AC = Alexis Castaing

Batch Type: Analysis

DRE = Daniel Etscheid

Lab: TAL PIT

Batch Type: Analysis

AVS = Abbey Smith

JBF = Joshua Fritsch

MJH = Matthew Hartman

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

## Client Sample ID: MGWC-3

## Lab Sample ID: 180-88159-1

Date Collected: 03/26/19 10:00

Matrix: Water

Date Received: 03/27/19 09:00

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14		1.0	0.71	mg/L			04/03/19 07:34	1
Fluoride	0.072	J	0.20	0.026	mg/L			04/03/19 07:34	1
Sulfate	110		1.0	0.38	mg/L			04/03/19 07:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0012	J	0.0013	0.00046	mg/L		03/30/19 11:31	04/01/19 23:47	5
Boron	1.5		0.050	0.021	mg/L		03/30/19 11:31	04/01/19 23:47	5
Barium	0.13		0.0025	0.00049	mg/L		03/30/19 11:31	04/01/19 23:47	5
Calcium	99	^	0.25	0.13	mg/L		03/30/19 11:31	04/01/19 23:47	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/01/19 23:47	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/01/19 23:47	5
Lithium	0.012		0.0050	0.0011	mg/L		03/30/19 11:31	04/01/19 23:47	5

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	370		10	10	mg/L			03/30/19 13:18	1

## Client Sample ID: MGWC-12

## Lab Sample ID: 180-88159-2

Date Collected: 03/26/19 10:20

Matrix: Water

Date Received: 03/27/19 09:00

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.8		1.0	0.71	mg/L			04/02/19 13:01	1
Fluoride	0.22		0.10	0.026	mg/L			04/02/19 13:01	1
Sulfate	2.9		1.0	0.38	mg/L			04/02/19 13:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00079	J	0.0013	0.00046	mg/L		03/30/19 11:31	04/01/19 23:51	5
Boron	0.032	J	0.050	0.021	mg/L		03/30/19 11:31	04/01/19 23:51	5
Barium	0.060		0.0025	0.00049	mg/L		03/30/19 11:31	04/01/19 23:51	5
Calcium	33	^	0.25	0.13	mg/L		03/30/19 11:31	04/01/19 23:51	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/01/19 23:51	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/01/19 23:51	5
Lithium	0.020		0.0050	0.0011	mg/L		03/30/19 11:31	04/01/19 23:51	5

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	180		10	10	mg/L			03/30/19 13:18	1

## Client Sample ID: MGWA-6

## Lab Sample ID: 180-88159-3

Date Collected: 03/26/19 10:25

Matrix: Water

Date Received: 03/27/19 09:00

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.8		1.0	0.71	mg/L			04/02/19 13:16	1
Fluoride	0.065	J	0.10	0.026	mg/L			04/02/19 13:16	1
Sulfate	6.3		1.0	0.38	mg/L			04/02/19 13:16	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

**Client Sample ID: MGWA-6**

**Lab Sample ID: 180-88159-3**

Date Collected: 03/26/19 10:25

Matrix: Water

Date Received: 03/27/19 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0097		0.0013	0.00046	mg/L		03/30/19 11:31	04/01/19 23:54	5
Boron	0.079		0.050	0.021	mg/L		03/30/19 11:31	04/01/19 23:54	5
Barium	0.033		0.0025	0.00049	mg/L		03/30/19 11:31	04/01/19 23:54	5
Calcium	100	^	0.25	0.13	mg/L		03/30/19 11:31	04/01/19 23:54	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/01/19 23:54	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/01/19 23:54	5
Lithium	<0.0011		0.0050	0.0011	mg/L		03/30/19 11:31	04/01/19 23:54	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	290		10	10	mg/L			03/30/19 13:18	1

**Client Sample ID: MGWC-2**

**Lab Sample ID: 180-88159-4**

Date Collected: 03/26/19 11:23

Matrix: Water

Date Received: 03/27/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14		1.0	0.71	mg/L			04/02/19 13:32	1
Fluoride	0.076	J	0.10	0.026	mg/L			04/02/19 13:32	1
Sulfate	190		1.0	0.38	mg/L			04/02/19 13:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		03/30/19 11:31	04/01/19 23:58	5
Barium	0.048		0.0025	0.00049	mg/L		03/30/19 11:31	04/01/19 23:58	5
Cadmium	0.0019	J	0.0025	0.00034	mg/L		03/30/19 11:31	04/01/19 23:58	5
Cobalt	0.0030		0.0025	0.00040	mg/L		03/30/19 11:31	04/01/19 23:58	5
Lithium	0.0051		0.0050	0.0011	mg/L		03/30/19 11:31	04/01/19 23:58	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.6		0.25	0.11	mg/L		03/30/19 11:31	04/02/19 11:17	25
Calcium	110		1.3	0.63	mg/L		03/30/19 11:31	04/02/19 11:17	25

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	530		10	10	mg/L			03/30/19 13:18	1

**Client Sample ID: MGWC-1**

**Lab Sample ID: 180-88159-5**

Date Collected: 03/26/19 12:00

Matrix: Water

Date Received: 03/27/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		1.0	0.71	mg/L			04/02/19 14:04	1
Fluoride	0.16		0.10	0.026	mg/L			04/02/19 14:04	1
Sulfate	130		1.0	0.38	mg/L			04/02/19 14:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0020		0.0013	0.00046	mg/L		03/30/19 11:31	04/02/19 00:02	5

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

**Client Sample ID: MGWC-1**

**Lab Sample ID: 180-88159-5**

Date Collected: 03/26/19 12:00

Matrix: Water

Date Received: 03/27/19 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.3		0.050	0.021	mg/L		03/30/19 11:31	04/02/19 00:02	5
Barium	0.096		0.0025	0.00049	mg/L		03/30/19 11:31	04/02/19 00:02	5
Calcium	100	^	0.25	0.13	mg/L		03/30/19 11:31	04/02/19 00:02	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/02/19 00:02	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/02/19 00:02	5
Lithium	0.010		0.0050	0.0011	mg/L		03/30/19 11:31	04/02/19 00:02	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	370		10	10	mg/L			03/30/19 13:18	1

**Client Sample ID: MGWC-8**

**Lab Sample ID: 180-88159-6**

Date Collected: 03/26/19 12:50

Matrix: Water

Date Received: 03/27/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11		1.0	0.71	mg/L			04/03/19 07:49	1
Fluoride	0.088	J	0.20	0.026	mg/L			04/03/19 07:49	1
Sulfate	420		5.0	1.9	mg/L			04/03/19 10:39	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		03/30/19 11:31	04/02/19 00:06	5
Barium	0.032		0.0025	0.00049	mg/L		03/30/19 11:31	04/02/19 00:06	5
Calcium	96	^	0.25	0.13	mg/L		03/30/19 11:31	04/02/19 00:06	5
Cadmium	0.00050	J	0.0025	0.00034	mg/L		03/30/19 11:31	04/02/19 00:06	5
Cobalt	0.020		0.0025	0.00040	mg/L		03/30/19 11:31	04/02/19 00:06	5
Lithium	0.043		0.0050	0.0011	mg/L		03/30/19 11:31	04/02/19 00:06	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	5.1		0.50	0.21	mg/L		03/30/19 11:31	04/02/19 11:21	50

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	630		10	10	mg/L			03/30/19 13:18	1

**Client Sample ID: MGWC-7**

**Lab Sample ID: 180-88159-7**

Date Collected: 03/26/19 12:55

Matrix: Water

Date Received: 03/27/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11		1.0	0.71	mg/L			04/03/19 11:10	1
Fluoride	0.19	J	0.20	0.026	mg/L			04/03/19 11:10	1
Sulfate	180		1.0	0.38	mg/L			04/03/19 11:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		03/30/19 11:31	04/02/19 00:09	5
Boron	1.5		0.050	0.021	mg/L		03/30/19 11:31	04/02/19 00:09	5

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

**Client Sample ID: MGWC-7**

**Lab Sample ID: 180-88159-7**

Date Collected: 03/26/19 12:55

Matrix: Water

Date Received: 03/27/19 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0086		0.0025	0.00049	mg/L		03/30/19 11:31	04/02/19 00:09	5
Calcium	52	^	0.25	0.13	mg/L		03/30/19 11:31	04/02/19 00:09	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/02/19 00:09	5
Cobalt	0.0090		0.0025	0.00040	mg/L		03/30/19 11:31	04/02/19 00:09	5
Lithium	0.12		0.0050	0.0011	mg/L		03/30/19 11:31	04/02/19 00:09	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	320		10	10	mg/L			03/30/19 13:18	1

**Client Sample ID: AP-DUP-01**

**Lab Sample ID: 180-88159-8**

Date Collected: 03/26/19 00:00

Matrix: Water

Date Received: 03/27/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.5		1.0	0.71	mg/L			04/06/19 19:25	1
Fluoride	0.048	J	0.20	0.026	mg/L			04/06/19 19:25	1
Sulfate	7.9		1.0	0.38	mg/L			04/06/19 19:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.010		0.0013	0.00046	mg/L		03/30/19 11:31	04/02/19 00:13	5
Boron	0.15		0.050	0.021	mg/L		03/30/19 11:31	04/02/19 00:13	5
Barium	0.034		0.0025	0.00049	mg/L		03/30/19 11:31	04/02/19 00:13	5
Calcium	100	^	0.25	0.13	mg/L		03/30/19 11:31	04/02/19 00:13	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/02/19 00:13	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/02/19 00:13	5
Lithium	<0.0011		0.0050	0.0011	mg/L		03/30/19 11:31	04/02/19 00:13	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	290		10	10	mg/L			03/30/19 13:18	1

**Client Sample ID: AP-DUP-02**

**Lab Sample ID: 180-88159-9**

Date Collected: 03/26/19 00:00

Matrix: Water

Date Received: 03/27/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		1.0	0.71	mg/L			04/03/19 07:17	1
Fluoride	0.14	J	0.20	0.026	mg/L			04/03/19 07:17	1
Sulfate	130		1.0	0.38	mg/L			04/03/19 07:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0021		0.0013	0.00046	mg/L		03/30/19 11:31	04/02/19 00:17	5
Boron	1.3		0.050	0.021	mg/L		03/30/19 11:31	04/02/19 00:17	5
Barium	0.097		0.0025	0.00049	mg/L		03/30/19 11:31	04/02/19 00:17	5
Calcium	100	^	0.25	0.13	mg/L		03/30/19 11:31	04/02/19 00:17	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/02/19 00:17	5

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

**Client Sample ID: AP-DUP-02**

**Lab Sample ID: 180-88159-9**

Date Collected: 03/26/19 00:00

Matrix: Water

Date Received: 03/27/19 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/02/19 00:17	5
Lithium	<b>0.011</b>		0.0050	0.0011	mg/L		03/30/19 11:31	04/02/19 00:17	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<b>370</b>		10	10	mg/L			03/30/19 13:52	1

**Client Sample ID: FB-AP-01**

**Lab Sample ID: 180-88159-10**

Date Collected: 03/26/19 13:15

Matrix: Water

Date Received: 03/27/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			04/03/19 09:37	1
Fluoride	<0.026		0.20	0.026	mg/L			04/03/19 09:37	1
Sulfate	<b>0.70 J</b>		1.0	0.38	mg/L			04/03/19 09:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		03/30/19 11:31	04/02/19 00:40	5
Boron	<0.021		0.050	0.021	mg/L		03/30/19 11:31	04/02/19 00:40	5
Barium	<0.00049		0.0025	0.00049	mg/L		03/30/19 11:31	04/02/19 00:40	5
Calcium	<0.13		0.25	0.13	mg/L		03/30/19 11:31	04/02/19 00:40	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/02/19 00:40	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/02/19 00:40	5
Lithium	<0.0011		0.0050	0.0011	mg/L		03/30/19 11:31	04/02/19 00:40	5

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			03/30/19 13:52	1

**Client Sample ID: FB-AP-02**

**Lab Sample ID: 180-88159-11**

Date Collected: 03/26/19 13:20

Matrix: Water

Date Received: 03/27/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			04/03/19 09:52	1
Fluoride	<0.026		0.20	0.026	mg/L			04/03/19 09:52	1
Sulfate	<b>0.46 J</b>		1.0	0.38	mg/L			04/03/19 09:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		03/30/19 11:31	04/02/19 00:44	5
Boron	<0.021		0.050	0.021	mg/L		03/30/19 11:31	04/02/19 00:44	5
Barium	<0.00049		0.0025	0.00049	mg/L		03/30/19 11:31	04/02/19 00:44	5
Calcium	<0.13		0.25	0.13	mg/L		03/30/19 11:31	04/02/19 00:44	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/02/19 00:44	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/02/19 00:44	5
Lithium	<0.0011		0.0050	0.0011	mg/L		03/30/19 11:31	04/02/19 00:44	5

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

**Client Sample ID: FB-AP-02**

**Lab Sample ID: 180-88159-11**

Date Collected: 03/26/19 13:20

Matrix: Water

Date Received: 03/27/19 09:00

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			03/30/19 13:52	1

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-88159-12**

Date Collected: 03/26/19 13:30

Matrix: Water

Date Received: 03/27/19 09:00

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			04/03/19 10:08	1
Fluoride	<0.026		0.20	0.026	mg/L			04/03/19 10:08	1
Sulfate	<0.38		1.0	0.38	mg/L			04/03/19 10:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		03/30/19 11:31	04/02/19 00:48	5
Boron	<0.021		0.050	0.021	mg/L		03/30/19 11:31	04/02/19 00:48	5
Barium	<0.00049		0.0025	0.00049	mg/L		03/30/19 11:31	04/02/19 00:48	5
Calcium	<0.13		0.25	0.13	mg/L		03/30/19 11:31	04/02/19 00:48	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/02/19 00:48	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/02/19 00:48	5
Lithium	<0.0011		0.0050	0.0011	mg/L		03/30/19 11:31	04/02/19 00:48	5

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			03/30/19 13:52	1

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-88159-13**

Date Collected: 03/26/19 13:40

Matrix: Water

Date Received: 03/27/19 09:00

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			04/03/19 10:24	1
Fluoride	<0.026		0.20	0.026	mg/L			04/03/19 10:24	1
Sulfate	<b>0.64 J</b>		1.0	0.38	mg/L			04/03/19 10:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		03/30/19 11:31	04/02/19 00:51	5
Boron	<0.021		0.050	0.021	mg/L		03/30/19 11:31	04/02/19 00:51	5
Barium	<0.00049		0.0025	0.00049	mg/L		03/30/19 11:31	04/02/19 00:51	5
Calcium	<0.13		0.25	0.13	mg/L		03/30/19 11:31	04/02/19 00:51	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/02/19 00:51	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/02/19 00:51	5
Lithium	<0.0011		0.0050	0.0011	mg/L		03/30/19 11:31	04/02/19 00:51	5

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			03/30/19 13:52	1

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
 SDG: Ash

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

**Lab Sample ID: MB 180-274532/6**  
**Matrix: Water**  
**Analysis Batch: 274532**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			04/02/19 05:41	1
Fluoride	<0.026		0.10	0.026	mg/L			04/02/19 05:41	1
Sulfate	<0.38		1.0	0.38	mg/L			04/02/19 05:41	1

**Lab Sample ID: LCS 180-274532/5**  
**Matrix: Water**  
**Analysis Batch: 274532**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.6		mg/L		102	90 - 110
Fluoride	1.25	1.24		mg/L		99	90 - 110
Sulfate	25.0	25.2		mg/L		101	90 - 110

**Lab Sample ID: MB 180-274661/6**  
**Matrix: Water**  
**Analysis Batch: 274661**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			04/03/19 06:33	1
Fluoride	<0.026		0.20	0.026	mg/L			04/03/19 06:33	1
Sulfate	<0.38		1.0	0.38	mg/L			04/03/19 06:33	1

**Lab Sample ID: LCS 180-274661/5**  
**Matrix: Water**  
**Analysis Batch: 274661**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	27.1		mg/L		108	90 - 110
Fluoride	1.25	1.28		mg/L		103	90 - 110
Sulfate	25.0	26.5		mg/L		106	90 - 110

**Lab Sample ID: 180-88159-7 MS**  
**Matrix: Water**  
**Analysis Batch: 274661**

**Client Sample ID: MGWC-7**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	11		25.0	39.2		mg/L		114	80 - 120
Fluoride	0.19	J	1.25	1.49		mg/L		104	80 - 120
Sulfate	180		25.0	193	4	mg/L		48	80 - 120

**Lab Sample ID: 180-88159-7 MSD**  
**Matrix: Water**  
**Analysis Batch: 274661**

**Client Sample ID: MGWC-7**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	11		25.0	39.7		mg/L		116	80 - 120	1	20
Fluoride	0.19	J	1.25	1.53		mg/L		107	80 - 120	2	20
Sulfate	180		25.0	195	4	mg/L		55	80 - 120	1	20

# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 180-275006/5**  
**Matrix: Water**  
**Analysis Batch: 275006**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			04/06/19 09:38	1
Fluoride	<0.026		0.20	0.026	mg/L			04/06/19 09:38	1
Sulfate	<0.38		1.0	0.38	mg/L			04/06/19 09:38	1

**Lab Sample ID: LCS 180-275006/6**  
**Matrix: Water**  
**Analysis Batch: 275006**

**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	50.8		mg/L		102	90 - 110
Fluoride	2.50	2.43		mg/L		97	90 - 110
Sulfate	50.0	50.4		mg/L		101	90 - 110

**Lab Sample ID: 180-88159-8 MS**  
**Matrix: Water**  
**Analysis Batch: 275006**

**Client Sample ID: AP-DUP-01**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	6.5		25.0	32.8		mg/L		105	80 - 120
Fluoride	0.048	J	1.25	1.31		mg/L		101	80 - 120
Sulfate	7.9		25.0	33.7		mg/L		103	80 - 120

**Lab Sample ID: 180-88159-8 MSD**  
**Matrix: Water**  
**Analysis Batch: 275006**

**Client Sample ID: AP-DUP-01**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	6.5		25.0	32.7		mg/L		105	80 - 120	0	20
Fluoride	0.048	J	1.25	1.29		mg/L		99	80 - 120	2	20
Sulfate	7.9		25.0	32.9		mg/L		100	80 - 120	2	20

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

**Lab Sample ID: MB 400-435281/1-A ^5**  
**Matrix: Water**  
**Analysis Batch: 435553**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 435281**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00046		0.0013	0.00046	mg/L		03/30/19 11:31	04/01/19 22:42	5
Boron	<0.021		0.050	0.021	mg/L		03/30/19 11:31	04/01/19 22:42	5
Barium	<0.00049		0.0025	0.00049	mg/L		03/30/19 11:31	04/01/19 22:42	5
Calcium	<0.13		0.25	0.13	mg/L		03/30/19 11:31	04/01/19 22:42	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		03/30/19 11:31	04/01/19 22:42	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		03/30/19 11:31	04/01/19 22:42	5
Lithium	<0.0011		0.0050	0.0011	mg/L		03/30/19 11:31	04/01/19 22:42	5

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
 SDG: Ash

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

Lab Sample ID: LCS 400-435281/2-A  
 Matrix: Water  
 Analysis Batch: 435553

Client Sample ID: Lab Control Sample  
 Prep Type: Total Recoverable  
 Prep Batch: 435281

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0500	0.0500		mg/L		100	80 - 120
Boron	0.100	0.102		mg/L		102	80 - 120
Barium	0.0500	0.0483		mg/L		97	80 - 120
Calcium	5.00	5.10		mg/L		102	80 - 120
Cadmium	0.0500	0.0475		mg/L		95	80 - 120
Cobalt	0.0500	0.0471		mg/L		94	80 - 120
Lithium	0.0500	0.0500		mg/L		100	80 - 120

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-274448/2  
 Matrix: Water  
 Analysis Batch: 274448

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			03/30/19 13:18	1

Lab Sample ID: LCS 180-274448/1  
 Matrix: Water  
 Analysis Batch: 274448

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	304	274		mg/L		90	80 - 120

Lab Sample ID: MB 180-274449/2  
 Matrix: Water  
 Analysis Batch: 274449

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			03/30/19 13:52	1

Lab Sample ID: LCS 180-274449/1  
 Matrix: Water  
 Analysis Batch: 274449

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	304	260		mg/L		86	80 - 120

Lab Sample ID: 180-88159-9 DU  
 Matrix: Water  
 Analysis Batch: 274449

Client Sample ID: AP-DUP-02  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	370		381		mg/L		4	10

# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
SDG: Ash

## HPLC/IC

### Analysis Batch: 274532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88159-2	MGWC-12	Total/NA	Water	EPA 300.0 R2.1	
180-88159-3	MGWA-6	Total/NA	Water	EPA 300.0 R2.1	
180-88159-4	MGWC-2	Total/NA	Water	EPA 300.0 R2.1	
180-88159-5	MGWC-1	Total/NA	Water	EPA 300.0 R2.1	
MB 180-274532/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-274532/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 274661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88159-1	MGWC-3	Total/NA	Water	EPA 300.0 R2.1	
180-88159-6	MGWC-8	Total/NA	Water	EPA 300.0 R2.1	
180-88159-6	MGWC-8	Total/NA	Water	EPA 300.0 R2.1	
180-88159-7	MGWC-7	Total/NA	Water	EPA 300.0 R2.1	
180-88159-9	AP-DUP-02	Total/NA	Water	EPA 300.0 R2.1	
180-88159-10	FB-AP-01	Total/NA	Water	EPA 300.0 R2.1	
180-88159-11	FB-AP-02	Total/NA	Water	EPA 300.0 R2.1	
180-88159-12	FERB-AP-01	Total/NA	Water	EPA 300.0 R2.1	
180-88159-13	FERB-AP-02	Total/NA	Water	EPA 300.0 R2.1	
MB 180-274661/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-274661/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-88159-7 MS	MGWC-7	Total/NA	Water	EPA 300.0 R2.1	
180-88159-7 MSD	MGWC-7	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 275006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88159-8	AP-DUP-01	Total/NA	Water	EPA 300.0 R2.1	
MB 180-275006/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-275006/6	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-88159-8 MS	AP-DUP-01	Total/NA	Water	EPA 300.0 R2.1	
180-88159-8 MSD	AP-DUP-01	Total/NA	Water	EPA 300.0 R2.1	

## Metals

### Prep Batch: 435281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88159-1	MGWC-3	Total Recoverable	Water	3005A	
180-88159-2	MGWC-12	Total Recoverable	Water	3005A	
180-88159-3	MGWA-6	Total Recoverable	Water	3005A	
180-88159-4 - DL	MGWC-2	Total Recoverable	Water	3005A	
180-88159-4	MGWC-2	Total Recoverable	Water	3005A	
180-88159-5	MGWC-1	Total Recoverable	Water	3005A	
180-88159-6	MGWC-8	Total Recoverable	Water	3005A	
180-88159-6 - DL	MGWC-8	Total Recoverable	Water	3005A	
180-88159-7	MGWC-7	Total Recoverable	Water	3005A	
180-88159-8	AP-DUP-01	Total Recoverable	Water	3005A	
180-88159-9	AP-DUP-02	Total Recoverable	Water	3005A	
180-88159-10	FB-AP-01	Total Recoverable	Water	3005A	
180-88159-11	FB-AP-02	Total Recoverable	Water	3005A	
180-88159-12	FERB-AP-01	Total Recoverable	Water	3005A	
180-88159-13	FERB-AP-02	Total Recoverable	Water	3005A	
MB 400-435281/1-A ^5	Method Blank	Total Recoverable	Water	3005A	

Eurofins TestAmerica, Pittsburgh

# QC Association Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-1  
 SDG: Ash

## Metals (Continued)

### Prep Batch: 435281 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 400-435281/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Analysis Batch: 435553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88159-1	MGWC-3	Total Recoverable	Water	6020	435281
180-88159-2	MGWC-12	Total Recoverable	Water	6020	435281
180-88159-3	MGWA-6	Total Recoverable	Water	6020	435281
180-88159-4	MGWC-2	Total Recoverable	Water	6020	435281
180-88159-4 - DL	MGWC-2	Total Recoverable	Water	6020	435281
180-88159-5	MGWC-1	Total Recoverable	Water	6020	435281
180-88159-6	MGWC-8	Total Recoverable	Water	6020	435281
180-88159-6 - DL	MGWC-8	Total Recoverable	Water	6020	435281
180-88159-7	MGWC-7	Total Recoverable	Water	6020	435281
180-88159-8	AP-DUP-01	Total Recoverable	Water	6020	435281
180-88159-9	AP-DUP-02	Total Recoverable	Water	6020	435281
180-88159-10	FB-AP-01	Total Recoverable	Water	6020	435281
180-88159-11	FB-AP-02	Total Recoverable	Water	6020	435281
180-88159-12	FERB-AP-01	Total Recoverable	Water	6020	435281
180-88159-13	FERB-AP-02	Total Recoverable	Water	6020	435281
MB 400-435281/1-A ^5	Method Blank	Total Recoverable	Water	6020	435281
LCS 400-435281/2-A	Lab Control Sample	Total Recoverable	Water	6020	435281

## General Chemistry

### Analysis Batch: 274448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88159-1	MGWC-3	Total/NA	Water	SM 2540C	
180-88159-2	MGWC-12	Total/NA	Water	SM 2540C	
180-88159-3	MGWA-6	Total/NA	Water	SM 2540C	
180-88159-4	MGWC-2	Total/NA	Water	SM 2540C	
180-88159-5	MGWC-1	Total/NA	Water	SM 2540C	
180-88159-6	MGWC-8	Total/NA	Water	SM 2540C	
180-88159-7	MGWC-7	Total/NA	Water	SM 2540C	
180-88159-8	AP-DUP-01	Total/NA	Water	SM 2540C	
MB 180-274448/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-274448/1	Lab Control Sample	Total/NA	Water	SM 2540C	

### Analysis Batch: 274449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88159-9	AP-DUP-02	Total/NA	Water	SM 2540C	
180-88159-10	FB-AP-01	Total/NA	Water	SM 2540C	
180-88159-11	FB-AP-02	Total/NA	Water	SM 2540C	
180-88159-12	FERB-AP-01	Total/NA	Water	SM 2540C	
180-88159-13	FERB-AP-02	Total/NA	Water	SM 2540C	
MB 180-274449/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-274449/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-88159-9 DU	AP-DUP-02	Total/NA	Water	SM 2540C	



### Chain of Custody Record

<b>Client Information</b> Client Contact: Ms. Lauren Petty Company: Southern Company Address: PO BOX 2641 GSC8 City: Birmingham State, Zip: AL, 35291 Phone: 205-992-5417(Tel) Email: lmpetty@southernco.com Project Name: CCR - Plant McIntosh - Ash Pond Site:		Lab PM: Bortol, Veronica E-Mail: veronica.bortol@testamericainc.com Carrier Tracking No(s): Job #: 1 of 2 COC No:	
Due Date Requested: TAT Requested (days): Standard PO #: SCS-10347656 WO #:		Analysis Requested Performance MS/MSD (Yes or No) Field Filtered Sample (Yes or No) 916 Ra226, 9320 Ra228, Ra226Ra228 GFPC 300 ORGFM_28D - Chloride, Fluoride & Sulfate, 2640C - TDS 6020-As, Ba, B, Ca, Cd, Co, Li, D	
Sample Identification Sample Date Sample Time Sample Type (C=comp, G=grab) Matrix (W=water, S=solid, O=wastewater, AT=Tissue, A=air)		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 Z - other (specify)	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Special Instructions/Note: Assessment Event Total Number of containers 180-88159 Chain of Custody	
Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 m) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab Archive For: Months	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by: <i>Lambert</i> Date/Time: 3/26/19		Received by: <i>Jellowater</i> Date/Time: 3-27-19 Company:	
Relinquished by:		Received by:	
Relinquished by:		Received by:	
Custody Seals Intact: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks:	



**Chain of Custody Record**

<b>Client Information</b>		Sampler: L. Coker, J. Adcock, J. Niles		Lab PM: Bortot, Veronica	Carrier Tracking No(s):		
Client Contact: Ms. Lauren Petty		Phone: 404-5920094		E-Mail: veronica.bortot@testamericainc.com	Page 2 of 2		
Company: Southern Company		Address: PO BOX 2641 GSC8		City: Birmingham		Job #:	
State, Zip: AL, 35291		Phone: 205-992-5417(Tel)		PO #: SCS10347656		TAT Requested (days): Standard	
Email: Impetty@southernco.com		Project #: 40007692		SSOW#:		Due Date Requested:	
Site: CCR - Plant McIntosh - Ash Pond		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)	
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)	
FERB-AP-01		3/26/19		1330		G	
FERB-AP-02		3/26/19		1340		G	
Matrix (W=water, S=solid, O=water/oil, BT=Issue, A=Air)		Preservation Code		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)	
W		W		N		N	
W		W		N		N	
Total Number of containers		6020-As, Ba, B, Ca, Cd, Co, Li, TDS		300 ORGM_28D - Chloride, Fluoride & Sulfate, 2540C -		9316_Ra226, 9320_Ra228, Ra226Ra228, GPC	
Special Instructions/Note:		Assessment Event		3		3	
Preservation Codes:		A - HCL		M - Hexane		N - None	
B - NaOH		C - Zn Acetate		D - Nitric Acid		E - NaHCO4	
F - MeOH		G - Amchlor		H - Ascorbic Acid		I - Ice	
J - DI Water		K - EDTA		L - EDTA		Other:	
P - Na2O2		Q - Na2SO3		R - Na2S2O3		S - H2SO4	
T - TSP Dodecahydrate		U - Acetone		V - MCAA		W - pH 4.5	
Z - other (specify)							
Analysis Requested		Return To Client		Disposal By Lab		Archive For	
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Return To Client		Disposal By Lab		Archive For	
Special Instructions/QC Requirements:		Return To Client		Disposal By Lab		Archive For	
Possible Hazard Identification		Non-Hazard		Flammable		Skin Irritant	
Deliverable Requested: I, II, III, IV, Other (specify)		Poison B		Unknown		Radiological	
Empty Kit Relinquished by:		Date/Time:		Date/Time:		Date/Time:	
Relinquished by: Janner		3/26/19		GEI		Received by: Debbie Water	
Relinquished by:		Date/Time:		Date/Time:		Date/Time:	
Relinquished by:		Date/Time:		Date/Time:		Date/Time:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		700	





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ORIGIN ID:SAVA (919) 724-7237  
JAKE ADCOCK  
RIOC PARK DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

SHIP DATE: 26MAR19  
ACTWT: 43.60 LB  
CAD: 006994919/SSFE2002  
DIMS: 24x13x14 IN  
BILL THIRD PARTY

0 VERONICA BORTOT  
TEST AMERICA - PITTSBURGH  
301 ALPHA DR

PITTSBURGH PA 15238

(412) 983-7068  
REF1  
DEPT1



WED - 27 MAR 10:30A  
PRIORITY OVERNIGHT

1 of 3  
TRK# 7862 7008 2007  
0201  
## MASTER ##  
**XH AGCA**

15238  
PA-US PIT

Uncorrected temp 15.7 °C  
Thermometer ID *MS10*  
CF 0 Initials JS

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



ORIGIN ID:SAVA (919) 724-7237  
JAKE ADCOCK  
RIOC PARK DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

SHIP DATE: 26MAR19  
ACTWT: 55.00 LB  
CAD: 006994919/SSFE2002  
DIMS: 24x13x14 IN  
BILL THIRD PARTY

0 VERONICA BORTOT  
TEST AMERICA - PITTSBURGH  
301 ALPHA DR

PITTSBURGH PA 15238

(412) 983-7068  
REF1  
DEPT1



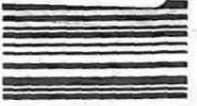
WED - 27 MAR 10:30A  
PRIORITY OVERNIGHT

3 of 3  
MPS# 7862 7008 2029  
0263  
Mstr# 7862 7008 2007  
0201  
**XH AGCA**

15238  
PA-US PIT

Uncorrected temp 22.1 °C  
Thermometer ID 10  
CF 0 Initials JS

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



97



180-88159 Waybill

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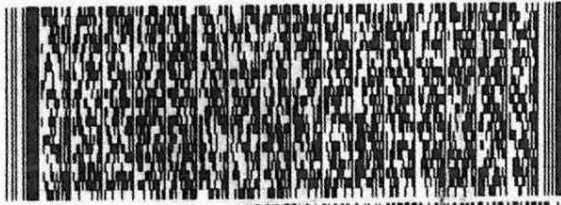
PT-WI-SR-001 effective 11/8/18  
 CF Initials CF  
 Thermometer ID 10  
 Uncorrected temp 2.0 °C

15238 PA-US PIT

**XH AGCA**

Matr# 7862 7008 2007 0201

WED - 27 MAR 10:30A  
 PRIORITY OVERNIGHT  
 2 of 3  
 MPS# 7862 7008 2018 0263



VERONICA BORTOT  
 TEST AMERICA - PITTSBURGH  
 301 ALPHA DR  
 PITTSBURGH PA 15238  
 (412) 963-7068  
 REF: DEPT:

ORIGIN ID:SAVA (919) 724-7237  
 JAKE ADCOCK  
 301 ALPHA DR  
 PITTSBURGH, PA 15238  
 UNITED STATES US  
 SHIP DATE: 26MAR19  
 ACTWGT: 51.40 LB  
 CAD: 006994919/SSFE2002  
 DIMS: 24X13X14 IN  
 BILL THIRD PARTY

555114603/23AB  
 1010





<b>Client Information (Sub Contract Lab)</b>		Lab PM: Bortot, Veronica		Carrier Tracking No(s): 180-358456.1					
Client Contact: Shipping/Receiving		E-Mail: veronica_bortot@testamericainc.com		Page: Page 1 of 2					
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-88159-1					
Address: 13715 Rider Trail North,		Due Date Requested: 4/8/2019		Preservation Codes:					
City: Earth City		TAT Requested (days):		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:					
State, Zip: MO, 63045		PO #:		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 Z - other (specify)					
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		WO #:		Total Number of containers					
Email:		Project #:		Special Instructions/Note:					
Project Name: CCR - Plant McIntosh Ash Pond 1		18019956							
Site:		SSOW#:							
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water, BT=ISSUR, A=AI)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	915_Ra228/PreSep_21 (MOD) Copy Analytes	920_Ra228/PreSep_0 Standard Target List	Ra228Ra228_GFPc
MGWC-3 (180-88159-1)	3/26/19	10:00 Eastern	Water	Water	X	X	X	X	1
MGWC-12 (180-88159-2)	3/26/19	10:20 Eastern	Water	Water	X	X	X	X	1
MGWA-6 (180-88159-3)	3/26/19	10:25 Eastern	Water	Water	X	X	X	X	1
MGWC-2 (180-88159-4)	3/26/19	11:23 Eastern	Water	Water	X	X	X	X	1
MGWC-1 (180-88159-5)	3/26/19	12:00 Eastern	Water	Water	X	X	X	X	1
MGWC-8 (180-88159-6)	3/26/19	12:50 Eastern	Water	Water	X	X	X	X	1
MGWC-7 (180-88159-7)	3/26/19	12:55 Eastern	Water	Water	X	X	X	X	1
AP-DUP-01 (180-88159-8)	3/26/19	Eastern	Water	Water	X	X	X	X	1
AP-DUP-02 (180-88159-9)	3/26/19	Eastern	Water	Water	X	X	X	X	1

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/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

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

Sample 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/QC Requirements:

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method of Shipment: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: 3/28/19 12:00 Company: MNT Company

Relinquished by: Michael Heum Date/Time: 3-27-19 09:00 Company: JAIL Company

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: \_\_\_\_\_ Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_  
 Δ Yes Δ No



**Chain of Custody Record**

<b>Client Information (Sub Contract Lab)</b>		Lab PM: Bortol, Veronica		Carrier Tracking No(s): 180-358456.2							
Client Contact: Shipping/Receiving		E-Mail: veronica.bortol@testamericainc.com		Page: Page 2 of 2							
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-88159-1							
Address: 13715 Rider Trail North, Earth City, MO, 63045		Due Date Requested: 4/8/2019		Preservation Codes:							
Phone: 314-298-8566(Tel) 314-298-8757(Fax)		TAT Requested (days):		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:							
Project Name: CCR - Plant McIntosh Ash Pond 1		Project #: 18019956		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecaldehyde U - Acetone V - MCAA W - pH 4-5 Z - other (specify)							
Site:		SSOW#:		Total Number of Containers:							
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=organic)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9220_Ra228/PreSep_0 Standard Target List	9315_Ra226/PreSep_21 (MD) Copy Analyses	Ra226Ra228_GPPC	Analysis Requested	Special Instructions/Note:
FB-AP-01 (180-88159-10)	3/26/19	13:15 Eastern	Water	Water	X	X	X	X	X		
FB-AP-02 (180-88159-11)	3/26/19	13:20 Eastern	Water	Water	X	X	X	X	X		
FERB-AP-01 (180-88159-12)	3/26/19	13:30 Eastern	Water	Water	X	X	X	X	X		
FERB-AP-02 (180-88159-13)	3/26/19	13:40 Eastern	Water	Water	X	X	X	X	X		



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

Sample 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/QC Requirements:

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: 3/28/19 17W Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: \_\_\_\_\_  
 Δ Yes Δ No

Received by: \_\_\_\_\_ Date/Time: 3-29-19 6:00pm Company: \_\_\_\_\_

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Cooler Temperature(s) °C and Other Remarks:







<b>Client Information (Sub Contract Lab)</b>		Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-358450.1
Client Contact: Shipping/Receiving		E-Mail: veronica.bortot@testamericainc.com	State of Origin: Georgia	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note) 180-88159-1		
Address: 3355 McLemore Drive,		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:		
City: Pensacola		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 Z - other (specify)		
State, Zip: FL, 32514		Total Number of Containers		
Phone: 850-474-1001(Tel) 850-478-2671(Fax)		Special Instructions/Note:		
Email:				
Project #: CCR - Plant McIntosh Ash Pond 1				
Site: SSOW#				
Due Date Requested: 4/8/2019				
TAT Requested (days):				
PO #:				
WO #:				
Field Filtered Sample (Yes or No)				
Perform MRM/D (Yes or No)				
6020/3005A B Ca As Ba Cd Coli				
Sample Date				
Sample Time				
Sample Type (C=Comp, G=grab)				
Matrix (Water, Solid, or Waste/Oil)				
Preservation Code:				
Sample Identification - Client ID (Lab ID)				
MGWC-3 (180-88159-1)	3/26/19 10:00 Eastern	Water	X	1
MGWC-12 (180-88159-2)	3/26/19 10:20 Eastern	Water	X	1
MGWA-6 (180-88159-3)	3/26/19 10:25 Eastern	Water	X	1
MGWC-2 (180-88159-4)	3/26/19 11:23 Eastern	Water	X	1
MGWC-1 (180-88159-5)	3/26/19 12:00 Eastern	Water	X	1
MGWC-8 (180-88159-6)	3/26/19 12:50 Eastern	Water	X	1
MGWC-7 (180-88159-7)	3/26/19 12:55 Eastern	Water	X	1
AP-DUP-01 (180-88159-8)	3/26/19 Eastern	Water	X	1
AP-DUP-02 (180-88159-9)	3/26/19 Eastern	Water	X	1
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/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.				
<b>Possible Hazard Identification</b>				
Unconfirmed				
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2				
Empty Kit Relinquished by:				
Relinquished by: <i>[Signature]</i> Date: 3/28/19 12:00				
Relinquished by: <i>[Signature]</i> Date: <i>[Blank]</i>				
Relinquished by: <i>[Signature]</i> Date: <i>[Blank]</i>				
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No				
Custody Seal No.: 450107				
Cooler Temperature(s) °C and Other Remarks: 4.5°C				
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)				
<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Special Instructions/QC Requirements:				
Time: _____ Date: _____				
Received by: <i>[Signature]</i> Date/Time: _____ Company: _____				
Received by: <i>[Signature]</i> Date/Time: _____ Company: _____				
Received by: <i>[Signature]</i> Date/Time: 3-29-19 8:56 Company: _____				



**Chain of Custody Record**

**Client Information (Sub Contract Lab)**  
 Client Contact: Bortot, Veronica  
 Shipping/Receiving: veronica.bortot@testamericainc.com  
 Company: TestAmerica Laboratories, Inc. Accreditations Required (See note)  
 Address: 3355 McLemore Drive,  
 City: Pensacola  
 State: FL Zip: 32514  
 Phone: 850-474-1001(Tel) 850-478-2671(Fax)  
 Email:   
 Project Name: CCR - Plant McIntosh Ash Pond 1  
 Site:   
 Project #: 18019956  
 SSOW#:   
 Due Date Requested: 4/8/2019  
 TAT Requested (days):   
 PO #:   
 WG #:   
 Sampler:   
 Lab PM: Bortot, Veronica  
 Carrier Tracking No(s):   
 Phone:   
 E-Mail: veronica.bortot@testamericainc.com  
 State of Origin: Georgia  
 COC No: 180-358450.2  
 Page: Page 2 of 2  
 Job #: 180-88159-1

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water/soil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note:	Analysis Requested	Preservation Codes:	
										M - Hexane	N - None
FB-AP-01 (180-88159-10)	3/26/19	13:15 Eastern		Water			1				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:
FB-AP-02 (180-88159-11)	3/26/19	13:20 Eastern		Water			1				M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)
FERB-AP-01 (180-88159-12)	3/26/19	13:30 Eastern		Water			1				
FERB-AP-02 (180-88159-13)	3/26/19	13:40 Eastern		Water			1				

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  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:   
 Relinquished by:   
 Date/Time: 3/28/19 1200  
 Relinquished by:   
 Date/Time:   
 Relinquished by:   
 Date/Time:   
 Custody Seals Intact:   
 Custody Seal No.:   
 Cooler Temperature(s) °C and Other Remarks: 4.5 ± 1 R7



Test America Temperature Control  
THE LEADER IN ENVIRONMENTAL TESTING  
IF THIS SHIPMENT IS DELAYED IN TRANSIT,  
STORE REFRIGERATED (2° TO 8° C / 36° TO 47° F)  
TAL-006

THE LEADER IN ENVIRONMENTAL TESTING

ORIGIN ID: AGCA (412) 963-7058  
SAMPLE RECEIVING  
TEST AMERICA LABORATORIES INC  
301 ALPHA DR  
PITTSBURGH, PA 152381330  
UNITED STATES US

SHIP DATE: 28MAR19  
ACTWGT: 34.00 LB MAN  
CAD: 741733/CAFE3211

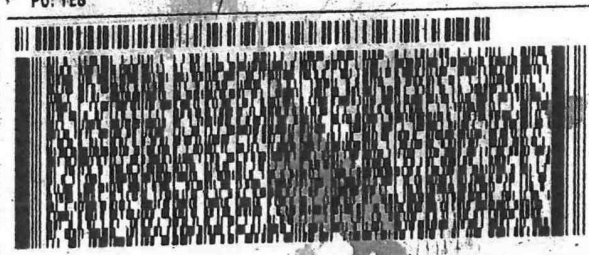
BILL RECIPIENT

TO SHIPPING/RECEIVING  
TESTAMERICA LABORATORIES, INC.  
3355 MCLEMORE DRIVE

PENSACOLA FL 32514

(850) 474-1001  
PO: YES

REF: 6180-50699

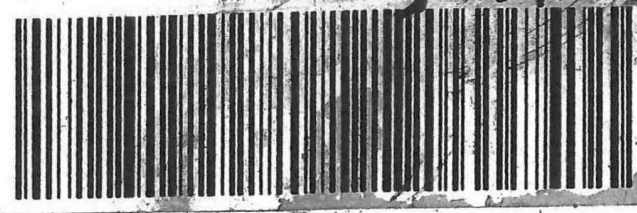


FedEx Express  
E  
JTB11180606BTBY

TRK# 4818 7131 3681  
0201

FRI - 29 MAR 10:30A  
PRIORITY OVERNIGHT

XH PNSA 4.50  
32514  
FL US BFM



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## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-88159-1

SDG Number: Ash

**Login Number: 88159**

**List Source: Eurofins TestAmerica, Pittsburgh**

**List Number: 1**

**Creator: Watson, Debbie**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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.	False	
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: 180-88159-1

SDG Number: Ash

**Login Number: 88159**

**List Number: 4**

**Creator: Conrady, Hank W**

**List Source: Eurofins TestAmerica, Pensacola**

**List Creation: 03/29/19 05:33 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	N/A	
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	4.5°C IR-7
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



## ANALYTICAL REPORT

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

Laboratory Job ID: 180-88159-2

Laboratory Sample Delivery Group: Ash

Client Project/Site: CCR - Plant McIntosh Ash Pond 1

**For:**

Southern Company  
PO BOX 2641 GSC8  
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty



Authorized for release by:  
5/10/2019 4:20:06 PM

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

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

PA Lab ID: 02-00416





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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

## Job ID: 180-88159-2

### Laboratory: Eurofins TestAmerica, Pittsburgh

#### Narrative

#### Job Narrative 180-88159-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 3/27/2019 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 2.0° C, 2.2° C and 15.7° C.

#### Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. There is no relinquished by time listed on the COC.

MGWC-3 (180-88159-1), MGWC-12 (180-88159-2), MGWA-6 (180-88159-3), MGWC-2 (180-88159-4), MGWC-1 (180-88159-5), MGWC-8 (180-88159-6), MGWC-7 (180-88159-7), AP-DUP-01 (180-88159-8), AP-DUP-02 (180-88159-9), FB-AP-01 (180-88159-10), FB-AP-02 (180-88159-11), FERB-AP-01 (180-88159-12) and FERB-AP-02 (180-88159-13) The cooler which was 15.7 had the Rad metals containers inside which do not need to be iced.

#### RAD

Method(s) 903.0, 9315: Ra-226 Prep Batch 160-423237

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.

MGWC-3 (180-88159-1), MGWC-12 (180-88159-2), MGWA-6 (180-88159-3), MGWC-2 (180-88159-4), MGWC-1 (180-88159-5), MGWC-8 (180-88159-6), MGWC-7 (180-88159-7), AP-DUP-01 (180-88159-8), AP-DUP-02 (180-88159-9), FB-AP-01 (180-88159-10), FB-AP-02 (180-88159-11), FERB-AP-01 (180-88159-12), FERB-AP-02 (180-88159-13), (LCS 160-423237/1-A), (LCSD 160-423237/2-A) and (MB 160-423237/23-A)

Method(s) 904.0, 9320: Radium-228 Prep Batch 160-423238

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.

MGWC-3 (180-88159-1), MGWC-12 (180-88159-2), MGWA-6 (180-88159-3), MGWC-2 (180-88159-4), MGWC-1 (180-88159-5), MGWC-8 (180-88159-6), MGWC-7 (180-88159-7), AP-DUP-01 (180-88159-8), AP-DUP-02 (180-88159-9), FB-AP-01 (180-88159-10), FB-AP-02 (180-88159-11), FERB-AP-01 (180-88159-12) and FERB-AP-02 (180-88159-13)

Method(s) PrecSep\_0: Radium 228 Prep Batch 160-423238:

Insufficient sample volume was available to perform a sample duplicate for the following samples: MGWC-3 (180-88159-1), MGWC-12 (180-88159-2), MGWA-6 (180-88159-3), MGWC-2 (180-88159-4), MGWC-1 (180-88159-5), MGWC-8 (180-88159-6), MGWC-7 (180-88159-7), AP-DUP-01 (180-88159-8), AP-DUP-02 (180-88159-9), FB-AP-01 (180-88159-10), FB-AP-02 (180-88159-11), FERB-AP-01 (180-88159-12) and FERB-AP-02 (180-88159-13). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-423237:

# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

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## Job ID: 180-88159-2 (Continued)

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### Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

Insufficient sample volume was available to perform a sample duplicate for the following samples: MGWC-3 (180-88159-1), MGWC-12 (180-88159-2), MGWA-6 (180-88159-3), MGWC-2 (180-88159-4), MGWC-1 (180-88159-5), MGWC-8 (180-88159-6), MGWC-7 (180-88159-7), AP-DUP-01 (180-88159-8), AP-DUP-02 (180-88159-9), FB-AP-01 (180-88159-10), FB-AP-02 (180-88159-11), FERB-AP-01 (180-88159-12) and FERB-AP-02 (180-88159-13). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

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 McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

## 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 McIntosh Ash Pond 1

Job ID: 180-88159-2  
 SDG: Ash

## Laboratory: Eurofins TestAmerica, Pittsburgh

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

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

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



# Accreditation/Certification Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
 SDG: Ash

## 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	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	MO00054	06-30-19
ANAB	DoD		L2305	04-06-22
Arizona	State Program	9	AZ0813	12-08-19
California	State Program	9	2886	06-30-19 *
Connecticut	State Program	1	PH-0241	03-31-21
Florida	NELAP	4	E87689	06-30-19 *
Hawaii	State Program	9	NA	06-30-19
Illinois	NELAP	5	200023	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19
New Jersey	NELAP	2	MO002	06-30-19 *
New York	NELAP	2	11616	03-31-20
North Dakota	State Program	8	R207	06-30-19 *
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	9997	08-31-19
Pennsylvania	NELAP	3	68-00540	02-28-20
South Carolina	State Program	4	85002001	06-30-19
Texas	NELAP	6	T104704193-18-13	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19 *
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

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



# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-88159-1	MGWC-3	Water	03/26/19 10:00	03/27/19 09:00
180-88159-2	MGWC-12	Water	03/26/19 10:20	03/27/19 09:00
180-88159-3	MGWA-6	Water	03/26/19 10:25	03/27/19 09:00
180-88159-4	MGWC-2	Water	03/26/19 11:23	03/27/19 09:00
180-88159-5	MGWC-1	Water	03/26/19 12:00	03/27/19 09:00
180-88159-6	MGWC-8	Water	03/26/19 12:50	03/27/19 09:00
180-88159-7	MGWC-7	Water	03/26/19 12:55	03/27/19 09:00
180-88159-8	AP-DUP-01	Water	03/26/19 00:00	03/27/19 09:00
180-88159-9	AP-DUP-02	Water	03/26/19 00:00	03/27/19 09:00
180-88159-10	FB-AP-01	Water	03/26/19 13:15	03/27/19 09:00
180-88159-11	FB-AP-02	Water	03/26/19 13:20	03/27/19 09:00
180-88159-12	FERB-AP-01	Water	03/26/19 13:30	03/27/19 09:00
180-88159-13	FERB-AP-02	Water	03/26/19 13:40	03/27/19 09:00

# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

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 McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

## Client Sample ID: MGWC-3

## Lab Sample ID: 180-88159-1

Date Collected: 03/26/19 10:00

Matrix: Water

Date Received: 03/27/19 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			1000.66 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426518	05/02/19 13:40	CDR	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Prep	PrecSep_0			1000.66 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425249	04/23/19 15:37	CDR	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWC-12

## Lab Sample ID: 180-88159-2

Date Collected: 03/26/19 10:20

Matrix: Water

Date Received: 03/27/19 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			999.67 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426518	05/02/19 13:40	CDR	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Prep	PrecSep_0			999.67 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425249	04/23/19 15:37	CDR	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-6

## Lab Sample ID: 180-88159-3

Date Collected: 03/26/19 10:25

Matrix: Water

Date Received: 03/27/19 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			1000.31 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426507	05/02/19 13:42	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			1000.31 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425249	04/23/19 15:37	CDR	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWC-2

## Lab Sample ID: 180-88159-4

Date Collected: 03/26/19 11:23

Matrix: Water

Date Received: 03/27/19 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			999.60 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426507	05/02/19 13:42	CDR	TAL SL
Instrument ID: GFPCPURPLE										

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
 SDG: Ash

## Client Sample ID: MGWC-2

## Lab Sample ID: 180-88159-4

Date Collected: 03/26/19 11:23

Matrix: Water

Date Received: 03/27/19 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_0			999.60 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425247	04/23/19 15:39	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWC-1

## Lab Sample ID: 180-88159-5

Date Collected: 03/26/19 12:00

Matrix: Water

Date Received: 03/27/19 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			999.85 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426507	05/02/19 13:42	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			999.85 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425247	04/23/19 15:39	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWC-8

## Lab Sample ID: 180-88159-6

Date Collected: 03/26/19 12:50

Matrix: Water

Date Received: 03/27/19 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			1000.20 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426507	05/02/19 13:43	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			1000.20 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425247	04/23/19 15:39	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWC-7

## Lab Sample ID: 180-88159-7

Date Collected: 03/26/19 12:55

Matrix: Water

Date Received: 03/27/19 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			1000.07 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426507	05/02/19 13:43	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			1000.07 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425247	04/23/19 15:39	CDR	TAL SL
Instrument ID: GFPCPURPLE										

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
 SDG: Ash

**Client Sample ID: MGWC-7**

**Lab Sample ID: 180-88159-7**

Date Collected: 03/26/19 12:55

Matrix: Water

Date Received: 03/27/19 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	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL

**Client Sample ID: AP-DUP-01**

**Lab Sample ID: 180-88159-8**

Date Collected: 03/26/19 00:00

Matrix: Water

Date Received: 03/27/19 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			999.84 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426507	05/02/19 13:43	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			999.84 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425247	04/23/19 15:40	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: AP-DUP-02**

**Lab Sample ID: 180-88159-9**

Date Collected: 03/26/19 00:00

Matrix: Water

Date Received: 03/27/19 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			1000.54 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426507	05/02/19 13:43	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			1000.54 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425247	04/23/19 15:40	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: FB-AP-01**

**Lab Sample ID: 180-88159-10**

Date Collected: 03/26/19 13:15

Matrix: Water

Date Received: 03/27/19 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			1000.94 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426507	05/02/19 13:43	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			1000.94 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425248	04/23/19 15:41	CDR	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL
Instrument ID: NOEQUIP										

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

**Client Sample ID: FB-AP-02**

**Lab Sample ID: 180-88159-11**

**Date Collected: 03/26/19 13:20**

**Matrix: Water**

**Date Received: 03/27/19 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			1000.08 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426507	05/02/19 13:43	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			1000.08 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425248	04/23/19 15:41	CDR	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-88159-12**

**Date Collected: 03/26/19 13:30**

**Matrix: Water**

**Date Received: 03/27/19 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			1000.06 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426507	05/02/19 13:43	CDR	TAL SL
Instrument ID: GFPCPURPLE										
Total/NA	Prep	PrecSep_0			1000.06 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425248	04/23/19 15:41	CDR	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	SMP	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-88159-13**

**Date Collected: 03/26/19 13:40**

**Matrix: Water**

**Date Received: 03/27/19 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			1000.03 mL	1.0 g	423237	04/10/19 14:05	CLP	TAL SL
Total/NA	Analysis	9315		1			426506	05/02/19 14:44	CDR	TAL SL
Instrument ID: GFPCBLUE										
Total/NA	Prep	PrecSep_0			1000.03 mL	1.0 g	423238	04/10/19 14:07	CLP	TAL SL
Total/NA	Analysis	9320		1			425248	04/23/19 15:42	CDR	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			426560	05/03/19 07:49	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

CLP = Cassandra Park

Batch Type: Analysis

CDR = Conrad Reuscher

SMP = Siobhan Perry

Eurofins TestAmerica, Pittsburgh



# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

**Client Sample ID: MGWC-3**

**Lab Sample ID: 180-88159-1**

Date Collected: 03/26/19 10:00

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.798		0.153	0.169	1.00	0.0898	pCi/L	04/10/19 14:05	05/02/19 13:40	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	102		40 - 110					04/10/19 14:05	05/02/19 13:40	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.456		0.262	0.265	1.00	0.395	pCi/L	04/10/19 14:07	04/23/19 15:37	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	102		40 - 110					04/10/19 14:07	04/23/19 15:37	1
Y Carrier	80.4		40 - 110					04/10/19 14:07	04/23/19 15:37	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	1.25		0.303	0.314	5.00	0.395	pCi/L		05/03/19 07:49	1

**Client Sample ID: MGWC-12**

**Lab Sample ID: 180-88159-2**

Date Collected: 03/26/19 10:20

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.241		0.0902	0.0928	1.00	0.0842	pCi/L	04/10/19 14:05	05/02/19 13:40	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	98.8		40 - 110					04/10/19 14:05	05/02/19 13:40	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.366	U	0.249	0.251	1.00	0.385	pCi/L	04/10/19 14:07	04/23/19 15:37	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	98.8		40 - 110					04/10/19 14:07	04/23/19 15:37	1
Y Carrier	81.9		40 - 110					04/10/19 14:07	04/23/19 15:37	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
 SDG: Ash

**Client Sample ID: MGWC-12**

**Lab Sample ID: 180-88159-2**

Date Collected: 03/26/19 10:20

Matrix: Water

Date Received: 03/27/19 09:00

**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	0.607		0.265	0.268	5.00	0.385	pCi/L		05/03/19 07:49	1

**Client Sample ID: MGWA-6**

**Lab Sample ID: 180-88159-3**

Date Collected: 03/26/19 10:25

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.321		0.0999	0.104	1.00	0.0869	pCi/L	04/10/19 14:05	05/02/19 13:42	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	98.2		40 - 110					04/10/19 14:05	05/02/19 13:42	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0783	U	0.202	0.202	1.00	0.350	pCi/L	04/10/19 14:07	04/23/19 15:37	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	98.2		40 - 110					04/10/19 14:07	04/23/19 15:37	1
Y Carrier	83.4		40 - 110					04/10/19 14:07	04/23/19 15:37	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	0.400		0.225	0.227	5.00	0.350	pCi/L		05/03/19 07:49	1

**Client Sample ID: MGWC-2**

**Lab Sample ID: 180-88159-4**

Date Collected: 03/26/19 11:23

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.191		0.0817	0.0834	1.00	0.0829	pCi/L	04/10/19 14:05	05/02/19 13:42	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	95.9		40 - 110					04/10/19 14:05	05/02/19 13:42	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

**Client Sample ID: MGWC-2**

**Lab Sample ID: 180-88159-4**

Date Collected: 03/26/19 11:23

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.219	U	0.251	0.251	1.00	0.412	pCi/L	04/10/19 14:07	04/23/19 15:39	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	95.9		40 - 110					04/10/19 14:07	04/23/19 15:39	1
Y Carrier	81.5		40 - 110					04/10/19 14:07	04/23/19 15:39	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	0.410	U	0.264	0.264	5.00	0.412	pCi/L		05/03/19 07:49	1

**Client Sample ID: MGWC-1**

**Lab Sample ID: 180-88159-5**

Date Collected: 03/26/19 12:00

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.08		0.180	0.204	1.00	0.0850	pCi/L	04/10/19 14:05	05/02/19 13:42	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	92.3		40 - 110					04/10/19 14:05	05/02/19 13:42	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0777	U	0.241	0.241	1.00	0.444	pCi/L	04/10/19 14:07	04/23/19 15:39	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	92.3		40 - 110					04/10/19 14:07	04/23/19 15:39	1
Y Carrier	80.7		40 - 110					04/10/19 14:07	04/23/19 15:39	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	1.00		0.301	0.316	5.00	0.444	pCi/L		05/03/19 07:49	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

**Client Sample ID: MGWC-8**

**Lab Sample ID: 180-88159-6**

Date Collected: 03/26/19 12:50

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.930		0.161	0.182	1.00	0.0692	pCi/L	04/10/19 14:05	05/02/19 13:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/10/19 14:05	05/02/19 13:43	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.860		0.273	0.284	1.00	0.354	pCi/L	04/10/19 14:07	04/23/19 15:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/10/19 14:07	04/23/19 15:39	1
Y Carrier	84.1		40 - 110					04/10/19 14:07	04/23/19 15:39	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	1.79		0.317	0.337	5.00	0.354	pCi/L		05/03/19 07:49	1

**Client Sample ID: MGWC-7**

**Lab Sample ID: 180-88159-7**

Date Collected: 03/26/19 12:55

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.601		0.133	0.143	1.00	0.0836	pCi/L	04/10/19 14:05	05/02/19 13:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/10/19 14:05	05/02/19 13:43	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	0.196	0.197	1.00	0.320	pCi/L	04/10/19 14:07	04/23/19 15:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/10/19 14:07	04/23/19 15:39	1
Y Carrier	87.5		40 - 110					04/10/19 14:07	04/23/19 15:39	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

**Client Sample ID: MGWC-7**

**Lab Sample ID: 180-88159-7**

Date Collected: 03/26/19 12:55

Matrix: Water

Date Received: 03/27/19 09:00

**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	0.784		0.237	0.243	5.00	0.320	pCi/L		05/03/19 07:49	1

**Client Sample ID: AP-DUP-01**

**Lab Sample ID: 180-88159-8**

Date Collected: 03/26/19 00:00

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.143		0.0749	0.0760	1.00	0.0833	pCi/L	04/10/19 14:05	05/02/19 13:43	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	90.9		40 - 110					04/10/19 14:05	05/02/19 13:43	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0182	U	0.223	0.223	1.00	0.398	pCi/L	04/10/19 14:07	04/23/19 15:40	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	90.9		40 - 110					04/10/19 14:07	04/23/19 15:40	1
Y Carrier	86.4		40 - 110					04/10/19 14:07	04/23/19 15:40	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	0.161	U	0.235	0.236	5.00	0.398	pCi/L		05/03/19 07:49	1

**Client Sample ID: AP-DUP-02**

**Lab Sample ID: 180-88159-9**

Date Collected: 03/26/19 00:00

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.01		0.166	0.189	1.00	0.0790	pCi/L	04/10/19 14:05	05/02/19 13:43	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	100		40 - 110					04/10/19 14:05	05/02/19 13:43	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

**Client Sample ID: AP-DUP-02**

**Lab Sample ID: 180-88159-9**

Date Collected: 03/26/19 00:00

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.00212	U	0.187	0.187	1.00	0.339	pCi/L	04/10/19 14:07	04/23/19 15:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					04/10/19 14:07	04/23/19 15:40	1
Y Carrier	84.9		40 - 110					04/10/19 14:07	04/23/19 15:40	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	1.01		0.250	0.266	5.00	0.339	pCi/L		05/03/19 07:49	1

**Client Sample ID: FB-AP-01**

**Lab Sample ID: 180-88159-10**

Date Collected: 03/26/19 13:15

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0231	U	0.0427	0.0427	1.00	0.0768	pCi/L	04/10/19 14:05	05/02/19 13:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					04/10/19 14:05	05/02/19 13:43	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.212	U	0.215	0.215	1.00	0.349	pCi/L	04/10/19 14:07	04/23/19 15:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	107		40 - 110					04/10/19 14:07	04/23/19 15:41	1
Y Carrier	83.7		40 - 110					04/10/19 14:07	04/23/19 15:41	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	0.235	U	0.219	0.219	5.00	0.349	pCi/L		05/03/19 07:49	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

**Client Sample ID: FB-AP-02**

**Lab Sample ID: 180-88159-11**

Date Collected: 03/26/19 13:20

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0162	U	0.0387	0.0388	1.00	0.0732	pCi/L	04/10/19 14:05	05/02/19 13:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					04/10/19 14:05	05/02/19 13:43	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	0.203	0.203	1.00	0.341	pCi/L	04/10/19 14:07	04/23/19 15:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					04/10/19 14:07	04/23/19 15:41	1
Y Carrier	86.0		40 - 110					04/10/19 14:07	04/23/19 15:41	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	0.152	U	0.207	0.207	5.00	0.341	pCi/L		05/03/19 07:49	1

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-88159-12**

Date Collected: 03/26/19 13:30

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00487	U	0.0425	0.0425	1.00	0.0905	pCi/L	04/10/19 14:05	05/02/19 13:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/10/19 14:05	05/02/19 13:43	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.138	U	0.242	0.242	1.00	0.409	pCi/L	04/10/19 14:07	04/23/19 15:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/10/19 14:07	04/23/19 15:41	1
Y Carrier	86.4		40 - 110					04/10/19 14:07	04/23/19 15:41	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
SDG: Ash

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-88159-12**

Date Collected: 03/26/19 13:30

Matrix: Water

Date Received: 03/27/19 09:00

**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	0.133	U	0.246	0.246	5.00	0.409	pCi/L		05/03/19 07:49	1

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-88159-13**

Date Collected: 03/26/19 13:40

Matrix: Water

Date Received: 03/27/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0112	U	0.0386	0.0386	1.00	0.0766	pCi/L	04/10/19 14:05	05/02/19 14:44	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	103		40 - 110					04/10/19 14:05	05/02/19 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	0.0834	U	0.219	0.219	1.00	0.378	pCi/L	04/10/19 14:07	04/23/19 15:42	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	103		40 - 110					04/10/19 14:07	04/23/19 15:42	1
Y Carrier	83.4		40 - 110					04/10/19 14:07	04/23/19 15:42	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	0.0946	U	0.222	0.222	5.00	0.378	pCi/L		05/03/19 07:49	1

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
 SDG: Ash

## Method: 9315 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-423237/23-A**  
**Matrix: Water**  
**Analysis Batch: 426506**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 423237**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.01774	U	0.0408	0.0408	1.00	0.0766	pCi/L	04/10/19 14:05	05/02/19 14:45	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	109		40 - 110			04/10/19 14:05	05/02/19 14:45	1		

**Lab Sample ID: LCS 160-423237/1-A**  
**Matrix: Water**  
**Analysis Batch: 426518**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 423237**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.4	8.833		0.929	1.00	0.0849	pCi/L	78	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits			Prepared	Analyzed	Dil Fac	
Ba Carrier	108		40 - 110						

**Lab Sample ID: LCSD 160-423237/2-A**  
**Matrix: Water**  
**Analysis Batch: 426518**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 423237**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits	RER	Limit
				Uncert. (2σ+/-)							
Radium-226	11.4	8.638		0.912	1.00	0.0972	pCi/L	76	75 - 125	0.11	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits			Prepared	Analyzed	Dil Fac			
Ba Carrier	107		40 - 110								

## Method: 9320 - Radium-228 (GFPC)

**Lab Sample ID: MB 160-423238/23-A**  
**Matrix: Water**  
**Analysis Batch: 425108**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 423238**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.2218	U	0.238	0.239	1.00	0.390	pCi/L	04/10/19 14:07	04/23/19 15:35	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
	%Yield	Qualifier								
Ba Carrier	109		40 - 110			04/10/19 14:07	04/23/19 15:35	1		
Y Carrier	80.7		40 - 110			04/10/19 14:07	04/23/19 15:35	1		

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
 SDG: Ash

## Method: 9320 - Radium-228 (GFPC) (Continued)

**Lab Sample ID: LCS 160-423238/1-A**  
**Matrix: Water**  
**Analysis Batch: 425249**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 423238**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.27	9.610		1.11	1.00	0.384	pCi/L	104	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	108		40 - 110
Y Carrier	78.1		40 - 110

**Lab Sample ID: LCSD 160-423238/2-A**  
**Matrix: Water**  
**Analysis Batch: 425249**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 423238**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	9.27	8.638		1.01	1.00	0.362	pCi/L	93	75 - 125	0.46	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	107		40 - 110
Y Carrier	81.5		40 - 110

# QC Association Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-88159-2  
 SDG: Ash

## Rad

### Prep Batch: 423237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88159-1	MGWC-3	Total/NA	Water	PrecSep-21	
180-88159-2	MGWC-12	Total/NA	Water	PrecSep-21	
180-88159-3	MGWA-6	Total/NA	Water	PrecSep-21	
180-88159-4	MGWC-2	Total/NA	Water	PrecSep-21	
180-88159-5	MGWC-1	Total/NA	Water	PrecSep-21	
180-88159-6	MGWC-8	Total/NA	Water	PrecSep-21	
180-88159-7	MGWC-7	Total/NA	Water	PrecSep-21	
180-88159-8	AP-DUP-01	Total/NA	Water	PrecSep-21	
180-88159-9	AP-DUP-02	Total/NA	Water	PrecSep-21	
180-88159-10	FB-AP-01	Total/NA	Water	PrecSep-21	
180-88159-11	FB-AP-02	Total/NA	Water	PrecSep-21	
180-88159-12	FERB-AP-01	Total/NA	Water	PrecSep-21	
180-88159-13	FERB-AP-02	Total/NA	Water	PrecSep-21	
MB 160-423237/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-423237/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-423237/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

### Prep Batch: 423238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-88159-1	MGWC-3	Total/NA	Water	PrecSep_0	
180-88159-2	MGWC-12	Total/NA	Water	PrecSep_0	
180-88159-3	MGWA-6	Total/NA	Water	PrecSep_0	
180-88159-4	MGWC-2	Total/NA	Water	PrecSep_0	
180-88159-5	MGWC-1	Total/NA	Water	PrecSep_0	
180-88159-6	MGWC-8	Total/NA	Water	PrecSep_0	
180-88159-7	MGWC-7	Total/NA	Water	PrecSep_0	
180-88159-8	AP-DUP-01	Total/NA	Water	PrecSep_0	
180-88159-9	AP-DUP-02	Total/NA	Water	PrecSep_0	
180-88159-10	FB-AP-01	Total/NA	Water	PrecSep_0	
180-88159-11	FB-AP-02	Total/NA	Water	PrecSep_0	
180-88159-12	FERB-AP-01	Total/NA	Water	PrecSep_0	
180-88159-13	FERB-AP-02	Total/NA	Water	PrecSep_0	
MB 160-423238/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-423238/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-423238/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	



**Chain of Custody Record**

<b>Client Information</b>			<b>Lab PM:</b>			<b>Carrier Tracking No(s):</b>			<b>COC No:</b>		
Client Contact: Ms. Lauren Petty Southern Company Address: PO BOX 2641 GSC8 City: Birmingham State, Zip: AL, 35291 Phone: 205-992-5417(Tel) Email: lmpetty@southernco.com Project Name: CCR - Plant McIntosh - Ash Pond Site:			L. Coker, J. Adcock, J. Noles Bortol, Veronica E-Mail: veronica.bortol@testamericainc.com			Page 1 of 2 Job #:			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 - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)		
<b>Due Date Requested:</b>			<b>Analysis Requested</b>			<b>Total Number of containers</b>			<b>Special Instructions/Note:</b>		
TAT Requested (days): Standard			6020-As, Ba, B, Ca, Cd, Co, Li, TDS			3			Assessment Event		
PO #: SCS-10347656			916 Ra226, 9320 Ra228, Ra226Ra228 GFPC			3			180-88159 Chain of Custody		
WO #: 40007692			300 ORGFM_28D - Chloride, Fluoride & Sulfate, 2640C -			3					
Project #: 40007692			Field Filtered Sample (Yes or No)			3					
SSOWN#:			Perform MS/MSD (Yes or No)			3					
			Sample Date			3					
			Sample Time			3					
			Sample Type (C=comp, G=grab)			3					
			Matrix (W=water, S=solid, O=wastewater, AT=Tissue, A=Air)			3					
			Preservation Code:			3					
Sample Identification			MGWC-3			3					
			MGWC-12			3					
			MGWA-6			3					
			MGWC-2			3					
			MGWC-1			3					
			MGWC-8			3					
			MGWC-7			3					
			AP-DUP-01			3					
			AP-DUP-02			3					
			FB-AP-01			3					
			FB-AP-02			3					
<b>Possible Hazard Identification</b>			<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 m)</b>			<b>Return To Client</b>			<b>Archive For</b>		
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)			<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For			<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For			<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For		
<b>Empty Kit Relinquished by:</b>			<b>Date:</b>			<b>Method of Shipment:</b>			<b>Company:</b>		
Relinquished by: <i>Lambert</i>			Date/Time: 3/26/19			Received by: <i>Jellowater</i>			Date/Time: 3-27-19		
Relinquished by:			Date/Time:			Received by:			Date/Time: 900		
Relinquished by:			Date/Time:			Received by:			Date/Time:		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No			Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:					



**Chain of Custody Record**

<b>Client Information</b>		Sampler: L. Coker, J. Adcock, J. Niles		Lab PM: Bortot, Veronica	Carrier Tracking No(s):		
Client Contact: Ms. Lauren Petty		Phone: 404-5920094		E-Mail: veronica.bortot@testamericainc.com	Page 2 of 2		
Company: Southern Company		Address: PO BOX 2641 GSC8		City: Birmingham		Job #:	
State, Zip: AL, 35291		Phone: 205-992-5417(Tel)		PO #: SCS10347656		Due Date Requested:	
Email: Impetty@southernco.com		Project #: 40007692		SSOW#:		TAT Requested (days): Standard	
Project Name: CCR - Plant McIntosh - Ash Pond		Site:		Matrix (W=water, S=solid, O=water/oil, BT=Issue, A=Air)		Sample Type (C=Comp, G=grab)	
Sample Identification		Sample Date		Sample Time		Sample Date	
FERB-AP-01		3/26/19		1330		G W	
FERB-AP-02		3/26/19		1340		G W	
Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		300 ORGM_28D - Chloride, Fluoride & Sulfate, 2540C - TDS		6020-As,Ba,Cd,Cu,Co,LI	
Analysis Requested		Preservation Codes:		Special Instructions/Note:		Total Number of containers	
A - HCL		M - Hexane		Assessment Event		3	
B - NaOH		N - None				3	
C - Zn Acetate		O - AsNaO2					
D - Nitric Acid		P - Na2O4S					
E - NaHCO4		Q - Na2SO3					
F - MeOH		R - Na2S2O3					
G - Amchlor		S - H2SO4					
H - Ascorbic Acid		T - TSP Dodecahydrate					
I - Ice		U - Acetone					
J - DI Water		V - MCAA					
K - EDTA		W - pH 4.5					
L - EDTA		Z - other (specify)					
Other:							
Possible Hazard Identification		Poison B		Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
<input checked="" type="checkbox"/> Non-Hazard		<input type="checkbox"/> Flammable		<input type="checkbox"/> Skin Irritant		<input checked="" type="checkbox"/> Return To Client	
Deliverable Requested: I, II, III, IV, Other (specify)		Unknown		Empty Kit Relinquished by:		Archive For _____ Months	
Empty Kit Relinquished by:		Date:		Method of Shipment:		Special Instructions/QC Requirements:	
Relinquished by: <i>Jamie...</i>		Date: 3/26/19		Company: GEI		Received by: <i>Debbie Water</i>	
Relinquished by:		Date/Time:		Company:		Date/Time: 3-27-19	
Relinquished by:		Date/Time:		Company:		Date/Time: 7:00	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			



1  
2  
3  
4  
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7  
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9  
10  
11  
12  
13

ORIGIN ID:SAVA (919) 724-7237  
JAKE ADOCK  
RIOC PARK DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

SHIP DATE: 26MAR19  
ACTWT: 43.60 LB  
CAD: 006994919/SSFE2002  
DIMS: 24x13x14 IN  
BILL THIRD PARTY

0 VERONICA BORTOT  
TEST AMERICA - PITTSBURGH  
301 ALPHA DR

PITTSBURGH PA 15238

(412) 983-7068  
REF1  
DEPT1



WED - 27 MAR 10:30A  
PRIORITY OVERNIGHT

1 of 3  
TRK# 7862 7008 2007  
0201  
## MASTER ##  
**XH AGCA**

15238  
PA-US PIT

Uncorrected temp 15.7 °C  
Thermometer ID *MS*  
CF 0 Initials JS

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



ORIGIN ID:SAVA (919) 724-7237  
JAKE ADOCK  
RIOC PARK DR  
301 ALPHA DR  
PITTSBURGH, PA 15238  
UNITED STATES US

SHIP DATE: 26MAR19  
ACTWT: 55.00 LB  
CAD: 006994919/SSFE2002  
DIMS: 24x13x14 IN  
BILL THIRD PARTY

0 VERONICA BORTOT  
TEST AMERICA - PITTSBURGH  
301 ALPHA DR

PITTSBURGH PA 15238

(412) 983-7068  
REF1  
DEPT1



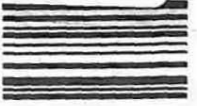
WED - 27 MAR 10:30A  
PRIORITY OVERNIGHT

3 of 3  
MPS# 7862 7008 2029  
0263  
Mstr# 7862 7008 2007  
0201  
**XH AGCA**

15238  
PA-US PIT

Uncorrected temp 22.1 °C  
Thermometer ID 10  
CF 0 Initials JS

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



180-88159 Waybill

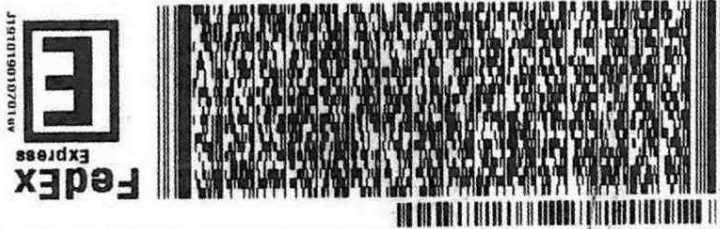


- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

PT-MI-SR-001 effective 11/8/18  
 CF Initials CF  
 Thermometer ID 10  
 Uncorrected temp 2.0 °C



**XH AGCA**  
 Mat# 7862 7008 2007  
 0201  
 MP# 7862 7008 2018  
 0263  
 2 of 3  
**WED - 27 MAR 10:30A**  
**PRIORITY OVERNIGHT**  
 15238 PA-US PIT



SHIP DATE: 26MAR19  
 ACTWGT: 51.40 LB  
 CAD: 006994919/SSFE2002  
 DIMS: 24x13x14 IN  
 BILL THIRD PARTY  
 VERONICA BORTOT  
 TEST AMERICA - PITTSBURGH  
 301 ALPHA DR  
 PITTSBURGH PA 15238  
 (412) 963-7068  
 REF: DEPT:  
 ORIGIN ID: SAVA (919) 724-7237  
 JAKE ADCOCK  
 301 ALPHA DR  
 PITTSBURGH, PA 15238  
 UNITED STATES US

555114603/2348  
 1010

## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-88159-2

SDG Number: Ash

**Login Number: 88159**

**List Source: Eurofins TestAmerica, Pittsburgh**

**List Number: 1**

**Creator: Watson, Debbie**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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.	False	
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: 180-88159-2

SDG Number: Ash

**Login Number: 88159**

**List Number: 2**

**Creator: Hellm, Michael**

**List Source: Eurofins TestAmerica, St. Louis**

**List Creation: 03/29/19 10:58 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	19.0
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	



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-88159-2

SDG Number: Ash

**Login Number: 88159**

**List Number: 3**

**Creator: Hellm, Michael**

**List Source: Eurofins TestAmerica, St. Louis**

**List Creation: 03/29/19 11:00 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	19.0
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	





**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Pittsburgh, PA and Pensacola, FL  
**Report No.:** 180-88108-1  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** June 3, 2019

### **Samples Reviewed and Evaluation Summary**

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWA-10	180-88108-01	Metals, Anions, TDS
MGWA-11	180-88108-02	Metals, Anions, TDS
MGWA-24	180-88108-03	Metals, Anions, TDS
MGWA-5	180-88108-04	Metals, Anions, TDS
MGWA-6A	180-88108-05	Metals, Anions, TDS

#### QC Samples:

Field/Equipment blanks: FB-AP-01, FB-AP-02, FERB-AP-01, FERB-AP-02 (reported in 180-88159)

The above-listed aqueous samples were collected on March 25, 2019 and were analyzed for total recoverable metals by SW-846 method 6020, total dissolved solids (TDS) by Standard Methods SM 2540C, and anions (chloride, fluoride, and sulfate) by EPA method 300. The data were reviewed based on the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (USEPA-540-R-2017-001), as well as by the methods referenced and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method and Field Blanks
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Quantitation Limits

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

## Data Completeness

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, MS/MSD, laboratory duplicate, and LCS results.

## Holding Times and Sample Preservation

All criteria were met.

## Blanks

### Laboratory Blank Results

Contamination was not detected in the associated method blanks. The laboratory noted that calcium was detected in the instrument blank associated with the project samples. As the affected sample levels were greater than 10 times the instrument blank contamination level detected, the results for calcium are acceptable without qualification.

### Field Blank Results

Low level contamination was detected in the field blanks. The following table summarizes the highest level of contamination and validation actions taken.

Analyte	Blank ID/ Associated Samples	Maximum Contaminant Level (mg/L)	2x Action Level (mg/L)	10x Action Level (mg/L)	Validation Actions
Sulfate	FB-AP-01, FB- AP-02, and FERB-AP-02: All Ash Pond samples	0.70	1.4	7.0	Qualify the results for sulfate as nondetect (U) at the reported values in samples MGWA-10 and MGWA-11. Estimate (J) the positive results for sulfate in samples MGWA-5 and MGWA-6A; High bias.

#### **Blank Actions:**

If the sample result is < reporting limit (RL); report the result as nondetect (U) at the RL.

If the sample result is  $\geq$  RL and <2x contamination detected; report the result as nondetect (U) at the reported value.

If the sample result is  $\geq$  RL and <10x Action Level; report the sample result as estimated (J); biased high.

If the sample result is nondetect or > 10x Action Level; validation action is not required.

## **MS/MSD Results**

MS/MSD analyses were performed on sample MGWA-10 for metals. All recovery and precision criteria were met in these analyses.

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Date: June 3, 2019

### **Laboratory Duplicate Results**

MSD analyses were performed for metals in lieu of laboratory duplicate analyses.

### **LCS Results**

All criteria were met.

### **Quantitation Limits**

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL). These results were qualified as estimated (J) by the laboratory.

## DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified “J” data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The ‘J’ data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified “UJ” data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The ‘UJ’ data may be biased low.
- NJ - The analysis indicates the presence of a compound that has been “tentatively identified” (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Earth City, MO  
**Report Nos.:** 180-88108-2  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** May 5, 2019

### **Samples Reviewed and Evaluation Summary**

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWA-10	180-88108-01	Radium-226, Radium-228, Radium226-228
MGWA-11	180-88108-02	Radium-226, Radium-228, Radium226-228
MGWA-24	180-88108-03	Radium-226, Radium-228, Radium226-228
MGWA-5	180-88108-04	Radium-226, Radium-228, Radium226-228
MGWA-6A	180-88108-05	Radium-226, Radium-228, Radium226-228

The above-listed aqueous samples were collected on March 25, 2019 and were analyzed for Radium-226 by SW-846 method 9315, Radium-228 by SW-46 method 9320, and combined Radium-226 and Radium-228. The data were reviewed based on the US Department of Energy Evaluation of Radiochemical Data Usability, 1997, as well as by the pertinent methods referenced by the data package and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method Blanks
- Carrier Yields
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS)/LCS Duplicate (LCSD) Results
- Quantitation Limits

All results are usable as reported.

The validation findings were based on the following information.

### **Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, carrier yields, and LCS\LCSD results.

### **Holding Times and Sample Preservation**

All criteria were met.

**Method Blanks**

Contaminants were not detected in the associated laboratory method blanks.

**Carrier Yields**

All criteria were met.

**Laboratory Duplicate Results**

Laboratory duplicate analyses were not associated with this sample set.

**LCS/LCSD Results**

All criteria were met.

**Quantitation Limits**

Dilutions were not required.



## DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified “J” data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The ‘J’ data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified “UJ” data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The ‘UJ’ data may be biased low.
- NJ - The analysis indicates the presence of a compound that has been “tentatively identified” (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Pittsburgh, PA and Pensacola, FL  
**Report No.:** 180-88159-1  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** May 31, 2019

### **Samples Reviewed and Evaluation Summary**

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWC-3	180-88159-01	Metals, Anions, TDS
MGWC-12	180-88159-02	Metals, Anions, TDS
MGWA-6	180-88159-03	Metals, Anions, TDS
MGWC-2	180-88159-04	Metals, Anions, TDS
MGWC-1	180-88159-05	Metals, Anions, TDS
MGWC-8	180-88159-06	Metals, Anions, TDS
MGWC-7	180-88159-07	Metals, Anions, TDS
AP-DUP-01	180-88159-08	Metals, Anions, TDS
AP-DUP-02	180-88159-09	Metals, Anions, TDS
FB-AP-01	180-88159-10	Metals, Anions, TDS
FB-AP-02	180-88159-11	Metals, Anions, TDS
FERB-AP-01	180-88159-12	Metals, Anions, TDS
FERB-AP-02	180-88159-13	Metals, Anions, TDS

#### QC Samples:

Field/Equipment blanks: FB-AP-01, FB-AP-02, FERB-AP-01, FERB-AP-02  
 Field Duplicate pairs: MGWA-6/AP-DUP-01 and MGWC-1/AP-DUP-02

The above-listed aqueous samples and field blank samples were collected on March 26, 2019 and were analyzed for total recoverable metals by SW-846 method 6020, total dissolved solids (TDS) by Standard Methods SM 2540C, and anions (chloride, fluoride, and sulfate) by EPA method 300. The data were reviewed based on the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (USEPA-540-R-2017-001), as well as by the methods referenced and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method and Field Blanks
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Field Duplicate Results

- Quantitation Limits

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

### **Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, MS/MSD, laboratory duplicate, and LCS results.

### **Holding Times and Sample Preservation**

All criteria were met.

### **Blanks**

#### **Laboratory Blank Results**

Contamination was not detected in the associated method blanks. The laboratory noted that calcium was detected in the instrument blank associated with the project samples. As the sample levels were greater than 10 times the instrument blank contamination level detected, the results for calcium are acceptable without qualification.

#### **Field Blank Results**

Low level contamination was detected in the field blanks. The following table summarizes the highest level of contamination and validation actions taken.

Analyte	Blank ID/ Associated Samples	Maximum Contaminant Level (mg/L)	2x Action Level (mg/L)	10x Action Level (mg/L)	Validation Actions
Sulfate	FB-AP-01, FB-AP-02, and FERB-AP-02: All Ash Pond samples	0.70	1.4	7.0	Estimate (J) the positive results for sulfate in samples MGWC-12 and MGWA-6; High bias.

#### **Blank Actions:**

If the sample result is < reporting limit (RL); report the result as nondetect (U) at the RL.

If the sample result is  $\geq$  RL and <2x contamination detected; report the result as nondetect (U) at the reported value.

Site: Georgia Power Plant, Ash Pond  
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Date: May 31, 2019

If the sample result is  $\geq$  RL and  $<10x$  Action Level; report the sample result as estimated (J); biased high.  
If the sample result is nondetect or  $> 10x$  Action Level; validation action is not required.

### MS/MSD Results

MS/MSD analyses were performed on sample MGWC-7 for anions and sample AP-DUP-01 for metals. All recovery and precision criteria were met in these analyses.

### Laboratory Duplicate Results

MSD analyses were performed for anions and metals in lieu of laboratory duplicate analyses. A laboratory duplicate analysis was performed on sample AP-DUP-02 for total dissolved solids. All criteria were met.

### LCS Results

All criteria were met.

### Field Duplicate Results

Samples MGWA-6 and AP-DUP-01 were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair, which were within the acceptance criteria except for boron. The positive results for boron in samples MGWA-6 and AP-DUP-01 were qualified as estimated (J). The direction of the bias cannot be determined from this nonconformance.

Analyte	MGWA-6 (mg/L)	AP-DUP-01 (mg/L)	RPD (%)
Chloride	5.8	6.5	11.4
Fluoride	0.065 J	0.048 J	30, Within the RL
Sulfate	6.3	7.9	22.5
Arsenic	0.0097	0.010	3.0
Boron	0.079	0.15	<b>62, Not within RL</b>
Barium	0.033	0.034	3.0
Calcium	100	100	0
Total Dissolved Solids	290	290	0

NC – Not calculable  
Criteria: When both results are  $\geq 5x$  the RL, RPDs must be  $<30\%$ .  
When results are  $< 5x$  the RL, professional judgement was taken to estimate results if the absolute difference between the original and field duplicate  $>RL$ .

Samples MGWC-1 and AP-DUP-02 were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair, which were within the acceptance criteria.

Site: Georgia Power Plant, Ash Pond  
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 Date: May 31, 2019

Analyte	MGWC-1 (mg/L)	AP-DUP-02 (mg/L)	RPD (%)
Chloride	13	13	0
Fluoride	0.16	0.14 J	13.3
Sulfate	130	130	0
Arsenic	0.0020	0.0021	4.9
Barium	0.096	0.097	1.0
Boron	1.3	1.3	0
Calcium	100	100	0
Lithium	0.010	0.011	9.5
Total Dissolved Solids	370	370	0
NC – Not calculable Criteria: When both results are $\geq 5x$ the RL, RPDs must be $< 30\%$ . When results are $< 5x$ the RL, professional judgement was taken to estimate results if the absolute difference between the original and field duplicate $> RL$ .			

### **Quantitation Limits**

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL). These results were qualified as estimated (J) by the laboratory.

## DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified “J” data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The ‘J’ data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified “UJ” data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The ‘UJ’ data may be biased low.
- NJ - The analysis indicates the presence of a compound that has been “tentatively identified” (N) and the associated numerical value represents its approximate (J) concentration.
- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.



**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Earth City, MO  
**Report No.:** 180-88159-2  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** June 3, 2019

### **Samples Reviewed and Evaluation Summary**

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWC-3	180-88159-01	Radium-226, Radium-228, Radium226-228
MGWC-12	180-88159-02	Radium-226, Radium-228, Radium226-228
MGWA-6	180-88159-03	Radium-226, Radium-228, Radium226-228
MGWC-2	180-88159-04	Radium-226, Radium-228, Radium226-228
MGWC-1	180-88159-05	Radium-226, Radium-228, Radium226-228
MGWC-8	180-88159-06	Radium-226, Radium-228, Radium226-228
MGWC-7	180-88159-07	Radium-226, Radium-228, Radium226-228
AP-DUP-01	180-88159-08	Radium-226, Radium-228, Radium226-228
AP-DUP-02	180-88159-09	Radium-226, Radium-228, Radium226-228
FB-AP-01	180-88159-10	Radium-226, Radium-228, Radium226-228
FB-AP-02	180-88159-11	Radium-226, Radium-228, Radium226-228
FERB-AP-01	180-88159-12	Radium-226, Radium-228, Radium226-228
FERB-AP-02	180-88159-13	Radium-226, Radium-228, Radium226-228

#### QC Samples:

Field/Equipment blanks: FB-AP-01, FB-AP-02, FERB-AP-01, FERB-AP-02

Field Duplicate pairs: MGWA-6/AP-DUP-01 and MGWC-1/AP-DUP-02

The above-listed aqueous samples and field blanks were collected on March 26, 2019 and were analyzed for Radium-226 by SW-846 method 9315, Radium-228 by SW-46 method 9320, and combined Radium-226 and Radium-228. The data were reviewed based on the US Department of Energy Evaluation of Radiochemical Data Usability, 1997, as well as by the pertinent methods referenced by the data package and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method and Field Blanks
- Carrier Yields
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Field Duplicate Results

Site: Georgia Power Plant, Ash Pond  
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Date: June 3, 2019

- Quantitation Limits

All results are usable as reported. The validation findings were based on the following information.

### **Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, and LCS results.

### **Holding Times and Sample Preservation**

All criteria were met.

### **Blanks**

#### **Laboratory Blank Results**

Contamination was not detected in the associated method blanks.

#### **Field Blank Results**

Contamination was not detected in the associated field blanks.

### **Carrier Yields**

All criteria were met.

### **Laboratory Duplicate Results**

Due to limited sample volume a project duplicate could not be performed. A laboratory control sample duplicate (LCSD) was prepared instead to demonstrate method precision.

### **LCS Results**

All recovery and precision criteria were met.

### **Field Duplicate Results**

Samples MGWA-6 and AP-DUP-01 were submitted as the field duplicate pair with this sample set. The following table summarizes the evaluation of the analytes in the field duplicate pair,

Site: Georgia Power Plant, Ash Pond  
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Date: June 3, 2019

which were within the acceptance criteria.

Analyte	MGWA-6 (pCi/L)	AP-DUP-01 (pCi/L)	DER (%)
Radium-226	0.321	0.143	1.38
Combined Radium 226 + 228	0.400	0.161 U	0.73
Criteria: Duplicate Error Ratio (DER) $\leq 2$			

Samples MGWC-1 and AP-DUP-02 were submitted as the field duplicate pair with this sample set. The following table summarizes the evaluation of the analytes in the field duplicate pair, which were within the acceptance criteria.

Analyte	MGWC-1 (pCi/L)	AP-DUP-02 (pCi/L)	DER (%)
Radium-226	1.08	1.01	0.25
Combined Radium 226 + 228	1.00	1.01	0.02
Criteria: Duplicate Error Ratio (DER) $\leq 2$			

### **Quantitation Limits**

Quantitation limit criteria were met.

## DATA VALIDATION QUALIFIERS

- U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.
- J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified “J” data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The ‘J’ data may be biased high or low or the direction of the bias may be indeterminable.
- UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified “UJ” data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The ‘UJ’ data may be biased low.
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- R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

## ANALYTICAL REPORT

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

Laboratory Job ID: 180-95496-1

Laboratory Sample Delivery Group: Ash

Client Project/Site: CCR - Plant McIntosh Ash Pond 1

**For:**

Southern Company  
PO BOX 2641 GSC8  
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty



Authorized for release by:  
10/18/2019 6:53:32 PM

Veronica Bortot, Senior Project Manager  
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[veronica.bortot@testamericainc.com](mailto: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 McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

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**Job ID: 180-95496-1**

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**Laboratory: Eurofins TestAmerica, Pittsburgh**

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## Narrative

**Job Narrative**  
**180-95496-1**

### Comments

No additional comments.

### Receipt

The samples were received on 9/11/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.1° C, 2.3° C, 25.8° C and 26.7° C.

### Receipt Exceptions

The following samples were submitted for analysis; however, they were not listed on the Chain-of-Custody (COC): DUP 01 (180-95496-16) and DUP 02 (180-95496-17)

### GC Semi VOA

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

### Metals

Method(s) 6020B: The post digestion spike % recovery for calcium associated with batch 180-293025 was outside of control limits. The following sample is impacted: MGWC-7 (180-95496-5).

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

### General Chemistry

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



# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

## 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
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
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 McIntosh Ash Pond 1

Job ID: 180-95496-1  
 SDG: Ash

## 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
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 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



# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-95496-1	MGWA-10	Water	09/10/19 08:26	09/11/19 09:00	
180-95496-2	MGWA-11	Water	09/10/19 08:12	09/11/19 09:00	
180-95496-3	MGWA-6A	Water	09/10/19 09:50	09/11/19 09:00	
180-95496-4	MGWA-5	Water	09/10/19 10:00	09/11/19 09:00	
180-95496-5	MGWC-7	Water	09/10/19 10:10	09/11/19 09:00	
180-95496-6	MGWA-6	Water	09/10/19 10:50	09/11/19 09:00	
180-95496-7	MGWC-12	Water	09/10/19 11:20	09/11/19 09:00	
180-95496-8	MGWC-8	Water	09/10/19 12:15	09/11/19 09:00	
180-95496-9	MGWC-1	Water	09/10/19 12:50	09/11/19 09:00	
180-95496-10	MGWC-3	Water	09/10/19 12:40	09/11/19 09:00	
180-95496-11	MGWC-2	Water	09/10/19 13:30	09/11/19 09:00	
180-95496-12	FB-AP-01	Water	09/10/19 13:50	09/11/19 09:00	
180-95496-13	FB-AP-02	Water	09/10/19 13:55	09/11/19 09:00	
180-95496-14	FERB-AP-01	Water	09/10/19 13:40	09/11/19 09:00	
180-95496-15	FERB-AP-02	Water	09/10/19 13:45	09/11/19 09:00	
180-95496-16	DUP 01	Water	09/10/19 00:00	09/11/19 09:00	
180-95496-17	DUP 02	Water	09/10/19 00:00	09/11/19 09:00	

# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020B	Metals (ICP/MS)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

#### Protocol References:

EPA = US Environmental Protection Agency

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.

#### 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 McIntosh Ash Pond 1

Job ID: 180-95496-1  
 SDG: Ash

## Client Sample ID: MGWA-10

## Lab Sample ID: 180-95496-1

Date Collected: 09/10/19 08:26

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 17:56	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291262	09/13/19 12:37	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			292211	09/21/19 15:07	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291321	09/14/19 09:11	AVS	TAL PIT

## Client Sample ID: MGWA-11

## Lab Sample ID: 180-95496-2

Date Collected: 09/10/19 08:12

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 18:12	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291262	09/13/19 12:37	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			292211	09/21/19 15:11	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291321	09/14/19 09:11	AVS	TAL PIT

## Client Sample ID: MGWA-6A

## Lab Sample ID: 180-95496-3

Date Collected: 09/10/19 09:50

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 18:59	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 15:07	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291321	09/14/19 09:11	AVS	TAL PIT

## Client Sample ID: MGWA-5

## Lab Sample ID: 180-95496-4

Date Collected: 09/10/19 10:00

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 19:15	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 15:10	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291321	09/14/19 09:11	AVS	TAL PIT

Eurofins TestAmerica, Pittsburgh



# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
 SDG: Ash

## Client Sample ID: MGWC-7

## Lab Sample ID: 180-95496-5

Date Collected: 09/10/19 10:10

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 19:31	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 15:13	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291321	09/14/19 09:11	AVS	TAL PIT

## Client Sample ID: MGWA-6

## Lab Sample ID: 180-95496-6

Date Collected: 09/10/19 10:50

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 19:47	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 15:17	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291321	09/14/19 09:11	AVS	TAL PIT

## Client Sample ID: MGWC-12

## Lab Sample ID: 180-95496-7

Date Collected: 09/10/19 11:20

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 20:02	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 15:33	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291321	09/14/19 09:11	AVS	TAL PIT

## Client Sample ID: MGWC-8

## Lab Sample ID: 180-95496-8

Date Collected: 09/10/19 12:15

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 21:06	MJH	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2100B		5			291400	09/16/19 21:22	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 15:44	WTR	TAL PIT

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

**Client Sample ID: MGWC-8**

**Lab Sample ID: 180-95496-8**

**Date Collected: 09/10/19 12:15**

**Matrix: Water**

**Date Received: 09/11/19 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	291321	09/14/19 09:11	AVS	TAL PIT

**Client Sample ID: MGWC-1**

**Lab Sample ID: 180-95496-9**

**Date Collected: 09/10/19 12:50**

**Matrix: Water**

**Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 20:18	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 15:47	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291321	09/14/19 09:11	AVS	TAL PIT

**Client Sample ID: MGWC-3**

**Lab Sample ID: 180-95496-10**

**Date Collected: 09/10/19 12:40**

**Matrix: Water**

**Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 21:37	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 15:50	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291321	09/14/19 09:11	AVS	TAL PIT

**Client Sample ID: MGWC-2**

**Lab Sample ID: 180-95496-11**

**Date Collected: 09/10/19 13:30**

**Matrix: Water**

**Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 21:53	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 15:54	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291321	09/14/19 09:11	AVS	TAL PIT

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

**Client Sample ID: FB-AP-01**

**Lab Sample ID: 180-95496-12**

**Date Collected: 09/10/19 13:50**

**Matrix: Water**

**Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 23:28	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 15:57	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291321	09/14/19 09:11	AVS	TAL PIT

**Client Sample ID: FB-AP-02**

**Lab Sample ID: 180-95496-13**

**Date Collected: 09/10/19 13:55**

**Matrix: Water**

**Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 16:53	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 16:00	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291320	09/14/19 09:05	AVS	TAL PIT

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-95496-14**

**Date Collected: 09/10/19 13:40**

**Matrix: Water**

**Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHIC2100A		1			292864	09/27/19 11:02	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 16:04	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291320	09/14/19 09:05	AVS	TAL PIT

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-95496-15**

**Date Collected: 09/10/19 13:45**

**Matrix: Water**

**Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 17:08	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 16:07	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291320	09/14/19 09:05	AVS	TAL PIT

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
 SDG: Ash

**Client Sample ID: DUP 01**

**Lab Sample ID: 180-95496-16**

**Date Collected: 09/10/19 00:00**

**Matrix: Water**

**Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 22:25	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 16:11	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291320	09/14/19 09:05	AVS	TAL PIT

**Client Sample ID: DUP 02**

**Lab Sample ID: 180-95496-17**

**Date Collected: 09/10/19 00:00**

**Matrix: Water**

**Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291400	09/16/19 22:41	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020B Instrument ID: A		1			293025	09/27/19 16:14	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291320	09/14/19 09:05	AVS	TAL PIT

**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

NAM = Nicole Marfisi

Batch Type: Analysis

AVS = Abbey Smith

MJH = Matthew Hartman

WTR = Bill Reinheimer

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

**Client Sample ID: MGWA-10**

**Lab Sample ID: 180-95496-1**

Date Collected: 09/10/19 08:26

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.0		1.0	0.71	mg/L			09/16/19 17:56	1
Fluoride	0.044	J	0.10	0.026	mg/L			09/16/19 17:56	1
Sulfate	1.1		1.0	0.38	mg/L			09/16/19 17:56	1

**Method: EPA 6020B - 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		09/13/19 12:37	09/21/19 15:07	1
Barium	0.031		0.010	0.0016	mg/L		09/13/19 12:37	09/21/19 15:07	1
Boron	<0.039		0.080	0.039	mg/L		09/13/19 12:37	09/21/19 15:07	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/13/19 12:37	09/21/19 15:07	1
Calcium	4.9		0.50	0.13	mg/L		09/13/19 12:37	09/21/19 15:07	1
Cobalt	0.00011	J	0.00050	0.000075	mg/L		09/13/19 12:37	09/21/19 15:07	1
Lithium	0.011		0.0050	0.0034	mg/L		09/13/19 12:37	09/21/19 15:07	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	14		10	10	mg/L			09/14/19 09:11	1

**Client Sample ID: MGWA-11**

**Lab Sample ID: 180-95496-2**

Date Collected: 09/10/19 08:12

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.5		1.0	0.71	mg/L			09/16/19 18:12	1
Fluoride	0.075	J	0.10	0.026	mg/L			09/16/19 18:12	1
Sulfate	1.8		1.0	0.38	mg/L			09/16/19 18:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0018		0.0010	0.00032	mg/L		09/13/19 12:37	09/21/19 15:11	1
Barium	0.13		0.010	0.0016	mg/L		09/13/19 12:37	09/21/19 15:11	1
Boron	<0.039		0.080	0.039	mg/L		09/13/19 12:37	09/21/19 15:11	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/13/19 12:37	09/21/19 15:11	1
Calcium	36		0.50	0.13	mg/L		09/13/19 12:37	09/21/19 15:11	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/13/19 12:37	09/21/19 15:11	1
Lithium	0.026		0.0050	0.0034	mg/L		09/13/19 12:37	09/21/19 15:11	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	160		10	10	mg/L			09/14/19 09:11	1

**Client Sample ID: MGWA-6A**

**Lab Sample ID: 180-95496-3**

Date Collected: 09/10/19 09:50

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.2		1.0	0.71	mg/L			09/16/19 18:59	1
Fluoride	0.052	J	0.10	0.026	mg/L			09/16/19 18:59	1
Sulfate	0.60	J	1.0	0.38	mg/L			09/16/19 18:59	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

## Client Sample ID: MGWA-6A

## Lab Sample ID: 180-95496-3

Date Collected: 09/10/19 09:50

Matrix: Water

Date Received: 09/11/19 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0021		0.0010	0.00032	mg/L		09/16/19 12:16	09/27/19 15:07	1
Barium	0.042		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 15:07	1
Boron	0.040	J	0.080	0.039	mg/L		09/16/19 12:16	09/27/19 15:07	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 15:07	1
Calcium	86		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 15:07	1
Cobalt	0.00020	J	0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 15:07	1
Lithium	0.0062		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 15:07	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	230		10	10	mg/L			09/14/19 09:11	1

## Client Sample ID: MGWA-5

## Lab Sample ID: 180-95496-4

Date Collected: 09/10/19 10:00

Matrix: Water

Date Received: 09/11/19 09:00

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.1		1.0	0.71	mg/L			09/16/19 19:15	1
Fluoride	0.068	J	0.10	0.026	mg/L			09/16/19 19:15	1
Sulfate	4.7		1.0	0.38	mg/L			09/16/19 19:15	1

### Method: EPA 6020B - 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		09/16/19 12:16	09/27/19 15:10	1
Barium	0.035		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 15:10	1
Boron	<0.039		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 15:10	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 15:10	1
Calcium	27		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 15:10	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 15:10	1
Lithium	0.011		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 15:10	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	110		10	10	mg/L			09/14/19 09:11	1

## Client Sample ID: MGWC-7

## Lab Sample ID: 180-95496-5

Date Collected: 09/10/19 10:10

Matrix: Water

Date Received: 09/11/19 09:00

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.9		1.0	0.71	mg/L			09/16/19 19:31	1
Fluoride	0.15		0.10	0.026	mg/L			09/16/19 19:31	1
Sulfate	180		1.0	0.38	mg/L			09/16/19 19:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00074	J	0.0010	0.00032	mg/L		09/16/19 12:16	09/27/19 15:13	1
Barium	0.012		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 15:13	1
Boron	1.5		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 15:13	1

Eurofins TestAmerica, Pittsburgh



# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
 SDG: Ash

**Client Sample ID: MGWC-7**

**Lab Sample ID: 180-95496-5**

Date Collected: 09/10/19 10:10

Matrix: Water

Date Received: 09/11/19 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 15:13	1
Calcium	53		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 15:13	1
Cobalt	0.011		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 15:13	1
Lithium	0.11		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 15:13	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	260		10	10	mg/L			09/14/19 09:11	1

**Client Sample ID: MGWA-6**

**Lab Sample ID: 180-95496-6**

Date Collected: 09/10/19 10:50

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.0		1.0	0.71	mg/L			09/16/19 19:47	1
Fluoride	0.076	J	0.10	0.026	mg/L			09/16/19 19:47	1
Sulfate	5.6		1.0	0.38	mg/L			09/16/19 19:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0085		0.0010	0.00032	mg/L		09/16/19 12:16	09/27/19 15:17	1
Barium	0.040		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 15:17	1
Boron	0.097		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 15:17	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 15:17	1
Calcium	110		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 15:17	1
Cobalt	0.00037	J	0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 15:17	1
Lithium	0.0051		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 15:17	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	260		10	10	mg/L			09/14/19 09:11	1

**Client Sample ID: MGWC-12**

**Lab Sample ID: 180-95496-7**

Date Collected: 09/10/19 11:20

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.1		1.0	0.71	mg/L			09/16/19 20:02	1
Fluoride	0.20		0.10	0.026	mg/L			09/16/19 20:02	1
Sulfate	2.5		1.0	0.38	mg/L			09/16/19 20:02	1

**Method: EPA 6020B - 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		09/16/19 12:16	09/27/19 15:33	1
Barium	0.073		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 15:33	1
Boron	0.060	J	0.080	0.039	mg/L		09/16/19 12:16	09/27/19 15:33	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 15:33	1
Calcium	33		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 15:33	1
Cobalt	0.00016	J	0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 15:33	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

## Client Sample ID: MGWC-12

## Lab Sample ID: 180-95496-7

Date Collected: 09/10/19 11:20

Matrix: Water

Date Received: 09/11/19 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.023		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 15:33	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	140		10	10	mg/L			09/14/19 09:11	1

## Client Sample ID: MGWC-8

## Lab Sample ID: 180-95496-8

Date Collected: 09/10/19 12:15

Matrix: Water

Date Received: 09/11/19 09:00

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10		1.0	0.71	mg/L			09/16/19 21:06	1
Fluoride	0.083	J	0.10	0.026	mg/L			09/16/19 21:06	1
Sulfate	420		5.0	1.9	mg/L			09/16/19 21:22	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00056	J	0.0010	0.00032	mg/L		09/16/19 12:16	09/27/19 15:44	1
Barium	0.035		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 15:44	1
Boron	4.8		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 15:44	1
Cadmium	0.00079	J	0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 15:44	1
Calcium	97		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 15:44	1
Cobalt	0.019		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 15:44	1
Lithium	0.042		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 15:44	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	660		10	10	mg/L			09/14/19 09:11	1

## Client Sample ID: MGWC-1

## Lab Sample ID: 180-95496-9

Date Collected: 09/10/19 12:50

Matrix: Water

Date Received: 09/11/19 09:00

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		1.0	0.71	mg/L			09/16/19 20:18	1
Fluoride	0.098	J	0.10	0.026	mg/L			09/16/19 20:18	1
Sulfate	140		1.0	0.38	mg/L			09/16/19 20:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0018		0.0010	0.00032	mg/L		09/16/19 12:16	09/27/19 15:47	1
Barium	0.11		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 15:47	1
Boron	1.5		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 15:47	1
Cadmium	0.00017	J	0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 15:47	1
Calcium	110		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 15:47	1
Cobalt	0.00032	J	0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 15:47	1
Lithium	0.012		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 15:47	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

**Client Sample ID: MGWC-1**

**Lab Sample ID: 180-95496-9**

Date Collected: 09/10/19 12:50

Matrix: Water

Date Received: 09/11/19 09:00

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	360		10	10	mg/L			09/14/19 09:11	1

**Client Sample ID: MGWC-3**

**Lab Sample ID: 180-95496-10**

Date Collected: 09/10/19 12:40

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		1.0	0.71	mg/L			09/16/19 21:37	1
Fluoride	0.073	J	0.10	0.026	mg/L			09/16/19 21:37	1
Sulfate	110		1.0	0.38	mg/L			09/16/19 21:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0017		0.0010	0.00032	mg/L		09/16/19 12:16	09/27/19 15:50	1
Barium	0.15		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 15:50	1
Boron	1.5		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 15:50	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 15:50	1
Calcium	99		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 15:50	1
Cobalt	0.00065		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 15:50	1
Lithium	0.015		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 15:50	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	360		10	10	mg/L			09/14/19 09:11	1

**Client Sample ID: MGWC-2**

**Lab Sample ID: 180-95496-11**

Date Collected: 09/10/19 13:30

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		1.0	0.71	mg/L			09/16/19 21:53	1
Fluoride	0.070	J	0.10	0.026	mg/L			09/16/19 21:53	1
Sulfate	180		1.0	0.38	mg/L			09/16/19 21:53	1

**Method: EPA 6020B - 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		09/16/19 12:16	09/27/19 15:54	1
Barium	0.053		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 15:54	1
Boron	2.4		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 15:54	1
Cadmium	0.0011		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 15:54	1
Calcium	110		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 15:54	1
Cobalt	0.0027		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 15:54	1
Lithium	0.0074		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 15:54	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	470		10	10	mg/L			09/14/19 09:11	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

**Client Sample ID: FB-AP-01**

**Lab Sample ID: 180-95496-12**

Date Collected: 09/10/19 13:50

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			09/16/19 23:28	1
Fluoride	<0.026		0.10	0.026	mg/L			09/16/19 23:28	1
<b>Sulfate</b>	<b>0.41</b>	<b>J</b>	1.0	0.38	mg/L			09/16/19 23:28	1

**Method: EPA 6020B - 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		09/16/19 12:16	09/27/19 15:57	1
Barium	<0.0016		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 15:57	1
<b>Boron</b>	<b>0.087</b>		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 15:57	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 15:57	1
Calcium	<0.13		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 15:57	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 15:57	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 15:57	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			09/14/19 09:11	1

**Client Sample ID: FB-AP-02**

**Lab Sample ID: 180-95496-13**

Date Collected: 09/10/19 13:55

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			09/16/19 16:53	1
Fluoride	<0.026		0.10	0.026	mg/L			09/16/19 16:53	1
Sulfate	<0.38		1.0	0.38	mg/L			09/16/19 16:53	1

**Method: EPA 6020B - 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		09/16/19 12:16	09/27/19 16:00	1
<b>Barium</b>	<b>0.0018</b>	<b>J</b>	0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 16:00	1
<b>Boron</b>	<b>0.055</b>	<b>J</b>	0.080	0.039	mg/L		09/16/19 12:16	09/27/19 16:00	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 16:00	1
Calcium	<0.13		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 16:00	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 16:00	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 16:00	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			09/14/19 09:05	1

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-95496-14**

Date Collected: 09/10/19 13:40

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			09/27/19 11:02	1
Fluoride	<0.026		0.10	0.026	mg/L			09/27/19 11:02	1
Sulfate	<0.38		1.0	0.38	mg/L			09/27/19 11:02	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-95496-14**

Date Collected: 09/10/19 13:40

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 6020B - 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		09/16/19 12:16	09/27/19 16:04	1
Barium	<0.0016		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 16:04	1
Boron	<0.039		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 16:04	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 16:04	1
Calcium	<0.13		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 16:04	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 16:04	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 16:04	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			09/14/19 09:05	1

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-95496-15**

Date Collected: 09/10/19 13:45

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			09/16/19 17:08	1
Fluoride	0.026	J	0.10	0.026	mg/L			09/16/19 17:08	1
Sulfate	0.38	J	1.0	0.38	mg/L			09/16/19 17:08	1

**Method: EPA 6020B - 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		09/16/19 12:16	09/27/19 16:07	1
Barium	<0.0016		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 16:07	1
Boron	<0.039		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 16:07	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 16:07	1
Calcium	<0.13		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 16:07	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 16:07	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 16:07	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10	10	mg/L			09/14/19 09:05	1

**Client Sample ID: DUP 01**

**Lab Sample ID: 180-95496-16**

Date Collected: 09/10/19 00:00

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.1		1.0	0.71	mg/L			09/16/19 22:25	1
Fluoride	0.071	J	0.10	0.026	mg/L			09/16/19 22:25	1
Sulfate	5.7		1.0	0.38	mg/L			09/16/19 22:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0084		0.0010	0.00032	mg/L		09/16/19 12:16	09/27/19 16:11	1
Barium	0.039		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 16:11	1
Boron	0.096		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 16:11	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

**Client Sample ID: DUP 01**

**Lab Sample ID: 180-95496-16**

Date Collected: 09/10/19 00:00

Matrix: Water

Date Received: 09/11/19 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 16:11	1
<b>Calcium</b>	<b>100</b>		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 16:11	1
<b>Cobalt</b>	<b>0.00034</b>	<b>J</b>	0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 16:11	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 16:11	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>290</b>		10	10	mg/L			09/14/19 09:05	1

**Client Sample ID: DUP 02**

**Lab Sample ID: 180-95496-17**

Date Collected: 09/10/19 00:00

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>14</b>		1.0	0.71	mg/L			09/16/19 22:41	1
<b>Fluoride</b>	<b>0.10</b>		0.10	0.026	mg/L			09/16/19 22:41	1
<b>Sulfate</b>	<b>140</b>		1.0	0.38	mg/L			09/16/19 22:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>0.0016</b>		0.0010	0.00032	mg/L		09/16/19 12:16	09/27/19 16:14	1
<b>Barium</b>	<b>0.11</b>		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 16:14	1
<b>Boron</b>	<b>1.5</b>		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 16:14	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 16:14	1
<b>Calcium</b>	<b>110</b>		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 16:14	1
<b>Cobalt</b>	<b>0.00029</b>	<b>J</b>	0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 16:14	1
<b>Lithium</b>	<b>0.010</b>		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 16:14	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>410</b>		10	10	mg/L			09/14/19 09:05	1



# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
 SDG: Ash

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

**Lab Sample ID: MB 180-291400/49**  
**Matrix: Water**  
**Analysis Batch: 291400**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			09/16/19 16:37	1
Fluoride	<0.026		0.10	0.026	mg/L			09/16/19 16:37	1
Sulfate	<0.38		1.0	0.38	mg/L			09/16/19 16:37	1

**Lab Sample ID: LCS 180-291400/48**  
**Matrix: Water**  
**Analysis Batch: 291400**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.7		mg/L		103	90 - 110
Fluoride	1.25	1.28		mg/L		103	90 - 110
Sulfate	25.0	25.5		mg/L		102	90 - 110

**Lab Sample ID: 180-95496-2 MS**  
**Matrix: Water**  
**Analysis Batch: 291400**

**Client Sample ID: MGWA-11**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.5		25.0	27.5		mg/L		96	80 - 120
Fluoride	0.075	J	1.25	1.30		mg/L		98	80 - 120
Sulfate	1.8		25.0	25.7		mg/L		96	80 - 120

**Lab Sample ID: 180-95496-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 291400**

**Client Sample ID: MGWA-11**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.5		25.0	27.4		mg/L		96	80 - 120	0	20
Fluoride	0.075	J	1.25	1.30		mg/L		98	80 - 120	0	20
Sulfate	1.8		25.0	25.5		mg/L		95	80 - 120	1	20

**Lab Sample ID: MB 180-292864/6**  
**Matrix: Water**  
**Analysis Batch: 292864**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			09/27/19 05:21	1
Fluoride	<0.026		0.10	0.026	mg/L			09/27/19 05:21	1
Sulfate	<0.38		1.0	0.38	mg/L			09/27/19 05:21	1

**Lab Sample ID: LCS 180-292864/5**  
**Matrix: Water**  
**Analysis Batch: 292864**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	24.8		mg/L		99	90 - 110
Fluoride	1.25	1.22		mg/L		97	90 - 110
Sulfate	25.0	24.8		mg/L		99	90 - 110

# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

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

**Lab Sample ID: MB 180-291262/1-A**  
**Matrix: Water**  
**Analysis Batch: 292211**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 291262**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00032		0.0010	0.00032	mg/L		09/13/19 12:34	09/21/19 12:59	1
Barium	<0.0016		0.010	0.0016	mg/L		09/13/19 12:34	09/21/19 12:59	1
Boron	<0.039		0.080	0.039	mg/L		09/13/19 12:34	09/21/19 12:59	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/13/19 12:34	09/21/19 12:59	1
Calcium	<0.13		0.50	0.13	mg/L		09/13/19 12:34	09/21/19 12:59	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/13/19 12:34	09/21/19 12:59	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/13/19 12:34	09/21/19 12:59	1

**Lab Sample ID: LCS 180-291262/2-A**  
**Matrix: Water**  
**Analysis Batch: 292211**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 291262**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	1.00	0.938		mg/L		94	80 - 120
Barium	1.00	1.07		mg/L		107	80 - 120
Boron	1.25	1.34		mg/L		107	80 - 120
Cadmium	0.500	0.538		mg/L		108	80 - 120
Calcium	25.0	25.5		mg/L		102	80 - 120
Cobalt	0.500	0.483		mg/L		97	80 - 120
Lithium	0.500	0.499		mg/L		100	80 - 120

**Lab Sample ID: MB 180-291481/1-A**  
**Matrix: Water**  
**Analysis Batch: 293025**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 291481**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00032		0.0010	0.00032	mg/L		09/16/19 12:16	09/27/19 14:50	1
Barium	<0.0016		0.010	0.0016	mg/L		09/16/19 12:16	09/27/19 14:50	1
Boron	<0.039		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 14:50	1
Cadmium	<0.00013		0.0010	0.00013	mg/L		09/16/19 12:16	09/27/19 14:50	1
Calcium	<0.13		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 14:50	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 14:50	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 14:50	1

**Lab Sample ID: LCS 180-291481/2-A**  
**Matrix: Water**  
**Analysis Batch: 293025**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 291481**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	1.00	0.942		mg/L		94	80 - 120
Barium	1.00	1.07		mg/L		107	80 - 120
Boron	1.25	1.19		mg/L		95	80 - 120
Cadmium	0.500	0.497		mg/L		99	80 - 120
Calcium	25.0	26.2		mg/L		105	80 - 120
Cobalt	0.500	0.472		mg/L		94	80 - 120
Lithium	0.500	0.478		mg/L		96	80 - 120

# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

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

**Lab Sample ID: 180-95496-6 MS**  
**Matrix: Water**  
**Analysis Batch: 293025**

**Client Sample ID: MGWA-6**  
**Prep Type: Total Recoverable**  
**Prep Batch: 291481**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.0085		1.00	0.981		mg/L		97	75 - 125
Barium	0.040		1.00	1.16		mg/L		112	75 - 125
Boron	0.097		1.25	1.35		mg/L		100	75 - 125
Cadmium	<0.00013		0.500	0.512		mg/L		102	75 - 125
Calcium	110		25.0	122	4	mg/L		68	75 - 125
Cobalt	0.00037	J	0.500	0.485		mg/L		97	75 - 125
Lithium	0.0051		0.500	0.486		mg/L		96	75 - 125

**Lab Sample ID: 180-95496-6 MSD**  
**Matrix: Water**  
**Analysis Batch: 293025**

**Client Sample ID: MGWA-6**  
**Prep Type: Total Recoverable**  
**Prep Batch: 291481**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Arsenic	0.0085		1.00	0.957		mg/L		95	75 - 125	2	20
Barium	0.040		1.00	1.12		mg/L		108	75 - 125	3	20
Boron	0.097		1.25	1.34		mg/L		99	75 - 125	1	20
Cadmium	<0.00013		0.500	0.500		mg/L		100	75 - 125	2	20
Calcium	110		25.0	124	4	mg/L		72	75 - 125	1	20
Cobalt	0.00037	J	0.500	0.472		mg/L		94	75 - 125	3	20
Lithium	0.0051		0.500	0.469		mg/L		93	75 - 125	4	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 180-291320/2**  
**Matrix: Water**  
**Analysis Batch: 291320**

**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			09/14/19 09:05	1

**Lab Sample ID: LCS 180-291320/1**  
**Matrix: Water**  
**Analysis Batch: 291320**

**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	608		mg/L		96	80 - 120

**Lab Sample ID: 180-95496-17 DU**  
**Matrix: Water**  
**Analysis Batch: 291320**

**Client Sample ID: DUP 02**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	410		423		mg/L		2	10

**Lab Sample ID: MB 180-291321/2**  
**Matrix: Water**  
**Analysis Batch: 291321**

**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			09/14/19 09:11	1

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# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
 SDG: Ash

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: LCS 180-291321/1**  
**Matrix: Water**  
**Analysis Batch: 291321**

**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	518		mg/L		82	80 - 120

**Lab Sample ID: 180-95496-6 DU**  
**Matrix: Water**  
**Analysis Batch: 291321**

**Client Sample ID: MGWA-6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	260		242		mg/L		8	10

**Lab Sample ID: 180-95496-10 DU**  
**Matrix: Water**  
**Analysis Batch: 291321**

**Client Sample ID: MGWC-3**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	360		341		mg/L		6	10

# QC Association Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
 SDG: Ash

## HPLC/IC

### Analysis Batch: 291400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95496-1	MGWA-10	Total/NA	Water	EPA 300.0 R2.1	
180-95496-2	MGWA-11	Total/NA	Water	EPA 300.0 R2.1	
180-95496-3	MGWA-6A	Total/NA	Water	EPA 300.0 R2.1	
180-95496-4	MGWA-5	Total/NA	Water	EPA 300.0 R2.1	
180-95496-5	MGWC-7	Total/NA	Water	EPA 300.0 R2.1	
180-95496-6	MGWA-6	Total/NA	Water	EPA 300.0 R2.1	
180-95496-7	MGWC-12	Total/NA	Water	EPA 300.0 R2.1	
180-95496-8	MGWC-8	Total/NA	Water	EPA 300.0 R2.1	
180-95496-8	MGWC-8	Total/NA	Water	EPA 300.0 R2.1	
180-95496-9	MGWC-1	Total/NA	Water	EPA 300.0 R2.1	
180-95496-10	MGWC-3	Total/NA	Water	EPA 300.0 R2.1	
180-95496-11	MGWC-2	Total/NA	Water	EPA 300.0 R2.1	
180-95496-12	FB-AP-01	Total/NA	Water	EPA 300.0 R2.1	
180-95496-13	FB-AP-02	Total/NA	Water	EPA 300.0 R2.1	
180-95496-15	FERB-AP-02	Total/NA	Water	EPA 300.0 R2.1	
180-95496-16	DUP 01	Total/NA	Water	EPA 300.0 R2.1	
180-95496-17	DUP 02	Total/NA	Water	EPA 300.0 R2.1	
MB 180-291400/49	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-291400/48	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
180-95496-2 MS	MGWA-11	Total/NA	Water	EPA 300.0 R2.1	
180-95496-2 MSD	MGWA-11	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 292864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95496-14	FERB-AP-01	Total/NA	Water	EPA 300.0 R2.1	
MB 180-292864/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-292864/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

## Metals

### Prep Batch: 291262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95496-1	MGWA-10	Total Recoverable	Water	3005A	
180-95496-2	MGWA-11	Total Recoverable	Water	3005A	
MB 180-291262/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-291262/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Prep Batch: 291481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95496-3	MGWA-6A	Total Recoverable	Water	3005A	
180-95496-4	MGWA-5	Total Recoverable	Water	3005A	
180-95496-5	MGWC-7	Total Recoverable	Water	3005A	
180-95496-6	MGWA-6	Total Recoverable	Water	3005A	
180-95496-7	MGWC-12	Total Recoverable	Water	3005A	
180-95496-8	MGWC-8	Total Recoverable	Water	3005A	
180-95496-9	MGWC-1	Total Recoverable	Water	3005A	
180-95496-10	MGWC-3	Total Recoverable	Water	3005A	
180-95496-11	MGWC-2	Total Recoverable	Water	3005A	
180-95496-12	FB-AP-01	Total Recoverable	Water	3005A	
180-95496-13	FB-AP-02	Total Recoverable	Water	3005A	
180-95496-14	FERB-AP-01	Total Recoverable	Water	3005A	

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# QC Association Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
 SDG: Ash

## Metals (Continued)

### Prep Batch: 291481 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95496-15	FERB-AP-02	Total Recoverable	Water	3005A	
180-95496-16	DUP 01	Total Recoverable	Water	3005A	
180-95496-17	DUP 02	Total Recoverable	Water	3005A	
MB 180-291481/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-291481/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-95496-6 MS	MGWA-6	Total Recoverable	Water	3005A	
180-95496-6 MSD	MGWA-6	Total Recoverable	Water	3005A	

### Analysis Batch: 292211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95496-1	MGWA-10	Total Recoverable	Water	EPA 6020B	291262
180-95496-2	MGWA-11	Total Recoverable	Water	EPA 6020B	291262
MB 180-291262/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	291262
LCS 180-291262/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	291262

### Analysis Batch: 293025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95496-3	MGWA-6A	Total Recoverable	Water	EPA 6020B	291481
180-95496-4	MGWA-5	Total Recoverable	Water	EPA 6020B	291481
180-95496-5	MGWC-7	Total Recoverable	Water	EPA 6020B	291481
180-95496-6	MGWA-6	Total Recoverable	Water	EPA 6020B	291481
180-95496-7	MGWC-12	Total Recoverable	Water	EPA 6020B	291481
180-95496-8	MGWC-8	Total Recoverable	Water	EPA 6020B	291481
180-95496-9	MGWC-1	Total Recoverable	Water	EPA 6020B	291481
180-95496-10	MGWC-3	Total Recoverable	Water	EPA 6020B	291481
180-95496-11	MGWC-2	Total Recoverable	Water	EPA 6020B	291481
180-95496-12	FB-AP-01	Total Recoverable	Water	EPA 6020B	291481
180-95496-13	FB-AP-02	Total Recoverable	Water	EPA 6020B	291481
180-95496-14	FERB-AP-01	Total Recoverable	Water	EPA 6020B	291481
180-95496-15	FERB-AP-02	Total Recoverable	Water	EPA 6020B	291481
180-95496-16	DUP 01	Total Recoverable	Water	EPA 6020B	291481
180-95496-17	DUP 02	Total Recoverable	Water	EPA 6020B	291481
MB 180-291481/1-A	Method Blank	Total Recoverable	Water	EPA 6020B	291481
LCS 180-291481/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020B	291481
180-95496-6 MS	MGWA-6	Total Recoverable	Water	EPA 6020B	291481
180-95496-6 MSD	MGWA-6	Total Recoverable	Water	EPA 6020B	291481

## General Chemistry

### Analysis Batch: 291320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95496-13	FB-AP-02	Total/NA	Water	SM 2540C	
180-95496-14	FERB-AP-01	Total/NA	Water	SM 2540C	
180-95496-15	FERB-AP-02	Total/NA	Water	SM 2540C	
180-95496-16	DUP 01	Total/NA	Water	SM 2540C	
180-95496-17	DUP 02	Total/NA	Water	SM 2540C	
MB 180-291320/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-291320/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-95496-17 DU	DUP 02	Total/NA	Water	SM 2540C	



# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-1  
SDG: Ash

## General Chemistry

### Analysis Batch: 291321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95496-1	MGWA-10	Total/NA	Water	SM 2540C	
180-95496-2	MGWA-11	Total/NA	Water	SM 2540C	
180-95496-3	MGWA-6A	Total/NA	Water	SM 2540C	
180-95496-4	MGWA-5	Total/NA	Water	SM 2540C	
180-95496-5	MGWC-7	Total/NA	Water	SM 2540C	
180-95496-6	MGWA-6	Total/NA	Water	SM 2540C	
180-95496-7	MGWC-12	Total/NA	Water	SM 2540C	
180-95496-8	MGWC-8	Total/NA	Water	SM 2540C	
180-95496-9	MGWC-1	Total/NA	Water	SM 2540C	
180-95496-10	MGWC-3	Total/NA	Water	SM 2540C	
180-95496-11	MGWC-2	Total/NA	Water	SM 2540C	
180-95496-12	FB-AP-01	Total/NA	Water	SM 2540C	
MB 180-291321/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-291321/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-95496-6 DU	MGWA-6	Total/NA	Water	SM 2540C	
180-95496-10 DU	MGWC-3	Total/NA	Water	SM 2540C	

**Chain of Custody Record**

<b>Client Information</b>		Sampler: <u>J. Adcock, L. Coker, J. Niles</u>		Lab PM: <u>Bortol, Veronica</u>		COC No: <u>180-54264-10410.1</u>	
Client Contact: <u>Lauren Coker</u>		Phone: <u>404-592-0094</u>		E-Mail: <u>veronica.bortol@testamericainc.com</u>		Page: <u>1 of 2</u>	
Company: <u>Southern Company Services, Inc.</u>		Address: <u>3535 Colonnade Parkway</u>		City: <u>Birmingham</u>		State, Zip: <u>GA, 30309</u>	
Phone: <u>205-992-5417(Tel)</u>		PO #: <u>SCS10347656</u>		WO #: <u></u>		Project #: <u>18019956</u>	
Email: <u>Impetty@southernco.com</u>		Project Name: <u>CCR - Plant McIntosh Ash Pond 1</u>		Site: <u>Georgia</u>		SSOW#: <u></u>	
<b>Due Date Requested:</b>		TAT Requested (days): <u></u>		Field Filtered Sample (Yes or No): <u></u>		Form MS/MSD (Yes or No): <u></u>	
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, B=1-tissue, A=Air)	9316_Ra226, 9320_Ra228	6020_B, Ca; plus As, B, Cd, Co, Li (detected App IV elements)
MGWA-10	9/10/19	0826	G	Water	N	X	2640C_Calc, 300_Chloride Sulfate, Fluoride, pH TDS
MGWA-11		0812	G	Water	X		
MGWA-6A		0950	G	Water	X		
MGWA-5		1000	G	Water	X		
MGWC-7		1015	G	Water	X		
MGWA-6		1050	G	Water	X		
MGWC-12		1120	G	Water	X		
MGWC-8		1215	G	Water	X		
MGWC-1		1250	G	Water	X		
MGWC-B		1240	G	Water	X		
MGWC-Z		1330	G	Water	X		
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)							
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: <u>Janklyn</u> Date: <u>9/10/19</u> Time: <u>1900</u>							
Relinquished by: <u>Fedex</u> Date/Time: <u>9/11/19 9:00</u> Company: <u>GEI</u>							
Relinquished by: <u>Gunn</u> Date/Time: <u>9/11/19 9:00</u> Company: <u>GEI</u>							
Relinquished by: <u></u> Date/Time: <u></u> Company: <u></u>							
Custody Seals Intact: <u>Yes</u> <input type="checkbox"/> <u>No</u> <input type="checkbox"/> Cooler Temperature(s) °C and Other Remarks:							



# Chain of Custody Record

<b>Client Information</b>		Sampler: <u>S. Anderson, L. Coker, J. Williams</u> Lab PM: <u>Bortot, Veronica</u> Phone: <u>904-592-0094</u> E-Mail: <u>veronica.bortot@testamericainc.com</u>		Carrier Tracking No(s): COC No: <u>180-54264-10410.1</u> Page: <u>2 of 2</u> Job #:	
Company: Southern Company Services, Inc. Address: 3535 Colonnade Parkway City: Birmingham State, Zip: GA, 30309 Phone: 205-992-5417 (Tel) Email: <u>Impetty@southernco.com</u> Project Name: CCR - Plant McIntosh Ash Pond 1 Site: Georgia		Due Date Requested: TAT Requested (days): PO #: <u>SCS10347656</u> WO #: Project #: <u>18019956</u> SSOW#:		Analysis Requested 2540C_Caled, 300_Chloride Sulfate, Fluoride, pH 7.5 6020_B, Ca; plus As, B, Cd, Co, Li (detected App IV elements) 9316_Ra226, 9320_Ra228 Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> <input type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> <input type="checkbox"/> D N	
Sample Identification <u>FB-AP-01</u> <u>FB-AP-02</u> <u>FERB-AP-01</u> <u>FERB-AP-02</u>		Sample Date <u>9/10/19</u> ↓ ↓		Sample Time <u>1350</u> <u>1355</u> <u>1340</u> <u>1345</u>	
Sample Type (C=Comp, G=grab) G G G G		Matrix (W=water, S=solid, O=wastewater, I=Ice, T=tissue, A=air) Water Water Water Water		Preservation Code: X X X X	
Special Instructions/Note: Total Number of containers 3 3 3 3		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 - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		Special Instructions/Note: Total Number of containers 3 3 3 3	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					
Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit Relinquished by:					
Relinquished by: <u>Lauren</u> Date: <u>9/10/19 1900</u> Company: <u>GEI</u>					
Relinquished by: _____ Date/Time: _____ Company: _____					
Relinquished by: _____ Date/Time: _____ Company: _____					
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No					
Cooler Temperature(s) °C and Other Remarks:					



ORIGIN ID:SAVA (919) 724-7237  
JAKE ADOCK

1375 PEACHTREE ST NE  
SUITE A15  
ATLANTA, GA 30309  
UNITED STATES US

SHIP DATE: 10SEP19  
ACTWGT: 49.70 LB  
CAD: 006994919/SSFE2021  
DIMS: 23x15x13 IN

BILL THIRD PARTY

Part #: 1562972850/4164/11295 07/20

TO **VERONICZ BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

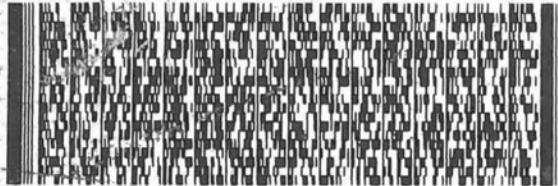
**PITTSBURGH PA 15238**

(412) 963-2435

REF:

INU:

DEPT:



**FedEx**  
Express



REL#  
3785346

4 of 4

MPS# 7897 2434 0241

Mstr# 7897 2434 0219

0201

**WED - 11 SEP 10:30A**  
**PRIORITY OVERNIGHT**

**XH AGCA**

**15238**

PA-US **PIT**

Uncorrected temp 2.3 °C  
Thermometer ID 10

CF ☉ Initials TJ

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



180-95496 Waybill



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ORIGIN ID:SAVA (919) 724-7237  
JAKE ADOCK

1375 PEACHTREE ST NE  
SUITE A15  
ATLANTA, GA 30309  
UNITED STATES US

SHIP DATE: 10SEP19  
ACTWGT: 49.30 LB  
CAD: 006994919/SSFE2021  
DIMS: 23x15x13 IN

BILL THIRD PARTY

Part # 158297-2850/4066/17295 07/20

TO **VERONICZ BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

**PITTSBURGH PA 15238**

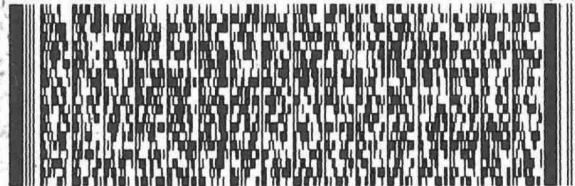
(412) 963-2435

REF:

INU:

DEPT:

11 0000101 000011 01 00000 11 0 0010 1 1 100 010 010



**FedEx**  
Express



REL#  
3785346

2 of 4

MPS# 7897 2434 0220

0263

Mstr# 7897 2434 0219

0201

**WED - 11 SEP 10:30A**  
**PRIORITY OVERNIGHT**

**XH AGCA**

**15238**

PA-US **PIT**

Uncorrected temp  
Thermometer ID

26.7 °C

10

CF ⊕

No. Ice Pack  
Initials JB

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



ORIGIN ID: SAVA (919) 724-7237  
JAKE ADOCK

1375 PEACHTREE ST NE  
SUITE A15  
ATLANTA, GA 30309  
UNITED STATES US

SHIP DATE: 10SEP19  
ACTWGT: 51.90 LB  
CAD: 006994919/SSFE2021  
DIMS: 23x15x13 IN

BILL THIRD PARTY

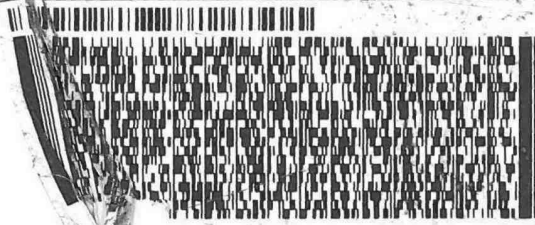
TO **VERONICZ BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

**PITTSBURGH PA 15238**

(2) 963-2436

REF:

DEPT:



**FedEx**  
Express



REL#  
3785346

1 of 4

TRK# 7897 2434 0219  
0201

## MASTER ##

**WED - 11 SEP 10:30A**  
**PRIORITY OVERNIGHT**

**XH AGCA**

**15238**

PA-US **PIT**

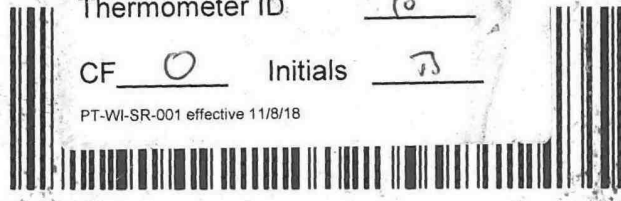
Uncorrected temp \_\_\_\_\_ °C  
Thermometer ID \_\_\_\_\_

1.1

10

CF 0 Initials JB

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





ORIGIN ID: SAVA (919) 724-7237  
JAKE ADOCK

1375 PEACHTREE ST NE  
SUITE A15  
ATLANTA, GA 30309  
UNITED STATES US

SHIP DATE: 10SEP19  
ACTWGT: 47.10 LB  
CAD: 006994919/89FE2021  
DIMS: 23x15x13 IN  
BILL THIRD PARTY

Part # 15829

TO **VERONICZ BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

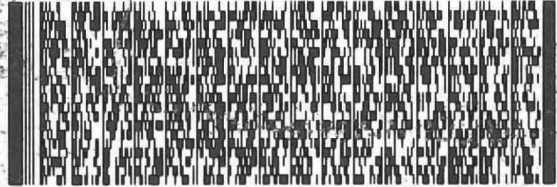
**PITTSBURGH PA 15238**

(412) 969-2435

REF:

INVT  
PO:

DEPT:



**FedEx**  
Express



4109290610201

REL#  
3785346

3 of 4

MPS# 7897 2434 0230  
0263

Mstr# 7897 2434 0219

0201

**WED - 11 SEP 10:30A**  
**PRIORITY OVERNIGHT**

**XH AGCA**

**15238**

PA-US **PIT**

Uncorrected temp 25.8 °C

Thermometer ID 10

CF 0 *No Ice Pack* Initials TB

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



RT 97  
FZ  
1  
10:30  
A  
0230  
09.11

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## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-95496-1

SDG Number: Ash

**Login Number: 95496**

**List Number: 1**

**Creator: Colussy, Jill L**

**List Source: Eurofins TestAmerica, Pittsburgh**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (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: 180-95496-2

Laboratory Sample Delivery Group: Ash

Client Project/Site: CCR - Plant McIntosh Ash Pond 1

**For:**

Southern Company  
PO BOX 2641 GSC8  
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty



Authorized for release by:  
10/18/2019 6:54:11 PM

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

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

**Job ID: 180-95496-2**

**Laboratory: Eurofins TestAmerica, Pittsburgh**

## Narrative

### Job Narrative 180-95496-2

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/11/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.1° C, 2.3° C, 25.8° C and 26.7° C.

#### Receipt Exceptions

The following samples were submitted for analysis; however, they were not listed on the Chain-of-Custody (COC): DUP 01 (180-95496-16) and DUP 02 (180-95496-17)

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): MGWC-3 (180-95496-10). The container labels list <MSWC-12>, while the COC lists <MSWC-3>. The sample collection date/time matches so it is assumed to be the same sample. Sample was logged as per the COC.

#### RAD

Method 9315: Radium-226 Prep Batch 160-443120

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.

MGWA-10 (180-95496-1), MGWA-11 (180-95496-2), MGWA-6A (180-95496-3), MGWA-5 (180-95496-4), MGWC-7 (180-95496-5), MGWA-6 (180-95496-6), MGWC-12 (180-95496-7), MGWC-8 (180-95496-8), MGWC-1 (180-95496-9), MGWC-3 (180-95496-10), MGWC-2 (180-95496-11), FB-AP-01 (180-95496-12), FB-AP-02 (180-95496-13), FERB-AP-01 (180-95496-14), FERB-AP-02 (180-95496-15), DUP 01 (180-95496-16), DUP 02 (180-95496-17), (LCS 160-443120/1-A), (LCSD 160-443120/2-A) and (MB 160-443120/20-A)

Method 9320: Ra-228 Prep Batch 160-443130

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.

MGWA-10 (180-95496-1), MGWA-11 (180-95496-2), MGWA-6A (180-95496-3), MGWA-5 (180-95496-4), MGWC-7 (180-95496-5), MGWA-6 (180-95496-6), MGWC-12 (180-95496-7), MGWC-8 (180-95496-8), MGWC-1 (180-95496-9), MGWC-3 (180-95496-10), MGWC-2 (180-95496-11), FB-AP-01 (180-95496-12), FB-AP-02 (180-95496-13), FERB-AP-01 (180-95496-14), FERB-AP-02 (180-95496-15), DUP 01 (180-95496-16), DUP 02 (180-95496-17), (LCS 160-443130/1-A), (LCSD 160-443130/2-A) and (MB 160-443130/20-A)

Method PrecSep\_0: Radium 228 Prep Batch 160-443130:

Insufficient sample volume was available to perform a sample duplicate for the following samples: MGWA-10 (180-95496-1), MGWA-11 (180-95496-2), MGWA-6A (180-95496-3), MGWA-5 (180-95496-4), MGWC-7 (180-95496-5), MGWA-6 (180-95496-6), MGWC-12 (180-95496-7), MGWC-8 (180-95496-8), MGWC-1 (180-95496-9), MGWC-3 (180-95496-10), MGWC-2 (180-95496-11), FB-AP-01 (180-95496-12), FB-AP-02 (180-95496-13), FERB-AP-01 (180-95496-14), FERB-AP-02 (180-95496-15), DUP 01 (180-95496-16) and DUP 02 (180-95496-17). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-443120:

Insufficient sample volume was available to perform a sample duplicate for the following samples: MGWA-10 (180-95496-1), MGWA-11 (180-95496-2), MGWA-6A (180-95496-3), MGWA-5 (180-95496-4), MGWC-7 (180-95496-5), MGWA-6 (180-95496-6), MGWC-12

# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

---

## Job ID: 180-95496-2 (Continued)

---

### Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

(180-95496-7), MGWC-8 (180-95496-8), MGWC-1 (180-95496-9), MGWC-3 (180-95496-10), MGWC-2 (180-95496-11), FB-AP-01 (180-95496-12), FB-AP-02 (180-95496-13), FERB-AP-01 (180-95496-14), FERB-AP-02 (180-95496-15), DUP 01 (180-95496-16) and DUP 02 (180-95496-17). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

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

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# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

## 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 McIntosh Ash Pond 1

Job ID: 180-95496-2  
 SDG: Ash

## 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 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 McIntosh Ash Pond 1

Job ID: 180-95496-2  
 SDG: Ash

## 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
HI - RadChem Recognition	State	n/a	06-30-20
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
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
Washington	State Program	C592	08-30-19 *
West Virginia DEP	State Program	381	10-31-19 *

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

# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-95496-1	MGWA-10	Water	09/10/19 08:26	09/11/19 09:00	
180-95496-2	MGWA-11	Water	09/10/19 08:12	09/11/19 09:00	
180-95496-3	MGWA-6A	Water	09/10/19 09:50	09/11/19 09:00	
180-95496-4	MGWA-5	Water	09/10/19 10:00	09/11/19 09:00	
180-95496-5	MGWC-7	Water	09/10/19 10:10	09/11/19 09:00	
180-95496-6	MGWA-6	Water	09/10/19 10:50	09/11/19 09:00	
180-95496-7	MGWC-12	Water	09/10/19 11:20	09/11/19 09:00	
180-95496-8	MGWC-8	Water	09/10/19 12:15	09/11/19 09:00	
180-95496-9	MGWC-1	Water	09/10/19 12:50	09/11/19 09:00	
180-95496-10	MGWC-3	Water	09/10/19 12:40	09/11/19 09:00	
180-95496-11	MGWC-2	Water	09/10/19 13:30	09/11/19 09:00	
180-95496-12	FB-AP-01	Water	09/10/19 13:50	09/11/19 09:00	
180-95496-13	FB-AP-02	Water	09/10/19 13:55	09/11/19 09:00	
180-95496-14	FERB-AP-01	Water	09/10/19 13:40	09/11/19 09:00	
180-95496-15	FERB-AP-02	Water	09/10/19 13:45	09/11/19 09:00	
180-95496-16	DUP 01	Water	09/10/19 00:00	09/11/19 09:00	
180-95496-17	DUP 02	Water	09/10/19 00:00	09/11/19 09:00	

# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

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 McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

## Client Sample ID: MGWA-10

Lab Sample ID: 180-95496-1

Date Collected: 09/10/19 08:26

Matrix: Water

Date Received: 09/11/19 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			1000.21 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 09:09	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.21 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:44	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-11

Lab Sample ID: 180-95496-2

Date Collected: 09/10/19 08:12

Matrix: Water

Date Received: 09/11/19 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			1000.18 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 09:09	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.18 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:44	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-6A

Lab Sample ID: 180-95496-3

Date Collected: 09/10/19 09:50

Matrix: Water

Date Received: 09/11/19 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			999.87 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 09:10	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			999.87 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:44	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-5

Lab Sample ID: 180-95496-4

Date Collected: 09/10/19 10:00

Matrix: Water

Date Received: 09/11/19 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			1000.27 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 09:10	KLS	TAL SL
Instrument ID: GFPCRED										

Eurofins TestAmerica, Pittsburgh



# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

## Client Sample ID: MGWA-5

Date Collected: 09/10/19 10:00

Date Received: 09/11/19 09:00

## Lab Sample ID: 180-95496-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			1000.27 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:44	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWC-7

Date Collected: 09/10/19 10:10

Date Received: 09/11/19 09:00

## Lab Sample ID: 180-95496-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.54 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 09:10	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.54 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:44	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWA-6

Date Collected: 09/10/19 10:50

Date Received: 09/11/19 09:00

## Lab Sample ID: 180-95496-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.75 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 09:10	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			999.75 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:44	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: MGWC-12

Date Collected: 09/10/19 11:20

Date Received: 09/11/19 09:00

## Lab Sample ID: 180-95496-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			1000.60 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 10:56	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.60 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:44	KLS	TAL SL
Instrument ID: GFPCPROTEAN										

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
 SDG: Ash

**Client Sample ID: MGWC-12**

**Lab Sample ID: 180-95496-7**

**Date Collected: 09/10/19 11:20**

**Matrix: Water**

**Date Received: 09/11/19 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	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL

**Client Sample ID: MGWC-8**

**Lab Sample ID: 180-95496-8**

**Date Collected: 09/10/19 12:15**

**Matrix: Water**

**Date Received: 09/11/19 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			1000.12 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 10:56	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.12 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:45	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: MGWC-1**

**Lab Sample ID: 180-95496-9**

**Date Collected: 09/10/19 12:50**

**Matrix: Water**

**Date Received: 09/11/19 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			1000.50 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 10:56	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.50 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:45	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: MGWC-3**

**Lab Sample ID: 180-95496-10**

**Date Collected: 09/10/19 12:40**

**Matrix: Water**

**Date Received: 09/11/19 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			1000.50 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 10:56	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.50 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:45	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

## Client Sample ID: MGWC-2

## Lab Sample ID: 180-95496-11

Date Collected: 09/10/19 13:30

Matrix: Water

Date Received: 09/11/19 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			999.76 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 10:57	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			999.76 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:45	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: FB-AP-01

## Lab Sample ID: 180-95496-12

Date Collected: 09/10/19 13:50

Matrix: Water

Date Received: 09/11/19 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			1000.58 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 10:57	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.58 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444902	10/02/19 08:45	KLS	TAL SL
Instrument ID: GFPCPROTEAN										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: FB-AP-02

## Lab Sample ID: 180-95496-13

Date Collected: 09/10/19 13:55

Matrix: Water

Date Received: 09/11/19 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			1000.19 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 10:57	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.19 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444903	10/02/19 08:39	KLS	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

## Client Sample ID: FERB-AP-01

## Lab Sample ID: 180-95496-14

Date Collected: 09/10/19 13:40

Matrix: Water

Date Received: 09/11/19 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			1000.13 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 10:57	KLS	TAL SL
Instrument ID: GFPCRED										

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-95496-14**

Date Collected: 09/10/19 13:40

Matrix: Water

Date Received: 09/11/19 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_0			1000.13 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444903	10/02/19 08:40	KLS	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-95496-15**

Date Collected: 09/10/19 13:45

Matrix: Water

Date Received: 09/11/19 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			1000.91 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 12:49	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.91 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444903	10/02/19 08:40	KLS	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: DUP 01**

**Lab Sample ID: 180-95496-16**

Date Collected: 09/10/19 00:00

Matrix: Water

Date Received: 09/11/19 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			999.22 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 12:49	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			999.22 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444903	10/02/19 08:40	KLS	TAL SL
Instrument ID: GFPCORANGE										
Total/NA	Analysis	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL
Instrument ID: NOEQUIP										

**Client Sample ID: DUP 02**

**Lab Sample ID: 180-95496-17**

Date Collected: 09/10/19 00:00

Matrix: Water

Date Received: 09/11/19 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			1000.94 mL	1.0 g	443120	09/17/19 08:02	EJQ	TAL SL
Total/NA	Analysis	9315		1			445949	10/12/19 12:49	KLS	TAL SL
Instrument ID: GFPCRED										
Total/NA	Prep	PrecSep_0			1000.94 mL	1.0 g	443130	09/17/19 08:43	EJQ	TAL SL
Total/NA	Analysis	9320		1			444903	10/02/19 08:40	KLS	TAL SL
Instrument ID: GFPCORANGE										

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

**Client Sample ID: DUP 02**

**Lab Sample ID: 180-95496-17**

**Date Collected: 09/10/19 00:00**

**Matrix: Water**

**Date Received: 09/11/19 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	Ra226_Ra228		1			446004	10/14/19 07:26	SMP	TAL SL

**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

EJQ = Erin Quinn

Batch Type: Analysis

KLS = Kody Saulters

SMP = Siobhan Perry

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

**Client Sample ID: MGWA-10**

**Lab Sample ID: 180-95496-1**

Date Collected: 09/10/19 08:26

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.368		0.110	0.115	1.00	0.0960	pCi/L	09/17/19 08:02	10/12/19 09:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.2		40 - 110					09/17/19 08:02	10/12/19 09:09	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.244	U	0.273	0.274	1.00	0.448	pCi/L	09/17/19 08:43	10/02/19 08:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.2		40 - 110					09/17/19 08:43	10/02/19 08:44	1
Y Carrier	83.7		40 - 110					09/17/19 08:43	10/02/19 08:44	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	0.612		0.294	0.297	5.00	0.448	pCi/L		10/14/19 07:26	1

**Client Sample ID: MGWA-11**

**Lab Sample ID: 180-95496-2**

Date Collected: 09/10/19 08:12

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.142		0.0704	0.0716	1.00	0.0759	pCi/L	09/17/19 08:02	10/12/19 09:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.2		40 - 110					09/17/19 08:02	10/12/19 09:09	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.235	U	0.280	0.280	1.00	0.461	pCi/L	09/17/19 08:43	10/02/19 08:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.2		40 - 110					09/17/19 08:43	10/02/19 08:44	1
Y Carrier	84.1		40 - 110					09/17/19 08:43	10/02/19 08:44	1



# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

**Client Sample ID: MGWA-11**

**Lab Sample ID: 180-95496-2**

Date Collected: 09/10/19 08:12

Matrix: Water

Date Received: 09/11/19 09:00

**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	0.377	U	0.289	0.289	5.00	0.461	pCi/L		10/14/19 07:26	1

**Client Sample ID: MGWA-6A**

**Lab Sample ID: 180-95496-3**

Date Collected: 09/10/19 09:50

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.244		0.105	0.107	1.00	0.129	pCi/L	09/17/19 08:02	10/12/19 09:10	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	94.1		40 - 110					09/17/19 08:02	10/12/19 09:10	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.744		0.284	0.292	1.00	0.397	pCi/L	09/17/19 08:43	10/02/19 08:44	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	94.1		40 - 110					09/17/19 08:43	10/02/19 08:44	1
Y Carrier	85.2		40 - 110					09/17/19 08:43	10/02/19 08:44	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	0.988		0.303	0.311	5.00	0.397	pCi/L		10/14/19 07:26	1

**Client Sample ID: MGWA-5**

**Lab Sample ID: 180-95496-4**

Date Collected: 09/10/19 10:00

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0440	U	0.0590	0.0592	1.00	0.0991	pCi/L	09/17/19 08:02	10/12/19 09:10	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	98.0		40 - 110					09/17/19 08:02	10/12/19 09:10	1

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
 SDG: Ash

**Client Sample ID: MGWA-5**

**Lab Sample ID: 180-95496-4**

Date Collected: 09/10/19 10:00

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.310	U	0.252	0.254	1.00	0.401	pCi/L	09/17/19 08:43	10/02/19 08:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.0		40 - 110					09/17/19 08:43	10/02/19 08:44	1
Y Carrier	82.2		40 - 110					09/17/19 08:43	10/02/19 08:44	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	0.354	U	0.259	0.261	5.00	0.401	pCi/L		10/14/19 07:26	1

**Client Sample ID: MGWC-7**

**Lab Sample ID: 180-95496-5**

Date Collected: 09/10/19 10:10

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.734		0.150	0.164	1.00	0.0896	pCi/L	09/17/19 08:02	10/12/19 09:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.2		40 - 110					09/17/19 08:02	10/12/19 09:10	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.224	U	0.266	0.267	1.00	0.439	pCi/L	09/17/19 08:43	10/02/19 08:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.2		40 - 110					09/17/19 08:43	10/02/19 08:44	1
Y Carrier	86.7		40 - 110					09/17/19 08:43	10/02/19 08:44	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	0.958		0.305	0.313	5.00	0.439	pCi/L		10/14/19 07:26	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

**Client Sample ID: MGWA-6**

**Lab Sample ID: 180-95496-6**

Date Collected: 09/10/19 10:50

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.205		0.103	0.105	1.00	0.137	pCi/L	09/17/19 08:02	10/12/19 09:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.9		40 - 110					09/17/19 08:02	10/12/19 09:10	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.276	U	0.248	0.249	1.00	0.398	pCi/L	09/17/19 08:43	10/02/19 08:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.9		40 - 110					09/17/19 08:43	10/02/19 08:44	1
Y Carrier	86.0		40 - 110					09/17/19 08:43	10/02/19 08:44	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	0.481		0.269	0.270	5.00	0.398	pCi/L		10/14/19 07:26	1

**Client Sample ID: MGWC-12**

**Lab Sample ID: 180-95496-7**

Date Collected: 09/10/19 11:20

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.300		0.0989	0.102	1.00	0.0880	pCi/L	09/17/19 08:02	10/12/19 10:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					09/17/19 08:02	10/12/19 10:56	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.639		0.276	0.282	1.00	0.394	pCi/L	09/17/19 08:43	10/02/19 08:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					09/17/19 08:43	10/02/19 08:44	1
Y Carrier	82.6		40 - 110					09/17/19 08:43	10/02/19 08:44	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

## Client Sample ID: MGWC-12

## Lab Sample ID: 180-95496-7

Date Collected: 09/10/19 11:20

Matrix: Water

Date Received: 09/11/19 09:00

### 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	0.939		0.293	0.300	5.00	0.394	pCi/L		10/14/19 07:26	1

## Client Sample ID: MGWC-8

## Lab Sample ID: 180-95496-8

Date Collected: 09/10/19 12:15

Matrix: Water

Date Received: 09/11/19 09:00

### Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.860		0.161	0.179	1.00	0.104	pCi/L	09/17/19 08:02	10/12/19 10:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.6		40 - 110					09/17/19 08:02	10/12/19 10:56	1

### Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.919		0.295	0.307	1.00	0.390	pCi/L	09/17/19 08:43	10/02/19 08:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.6		40 - 110					09/17/19 08:43	10/02/19 08:45	1
Y Carrier	83.7		40 - 110					09/17/19 08:43	10/02/19 08:45	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	1.78		0.336	0.355	5.00	0.390	pCi/L		10/14/19 07:26	1

## Client Sample ID: MGWC-1

## Lab Sample ID: 180-95496-9

Date Collected: 09/10/19 12:50

Matrix: Water

Date Received: 09/11/19 09:00

### Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.10		0.183	0.208	1.00	0.0991	pCi/L	09/17/19 08:02	10/12/19 10:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.2		40 - 110					09/17/19 08:02	10/12/19 10:56	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

**Client Sample ID: MGWC-1**

**Lab Sample ID: 180-95496-9**

Date Collected: 09/10/19 12:50

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.163	U	0.256	0.256	1.00	0.431	pCi/L	09/17/19 08:43	10/02/19 08:45	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	91.2		40 - 110					09/17/19 08:43	10/02/19 08:45	1
Y Carrier	86.0		40 - 110					09/17/19 08:43	10/02/19 08:45	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	1.26		0.315	0.330	5.00	0.431	pCi/L		10/14/19 07:26	1

**Client Sample ID: MGWC-3**

**Lab Sample ID: 180-95496-10**

Date Collected: 09/10/19 12:40

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.958		0.161	0.183	1.00	0.0736	pCi/L	09/17/19 08:02	10/12/19 10:56	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	101		40 - 110					09/17/19 08:02	10/12/19 10:56	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.641		0.253	0.260	1.00	0.353	pCi/L	09/17/19 08:43	10/02/19 08:45	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	101		40 - 110					09/17/19 08:43	10/02/19 08:45	1
Y Carrier	84.5		40 - 110					09/17/19 08:43	10/02/19 08:45	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	1.60		0.300	0.318	5.00	0.353	pCi/L		10/14/19 07:26	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

**Client Sample ID: MGWC-2**

**Lab Sample ID: 180-95496-11**

Date Collected: 09/10/19 13:30

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.165		0.0929	0.0940	1.00	0.126	pCi/L	09/17/19 08:02	10/12/19 10:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.0		40 - 110					09/17/19 08:02	10/12/19 10:57	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.383		0.245	0.248	1.00	0.378	pCi/L	09/17/19 08:43	10/02/19 08:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.0		40 - 110					09/17/19 08:43	10/02/19 08:45	1
Y Carrier	89.3		40 - 110					09/17/19 08:43	10/02/19 08:45	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	0.548		0.262	0.265	5.00	0.378	pCi/L		10/14/19 07:26	1

**Client Sample ID: FB-AP-01**

**Lab Sample ID: 180-95496-12**

Date Collected: 09/10/19 13:50

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00438	U	0.0472	0.0472	1.00	0.0945	pCi/L	09/17/19 08:02	10/12/19 10:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					09/17/19 08:02	10/12/19 10:57	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.193	U	0.235	0.236	1.00	0.389	pCi/L	09/17/19 08:43	10/02/19 08:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					09/17/19 08:43	10/02/19 08:45	1
Y Carrier	83.0		40 - 110					09/17/19 08:43	10/02/19 08:45	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

## Client Sample ID: FB-AP-01

## Lab Sample ID: 180-95496-12

Date Collected: 09/10/19 13:50

Matrix: Water

Date Received: 09/11/19 09:00

### 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	0.197	U	0.240	0.241	5.00	0.389	pCi/L		10/14/19 07:26	1

## Client Sample ID: FB-AP-02

## Lab Sample ID: 180-95496-13

Date Collected: 09/10/19 13:55

Matrix: Water

Date Received: 09/11/19 09:00

### Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00714	U	0.0406	0.0406	1.00	0.0824	pCi/L	09/17/19 08:02	10/12/19 10:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/17/19 08:02	10/12/19 10:57	1

### Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.147	U	0.189	0.189	1.00	0.313	pCi/L	09/17/19 08:43	10/02/19 08:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					09/17/19 08:43	10/02/19 08:39	1
Y Carrier	83.7		40 - 110					09/17/19 08:43	10/02/19 08:39	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	0.154	U	0.193	0.193	5.00	0.313	pCi/L		10/14/19 07:26	1

## Client Sample ID: FERB-AP-01

## Lab Sample ID: 180-95496-14

Date Collected: 09/10/19 13:40

Matrix: Water

Date Received: 09/11/19 09:00

### Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0495	U	0.0599	0.0600	1.00	0.135	pCi/L	09/17/19 08:02	10/12/19 10:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.9		40 - 110					09/17/19 08:02	10/12/19 10:57	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

**Client Sample ID: FERB-AP-01**

**Lab Sample ID: 180-95496-14**

Date Collected: 09/10/19 13:40

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.169	U	0.196	0.197	1.00	0.323	pCi/L	09/17/19 08:43	10/02/19 08:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.9		40 - 110					09/17/19 08:43	10/02/19 08:40	1
Y Carrier	84.5		40 - 110					09/17/19 08:43	10/02/19 08:40	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	0.119	U	0.205	0.206	5.00	0.323	pCi/L		10/14/19 07:26	1

**Client Sample ID: FERB-AP-02**

**Lab Sample ID: 180-95496-15**

Date Collected: 09/10/19 13:45

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0223	U	0.0308	0.0309	1.00	0.0833	pCi/L	09/17/19 08:02	10/12/19 12:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					09/17/19 08:02	10/12/19 12:49	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0309	U	0.167	0.167	1.00	0.298	pCi/L	09/17/19 08:43	10/02/19 08:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					09/17/19 08:43	10/02/19 08:40	1
Y Carrier	83.7		40 - 110					09/17/19 08:43	10/02/19 08:40	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	0.00860	U	0.170	0.170	5.00	0.298	pCi/L		10/14/19 07:26	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

**Client Sample ID: DUP 01**

**Lab Sample ID: 180-95496-16**

Date Collected: 09/10/19 00:00

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.265		0.102	0.104	1.00	0.108	pCi/L	09/17/19 08:02	10/12/19 12:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.8		40 - 110					09/17/19 08:02	10/12/19 12:49	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.209	U	0.254	0.255	1.00	0.421	pCi/L	09/17/19 08:43	10/02/19 08:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.8		40 - 110					09/17/19 08:43	10/02/19 08:40	1
Y Carrier	84.1		40 - 110					09/17/19 08:43	10/02/19 08:40	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	0.474		0.274	0.275	5.00	0.421	pCi/L		10/14/19 07:26	1

**Client Sample ID: DUP 02**

**Lab Sample ID: 180-95496-17**

Date Collected: 09/10/19 00:00

Matrix: Water

Date Received: 09/11/19 09:00

**Method: 9315 - Radium-226 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.32		0.200	0.233	1.00	0.100	pCi/L	09/17/19 08:02	10/12/19 12:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.5		40 - 110					09/17/19 08:02	10/12/19 12:49	1

**Method: 9320 - Radium-228 (GFPC)**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.180	U	0.211	0.212	1.00	0.348	pCi/L	09/17/19 08:43	10/02/19 08:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.5		40 - 110					09/17/19 08:43	10/02/19 08:40	1
Y Carrier	84.1		40 - 110					09/17/19 08:43	10/02/19 08:40	1

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
 SDG: Ash

**Client Sample ID: DUP 02**  
**Date Collected: 09/10/19 00:00**  
**Date Received: 09/11/19 09:00**

**Lab Sample ID: 180-95496-17**  
**Matrix: Water**

**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	1.50		0.291	0.315	5.00	0.348	pCi/L		10/14/19 07:26	1

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- 13

# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
SDG: Ash

## Method: 9315 - Radium-226 (GFPC)

**Lab Sample ID: MB 160-443120/20-A**  
**Matrix: Water**  
**Analysis Batch: 445949**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 443120**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.02834	U	0.0439	0.0440	1.00	0.0763	pCi/L	09/17/19 08:02	10/12/19 12:49	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	96.0		40 - 110		09/17/19 08:02	10/12/19 12:49	1			

**Lab Sample ID: LCS 160-443120/1-A**  
**Matrix: Water**  
**Analysis Batch: 445949**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 443120**

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.4	9.018		0.957	1.00	0.0927	pCi/L	79	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	90.1		40 - 110						

**Lab Sample ID: LCSD 160-443120/2-A**  
**Matrix: Water**  
**Analysis Batch: 445949**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 443120**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits	RER	Limit
				Uncert. (2σ+/-)							
Radium-226	11.4	8.628		0.918	1.00	0.105	pCi/L	76	75 - 125	0.21	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits								
Ba Carrier	93.8		40 - 110								

## Method: 9320 - Radium-228 (GFPC)

**Lab Sample ID: MB 160-443130/20-A**  
**Matrix: Water**  
**Analysis Batch: 444903**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 443130**

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.02471	U	0.191	0.191	1.00	0.340	pCi/L	09/17/19 08:43	10/02/19 08:41	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	96.0		40 - 110		09/17/19 08:43	10/02/19 08:41	1			
Y Carrier	85.2		40 - 110		09/17/19 08:43	10/02/19 08:41	1			

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
 SDG: Ash

## Method: 9320 - Radium-228 (GFPC) (Continued)

**Lab Sample ID: LCS 160-443130/1-A**  
**Matrix: Water**  
**Analysis Batch: 444902**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 443130**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.53	10.91		1.25	1.00	0.488	pCi/L	114	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	90.1		40 - 110
Y Carrier	84.9		40 - 110

**Lab Sample ID: LCSD 160-443130/2-A**  
**Matrix: Water**  
**Analysis Batch: 444902**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 443130**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	9.53	8.802		1.04	1.00	0.430	pCi/L	92	75 - 125	0.92	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	93.8		40 - 110
Y Carrier	84.1		40 - 110



# QC Association Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95496-2  
 SDG: Ash

## Rad

### Prep Batch: 443120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95496-1	MGWA-10	Total/NA	Water	PrecSep-21	
180-95496-2	MGWA-11	Total/NA	Water	PrecSep-21	
180-95496-3	MGWA-6A	Total/NA	Water	PrecSep-21	
180-95496-4	MGWA-5	Total/NA	Water	PrecSep-21	
180-95496-5	MGWC-7	Total/NA	Water	PrecSep-21	
180-95496-6	MGWA-6	Total/NA	Water	PrecSep-21	
180-95496-7	MGWC-12	Total/NA	Water	PrecSep-21	
180-95496-8	MGWC-8	Total/NA	Water	PrecSep-21	
180-95496-9	MGWC-1	Total/NA	Water	PrecSep-21	
180-95496-10	MGWC-3	Total/NA	Water	PrecSep-21	
180-95496-11	MGWC-2	Total/NA	Water	PrecSep-21	
180-95496-12	FB-AP-01	Total/NA	Water	PrecSep-21	
180-95496-13	FB-AP-02	Total/NA	Water	PrecSep-21	
180-95496-14	FERB-AP-01	Total/NA	Water	PrecSep-21	
180-95496-15	FERB-AP-02	Total/NA	Water	PrecSep-21	
180-95496-16	DUP 01	Total/NA	Water	PrecSep-21	
180-95496-17	DUP 02	Total/NA	Water	PrecSep-21	
MB 160-443120/20-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-443120/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-443120/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

### Prep Batch: 443130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95496-1	MGWA-10	Total/NA	Water	PrecSep_0	
180-95496-2	MGWA-11	Total/NA	Water	PrecSep_0	
180-95496-3	MGWA-6A	Total/NA	Water	PrecSep_0	
180-95496-4	MGWA-5	Total/NA	Water	PrecSep_0	
180-95496-5	MGWC-7	Total/NA	Water	PrecSep_0	
180-95496-6	MGWA-6	Total/NA	Water	PrecSep_0	
180-95496-7	MGWC-12	Total/NA	Water	PrecSep_0	
180-95496-8	MGWC-8	Total/NA	Water	PrecSep_0	
180-95496-9	MGWC-1	Total/NA	Water	PrecSep_0	
180-95496-10	MGWC-3	Total/NA	Water	PrecSep_0	
180-95496-11	MGWC-2	Total/NA	Water	PrecSep_0	
180-95496-12	FB-AP-01	Total/NA	Water	PrecSep_0	
180-95496-13	FB-AP-02	Total/NA	Water	PrecSep_0	
180-95496-14	FERB-AP-01	Total/NA	Water	PrecSep_0	
180-95496-15	FERB-AP-02	Total/NA	Water	PrecSep_0	
180-95496-16	DUP 01	Total/NA	Water	PrecSep_0	
180-95496-17	DUP 02	Total/NA	Water	PrecSep_0	
MB 160-443130/20-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-443130/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-443130/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

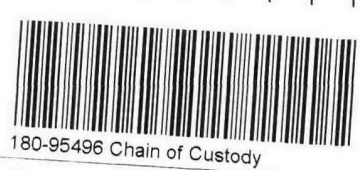
**Chain of Custody Record**

Client Information  
 Client Contact: Lauren Coker  
 Company: Southern Company Services, Inc.  
 Address: 3535 Colonnade Parkway  
 City: Birmingham  
 State, Zip: GA, 30309  
 Phone: 205-992-5417(Tel)  
 Email: Impetty@southernco.com  
 Project Name: CCR - Plant McIntosh Ash Pond 1  
 Site: Georgia

Sampler: J. Adcock, L. Coker, J. Niles  
 Lab PM: Bortol, Veronica  
 Phone: 404-592-0094  
 E-Mail: veronica.bortol@testamericainc.com

COC No: 180-54264-10410.1  
 Page: Page 1 of 2  
 Job #:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, B=1st tissue, A=Air)	Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		9316, Ra226, 9320, Ra228 (elements)		6020, B, Ca; plus As, B, Cd, Co, Li (detected App IV)		2540C, Calcd, 300, Chloride Sulfate, Fluoride, pH (TDS)		Analysis Requested	Total Number of containers	Special Instructions/Note:
					Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9316, Ra226, 9320, Ra228 (elements)	6020, B, Ca; plus As, B, Cd, Co, Li (detected App IV)	2540C, Calcd, 300, Chloride Sulfate, Fluoride, pH (TDS)							
MGWA-10	9/10/19	0826	G	Water	X	N	X	D	N						3		
MGWA-11		0812	G	Water											3		
MGWA-6A		0950	G	Water											3		
MGWA-5		1000	G	Water											3		
MGWC-7		1015	G	Water											3		
MGWA-6		1050	G	Water											3		
MGWC-12		1120	G	Water											3		
MGWC-8		1215	G	Water											3		
MGWC-1		1250	G	Water											3		
MGWC-B		1240	G	Water											3		
MGWC-Z		1330	G	Water											3		



Possible Hazard Identification  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample 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/QC Requirements:

Empty Kit Relinquished by: *Janklyn* Date: 9/10/19  
 Relinquished by: *Janklyn* Date/Time: 9/10/19 1900 Company: GEI  
 Relinquished by: *Janklyn* Date/Time: 9/11/19 900 Company: *GEI*  
 Relinquished by: *Janklyn* Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact:  Yes  No  Δ  No  Δ  No  
 Cooler Temperature(s) °C and Other Remarks:





# Chain of Custody Record

<b>Client Information</b>		Sampler: <i>S. Anderson, L. Coker, J. Williams</i> Lab PM: Bortol, Veronica Phone: <i>904-592-0094</i> E-Mail: <i>veronica.bortol@testamericainc.com</i>		Carrier Tracking No(s): COC No: 180-54264-10410.1 Page: <b>2 of 2</b> Job #:							
Company: Southern Company Services, Inc. Address: 3535 Colonnade Parkway City: Birmingham State, Zip: GA, 30309 Phone: 205-992-5417 (Tel) Email: <i>Impetty@southernco.com</i> Project Name: CCR - Plant McIntosh Ash Pond 1 Site: Georgia		<b>Analysis Requested</b> Due Date Requested: TAT Requested (days): PO #: SCS-10347656 WO #: Project #: 18019956 SSOW#:									
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, I=Ice, T=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9316_Ra226, 9320_Ra228 (elements)	6020_B, Ca; plus As, B, Cd, Co, Li (detected App IV)	2540C_Calcid, 300_Chloride Sulfate, Fluoride, pH (TS)	Total Number of containers	Special Instructions/Note:
FB-AP-01	9/10/19	1350	G	Water	N	X	X	N	Y	3	
FB-AP-02	↓	1355	G	Water	N	N	↓	↓	↓	3	
FERB-AP-01	↓	1340	G	Water	N	N	↓	↓	↓	3	
FERB-AP-02	↓	1345	G	Water	N	N	↓	↓	↓	3	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)											
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: <i>Lauren</i> Date: <i>9/10/19 1900</i> Relinquished by: <i>Lauren</i> Date: <i>9/10/19 1900</i> Relinquished by: <i>Lauren</i> Date: <i>9/10/19 1900</i> Relinquished by: <i>Lauren</i> Date: <i>9/10/19 1900</i> Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:											
Cooler Temperature(s) °C and Other Remarks:											



ORIGIN ID:SAVA (919) 724-7237  
JAKE ADOCK

1375 PEACHTREE ST NE  
SUITE A15  
ATLANTA, GA 30309  
UNITED STATES US

SHIP DATE: 10SEP19  
ACTWGT: 49.70 LB  
CAD: 006994919/SSFE2021  
DIMS: 23x15x13 IN

BILL THIRD PARTY

Part #: 1562972850/4164/11295 07/20

TO **VERONICZ BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

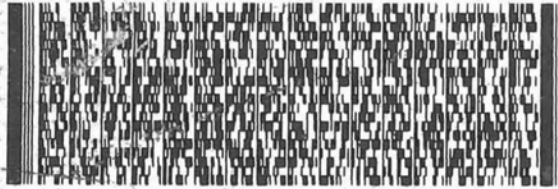
**PITTSBURGH PA 15238**

(412) 963-2435

REF:

INU:

DEPT:



**FedEx**  
Express



REL#  
3785346

4 of 4

MPS# 7897 2434 0241

Mstr# 7897 2434 0219

0201

**WED - 11 SEP 10:30A**  
**PRIORITY OVERNIGHT**

**XH AGCA**

**15238**

PA-US **PIT**

Uncorrected temp 2.3 °C  
Thermometer ID 10

CF ☉ Initials TJ

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



180-95496 Waybill



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ORIGIN ID:SAVA (919) 724-7237  
JAKE ADOCK

1375 PEACHTREE ST NE  
SUITE A15  
ATLANTA, GA 30309  
UNITED STATES US

SHIP DATE: 10SEP19  
ACTWGT: 49.30 LB  
CAD: 006994919/SSFE2021  
DIMS: 23x15x13 IN

BILL THIRD PARTY

Part # 158297-2850/4066/17295 07/20

TO **VERONICZ BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

**PITTSBURGH PA 15238**

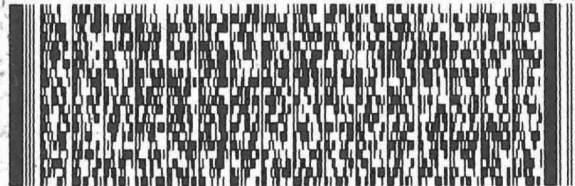
(412) 963-2435

REF:

INU:

DEPT:

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**FedEx**  
Express



REL#  
3785346

2 of 4

MPS# 7897 2434 0220

0263

Mstr# 7897 2434 0219

0201

**WED - 11 SEP 10:30A**  
**PRIORITY OVERNIGHT**

**XH AGCA**

**15238**

PA-US **PIT**

Uncorrected temp  
Thermometer ID

26.7 °C

10

CF ⊙

*No. Ice Req*  
Initials JB

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





ORIGIN ID: SAVA (919) 724-7237  
 JAKE ADOCK

SHIP DATE: 10SEP19  
 ACTWGT: 51.90 LB  
 CAD: 006994919/SSFE2021  
 DIMS: 23x15x13 IN

1375 PEACHTREE ST NE  
 SUITE A15  
 ATLANTA, GA 30309  
 UNITED STATES US

BILL THIRD PARTY

TO **VERONICZ BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

**PITTSBURGH PA 15238**

(2) 963-2436 REF: DEPT:

**FedEx Express**

**E**

REL# 3785346

1 of 4

TRK# 0201 **7897 2434 0219**

**## MASTER ##**

**XH AGCA**

**15238**  
 PA-US **PIT**

Uncorrected temp 1.1 °C  
 Thermometer ID 10

CF 0 Initials JB

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

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- 12
- 13



ORIGIN ID: SAVA (919) 724-7237  
JAKE ADOCK

1375 PEACHTREE ST NE  
SUITE A15  
ATLANTA, GA 30309  
UNITED STATES US

SHIP DATE: 10SEP19  
ACTWGT: 47.10 LB  
CAD: 006994919/89FE2021  
DIMS: 23x15x13 IN  
BILL THIRD PARTY

Part # 15829

TO **VERONICZ BORTOT**  
**TEST AMERICA**  
**301 ALPHA DR**

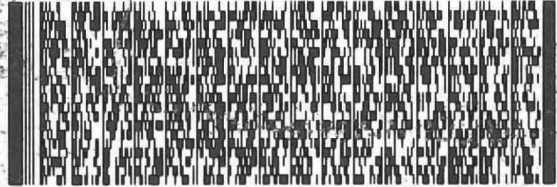
**PITTSBURGH PA 15238**

(412) 969-2435

REF:

INVT

DEPT:



**FedEx**  
Express



4109290610201

REL#  
3785346

3 of 4

MPS# 7897 2434 0230  
0263

Mstr# 7897 2434 0219

0201

**WED - 11 SEP 10:30A**  
**PRIORITY OVERNIGHT**

**XH AGCA**

**15238**

PA-US **PIT**

Uncorrected temp 25.8 °C

Thermometer ID 10

CF 0 *No Ice Pack* Initials TJ

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



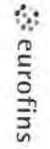
RT 97  
FZ  
1  
10:30  
A  
0230  
09.11

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- 13

**Eurofins TestAmerica, Pittsburgh**

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

**Chain of Custody Record**



Environment Testing  
TestAmerica

**Client Information (Sub Contract Lab)**

Client Contact: Shipping/Receiving  
Company: TestAmerica Laboratories, Inc.  
Address: 13715 Rider Trail North,  
City: Earth City  
State Zip: MO, 63045  
Phone: 314-298-8566(Tel) 314-298-8757(Fax)  
Email:

Sampler: Bortol, Veronica  
Phone: E-Mail: veronica.bortol@testamericainc.com  
Accreditations Required (See note)

Lab Pk: Bortol, Veronica  
Carrier Tracking No(s):  
State of Origin: Georgia

COC No: 180-373250.1  
Page: Page 1 of 2  
Job #: 180-95496-2  
Preservation Codes:

Due Date Requested: 10/7/2019  
TAT Requested (days):  
Project #: 18019956  
SSOW#:  
Project Name: CCR - Plant McIntosh Ash Pond 1  
Site: Southern McIntosh Ash Pond 1

Analysis Requested

Field Filtered Sample (Yes or No)  
Perform MS/MSD (Yes or No)  
9320\_Ra228/PrecSep\_0 Standard Target List  
9315\_Ra226/PrecSep\_21 (MOD) Copy Analytes  
Ra226Ra228\_GFPC

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 - EDTA  
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  
Z - other (specify)  
Other:

**Sample Identification - Client ID (Lab ID)**

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=Soil, O=Organic, A=Air)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	Special Instructions/Note
MGWA-10 (180-95496-1)	9/10/19	08:26	Water	Water		X	X	1	
MGWA-11 (180-95496-2)	9/10/19	08:12	Water	Water		X	X	1	
MGWA-6A (180-95496-3)	9/10/19	09:50	Water	Water		X	X	1	
MGWA-5 (180-95496-4)	9/10/19	10:00	Water	Water		X	X	1	
MGWC-7 (180-95496-5)	9/10/19	10:10	Water	Water		X	X	1	
MGWA-6 (180-95496-6)	9/10/19	10:50	Water	Water		X	X	1	
MGWC-12 (180-95496-7)	9/10/19	11:20	Water	Water		X	X	1	
MGWC-8 (180-95496-8)	9/10/19	12:15	Water	Water		X	X	1	
MGWC-1 (180-95496-9)	9/10/19	12:50	Water	Water		X	X	1	

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/strain, 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

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

Sample 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/QC Requirements:

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method of Shipment: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: 9/12/19 12:00 Company: SVA  
 Received by: Michael Hesse Date/Time: 9-13-19 09:15 Company: TSA SR

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: \_\_\_\_\_ Cooler Temperature(s) °C and Other Remarks:



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

**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>		Sampler	Lab PM	COCC No:						
Client Contact:	Phone	Bortol, Veronica	Carrier Tracking No(s):	180-373250.2						
Company:	TestAmerica Laboratories, Inc.	Email:	State of Origin:	Page:						
Address:	13715 Rider Trail North,	veronica.bortol@testamericainc.com	Georgia	Page 2 of 2						
City:	Earth City	Accreditations Required (See note):	Job #:							
State, Zip:	MO, 63045		180-95496-2							
Phone:	314-298-8566(Tel) 314-298-8757(Fax)		Preservation Codes:							
Email:			A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amphot H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2SO4 Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - PH 4.5 Z - other (specify)							
Project Name:	CCR - Plant Meltnosh Ash Pond 1	Project #:	180199956							
Site:	Southern Meltnosh Ash Pond 1	SSOW#:								
<b>Sample Identification - Client ID (Lab ID)</b>		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=organic, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Total Number of containers	Special Instructions/Note:
MGWC-3 (180-95496-10)	9/10/19	12:40	Eastern	Water		X	X		1	
MGWC-2 (180-95496-11)	9/10/19	13:30	Eastern	Water		X	X		1	
FB-AP-01 (180-95496-12)	9/10/19	13:50	Eastern	Water		X	X		1	
FB-AP-02 (180-95496-13)	9/10/19	13:55	Eastern	Water		X	X		1	
FERB-AP-01 (180-95496-14)	9/10/19	13:40	Eastern	Water		X	X		1	
FERB-AP-02 (180-95496-15)	9/10/19	13:45	Eastern	Water		X	X		1	
DUP 01 (180-95496-16)	9/10/19		Eastern	Water		X	X		1	
DUP 02 (180-95496-17)	9/10/19		Eastern	Water		X	X		1	



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. 1

**Possible Hazard Identification**  
 Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_ Primary Deliverable Rank: 2  
 Sample 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/QC Requirements: \_\_\_\_\_

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact: \_\_\_\_\_ Custody Seal No.: \_\_\_\_\_  
 Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_

Method of Shipment: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_  
 Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-95496-2

SDG Number: Ash

**Login Number: 95496**

**List Source: Eurofins TestAmerica, Pittsburgh**

**List Number: 1**

**Creator: Colussy, Jill L**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (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: 180-95496-2

SDG Number: Ash

**Login Number: 95496**

**List Number: 2**

**Creator: Hellm, Michael**

**List Source: Eurofins TestAmerica, St. Louis**

**List Creation: 09/13/19 02:07 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	21.0
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	



**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Pittsburgh, PA  
**Report Nos.:** 180-95496-1  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** October 28, 2019

### Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWA-10	180-95496-01	Metals, Anions, TDS
MGWA-11	180-95496-02	Metals, Anions, TDS
MGWA-6A	180-95496-03	Metals, Anions, TDS
MGWA-5	180-95496-04	Metals, Anions, TDS
MGWC-7	180-95496-05	Metals, Anions, TDS
MGWA-6	180-95496-06	Metals, Anions, TDS
MGWC-12	180-95496-07	Metals, Anions, TDS
MGWC-8	180-95496-08	Metals, Anions, TDS
MGWC-1	180-95496-09	Metals, Anions, TDS
MGWC-3	180-95496-10	Metals, Anions, TDS
MGWC-2	180-95496-11	Metals, Anions, TDS
FB-AP-01	180-95496-12	Metals, Anions, TDS
FB-AP-02	180-95496-13	Metals, Anions, TDS
FERB-AP-01	180-95496-14	Metals, Anions, TDS
FERB-AP-02	180-95496-15	Metals, Anions, TDS
DUP 01	180-95496-16	Metals, Anions, TDS
DUP 02	180-95496-17	Metals, Anions, TDS

QC Samples: Field/Equipment blanks: FB-AP-01, FB-AP-02, FERB-AP-01, FERB-AP-02  
 Field Duplicate pair: MGWA-6/DUP 01, MGWC-1/DUP 02

The above-listed aqueous samples and field blanks were collected on September 10, 2019 and were analyzed for select total recoverable metals by SW-846 method 6020B, total dissolved solids (TDS) by Standard Methods SM 2540C, and anions (chloride, fluoride, and sulfate) by EPA method 300. The data were reviewed based on the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (USEPA-540-R-2017-001), as well as by the methods referenced and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Laboratory and Field Blank Results
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Laboratory Control Sample (LCS) Results
- Field Duplicate Results



- Quantitation Limits

All results are usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers. All results were considered valid; even though some were qualified as discussed below.

The validation findings were based on the following information.

**Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, MS/MSD, laboratory duplicate, and LCS results.

**Holding Times and Sample Preservation**

All criteria were met.

**Laboratory and Field Blanks**

Laboratory Blanks

Contaminants were not detected in the associated laboratory method blanks.

Field Blanks

Low level contamination was detected in the associated field and equipment blank samples and is listed below. The following table summarizes the maximum level of contamination detected in bold, the blank action levels, and field blank qualification actions taken. The field blank samples were collected on 09/10 and were used in the evaluation of Ash Pond samples collected on 09/10 and 09/12.

Analyte	Concentration Detected (mg/L)	Field Blank ID	2X Blank Level (mg/L)	10X Blank Level (mg/L)	Validation Actions
Sulfate	<b>0.41 J</b>	FB-AP-01	0.82	4.1	The result for sulfate in sample MGWA-6A was qualified as nondetect (U) at the RL. Estimate (J) the positive results for sulfate in samples MGWA-10, MGWA-11, and MGWC-12; High bias.
	0.38 J	FERB-AP-02			
Fluoride	0.026 J	FERB-AP-02	0.052	0.26	The results for fluoride in samples MGWA-10, MGWA-11, MGWA-6A, MGWA-5, MGWA-6, MGWC-8, MGWC-1, MGWC-3, MGWC-2, and DUP 01 were qualified as nondetect (U) at the RL. Estimate (J) the positive results for fluoride in samples MGWC-7, MGWC-12, and DUP 02; High bias.

Analyte	Concentration Detected (mg/L)	Field Blank ID	2X Blank Level (mg/L)	10X Blank Level (mg/L)	Validation Actions
Barium	0.0018 J	FB-AP-02	0.0036	0.018	Estimate (J) the positive result for barium in sample MGWC-7; High bias.
Boron	<b>0.087</b>	FB-AP-01	0.174	0.87	The results for boron in samples MGWA-6A, MGWA-6, MGWC-12, and DUP 01 were qualified as nondetect (U) at the RL or reported values.
	0.055 J	FB-AP-02			

**Blank Actions:**

If the sample result is < reporting limit (RL); report the result as nondetect (U) at the RL.

If the sample result is  $\geq$  RL and <2x blank contamination detected; professional judgment was taken to report the result as nondetect (U) at the reported sample level.

If the sample result is  $\geq$  2x Blank Level (or RL) and  $\leq$  10x Blank Level; report the sample result as estimated (J); biased high.

If the sample result is nondetect or > 10x Blank Level; validation action was not required.

**MS/MSD Results**

MS/MSD analyses were performed on samples MGWA-11 for anions and sample MGWA-6 for metals. All criteria were met.

**Laboratory Duplicate Results**

Laboratory duplicate analyses were performed on samples MGWA-6, MGWC-3, and DUP 02 for total dissolved solids. All criteria were met.

**LCS Results**

All criteria were met.

**Field Duplicate Results**

Samples MGWA-6 and DUP 01 were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair, which were within the acceptance criteria.

Analyte	MGWA-6 (mg/L)	DUP 01 (mg/L)	RPD (%)
Chloride	6.0	6.1	1.7
Sulfate	5.6	5.7	1.8
Arsenic	0.0085	0.0084	1.2
Barium	0.040	0.039	2.5
Calcium	110	100	9.5
Cobalt	0.00037 J	0.00034 J	8.5
Lithium	0.0051	0.0050 U	Not calculable; Within the RL
Total Dissolved Solids	260	290	10.9

Criteria: When both results are  $\geq$ 5x the RL, RPDs must be <30%.  
 When results are < 5x the RL, professional judgement was taken to estimate results if the absolute difference between the original and field duplicate >RL.

**Site: Georgia Power Ash Pond**  
**Report No.: 180-95496-1**  
**Date: October 28, 2019**

Samples MGWC-1 and DUP 02 were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair, which were within the acceptance criteria.

Analyte	MGWC-1 (mg/L)	DUP 02 (mg/L)	RPD (%)
Chloride	13	14	7.4
Fluoride	0.10 U	0.10	NC, Within the RL
Sulfate	140	140	0
Arsenic	0.0018	0.0016	11.8
Barium	0.11	0.11	0
Boron	1.5	1.5	0
Cadmium	0.00017 J	0.0010 U	NC, Within the RL
Calcium	110	110	0
Cobalt	0.00032 J	0.00029 J	9.8
Lithium	0.012	0.010	18.2
Total Dissolved Solids	360	410	13.0
NC – Not calculable Criteria: When both results are $\geq 5x$ the RL, RPDs must be $< 30\%$ . When results are $< 5x$ the RL, professional judgement was taken to estimate results if the absolute difference between the original and field duplicate $> RL$ .			

### **Quantitation Limits**

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL). These results were qualified as estimated (J) by the laboratory.

**Site:** Georgia Power Plant, Ash Pond  
**Laboratory:** Test America, Earth City, MO  
**Report Nos.:** 180-95496-2  
**Reviewer:** Lorie MacKinnon/GEI Consultants  
**Date:** October 28, 2019

### Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
MGWA-10	180-95496-01	Radium-226, Radium-228, Radium226-228
MGWA-11	180-95496-02	Radium-226, Radium-228, Radium226-228
MGWA-6A	180-95496-03	Radium-226, Radium-228, Radium226-228
MGWA-5	180-95496-04	Radium-226, Radium-228, Radium226-228
MGWC-7	180-95496-05	Radium-226, Radium-228, Radium226-228
MGWA-6	180-95496-06	Radium-226, Radium-228, Radium226-228
MGWC-12	180-95496-07	Radium-226, Radium-228, Radium226-228
MGWC-8	180-95496-08	Radium-226, Radium-228, Radium226-228
MGWC-1	180-95496-09	Radium-226, Radium-228, Radium226-228
MGWC-3	180-95496-10	Radium-226, Radium-228, Radium226-228
MGWC-2	180-95496-11	Radium-226, Radium-228, Radium226-228
FB-AP-01	180-95496-12	Radium-226, Radium-228, Radium226-228
FB-AP-02	180-95496-13	Radium-226, Radium-228, Radium226-228
FERB-AP-01	180-95496-14	Radium-226, Radium-228, Radium226-228
FERB-AP-02	180-95496-15	Radium-226, Radium-228, Radium226-228
DUP 01	180-95496-16	Radium-226, Radium-228, Radium226-228
DUP 02	180-95496-17	Radium-226, Radium-228, Radium226-228

QC Samples: Field/Equipment blanks: FB-AP-01, FB-AP-02, FERB-AP-01, FERB-AP-02  
 Field Duplicate pair: MGWA-6/DUP 01, MGWC-1/DUP 02

The above-listed aqueous samples and field blanks were collected on September 10, 2019 and were analyzed for Radium-226 by SW-846 method 9315, Radium-228 by SW-46 method 9320, and combined Radium-226 and Radium-228. The data were reviewed based on the US Department of Energy Evaluation of Radiochemical Data Usability, 1997, as well as by the methods referenced by the data package and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Method and Field Blanks
- Carrier Yields
- Laboratory Duplicate Results
- Field Duplicate Results
- Laboratory Control Sample (LCS) Results
- Quantitation Limits

All results are usable as reported.

The validation findings were based on the following information.

### **Data Completeness**

The level 2 (reduced deliverable) data package was complete as received by the laboratory and included sample results, method blank, carrier yields, laboratory duplicate, and LCS results.

### **Holding Times and Sample Preservation**

All criteria were met.

### **Method and Field Blanks**

Radium-226 and Radium-228 were not detected above the minimum detectable concentrations (MDC) in the laboratory method blank samples and field blank samples.

### **Carrier Yields**

All criteria were met.

### **Laboratory Duplicate Results**

Laboratory duplicate analyses were not associated with this sample set. Validation action was not taken on this basis.

### **Field Duplicate Results**

Samples MGWA-6 and DUP 01 were submitted as the field duplicate pair with this sample set. The following table summarizes the evaluation of the analytes in the field duplicate pair, which were within the acceptance criteria.

Analyte	MGWA-6 (pCi/L)	DUP 01 (pCi/L)	DER
Radium-226	0.205	0.265	0.066
Radium-228	0.276 U	0.209 U	0.047
Combined Radium 226 + 228	0.481	0.474	0.005
Criteria: Duplicate Error Ratio (DER) $\leq$ 2 MDC – Minimum Detectable Concentration			

Samples MGWC-1 and DUP 02 were submitted as the field duplicate pair with this sample set. The following table summarizes the evaluation of the analytes in the field duplicate pair, which were within the acceptance criteria.

Site: Georgia Power Ash Pond  
Report No.: 180-95496-2  
Date: October 28, 2019

Analyte	MGWC-1 (pCi/L)	DUP 02 (pCi/L)	DER
Radium-226	1.10	1.32	0.166
Radium-228	0.163 U	0.180 U	0.012
Combined Radium 226 + 228	1.26	1.50	0.149
Criteria: Duplicate Error Ratio (DER) $\leq$ 2 MDC – Minimum Detectable Concentration			

### **LCS Results**

All criteria were met.

### **Quantitation Limits**

Dilutions were not required.



## **Appendix B1**

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### **Sanitas Outputs for Appendix III and IV Parameters – March 2019**

# Interwell Prediction Limit - Significant Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/12/2019, 9:58 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>
Boron (mg/L)	MGWC-1	0.18	n/a	3/26/2019	1.3	Yes	49	55.1	n/a	0.0007731	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-2	0.18	n/a	3/26/2019	2.6	Yes	49	55.1	n/a	0.0007731	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-3	0.18	n/a	3/26/2019	1.5	Yes	49	55.1	n/a	0.0007731	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-7	0.18	n/a	3/26/2019	1.5	Yes	49	55.1	n/a	0.0007731	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-8	0.18	n/a	3/26/2019	5.1	Yes	49	55.1	n/a	0.0007731	NP (NDs) 1 of 2
Chloride (mg/L)	MGWC-1	10.1	n/a	3/26/2019	13	Yes	49	0	No	0.0009403	Param 1 of 2
Chloride (mg/L)	MGWC-2	10.1	n/a	3/26/2019	14	Yes	49	0	No	0.0009403	Param 1 of 2
Chloride (mg/L)	MGWC-3	10.1	n/a	3/26/2019	14	Yes	49	0	No	0.0009403	Param 1 of 2
Chloride (mg/L)	MGWC-7	10.1	n/a	3/26/2019	11	Yes	49	0	No	0.0009403	Param 1 of 2
Chloride (mg/L)	MGWC-8	10.1	n/a	3/26/2019	11	Yes	49	0	No	0.0009403	Param 1 of 2
Fluoride (mg/L)	MGWC-12	0.2	n/a	3/26/2019	0.22	Yes	53	47.17	n/a	0.0006701	NP (normality) 1 of 2
Sulfate (mg/L)	MGWC-1	21	n/a	3/26/2019	130	Yes	49	20.41	n/a	0.0007731	NP (normality) 1 of 2
Sulfate (mg/L)	MGWC-2	21	n/a	3/26/2019	190	Yes	49	20.41	n/a	0.0007731	NP (normality) 1 of 2
Sulfate (mg/L)	MGWC-3	21	n/a	3/26/2019	110	Yes	49	20.41	n/a	0.0007731	NP (normality) 1 of 2
Sulfate (mg/L)	MGWC-7	21	n/a	3/26/2019	180	Yes	49	20.41	n/a	0.0007731	NP (normality) 1 of 2
Sulfate (mg/L)	MGWC-8	21	n/a	3/26/2019	420	Yes	49	20.41	n/a	0.0007731	NP (normality) 1 of 2

# Interwell Prediction Limit - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/12/2019, 9:58 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>
<b>Boron (mg/L)</b>	<b>MGWC-1</b>	<b>0.18</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>1.3</b>	<b>Yes</b>	<b>49</b>	<b>55.1</b>	<b>n/a</b>	<b>0.0007731</b>	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-12	0.18	n/a	3/26/2019	0.05ND	No	49	55.1	n/a	0.0007731	NP (NDs) 1 of 2
<b>Boron (mg/L)</b>	<b>MGWC-2</b>	<b>0.18</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>2.6</b>	<b>Yes</b>	<b>49</b>	<b>55.1</b>	<b>n/a</b>	<b>0.0007731</b>	NP (NDs) 1 of 2
<b>Boron (mg/L)</b>	<b>MGWC-3</b>	<b>0.18</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>1.5</b>	<b>Yes</b>	<b>49</b>	<b>55.1</b>	<b>n/a</b>	<b>0.0007731</b>	NP (NDs) 1 of 2
<b>Boron (mg/L)</b>	<b>MGWC-7</b>	<b>0.18</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>1.5</b>	<b>Yes</b>	<b>49</b>	<b>55.1</b>	<b>n/a</b>	<b>0.0007731</b>	NP (NDs) 1 of 2
<b>Boron (mg/L)</b>	<b>MGWC-8</b>	<b>0.18</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>5.1</b>	<b>Yes</b>	<b>49</b>	<b>55.1</b>	<b>n/a</b>	<b>0.0007731</b>	NP (NDs) 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-1</b>	<b>10.1</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>13</b>	<b>Yes</b>	<b>49</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
Chloride (mg/L)	MGWC-12	10.1	n/a	3/26/2019	3.8	No	49	0	No	0.0009403	Param 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-2</b>	<b>10.1</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>14</b>	<b>Yes</b>	<b>49</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-3</b>	<b>10.1</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>14</b>	<b>Yes</b>	<b>49</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-7</b>	<b>10.1</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>11</b>	<b>Yes</b>	<b>49</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-8</b>	<b>10.1</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>11</b>	<b>Yes</b>	<b>49</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
Fluoride (mg/L)	MGWC-1	0.2	n/a	3/26/2019	0.18	No	53	47.17	n/a	0.0006701	NP (normality) 1 of 2
<b>Fluoride (mg/L)</b>	<b>MGWC-12</b>	<b>0.2</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>0.22</b>	<b>Yes</b>	<b>53</b>	<b>47.17</b>	<b>n/a</b>	<b>0.0006701</b>	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-2	0.2	n/a	3/26/2019	0.1ND	No	53	47.17	n/a	0.0006701	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-3	0.2	n/a	3/26/2019	0.2ND	No	53	47.17	n/a	0.0006701	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-7	0.2	n/a	3/26/2019	0.2ND	No	53	47.17	n/a	0.0006701	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-8	0.2	n/a	3/26/2019	0.2ND	No	53	47.17	n/a	0.0006701	NP (normality) 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-1</b>	<b>21</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>130</b>	<b>Yes</b>	<b>49</b>	<b>20.41</b>	<b>n/a</b>	<b>0.0007731</b>	NP (normality) 1 of 2
Sulfate (mg/L)	MGWC-12	21	n/a	3/26/2019	1ND	No	49	20.41	n/a	0.0007731	NP (normality) 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-2</b>	<b>21</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>190</b>	<b>Yes</b>	<b>49</b>	<b>20.41</b>	<b>n/a</b>	<b>0.0007731</b>	NP (normality) 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-3</b>	<b>21</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>110</b>	<b>Yes</b>	<b>49</b>	<b>20.41</b>	<b>n/a</b>	<b>0.0007731</b>	NP (normality) 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-7</b>	<b>21</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>180</b>	<b>Yes</b>	<b>49</b>	<b>20.41</b>	<b>n/a</b>	<b>0.0007731</b>	NP (normality) 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-8</b>	<b>21</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>420</b>	<b>Yes</b>	<b>49</b>	<b>20.41</b>	<b>n/a</b>	<b>0.0007731</b>	NP (normality) 1 of 2

# Intrawell Prediction Limit - Significant Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/12/2019, 10:02 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>
Calcium (mg/L)	MGWC-12	32	n/a	3/26/2019	33	Yes	8	0	n/a	0.02144	NP (normality) 1 of 2
Calcium (mg/L)	MGWC-8	69.75	n/a	3/26/2019	96	Yes	8	0	No	0.0009403	Param 1 of 2
pH (pH)	MGWC-2	7.87	7.33	3/26/2019	6.68	Yes	8	0	n/a	0.04288	NP (normality) 1 of 2
pH (pH)	MGWC-3	7.063	6.534	3/26/2019	5.96	Yes	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWC-7	8.184	5.744	3/26/2019	5.19	Yes	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWC-8	6.592	4.535	3/26/2019	7.14	Yes	8	0	No	0.0004701	Param 1 of 2
TDS (mg/L)	MGWC-8	432.2	n/a	3/26/2019	630	Yes	8	0	No	0.0009403	Param 1 of 2

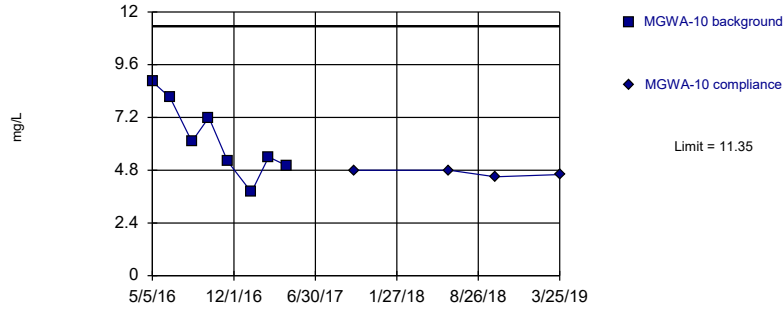
# Intrawell Prediction Limit - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/12/2019, 10:02 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Calcium (mg/L)	MGWA-10	11.35	n/a	3/25/2019	4.6	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWA-11	41.01	n/a	3/25/2019	37	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWA-5	33.26	n/a	3/25/2019	27	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWA-6	121.8	n/a	3/26/2019	100	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWC-1	134.5	n/a	3/26/2019	100	No	8	0	No	0.0009403	Param 1 of 2
<b>Calcium (mg/L)</b>	<b>MGWC-12</b>	<b>32</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>33</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>n/a</b>	<b>0.02144</b>	NP (normality) 1 of 2
Calcium (mg/L)	MGWC-2	148.4	n/a	3/26/2019	110	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWC-3	127.4	n/a	3/26/2019	99	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWC-7	63.9	n/a	3/26/2019	52	No	8	0	No	0.0009403	Param 1 of 2
<b>Calcium (mg/L)</b>	<b>MGWC-8</b>	<b>69.75</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>96</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
pH (pH)	MGWA-10	6.122	5.251	3/25/2019	5.27	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWA-11	8.011	7.239	3/25/2019	7.29	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWA-5	7.822	7.083	3/25/2019	7.44	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWA-6	7.767	6.501	3/26/2019	6.57	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWC-1	7.24	6.25	3/26/2019	7.01	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWC-12	7.61	6.97	3/26/2019	7.29	No	8	0	n/a	0.04288	NP (normality) 1 of 2
<b>pH (pH)</b>	<b>MGWC-2</b>	<b>7.87</b>	<b>7.33</b>	<b>3/26/2019</b>	<b>6.68</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>n/a</b>	<b>0.04288</b>	NP (normality) 1 of 2
<b>pH (pH)</b>	<b>MGWC-3</b>	<b>7.063</b>	<b>6.534</b>	<b>3/26/2019</b>	<b>5.96</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.0004701</b>	Param 1 of 2
<b>pH (pH)</b>	<b>MGWC-7</b>	<b>8.184</b>	<b>5.744</b>	<b>3/26/2019</b>	<b>5.19</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.0004701</b>	Param 1 of 2
<b>pH (pH)</b>	<b>MGWC-8</b>	<b>6.592</b>	<b>4.535</b>	<b>3/26/2019</b>	<b>7.14</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.0004701</b>	Param 1 of 2
TDS (mg/L)	MGWA-10	182.6	n/a	3/25/2019	54	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWA-11	326.4	n/a	3/25/2019	210	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWA-5	291.7	n/a	3/25/2019	150	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWA-6	450.9	n/a	3/26/2019	290	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-1	646.6	n/a	3/26/2019	370	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-12	261.8	n/a	3/26/2019	180	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-2	738.9	n/a	3/26/2019	530	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-3	449.9	n/a	3/26/2019	370	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-7	470.4	n/a	3/26/2019	320	No	8	0	No	0.0009403	Param 1 of 2
<b>TDS (mg/L)</b>	<b>MGWC-8</b>	<b>432.2</b>	<b>n/a</b>	<b>3/26/2019</b>	<b>630</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2

Within Limit

### Prediction Limit Intrawell Parametric

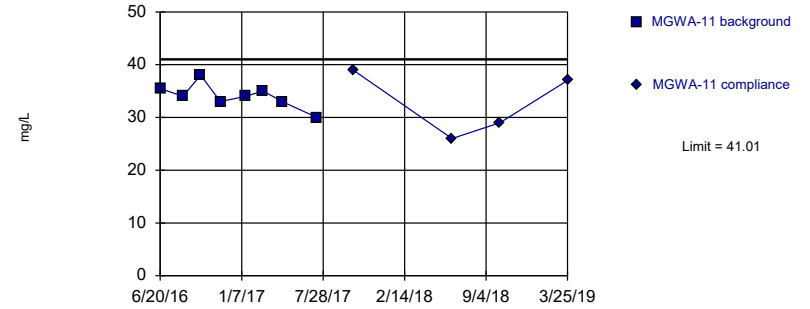


Background Data Summary: Mean=6.204, Std. Dev.=1.706, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9557, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 7/12/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

### Prediction Limit Intrawell Parametric

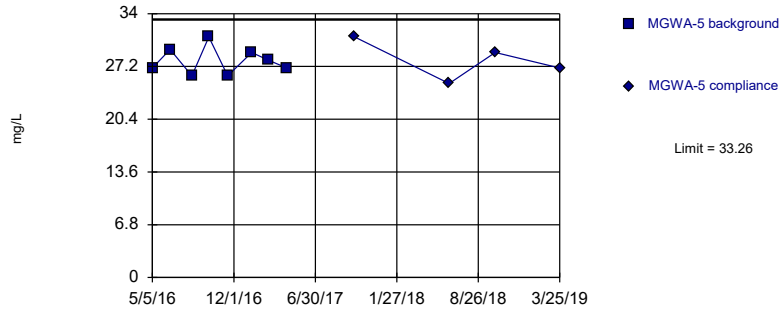


Background Data Summary: Mean=34.06, Std. Dev.=2.306, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9612, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 7/12/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

### Prediction Limit Intrawell Parametric

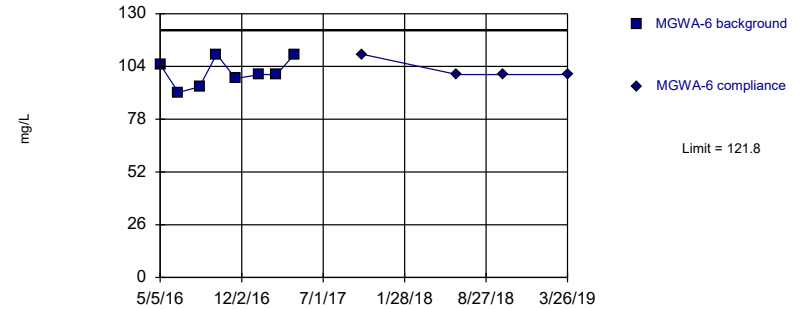


Background Data Summary: Mean=27.93, Std. Dev.=1.769, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9267, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 7/12/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

### Prediction Limit Intrawell Parametric



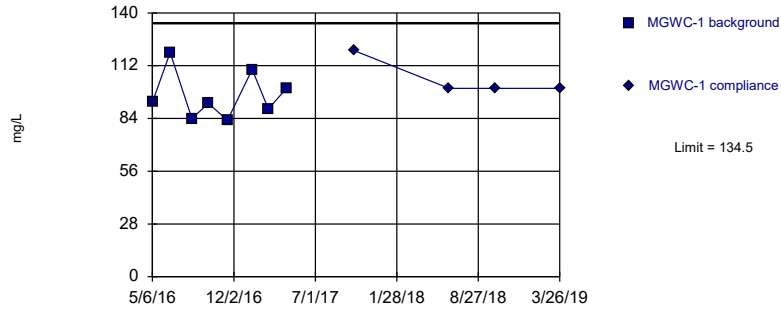
Background Data Summary: Mean=101, Std. Dev.=6.908, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9337, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 7/12/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



Within Limit

Prediction Limit  
Intrawell Parametric

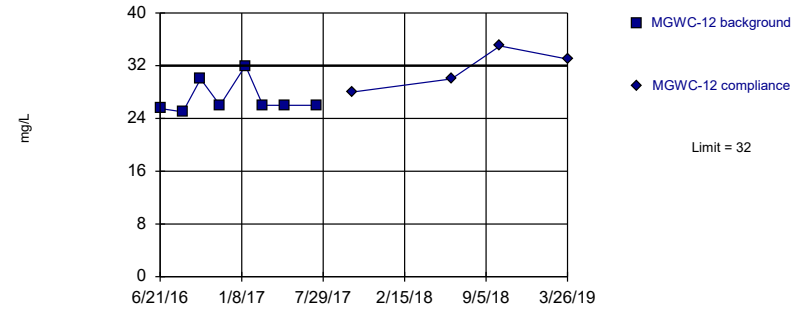


Background Data Summary: Mean=96.19, Std. Dev.=12.71, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9031, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 7/12/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit

Prediction Limit  
Intrawell Non-parametric

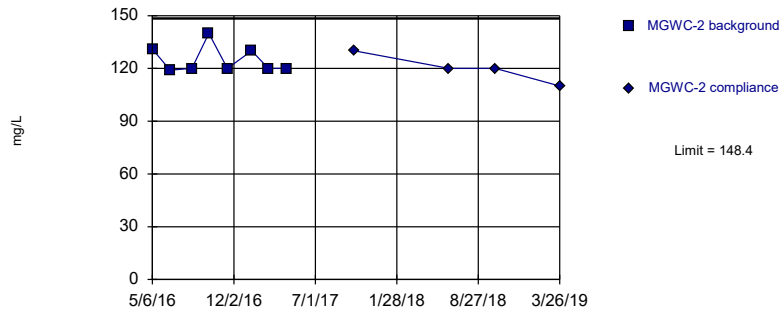


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Calcium Analysis Run 7/12/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

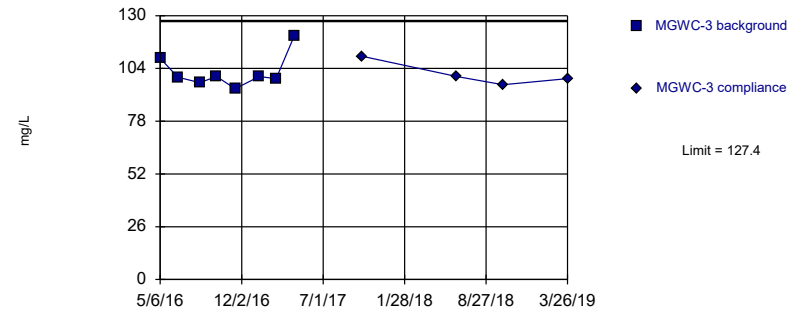


Background Data Summary: Mean=125, Std. Dev.=7.764, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.762, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 7/12/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric



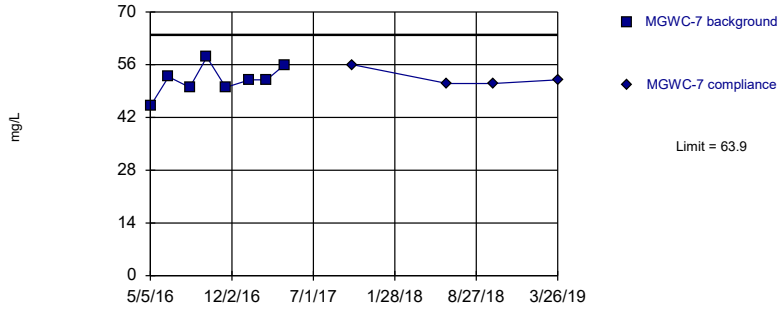
Background Data Summary: Mean=102.3, Std. Dev.=8.31, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8048, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 7/12/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit

Intrawell Parametric



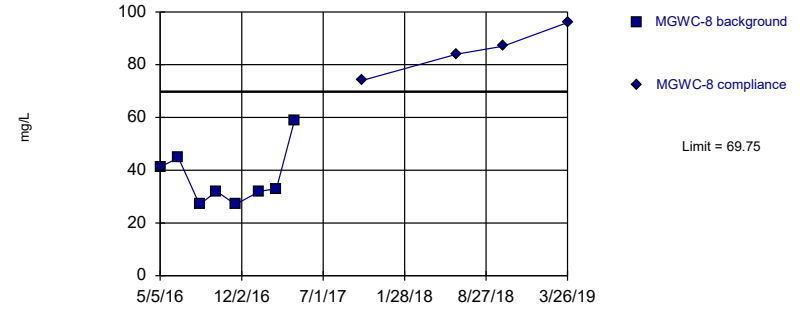
Background Data Summary: Mean=51.98, Std. Dev.=3.958, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.959, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 7/12/2019 10:01 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit

Prediction Limit

Intrawell Parametric



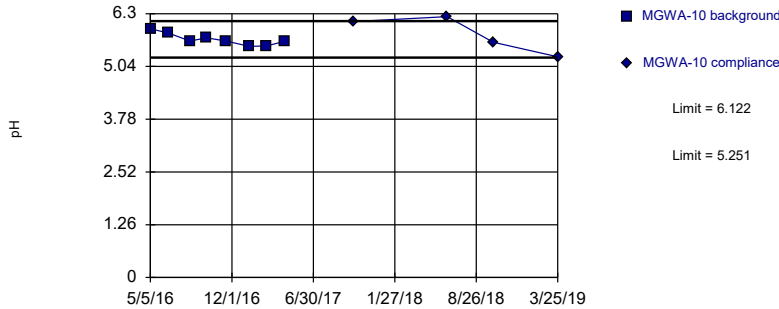
Background Data Summary: Mean=36.99, Std. Dev.=10.87, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8573, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 7/12/2019 10:01 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit

Intrawell Parametric



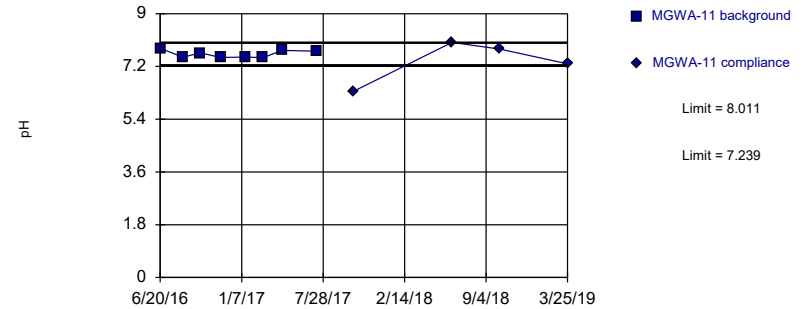
Background Data Summary: Mean=5.686, Std. Dev.=0.1444, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9186, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 7/12/2019 10:01 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit

Intrawell Parametric

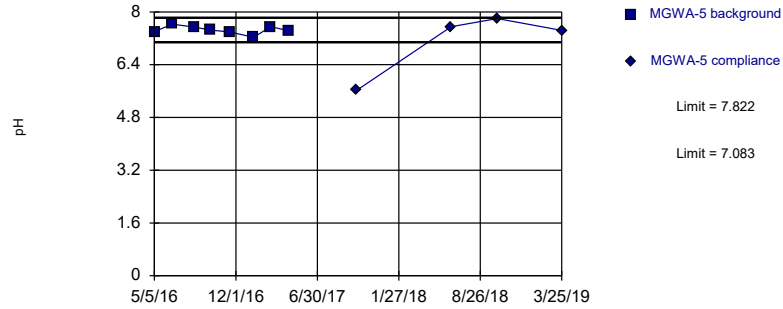


Background Data Summary: Mean=7.625, Std. Dev.=0.1281, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8497, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 7/12/2019 10:01 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Parametric

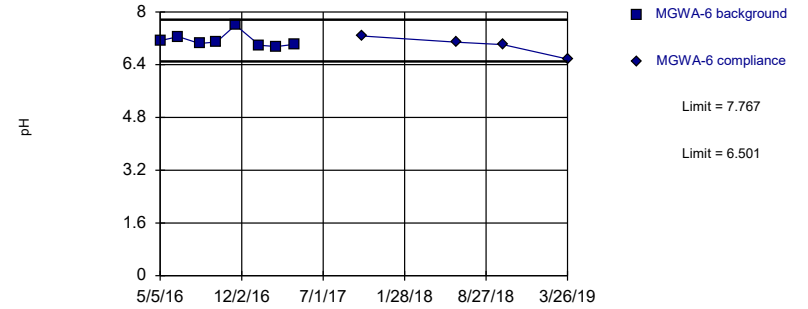


Background Data Summary: Mean=7.453, Std. Dev.=0.1227, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9613, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Parametric

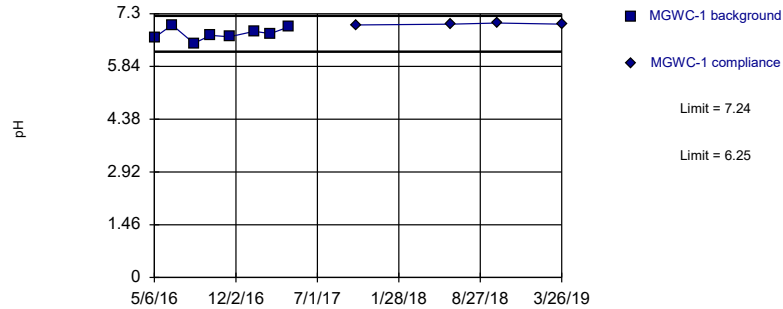


Background Data Summary: Mean=7.134, Std. Dev.=0.2101, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8014, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Parametric

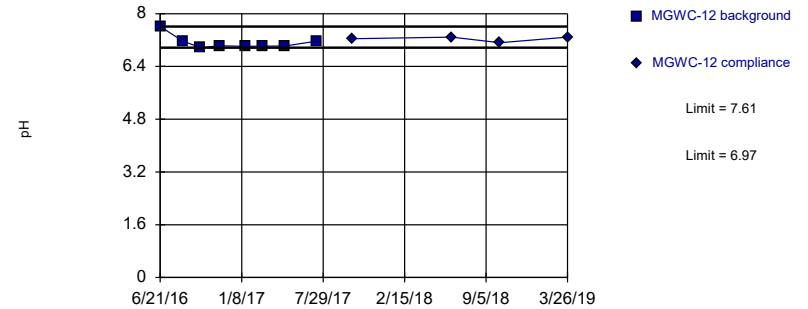


Background Data Summary: Mean=6.745, Std. Dev.=0.1643, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9754, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 8 background values. Well-constituent pair annual alpha = 0.08484. Individual comparison alpha = 0.04288 (1 of 2).

Constituent: pH Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limits

Prediction Limit  
Intrawell Non-parametric

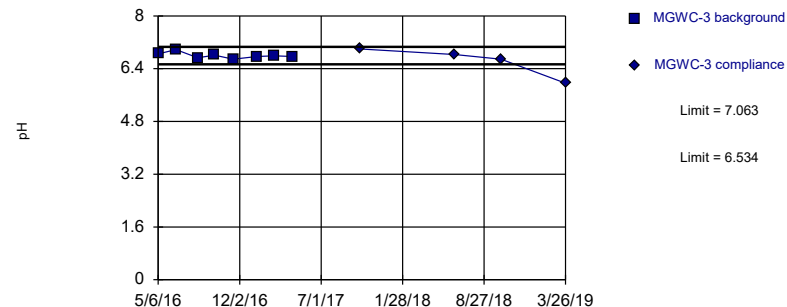


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 8 background values. Well-constituent pair annual alpha = 0.08484. Individual comparison alpha = 0.04288 (1 of 2).

Constituent: pH Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limits

Prediction Limit  
Intrawell Parametric

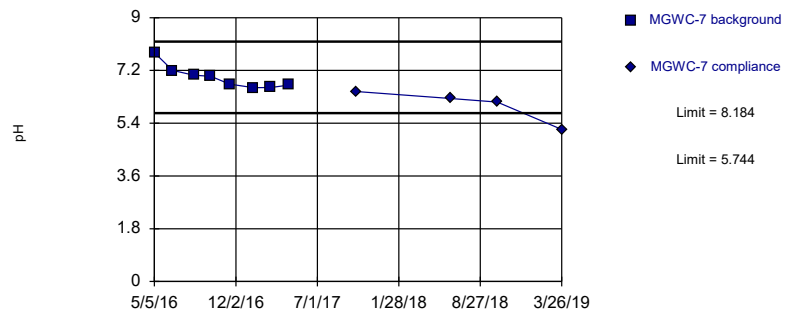


Background Data Summary: Mean=6.799, Std. Dev.=0.08774, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.911, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limits

Prediction Limit  
Intrawell Parametric

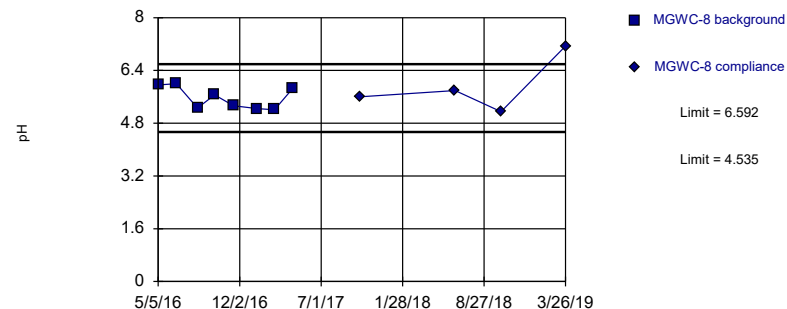


Background Data Summary: Mean=6.964, Std. Dev.=0.4047, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8447, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limits

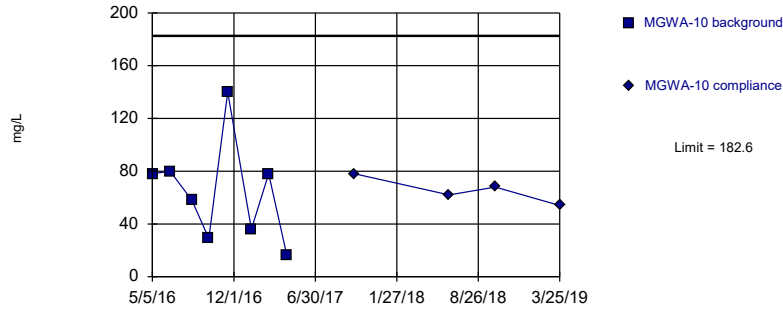
Prediction Limit  
Intrawell Parametric



Background Data Summary: Mean=5.564, Std. Dev.=0.3413, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8393, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

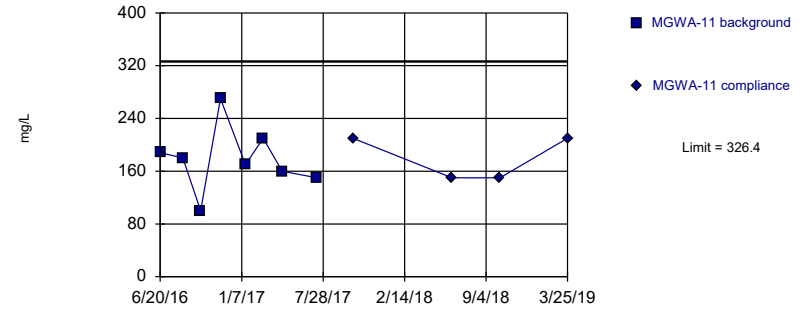
Within Limit Prediction Limit  
Intrawell Parametric



Background Data Summary: Mean=64.38, Std. Dev.=39.23, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9214, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

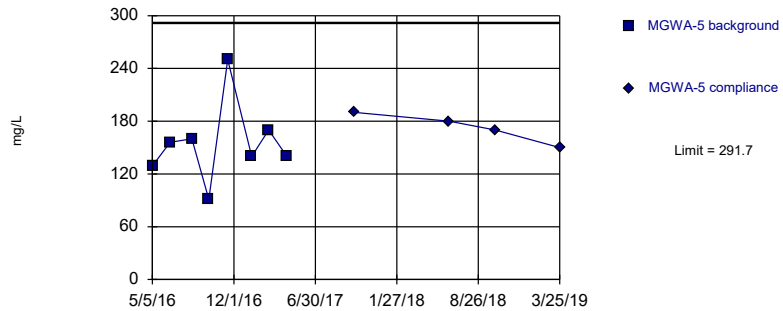
Within Limit Prediction Limit  
Intrawell Parametric



Background Data Summary: Mean=178.5, Std. Dev.=49.06, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9621, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

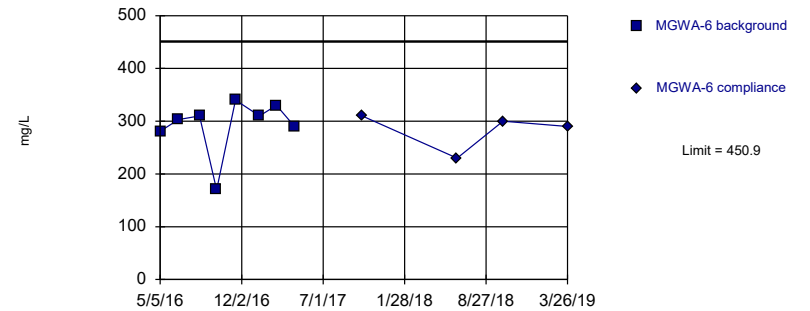
Within Limit Prediction Limit  
Intrawell Parametric



Background Data Summary: Mean=154.5, Std. Dev.=45.51, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.89, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit Prediction Limit  
Intrawell Parametric

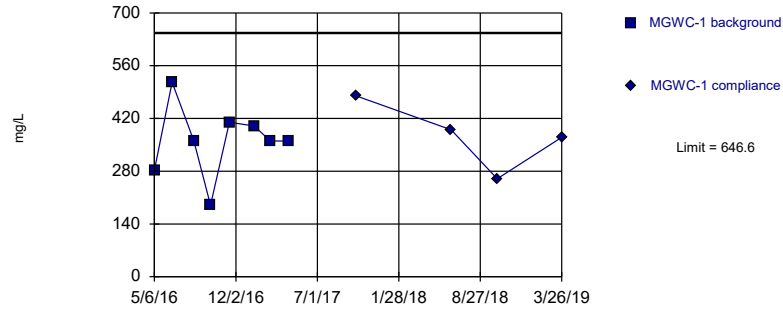


Background Data Summary: Mean=291.8, Std. Dev.=52.81, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7656, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

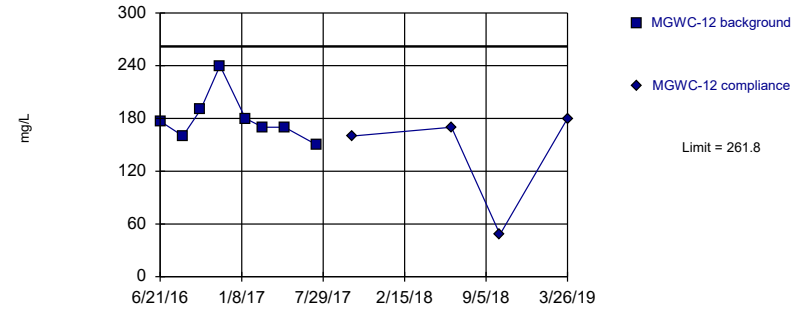


Background Data Summary: Mean=359.8, Std. Dev.=95.18, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9447, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

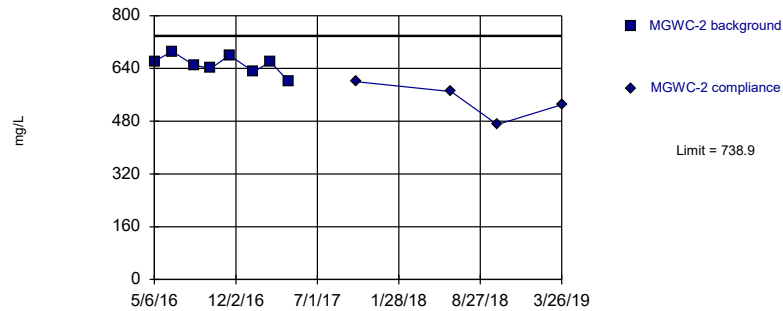


Background Data Summary: Mean=179.6, Std. Dev.=27.28, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8389, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

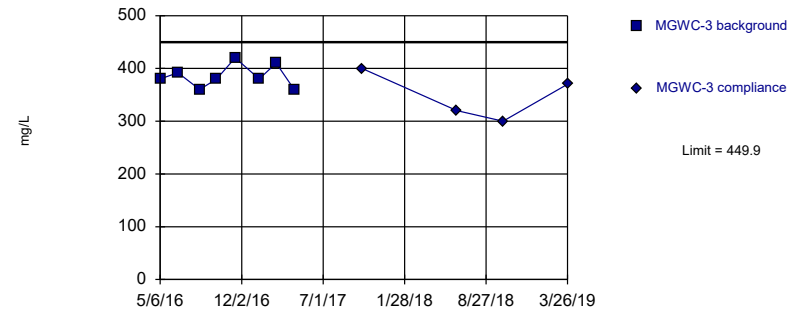


Background Data Summary: Mean=651.6, Std. Dev.=28.94, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9778, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric



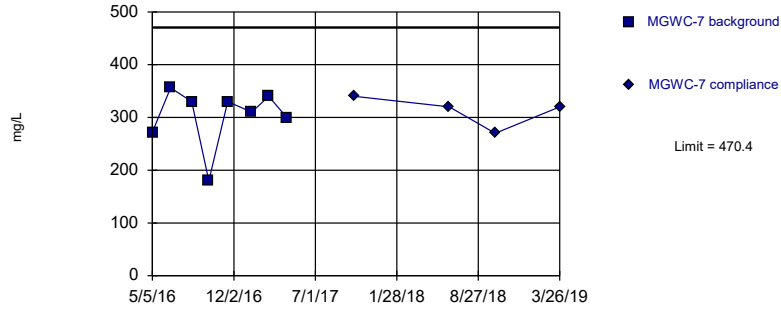
Background Data Summary: Mean=385.3, Std. Dev.=21.46, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9121, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



Within Limit

Prediction Limit  
Intrawell Parametric

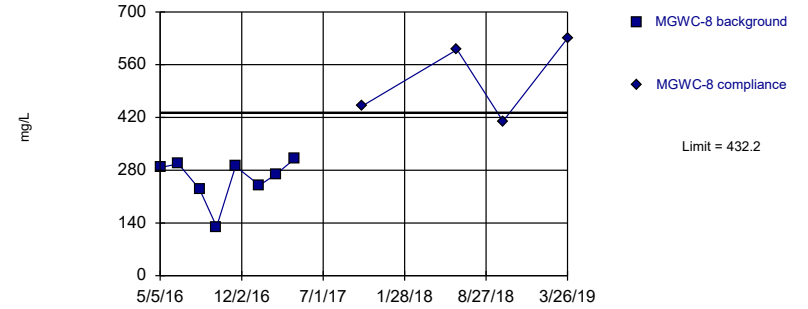


Background Data Summary: Mean=302.3, Std. Dev.=55.78, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8291, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit

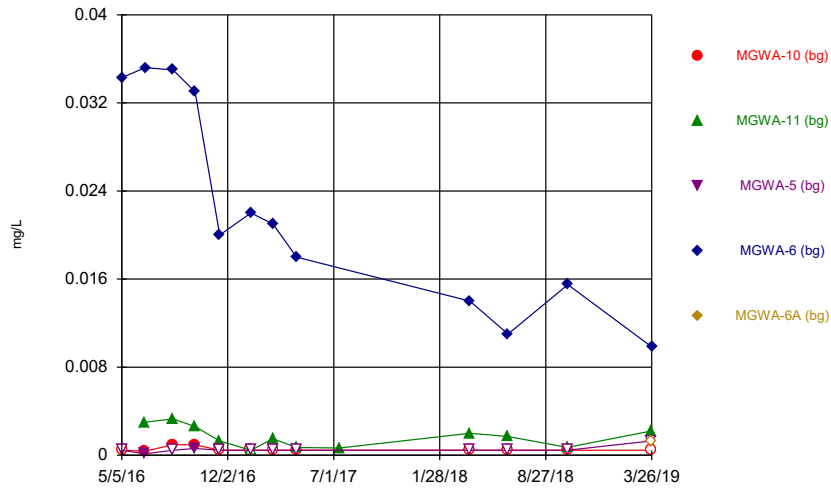
Prediction Limit  
Intrawell Parametric



Background Data Summary: Mean=256.8, Std. Dev.=58.2, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8242, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

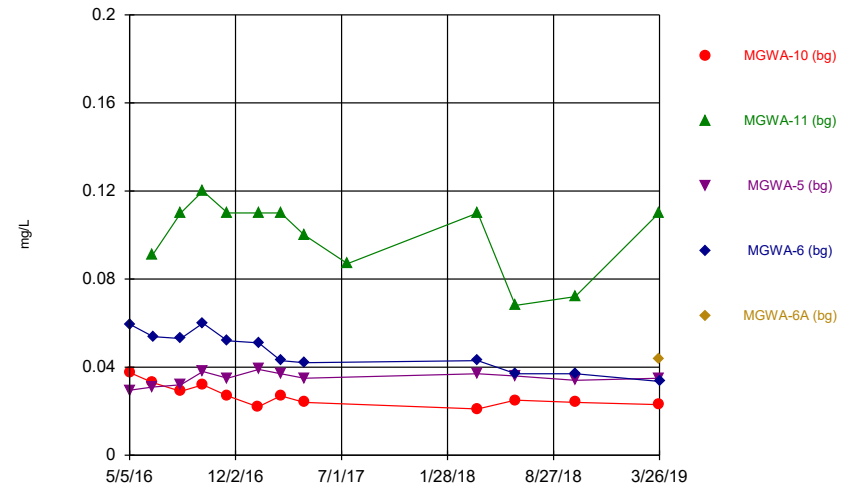
Constituent: TDS Analysis Run 7/12/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



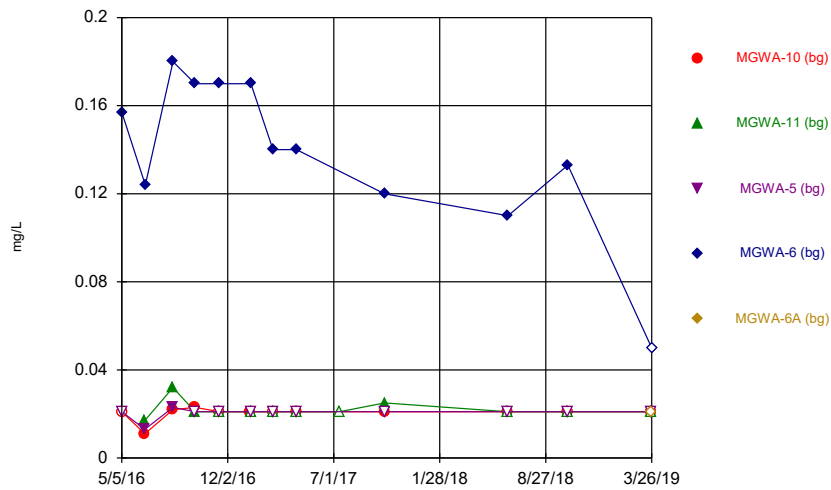
Constituent: Arsenic Analysis Run 7/12/2019 9:53 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



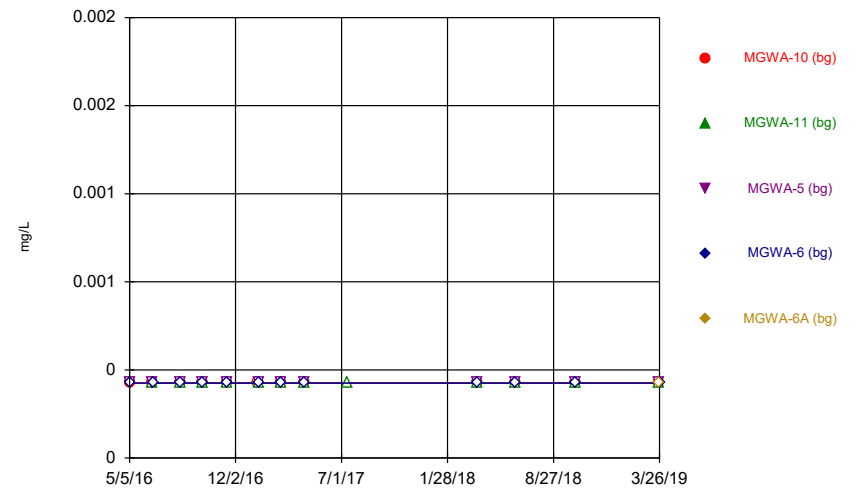
Constituent: Barium Analysis Run 7/12/2019 9:53 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



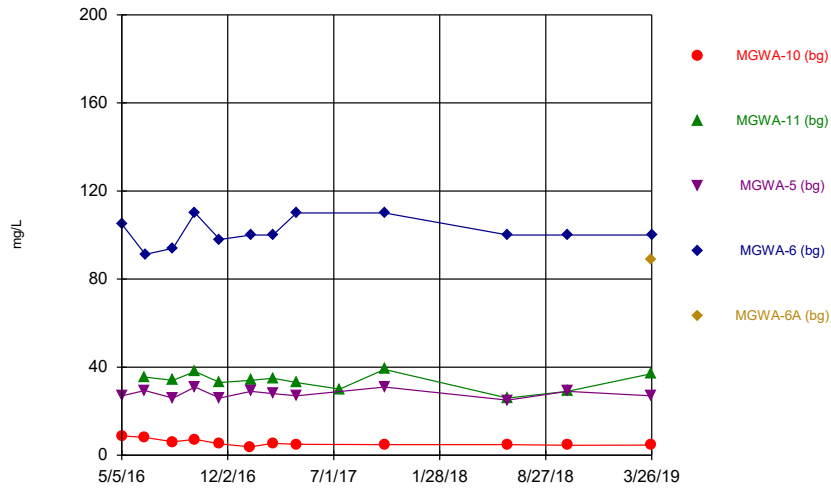
Constituent: Boron Analysis Run 7/12/2019 9:53 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



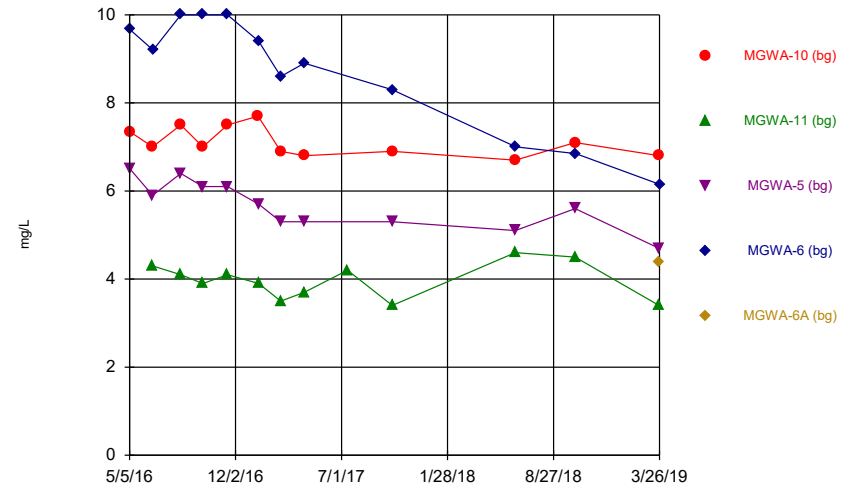
Constituent: Cadmium Analysis Run 7/12/2019 9:53 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



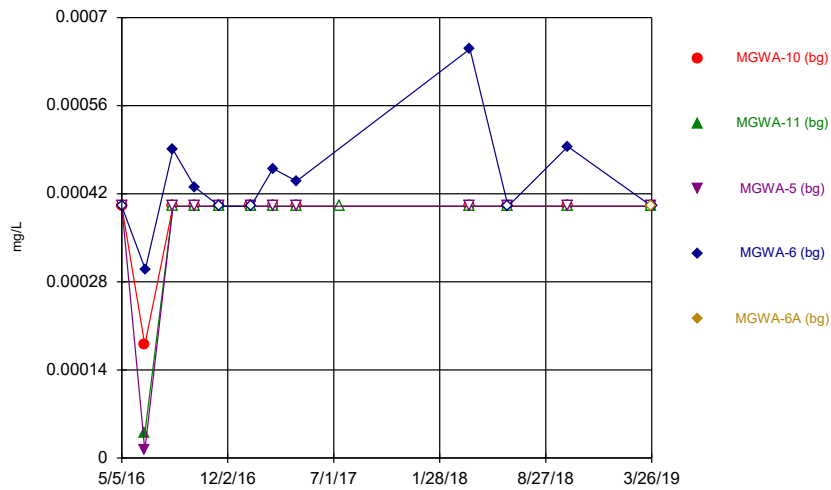
Constituent: Calcium Analysis Run 7/12/2019 9:53 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



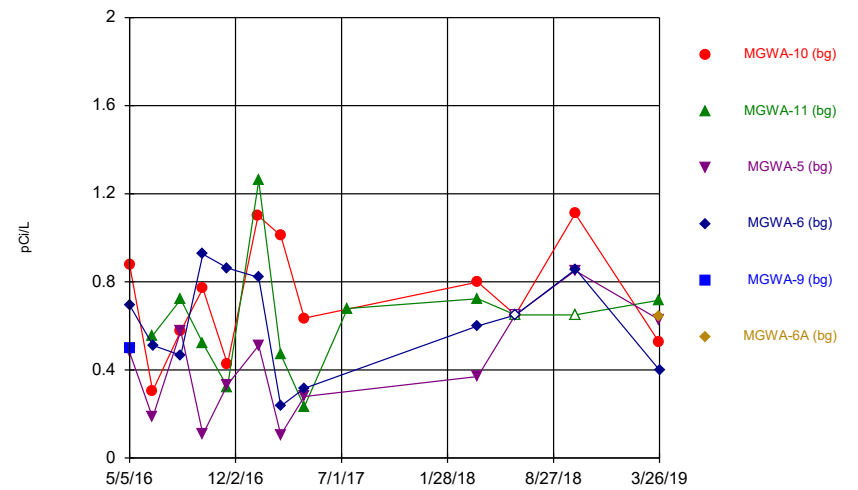
Constituent: Chloride Analysis Run 7/12/2019 9:53 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



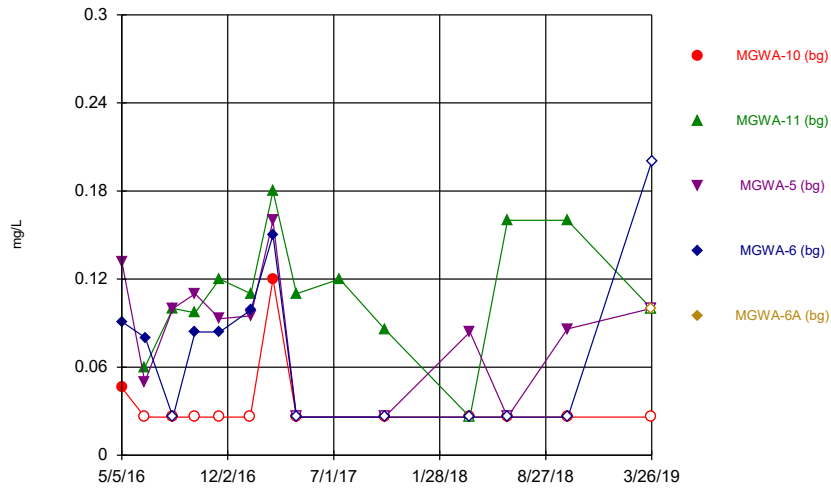
Constituent: Cobalt Analysis Run 7/12/2019 9:53 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



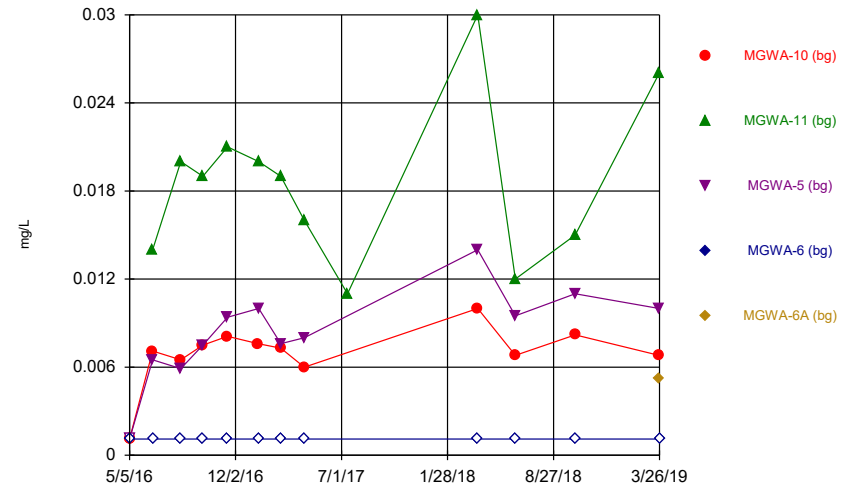
Constituent: Combined Radium 226 + 228 Analysis Run 7/12/2019 9:53 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



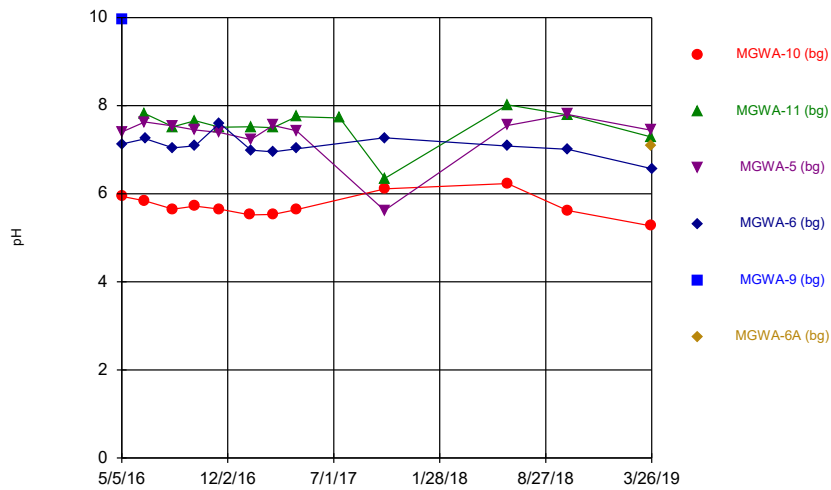
Constituent: Fluoride Analysis Run 7/12/2019 9:53 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



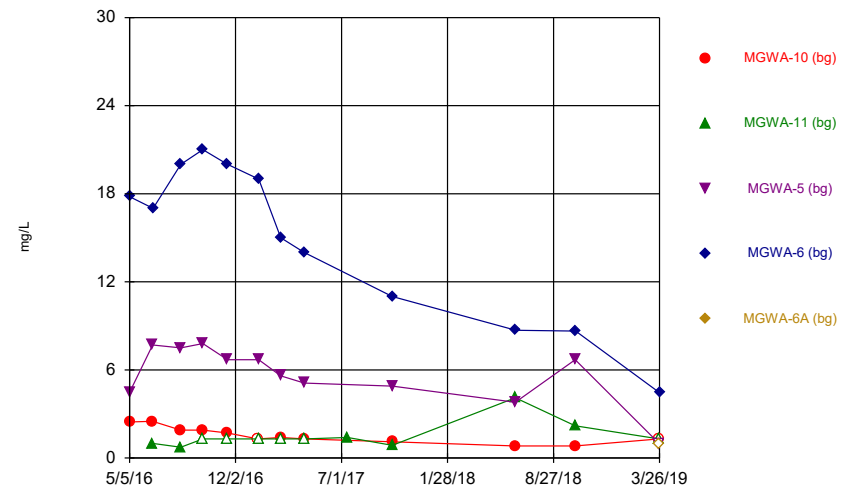
Constituent: Lithium Analysis Run 7/12/2019 9:53 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



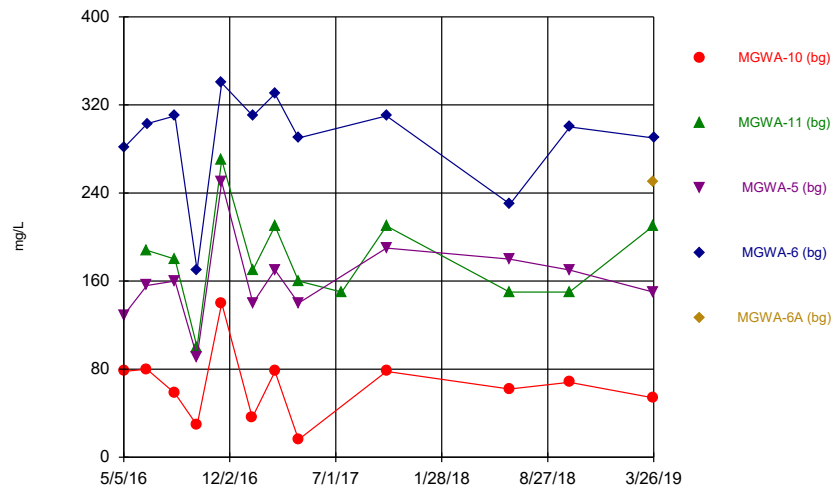
Constituent: pH Analysis Run 7/12/2019 9:53 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



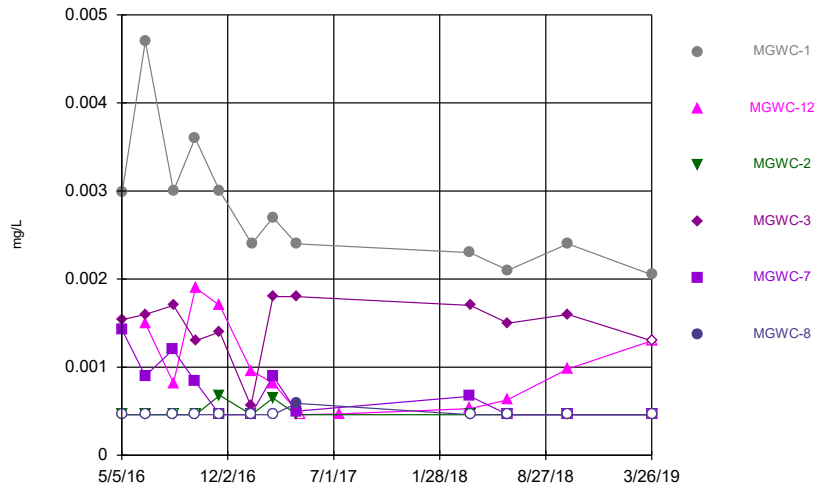
Constituent: Sulfate Analysis Run 7/12/2019 9:53 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



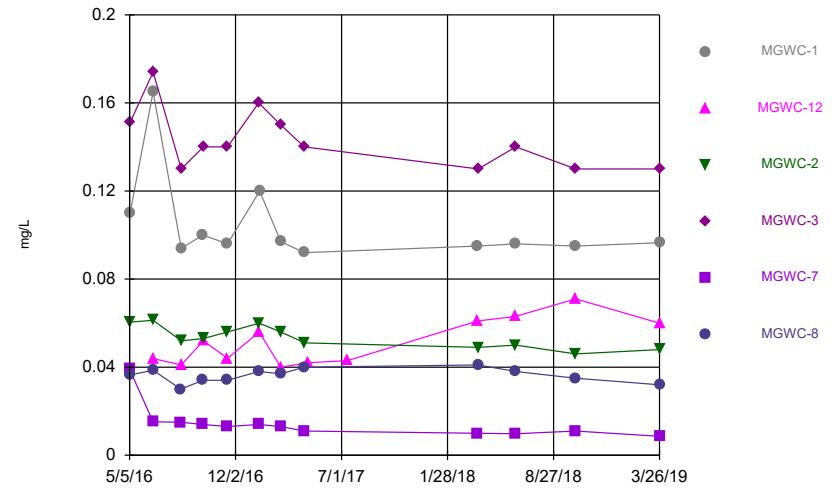
Constituent: TDS Analysis Run 7/12/2019 9:53 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



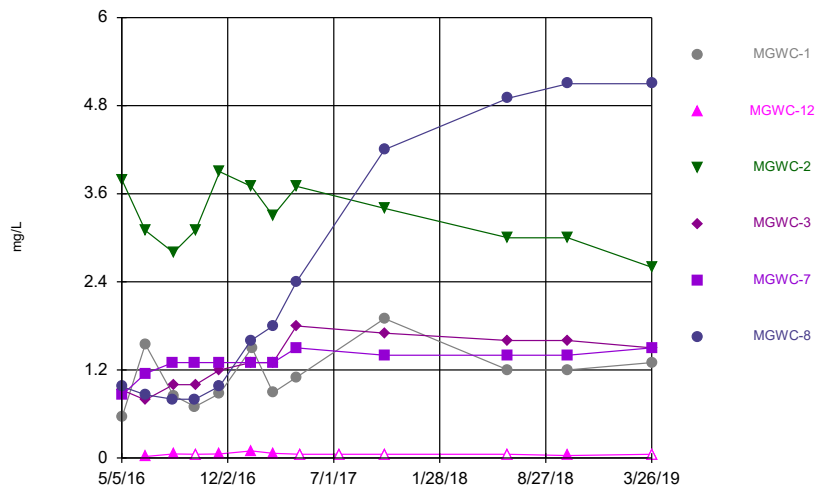
Constituent: Arsenic Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



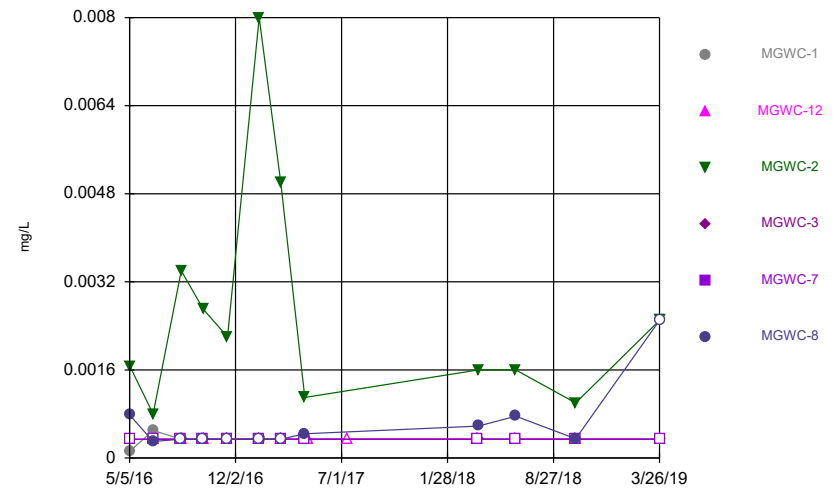
Constituent: Barium Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



Constituent: Boron Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series

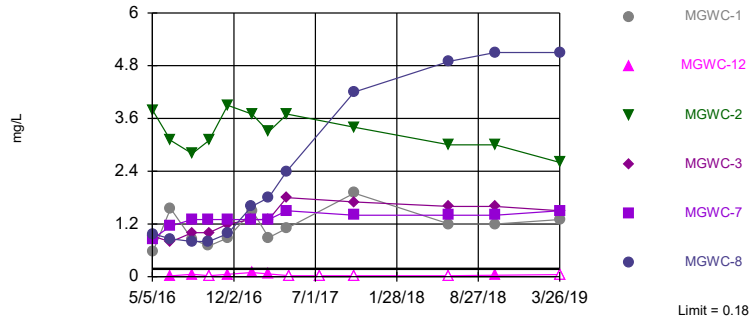


Constituent: Cadmium Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



Exceeds Limit: MGWC-1, MGWC-2, MGWC-3, MGWC-7, MGWC-8

Prediction Limit  
Interwell Non-parametric

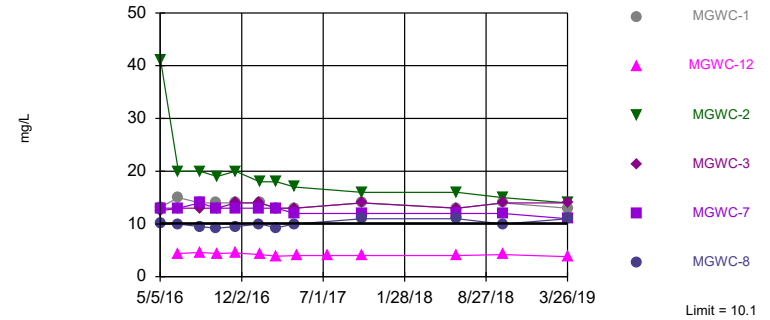


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 49 background values. 55.1% NDs. Annual per-constituent alpha = 0.0123. Individual comparison alpha = 0.0007731 (1 of 2). Comparing 6 points to limit. Assumes 2 future values.

Constituent: Boron Analysis Run 7/12/2019 9:57 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit: MGWC-1, MGWC-2, MGWC-3, MGWC-7, MGWC-8

Prediction Limit  
Interwell Parametric

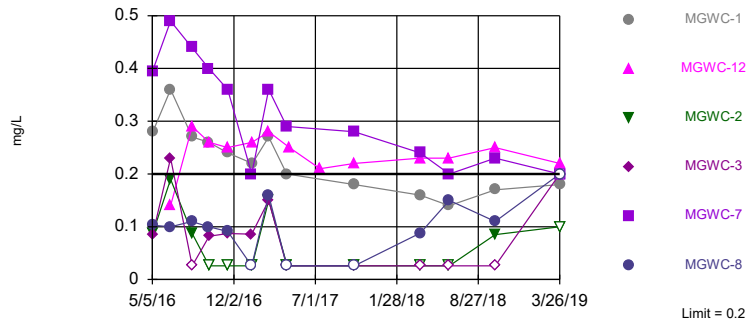


Background Data Summary: Mean=6.313, Std. Dev.=1.91, n=49. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9391, critical = 0.929. Kappa = 1.985 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 6 points to limit. Assumes 2 future values.

Constituent: Chloride Analysis Run 7/12/2019 9:57 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit: MGWC-12

Prediction Limit  
Interwell Non-parametric

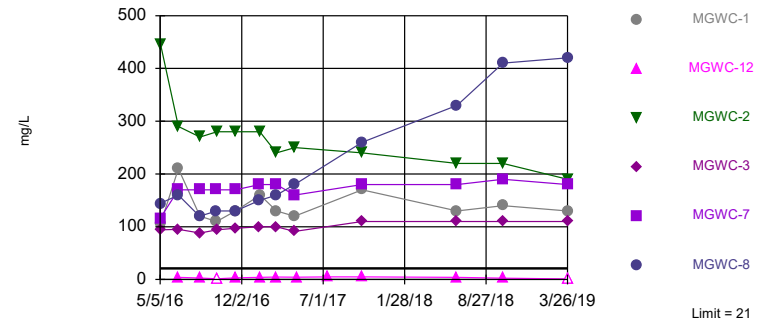


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 53 background values. 47.17% NDs. Annual per-constituent alpha = 0.01067. Individual comparison alpha = 0.0006701 (1 of 2). Comparing 6 points to limit. Assumes 2 future values.

Constituent: Fluoride Analysis Run 7/12/2019 9:57 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit: MGWC-1, MGWC-2, MGWC-3, MGWC-7, MGWC-8

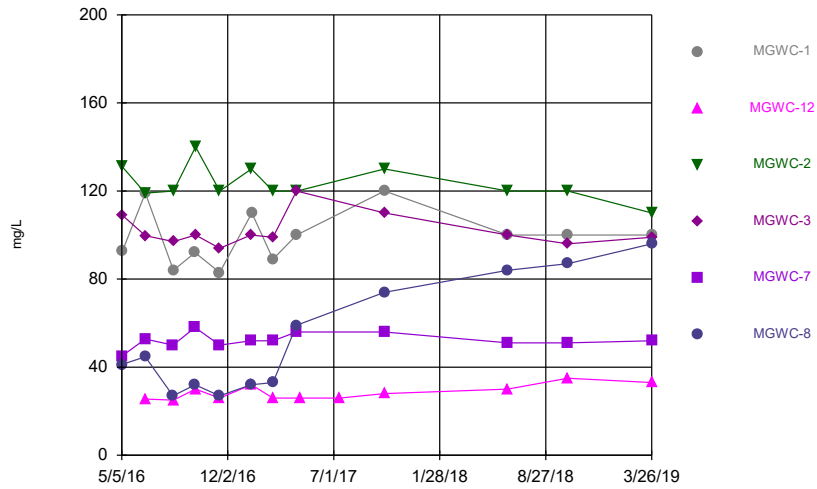
Prediction Limit  
Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 49 background values. 20.41% NDs. Annual per-constituent alpha = 0.0123. Individual comparison alpha = 0.0007731 (1 of 2). Comparing 6 points to limit. Assumes 2 future values.

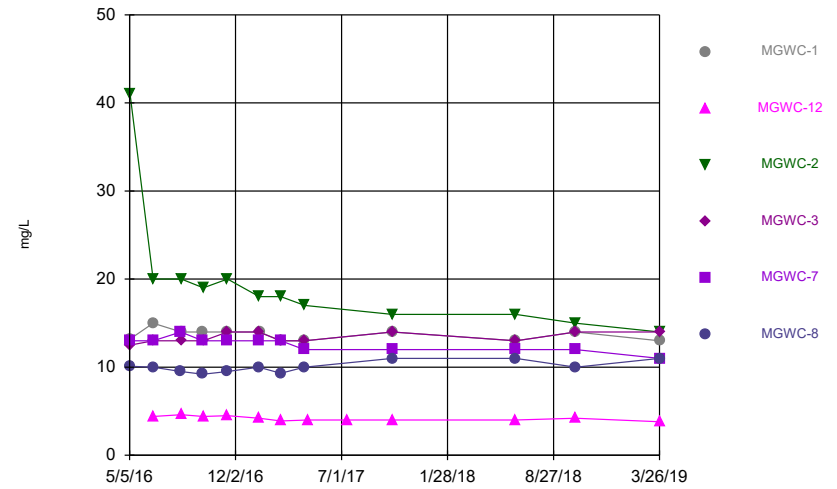
Constituent: Sulfate Analysis Run 7/12/2019 9:57 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



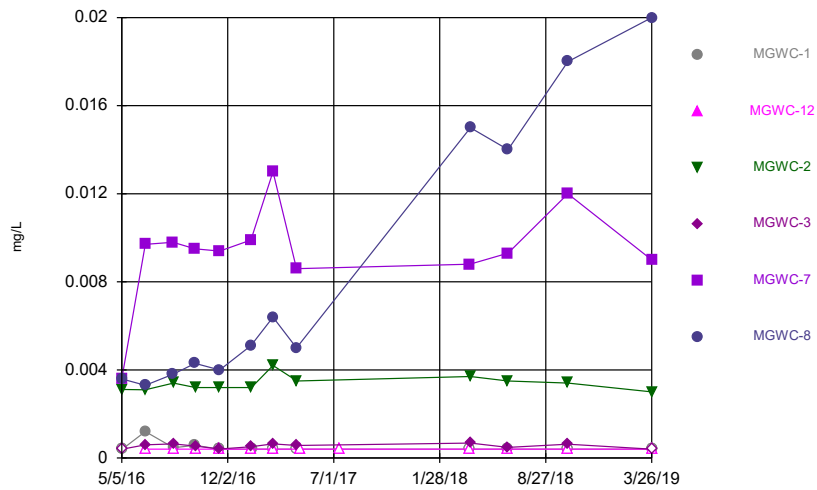
Constituent: Calcium Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



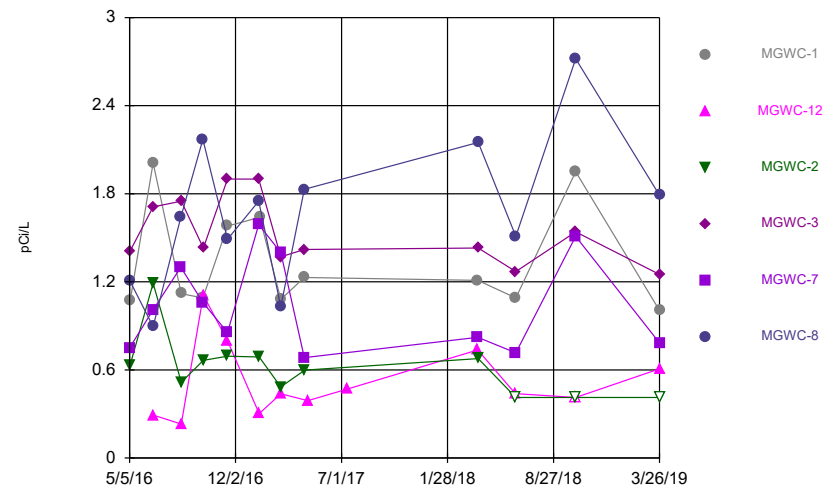
Constituent: Chloride Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



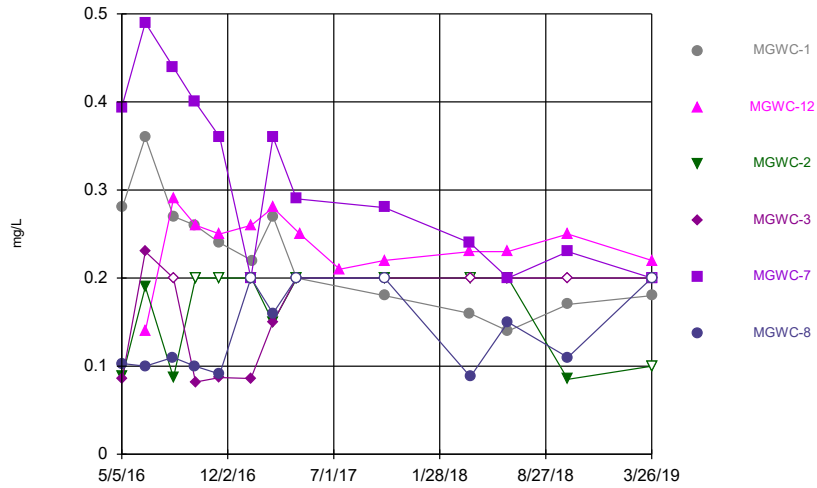
Constituent: Cobalt Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



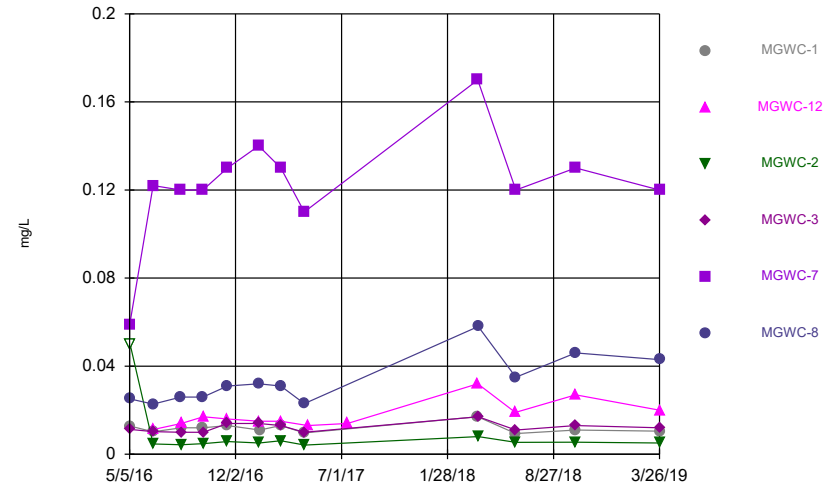
Constituent: Combined Radium 226 + 228 Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



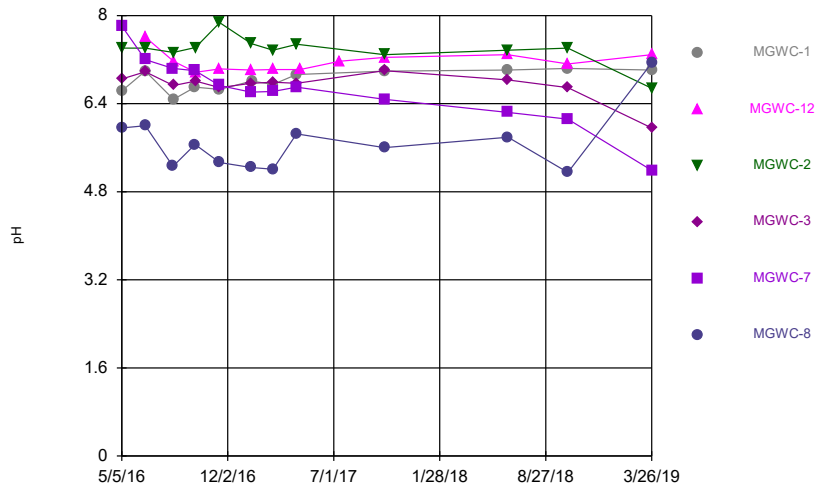
Constituent: Fluoride Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



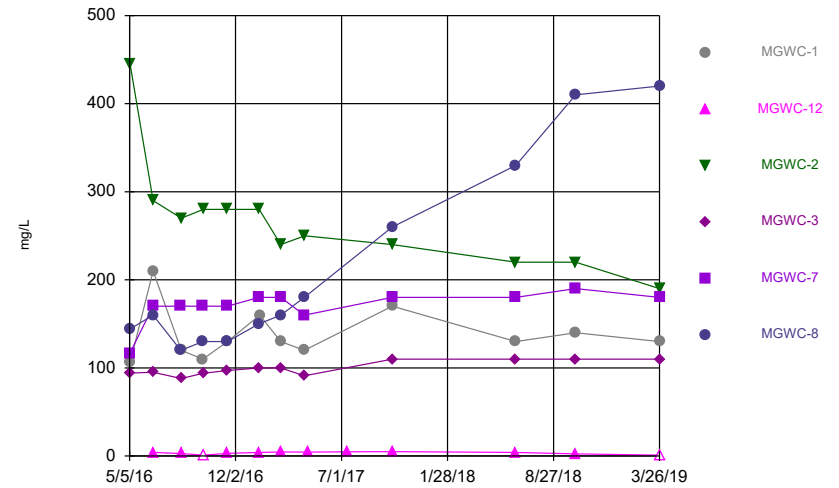
Constituent: Lithium Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



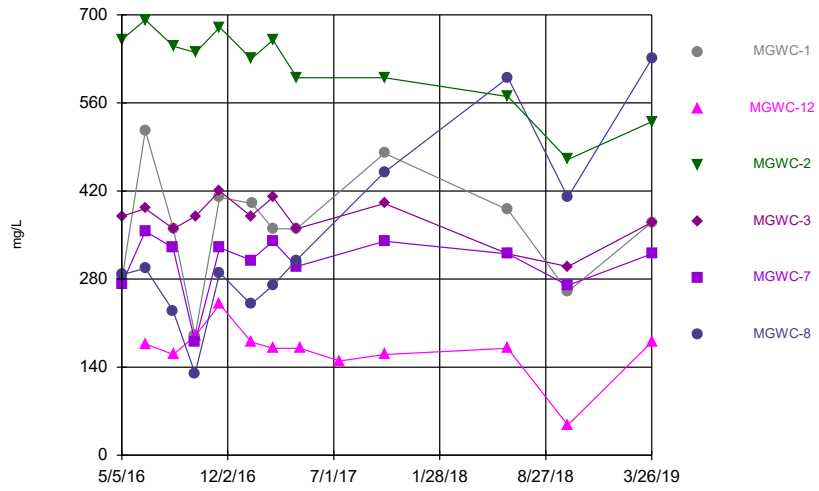
Constituent: pH Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



Constituent: Sulfate Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



Constituent: TDS Analysis Run 7/12/2019 9:56 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

# Trend Test - Significant Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/2/2019, 3:57 PM

<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)	MGWA-6 (bg)	-0.02592	-36	-35	Yes	12	8.333	n/a	n/a	0.02	NP
Boron (mg/L)	MGWC-3	0.3366	43	35	Yes	12	0	n/a	n/a	0.02	NP
Boron (mg/L)	MGWC-7	0.09415	46	35	Yes	12	0	n/a	n/a	0.02	NP
Boron (mg/L)	MGWC-8	1.837	54	35	Yes	12	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWA-10 (bg)	-1.276	-47	-35	Yes	12	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWC-8	20.49	42	35	Yes	12	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MGWA-5 (bg)	-0.5748	-48	-35	Yes	12	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MGWA-6 (bg)	-1.416	-47	-35	Yes	12	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MGWC-2	-2.694	-59	-35	Yes	12	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MGWC-7	-0.6288	-41	-35	Yes	12	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWA-6 (bg)	0.0455	42	39	Yes	13	53.85	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWC-1	-0.06344	-58	-39	Yes	13	0	n/a	n/a	0.02	NP
pH (pH)	MGWC-7	-0.6279	-60	-35	Yes	12	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWA-10 (bg)	-0.6507	-51	-35	Yes	12	16.67	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWA-6 (bg)	-5.189	-47	-35	Yes	12	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWC-2	-36.19	-53	-35	Yes	12	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWC-3	7.093	39	35	Yes	12	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWC-7	7.013	36	35	Yes	12	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWC-8	109.6	50	35	Yes	12	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWC-8	119.6	38	35	Yes	12	0	n/a	n/a	0.02	NP

# Trend Test - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/2/2019, 3:57 PM

<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)	MGWA-10 (bg)	0	-4	-35	No	12	58.33	n/a	n/a	0.02	NP
Boron (mg/L)	MGWA-11 (bg)	0	4	35	No	12	66.67	n/a	n/a	0.02	NP
Boron (mg/L)	MGWA-5 (bg)	0	1	35	No	12	83.33	n/a	n/a	0.02	NP
<b>Boron (mg/L)</b>	<b>MGWA-6 (bg)</b>	<b>-0.02592</b>	<b>-36</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>8.333</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Boron (mg/L)	MGWC-1	0.201	29	35	No	12	0	n/a	n/a	0.02	NP
Boron (mg/L)	MGWC-2	-0.1938	-21	-35	No	12	0	n/a	n/a	0.02	NP
<b>Boron (mg/L)</b>	<b>MGWC-3</b>	<b>0.3366</b>	<b>43</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Boron (mg/L)</b>	<b>MGWC-7</b>	<b>0.09415</b>	<b>46</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Boron (mg/L)</b>	<b>MGWC-8</b>	<b>1.837</b>	<b>54</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Calcium (mg/L)</b>	<b>MGWA-10 (bg)</b>	<b>-1.276</b>	<b>-47</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Calcium (mg/L)	MGWA-11 (bg)	-2.46	-16	-35	No	12	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWA-5 (bg)	0	-4	-35	No	12	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWA-6 (bg)	0.4244	13	35	No	12	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWC-12	2.505	35	35	No	12	0	n/a	n/a	0.02	NP
<b>Calcium (mg/L)</b>	<b>MGWC-8</b>	<b>20.49</b>	<b>42</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Chloride (mg/L)	MGWA-10 (bg)	-0.1662	-26	-35	No	12	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MGWA-11 (bg)	-0.1827	-11	-35	No	12	0	n/a	n/a	0.02	NP
<b>Chloride (mg/L)</b>	<b>MGWA-5 (bg)</b>	<b>-0.5748</b>	<b>-48</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Chloride (mg/L)</b>	<b>MGWA-6 (bg)</b>	<b>-1.416</b>	<b>-47</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Chloride (mg/L)	MGWC-1	-0.03463	-21	-35	No	12	0	n/a	n/a	0.02	NP
<b>Chloride (mg/L)</b>	<b>MGWC-2</b>	<b>-2.694</b>	<b>-59</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Chloride (mg/L)	MGWC-3	0.2999	27	35	No	12	0	n/a	n/a	0.02	NP
<b>Chloride (mg/L)</b>	<b>MGWC-7</b>	<b>-0.6288</b>	<b>-41</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Chloride (mg/L)	MGWC-8	0.3778	20	35	No	12	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWA-10 (bg)	0	-11	-39	No	13	84.62	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWA-11 (bg)	0.01905	16	39	No	13	15.38	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWA-5 (bg)	0.007769	10	39	No	13	30.77	n/a	n/a	0.02	NP
<b>Fluoride (mg/L)</b>	<b>MGWA-6 (bg)</b>	<b>0.0455</b>	<b>42</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>53.85</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Fluoride (mg/L)</b>	<b>MGWC-1</b>	<b>-0.06344</b>	<b>-58</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Fluoride (mg/L)	MGWC-12	-0.01515	-20	-39	No	13	0	n/a	n/a	0.02	NP
pH (pH)	MGWA-10 (bg)	-0.1289	-19	-35	No	12	0	n/a	n/a	0.02	NP
pH (pH)	MGWA-11 (bg)	-0.03556	-5	-35	No	12	0	n/a	n/a	0.02	NP
pH (pH)	MGWA-5 (bg)	0.002585	1	35	No	12	0	n/a	n/a	0.02	NP
pH (pH)	MGWA-6 (bg)	-0.1221	-24	-35	No	12	0	n/a	n/a	0.02	NP
pH (pH)	MGWC-2	-0.04323	-16	-35	No	12	0	n/a	n/a	0.02	NP
pH (pH)	MGWC-3	-0.06924	-18	-35	No	12	0	n/a	n/a	0.02	NP
<b>pH (pH)</b>	<b>MGWC-7</b>	<b>-0.6279</b>	<b>-60</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
pH (pH)	MGWC-8	-0.05204	-8	-35	No	12	0	n/a	n/a	0.02	NP
<b>Sulfate (mg/L)</b>	<b>MGWA-10 (bg)</b>	<b>-0.6507</b>	<b>-51</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>16.67</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Sulfate (mg/L)	MGWA-11 (bg)	0.2465	27	35	No	12	50	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWA-5 (bg)	-1.987	-33	-35	No	12	8.333	n/a	n/a	0.02	NP
<b>Sulfate (mg/L)</b>	<b>MGWA-6 (bg)</b>	<b>-5.189</b>	<b>-47</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Sulfate (mg/L)	MGWC-1	5.849	15	35	No	12	0	n/a	n/a	0.02	NP
<b>Sulfate (mg/L)</b>	<b>MGWC-2</b>	<b>-36.19</b>	<b>-53</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Sulfate (mg/L)</b>	<b>MGWC-3</b>	<b>7.093</b>	<b>39</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Sulfate (mg/L)</b>	<b>MGWC-7</b>	<b>7.013</b>	<b>36</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Sulfate (mg/L)</b>	<b>MGWC-8</b>	<b>109.6</b>	<b>50</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
TDS (mg/L)	MGWA-10 (bg)	-5.718	-13	-35	No	12	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWA-11 (bg)	-7.731	-8	-35	No	12	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWA-5 (bg)	11.25	16	35	No	12	0	n/a	n/a	0.02	NP



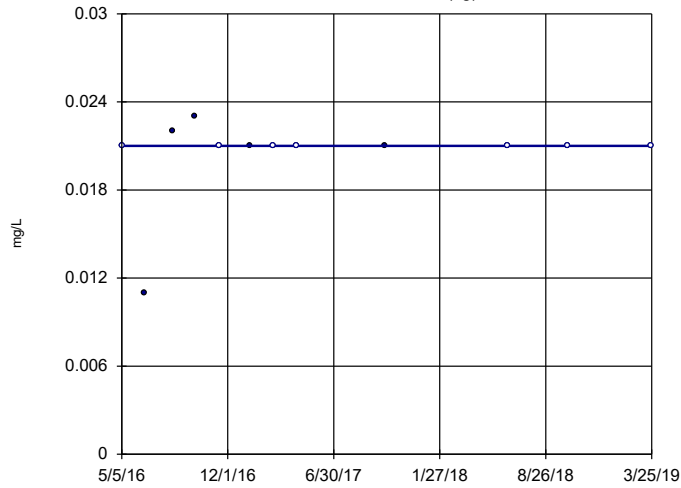
# Trend Test - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/2/2019, 3:57 PM

<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>
TDS (mg/L)	MGWA-6 (bg)	-0.651	-4	-35	No	12	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWC-1	0	-1	-35	No	12	0	n/a	n/a	0.02	NP
<b>TDS (mg/L)</b>	<b>MGWC-8</b>	<b>119.6</b>	<b>38</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>

### Sen's Slope Estimator

MGWA-10 (bg)

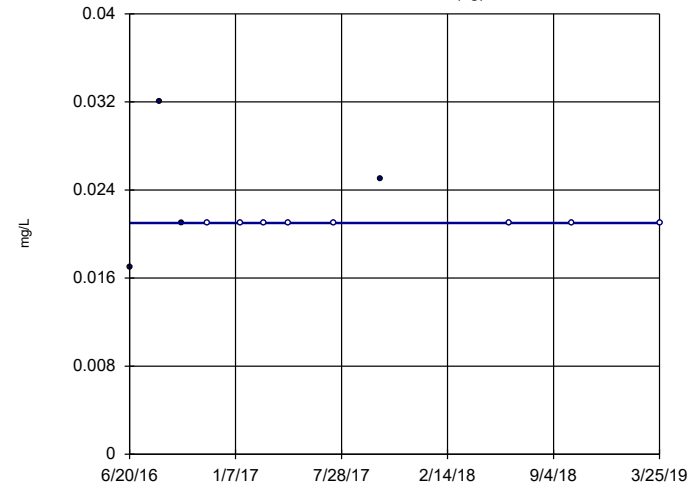


n = 12  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = -4  
critical = -35  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Boron Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-11 (bg)

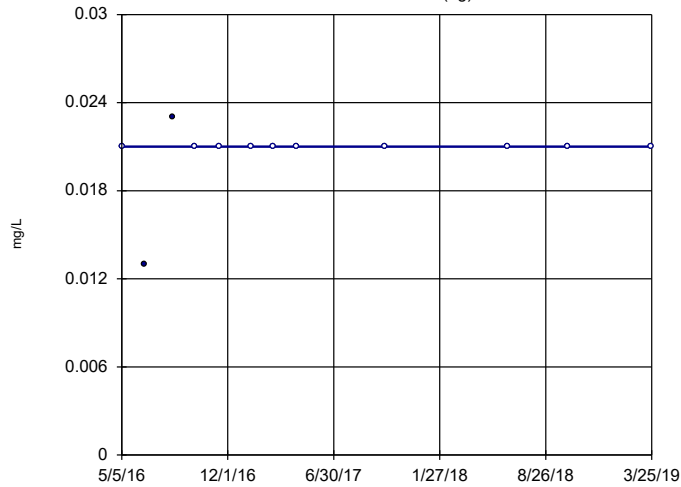


n = 12  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 4  
critical = 35  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Boron Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-5 (bg)

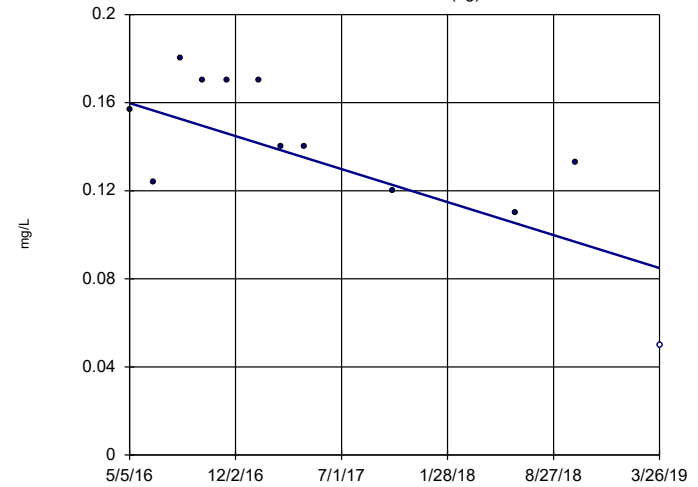


n = 12  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 1  
critical = 35  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Boron Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-6 (bg)

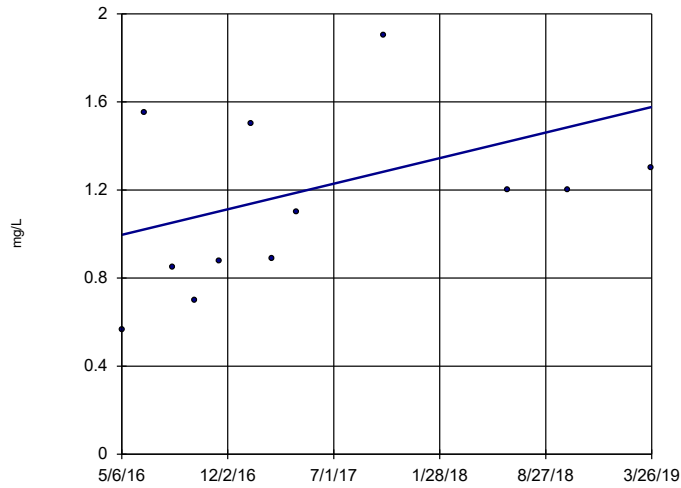


n = 12  
Slope = -0.02592  
units per year.  
Mann-Kendall  
statistic = -36  
critical = -35  
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Boron Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-1

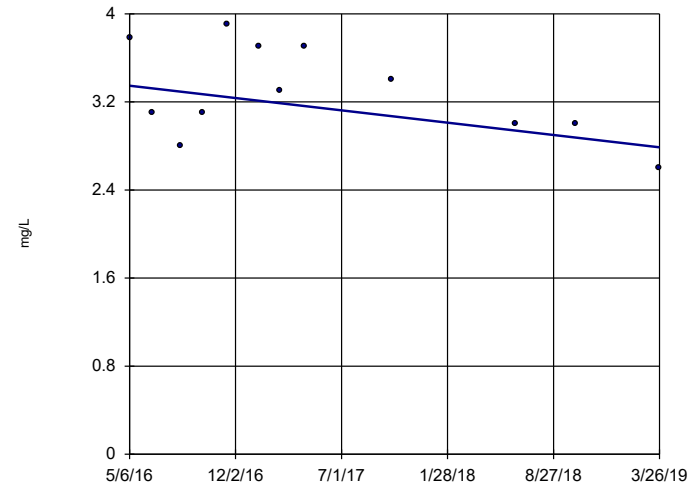


n = 12  
 Slope = 0.201 units per year.  
 Mann-Kendall statistic = 29  
 critical = 35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Boron Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-2

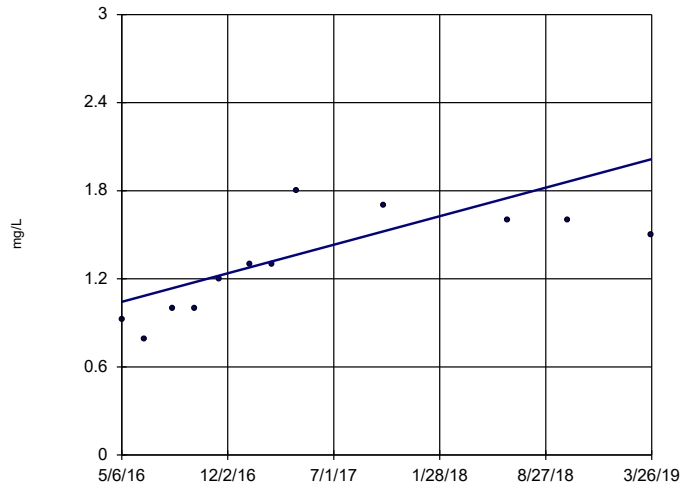


n = 12  
 Slope = -0.1938 units per year.  
 Mann-Kendall statistic = -21  
 critical = -35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Boron Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-3

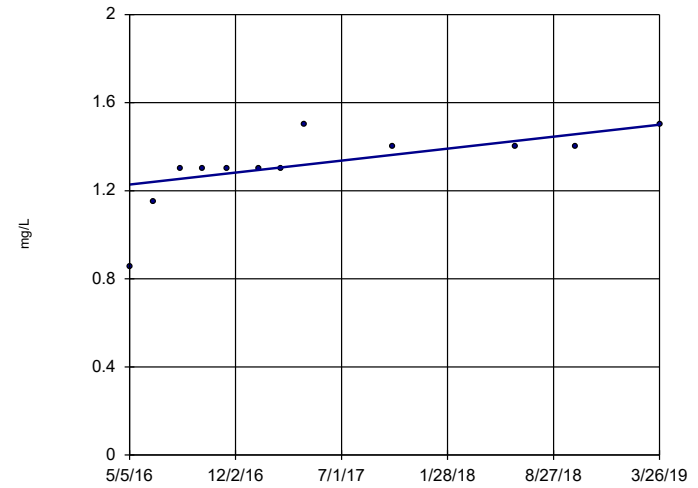


n = 12  
 Slope = 0.3366 units per year.  
 Mann-Kendall statistic = 43  
 critical = 35  
 Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Constituent: Boron Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

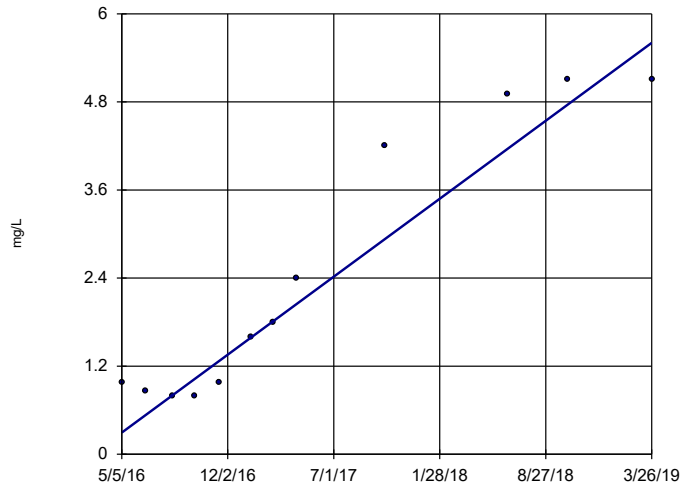
MGWC-7



n = 12  
 Slope = 0.09415 units per year.  
 Mann-Kendall statistic = 46  
 critical = 35  
 Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Constituent: Boron Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

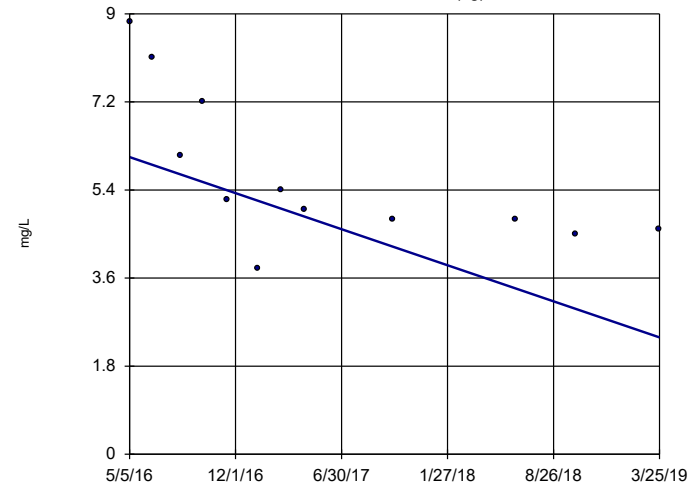
### Sen's Slope Estimator MGWC-8



n = 12  
Slope = 1.837  
units per year.  
Mann-Kendall  
statistic = 54  
critical = 35  
Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Boron Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

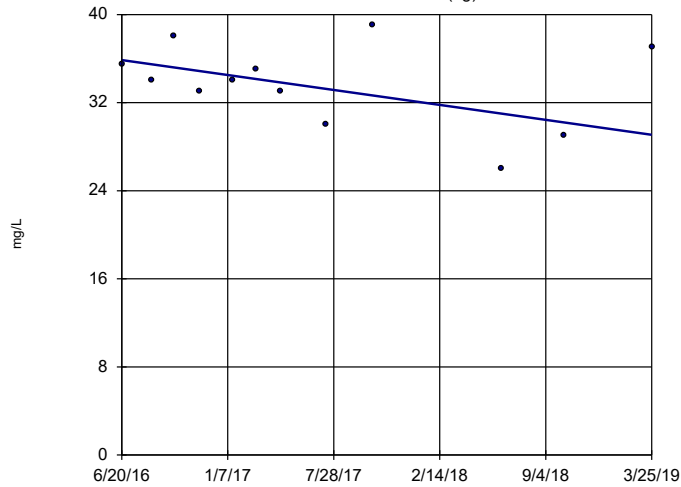
### Sen's Slope Estimator MGWA-10 (bg)



n = 12  
Slope = -1.276  
units per year.  
Mann-Kendall  
statistic = -47  
critical = -35  
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Calcium Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

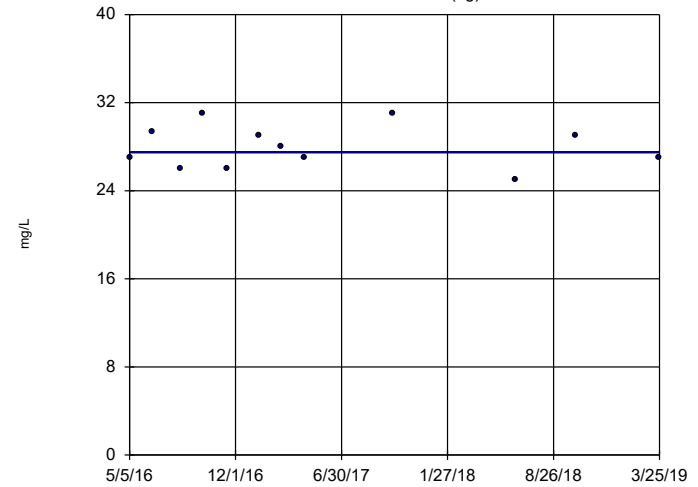
### Sen's Slope Estimator MGWA-11 (bg)



n = 12  
Slope = -2.46  
units per year.  
Mann-Kendall  
statistic = -16  
critical = -35  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Calcium Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator MGWA-5 (bg)

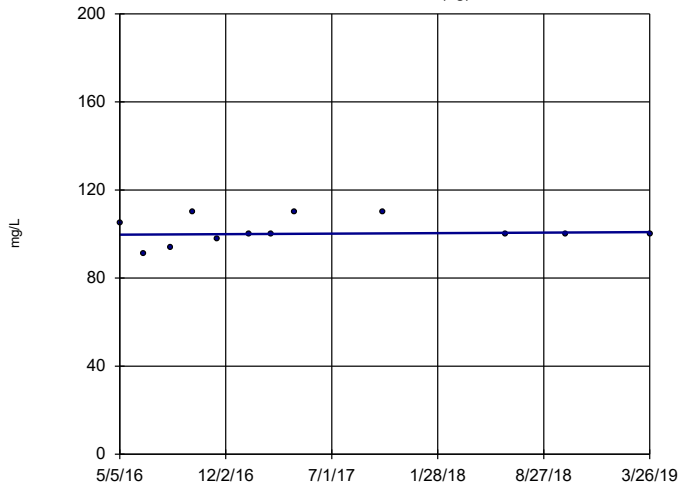


n = 12  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = -4  
critical = -35  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Calcium Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-6 (bg)

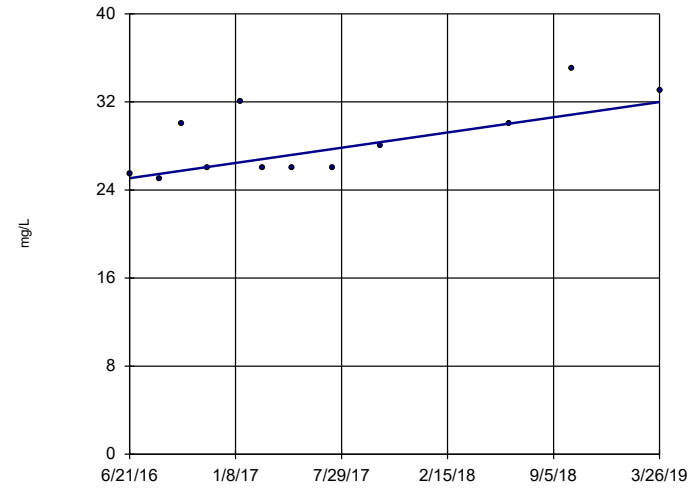


n = 12  
 Slope = 0.4244 units per year.  
 Mann-Kendall statistic = 13  
 critical = 35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Calcium Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-12

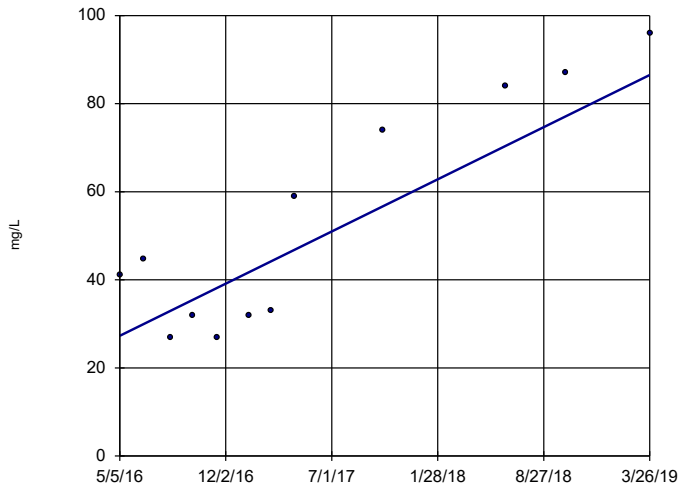


n = 12  
 Slope = 2.505 units per year.  
 Mann-Kendall statistic = 35  
 critical = 35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Calcium Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-8

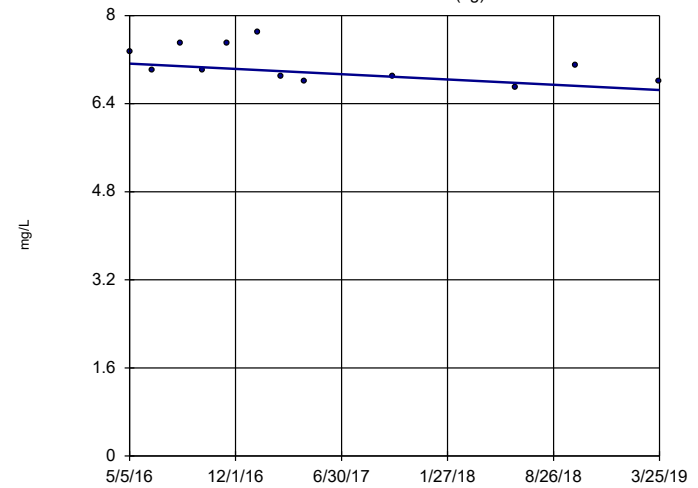


n = 12  
 Slope = 20.49 units per year.  
 Mann-Kendall statistic = 42  
 critical = 35  
 Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Constituent: Calcium Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-10 (bg)

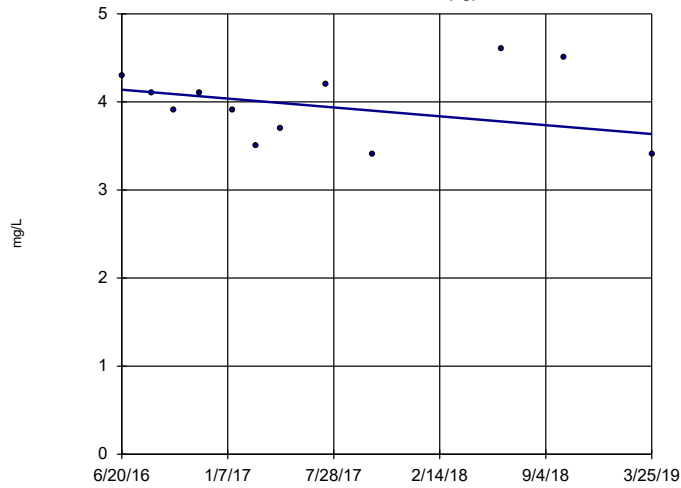


n = 12  
 Slope = -0.1662 units per year.  
 Mann-Kendall statistic = -26  
 critical = -35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Chloride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-11 (bg)

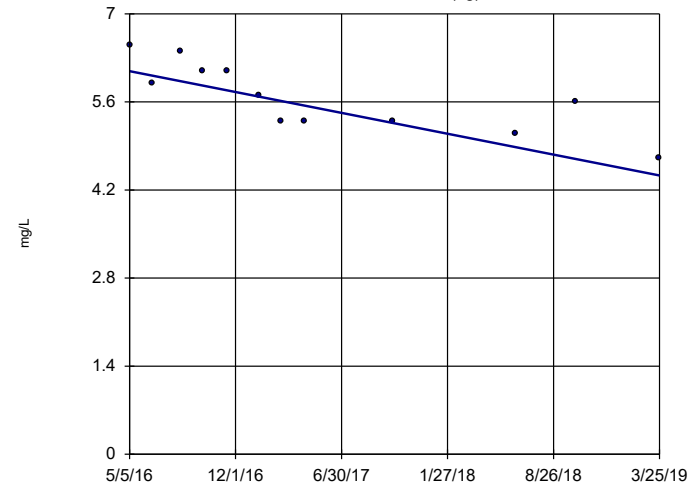


n = 12  
 Slope = -0.1827 units per year.  
 Mann-Kendall statistic = -11  
 critical = -35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Chloride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-5 (bg)

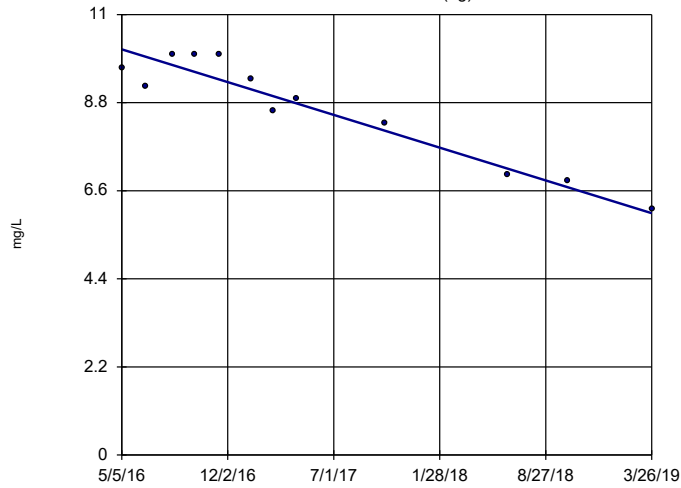


n = 12  
 Slope = -0.5748 units per year.  
 Mann-Kendall statistic = -48  
 critical = -35  
 Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Constituent: Chloride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-6 (bg)

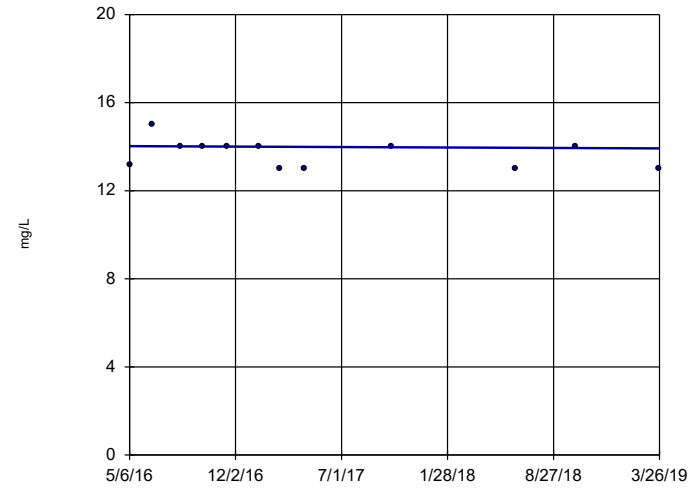


n = 12  
 Slope = -1.416 units per year.  
 Mann-Kendall statistic = -47  
 critical = -35  
 Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Constituent: Chloride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-1

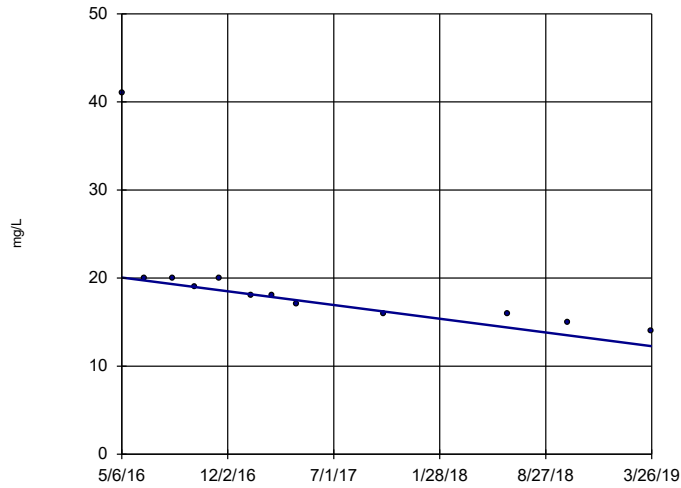


n = 12  
 Slope = -0.03463 units per year.  
 Mann-Kendall statistic = -21  
 critical = -35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Chloride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-2

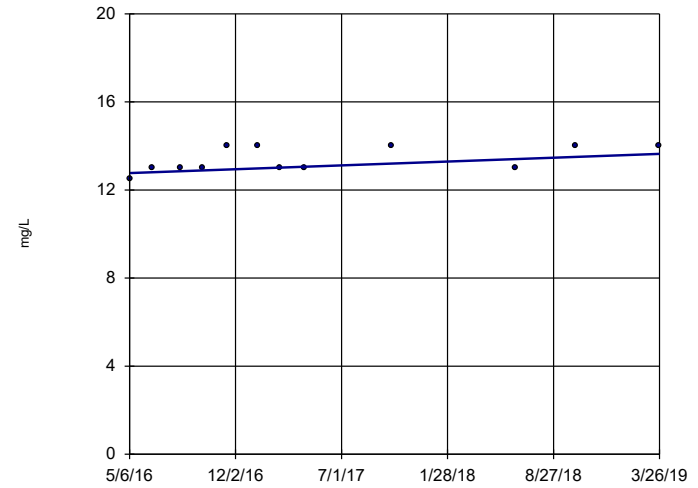


n = 12  
 Slope = -2.694  
 units per year.  
 Mann-Kendall  
 statistic = -59  
 critical = -35  
 Decreasing trend  
 significant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Chloride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-3

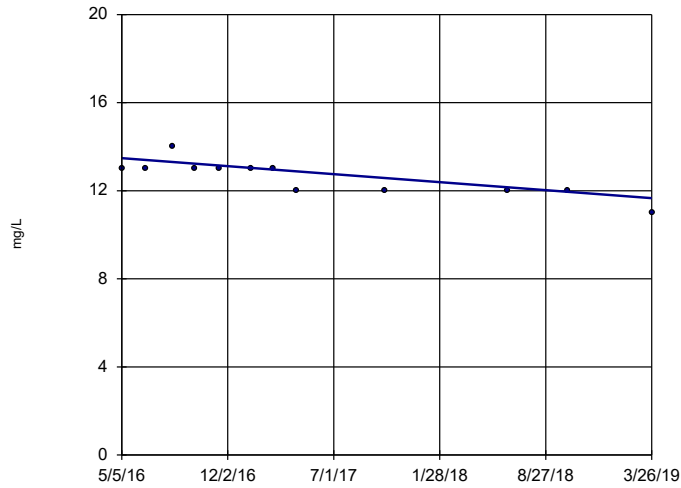


n = 12  
 Slope = 0.2999  
 units per year.  
 Mann-Kendall  
 statistic = 27  
 critical = 35  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Chloride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-7

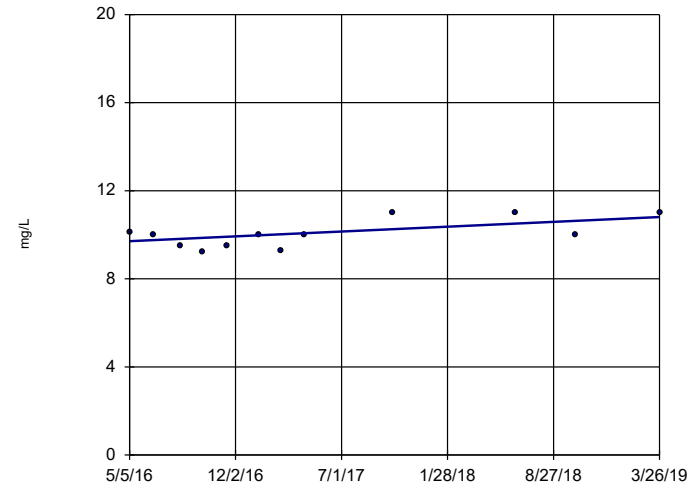


n = 12  
 Slope = -0.6288  
 units per year.  
 Mann-Kendall  
 statistic = -41  
 critical = -35  
 Decreasing trend  
 significant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Chloride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-8



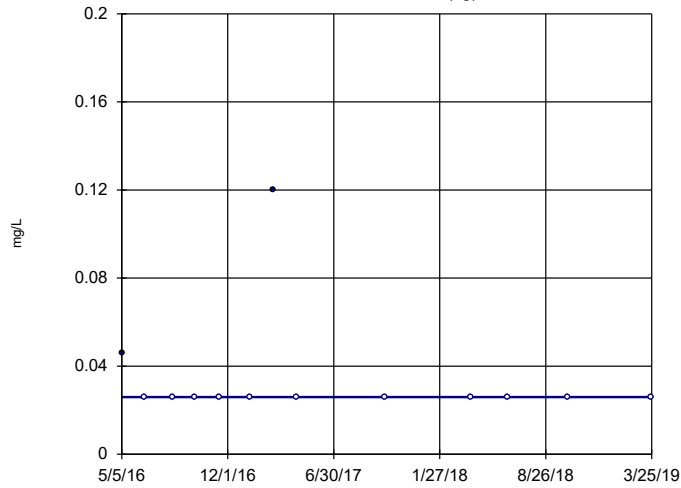
n = 12  
 Slope = 0.3778  
 units per year.  
 Mann-Kendall  
 statistic = 20  
 critical = 35  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Chloride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



Sen's Slope Estimator

MGWA-10 (bg)

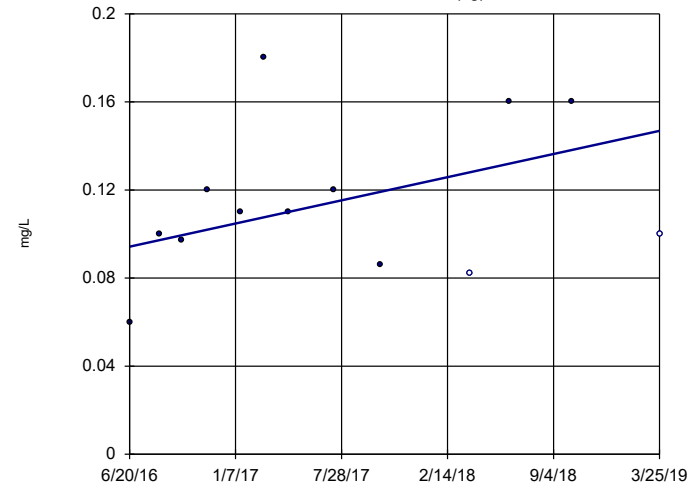


n = 13  
 Slope = 0  
 units per year.  
 Mann-Kendall  
 statistic = -11  
 critical = -39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Fluoride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator

MGWA-11 (bg)

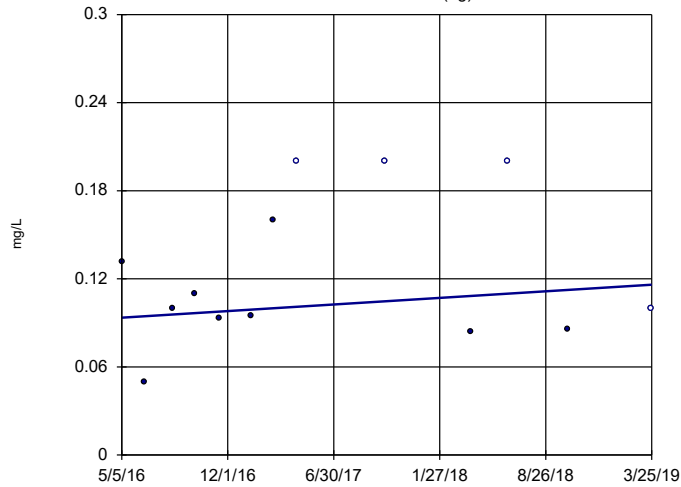


n = 13  
 Slope = 0.01905  
 units per year.  
 Mann-Kendall  
 statistic = 16  
 critical = 39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Fluoride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator

MGWA-5 (bg)

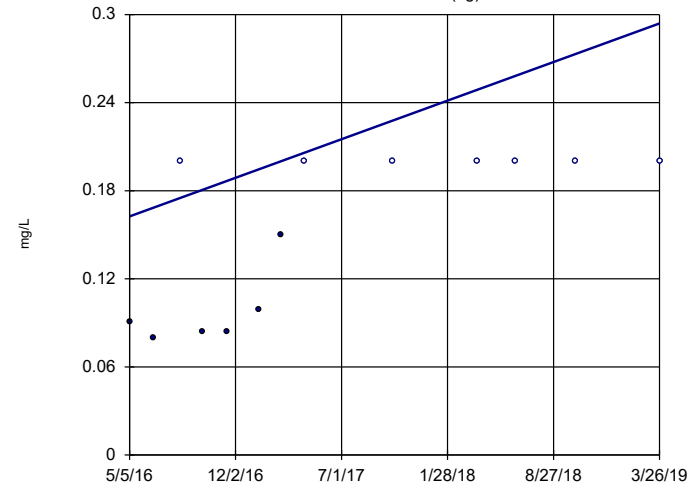


n = 13  
 Slope = 0.007769  
 units per year.  
 Mann-Kendall  
 statistic = 10  
 critical = 39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Fluoride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator

MGWA-6 (bg)

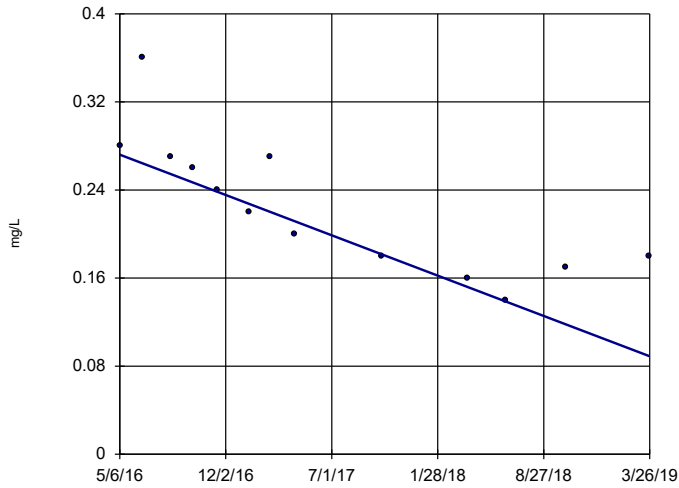


n = 13  
 Slope = 0.0455  
 units per year.  
 Mann-Kendall  
 statistic = 42  
 critical = 39  
 Increasing trend  
 significant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Fluoride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator

MGWC-1

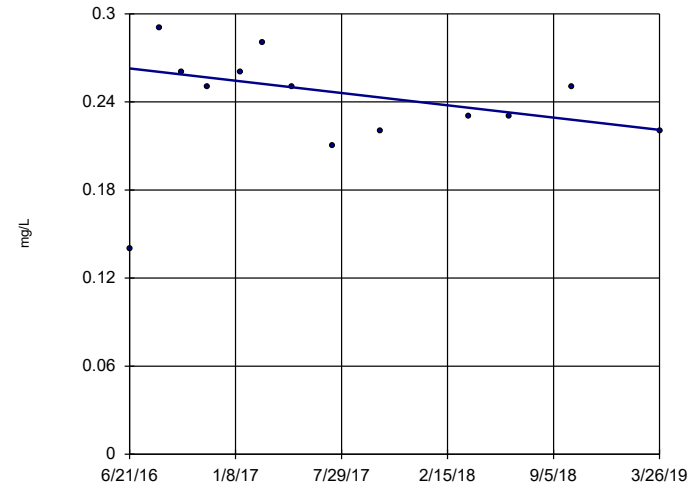


n = 13  
 Slope = -0.06344 units per year.  
 Mann-Kendall statistic = -58  
 critical = -39  
 Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Constituent: Fluoride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator

MGWC-12

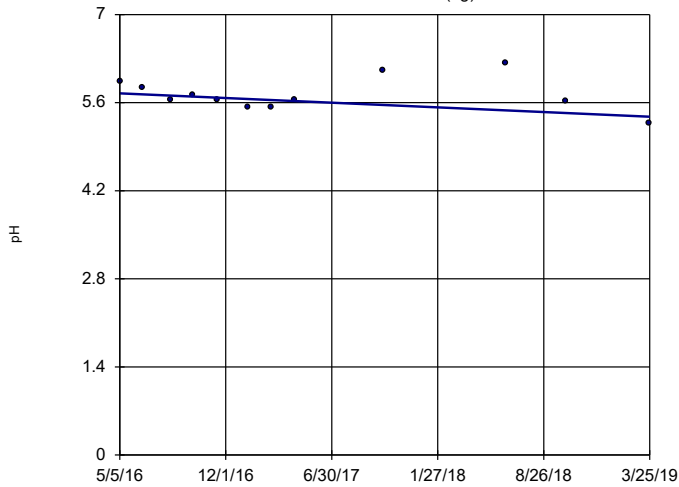


n = 13  
 Slope = -0.01515 units per year.  
 Mann-Kendall statistic = -20  
 critical = -39  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Fluoride Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator

MGWA-10 (bg)

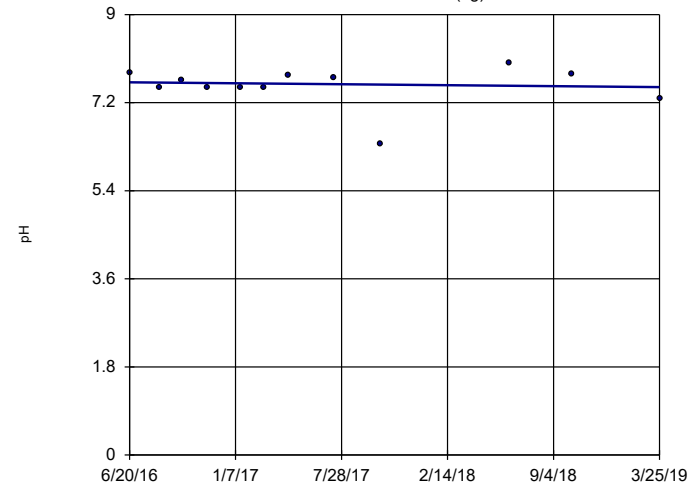


n = 12  
 Slope = -0.1289 units per year.  
 Mann-Kendall statistic = -19  
 critical = -35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: pH Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator

MGWA-11 (bg)

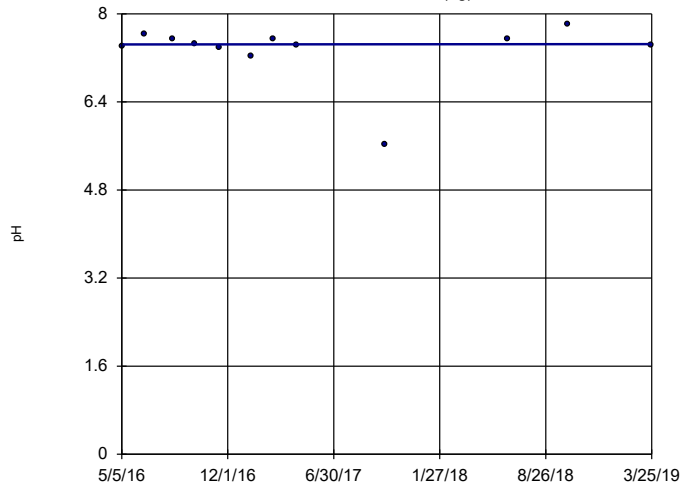


n = 12  
 Slope = -0.03556 units per year.  
 Mann-Kendall statistic = -5  
 critical = -35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: pH Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-5 (bg)

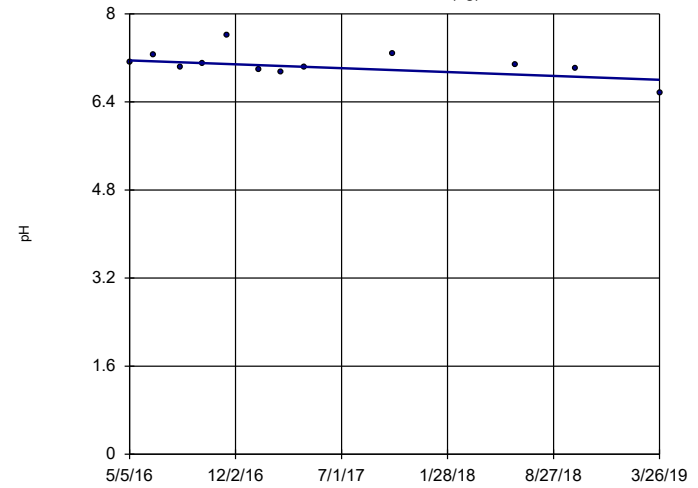


n = 12  
 Slope = 0.002585  
 units per year.  
 Mann-Kendall  
 statistic = 1  
 critical = 35  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: pH Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-6 (bg)

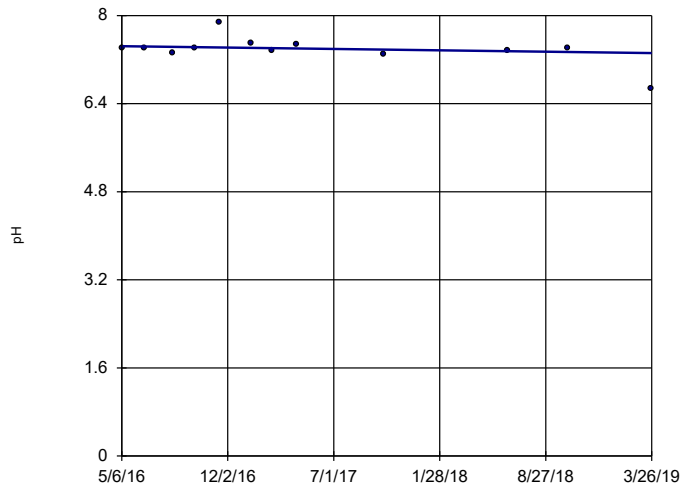


n = 12  
 Slope = -0.1221  
 units per year.  
 Mann-Kendall  
 statistic = -24  
 critical = -35  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: pH Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-2

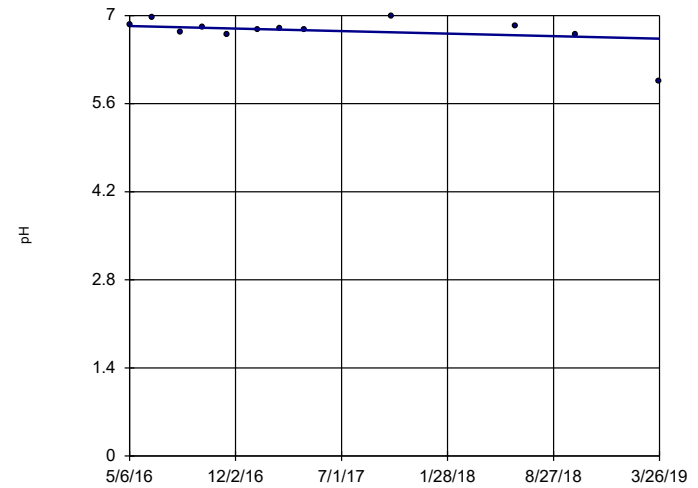


n = 12  
 Slope = -0.04323  
 units per year.  
 Mann-Kendall  
 statistic = -16  
 critical = -35  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: pH Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

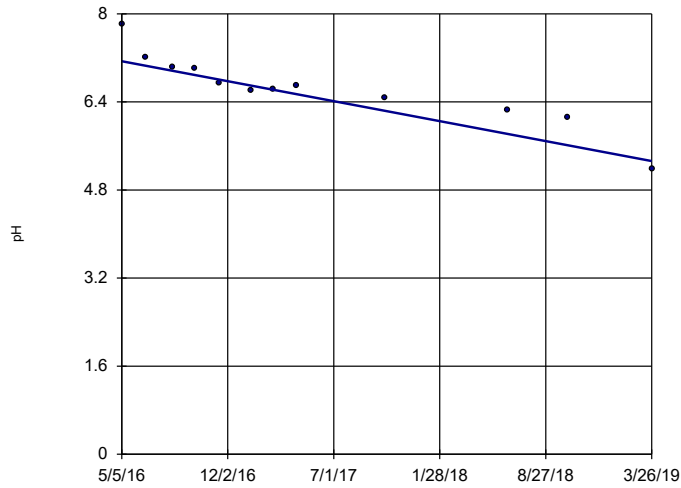
MGWC-3



n = 12  
 Slope = -0.06924  
 units per year.  
 Mann-Kendall  
 statistic = -18  
 critical = -35  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: pH Analysis Run 7/2/2019 3:55 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

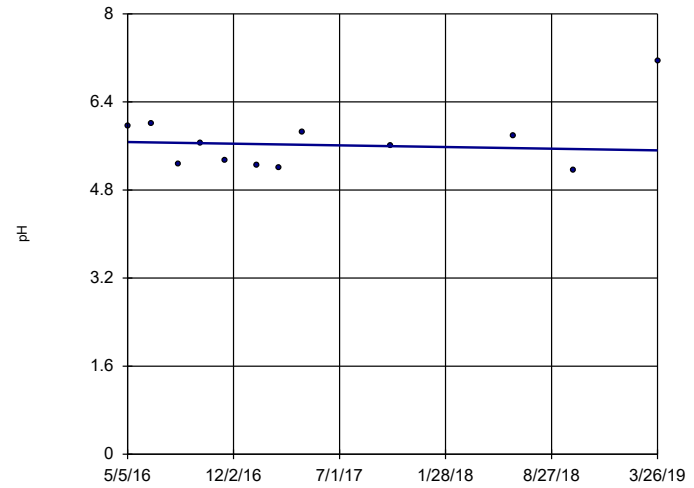
Sen's Slope Estimator  
MGWC-7



n = 12  
Slope = -0.6279  
units per year.  
Mann-Kendall  
statistic = -60  
critical = -35  
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: pH Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

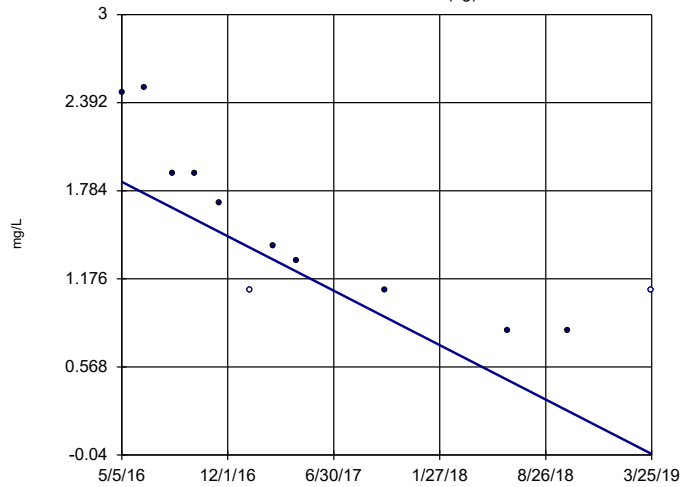
Sen's Slope Estimator  
MGWC-8



n = 12  
Slope = -0.05204  
units per year.  
Mann-Kendall  
statistic = -8  
critical = -35  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: pH Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

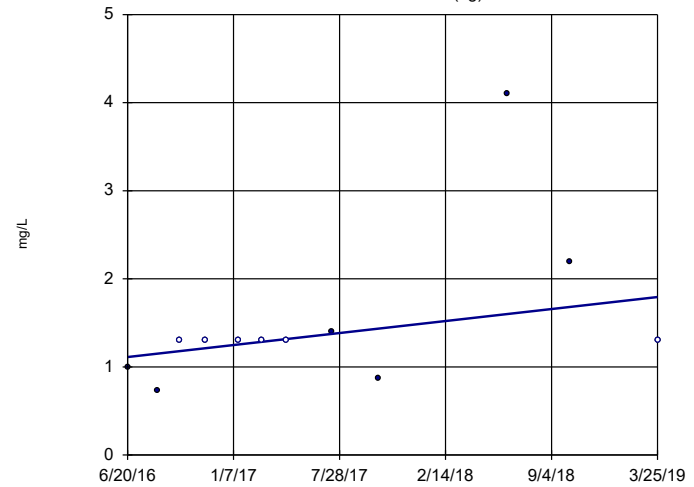
Sen's Slope Estimator  
MGWA-10 (bg)



n = 12  
Slope = -0.6507  
units per year.  
Mann-Kendall  
statistic = -51  
critical = -35  
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Sulfate Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator  
MGWA-11 (bg)

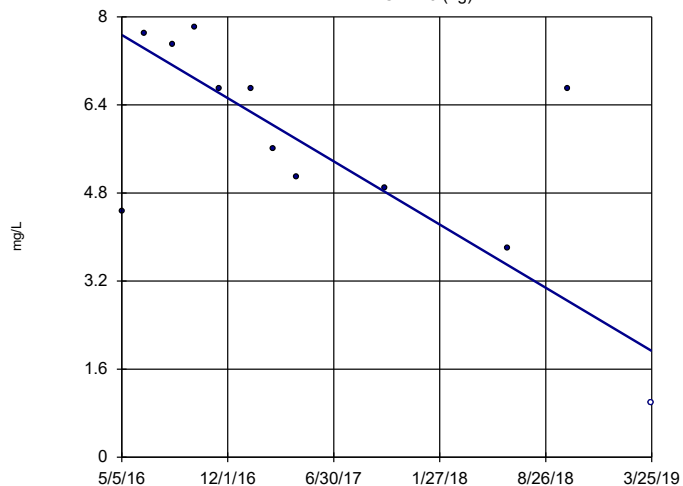


n = 12  
Slope = 0.2465  
units per year.  
Mann-Kendall  
statistic = 27  
critical = 35  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Sulfate Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-5 (bg)

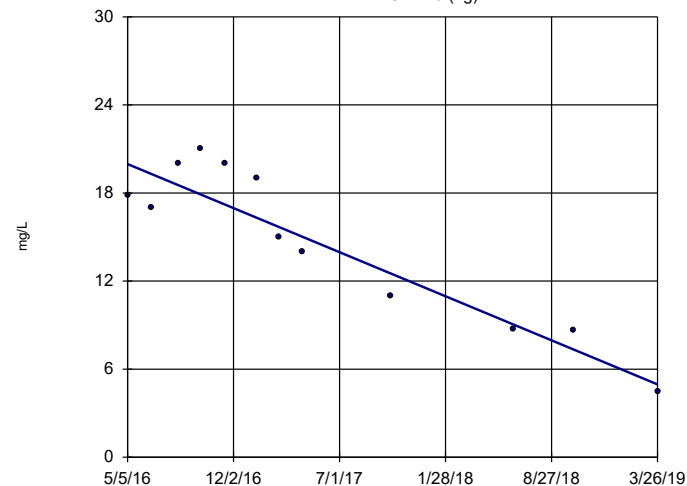


n = 12  
Slope = -1.987  
units per year.  
Mann-Kendall  
statistic = -33  
critical = -35  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Sulfate Analysis Run 7/2/2019 3:55 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-6 (bg)

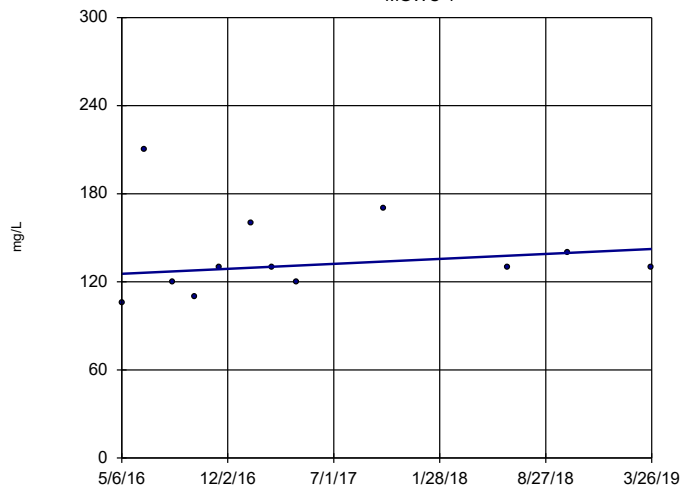


n = 12  
Slope = -5.189  
units per year.  
Mann-Kendall  
statistic = -47  
critical = -35  
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Sulfate Analysis Run 7/2/2019 3:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-1

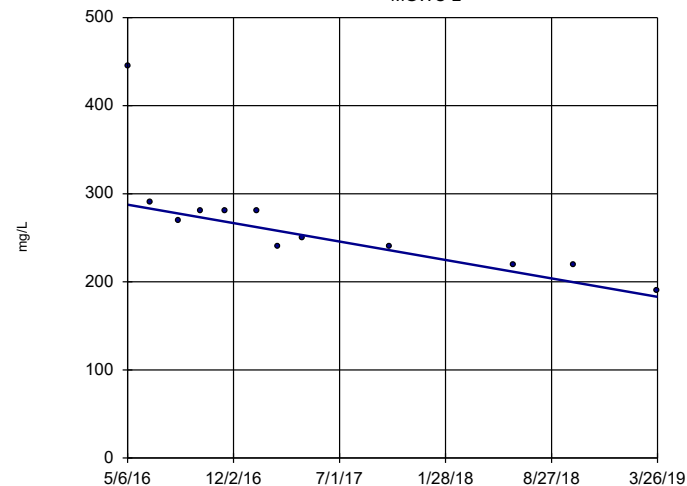


n = 12  
Slope = 5.849  
units per year.  
Mann-Kendall  
statistic = 15  
critical = 35  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Sulfate Analysis Run 7/2/2019 3:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

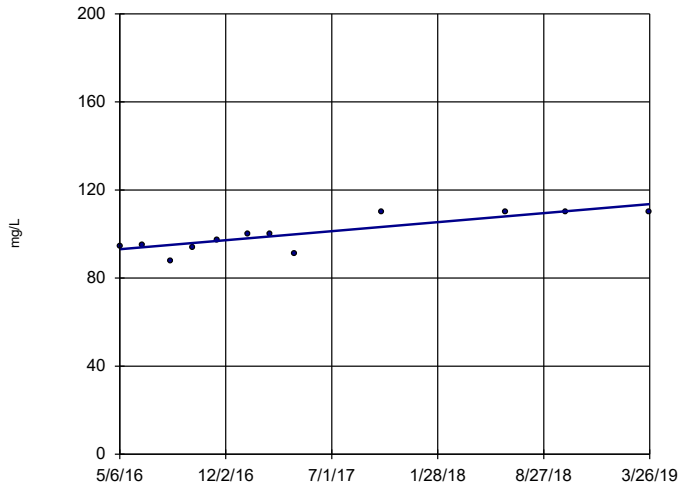
MGWC-2



n = 12  
Slope = -36.19  
units per year.  
Mann-Kendall  
statistic = -53  
critical = -35  
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Sulfate Analysis Run 7/2/2019 3:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

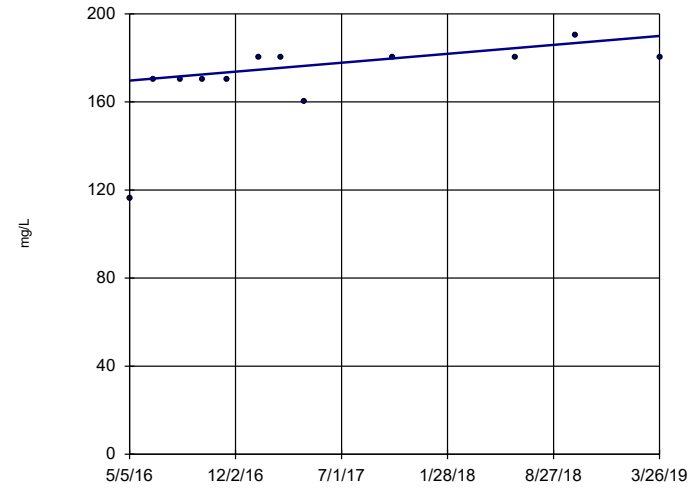
Sen's Slope Estimator  
MGWC-3



n = 12  
Slope = 7.093  
units per year.  
Mann-Kendall  
statistic = 39  
critical = 35  
Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Sulfate Analysis Run 7/2/2019 3:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

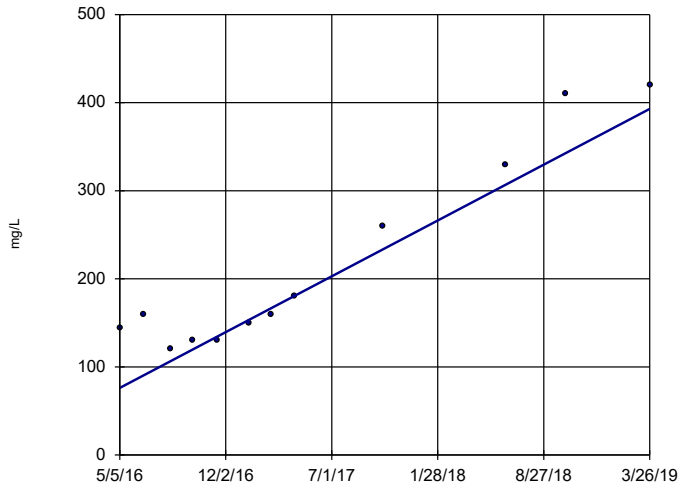
Sen's Slope Estimator  
MGWC-7



n = 12  
Slope = 7.013  
units per year.  
Mann-Kendall  
statistic = 36  
critical = 35  
Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Sulfate Analysis Run 7/2/2019 3:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

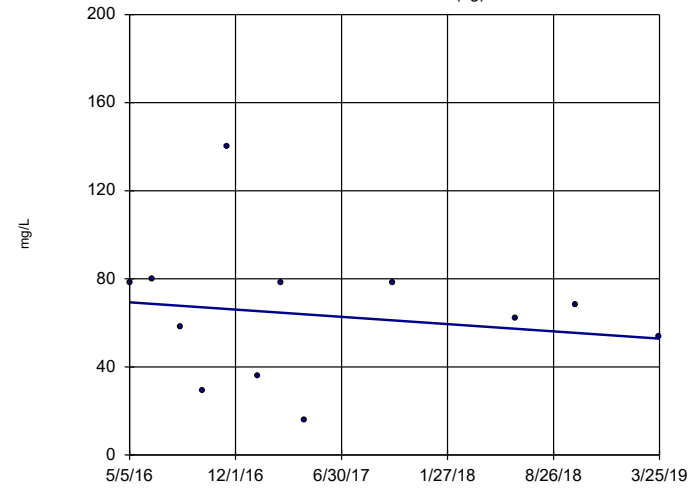
Sen's Slope Estimator  
MGWC-8



n = 12  
Slope = 109.6  
units per year.  
Mann-Kendall  
statistic = 50  
critical = 35  
Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Sulfate Analysis Run 7/2/2019 3:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator  
MGWA-10 (bg)

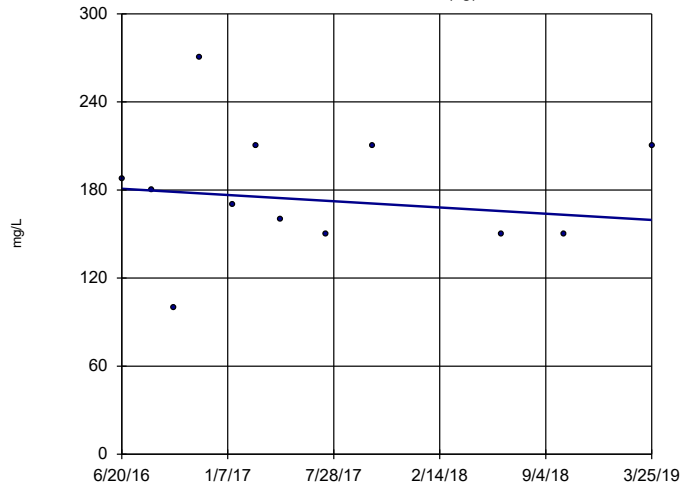


n = 12  
Slope = -5.718  
units per year.  
Mann-Kendall  
statistic = -13  
critical = -35  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: TDS Analysis Run 7/2/2019 3:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-11 (bg)

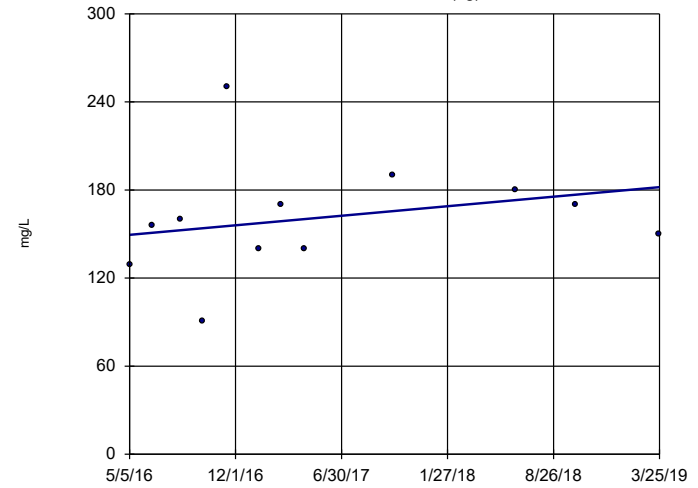


n = 12  
 Slope = -7.731 units per year.  
 Mann-Kendall statistic = -8  
 critical = -35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: TDS Analysis Run 7/2/2019 3:56 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-5 (bg)

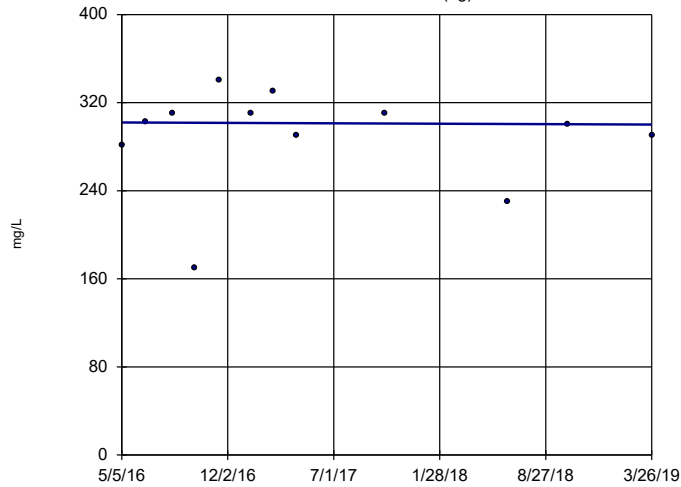


n = 12  
 Slope = 11.25 units per year.  
 Mann-Kendall statistic = 16  
 critical = 35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: TDS Analysis Run 7/2/2019 3:56 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-6 (bg)

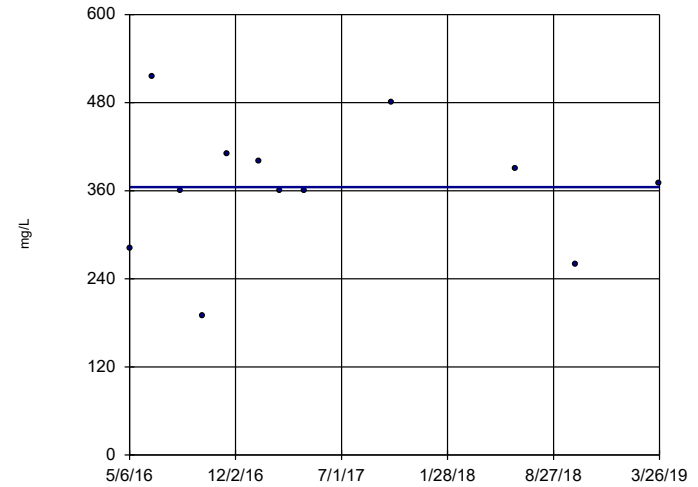


n = 12  
 Slope = -0.651 units per year.  
 Mann-Kendall statistic = -4  
 critical = -35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: TDS Analysis Run 7/2/2019 3:56 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-1



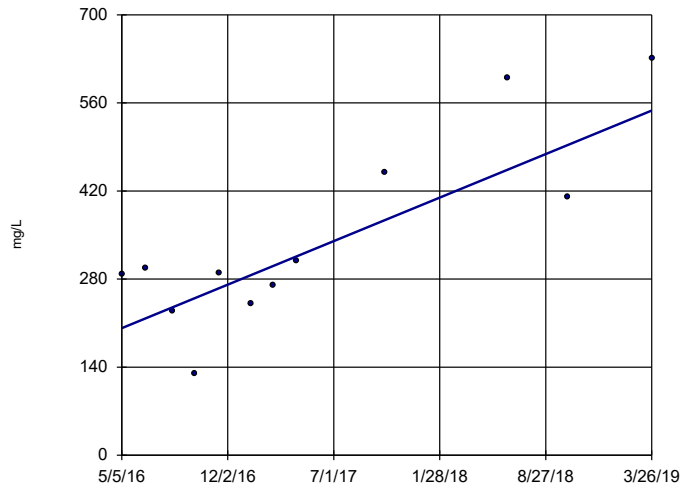
n = 12  
 Slope = 0 units per year.  
 Mann-Kendall statistic = -1  
 critical = -35  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: TDS Analysis Run 7/2/2019 3:56 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



### Sen's Slope Estimator

MGWC-8



n = 12

Slope = 119.6  
units per year.

Mann-Kendall  
statistic = 38  
critical = 35

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: TDS Analysis Run 7/2/2019 3:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

# Tolerance Limit - Upgradient Wells

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/29/2019, 2:07 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	n/a	0.0352	n/a	n/a	n/a	48	41.67	n/a	0.08526	NP Inter(normal...
Barium (mg/L)	n/a	0.12	n/a	n/a	n/a	48	0	n/a	0.08526	NP Inter(normal...
Cadmium (mg/L)	n/a	0.00034	n/a	n/a	n/a	48	100	n/a	0.08526	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.00065	n/a	n/a	n/a	48	79.17	n/a	0.08526	NP Inter(NDs)
Combined Radium 226 + 228 (pCi/L)	n/a	1.143	n/a	n/a	n/a	48	10.42	No	0.05	Inter
Fluoride (mg/L)	n/a	0.2	n/a	n/a	n/a	52	46.15	n/a	0.06944	NP Inter(normal...
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	48	29.17	n/a	0.08526	NP Inter(normal...

# Confidence Interval - Significant Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/3/2019, 12:04 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
<b>Cobalt (mg/L)</b>	<b>MGWC-7</b>	<b>0.01106</b>	<b>0.00794</b>	<b>0.006</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>x^2</b>	<b>0.01</b>	<b>Param.</b>
<b>Lithium (mg/L)</b>	<b>MGWC-7</b>	<b>0.14</b>	<b>0.11</b>	<b>0.04</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>

# Confidence Interval - All Results

Plant McIntosh    Client: GEI    Data: McIntosh Ash Pond Export    Printed 7/3/2019, 12:04 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	MGWA-10 (bg)	0.00095	0.00036	0.035	No	12	75	No	0.01	NP (normality)
Arsenic (mg/L)	MGWA-11 (bg)	0.002433	0.0009253	0.035	No	12	8.333	No	0.01	Param.
Arsenic (mg/L)	MGWA-5 (bg)	0.00062	0.00014	0.035	No	12	83.33	No	0.01	NP (NDs)
Arsenic (mg/L)	MGWA-6 (bg)	0.02992	0.01489	0.035	No	12	0	No	0.01	Param.
Arsenic (mg/L)	MGWC-1	0.003337	0.002243	0.035	No	12	0	sqrt(x)	0.01	Param.
Arsenic (mg/L)	MGWC-12	0.001551	0.0007234	0.035	No	12	16.67	No	0.01	Param.
Arsenic (mg/L)	MGWC-2	0.00065	0.00046	0.035	No	12	83.33	No	0.01	NP (NDs)
Arsenic (mg/L)	MGWC-3	0.001717	0.001289	0.035	No	12	8.333	x^2	0.01	Param.
Arsenic (mg/L)	MGWC-7	0.0012	0.00046	0.035	No	12	41.67	No	0.01	NP (normality)
Arsenic (mg/L)	MGWC-8	0.00059	0.00046	0.035	No	12	91.67	No	0.01	NP (NDs)
Barium (mg/L)	MGWA-10 (bg)	0.03098	0.02312	2	No	12	0	No	0.01	Param.
Barium (mg/L)	MGWA-11 (bg)	0.1123	0.08959	2	No	12	0	x^3	0.01	Param.
Barium (mg/L)	MGWA-5 (bg)	0.03712	0.03263	2	No	12	0	No	0.01	Param.
Barium (mg/L)	MGWA-6 (bg)	0.05413	0.04002	2	No	12	0	No	0.01	Param.
Barium (mg/L)	MGWC-1	0.12	0.094	2	No	12	0	No	0.01	NP (normality)
Barium (mg/L)	MGWC-12	0.05965	0.04316	2	No	12	0	No	0.01	Param.
Barium (mg/L)	MGWC-2	0.05761	0.04952	2	No	12	0	No	0.01	Param.
Barium (mg/L)	MGWC-3	0.1534	0.1323	2	No	12	0	sqrt(x)	0.01	Param.
Barium (mg/L)	MGWC-7	0.0152	0.0098	2	No	12	0	No	0.01	NP (normality)
Barium (mg/L)	MGWC-8	0.03873	0.0336	2	No	12	0	No	0.01	Param.
Cadmium (mg/L)	MGWA-10 (bg)	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-11 (bg)	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-5 (bg)	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-6 (bg)	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-1	0.0005	0.000126	0.005	No	12	83.33	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-12	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-2	0.003876	0.001197	0.005	No	12	8.333	sqrt(x)	0.01	Param.
Cadmium (mg/L)	MGWC-3	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-7	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-8	0.000784	0.0003	0.005	No	12	50	No	0.01	NP (normality)
Cobalt (mg/L)	MGWA-10 (bg)	0.0004	0.00018	0.006	No	12	91.67	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-11 (bg)	0.0004	0.000039	0.006	No	12	91.67	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-5 (bg)	0.0004	0.000012	0.006	No	12	91.67	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-6 (bg)	0.0004944	0.0002995	0.006	No	12	41.67	No	0.01	Param.
Cobalt (mg/L)	MGWC-1	0.00058	0.0004	0.006	No	12	66.67	No	0.01	NP (normality)
Cobalt (mg/L)	MGWC-12	0.0004	0.0004	0.006	No	12	100	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWC-2	0.003635	0.003117	0.006	No	12	0	No	0.01	Param.
Cobalt (mg/L)	MGWC-3	0.0006235	0.0004401	0.006	No	12	16.67	No	0.01	Param.
<b>Cobalt (mg/L)</b>	<b>MGWC-7</b>	<b>0.01106</b>	<b>0.00794</b>	<b>0.006</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>x^2</b>	<b>0.01</b>	<b>Param.</b>
Cobalt (mg/L)	MGWC-8	0.018	0.00359	0.006	No	12	0	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MGWA-10 (bg)	0.9283	0.4967	5	No	12	8.333	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWA-11 (bg)	0.7924	0.3114	5	No	12	16.67	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWA-5 (bg)	0.5777	0.2285	5	No	12	8.333	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWA-6 (bg)	0.777	0.4066	5	No	12	8.333	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-1	1.95	1.07	5	No	12	0	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MGWC-12	0.7176	0.3199	5	No	12	8.333	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-2	0.694	0.412	5	No	12	25	No	0.01	NP (Cohens/xfrm)
Combined Radium 226 + 228 (pCi/L)	MGWC-3	1.711	1.353	5	No	12	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-7	1.298	0.7825	5	No	12	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-8	2.086	1.279	5	No	12	0	No	0.01	Param.

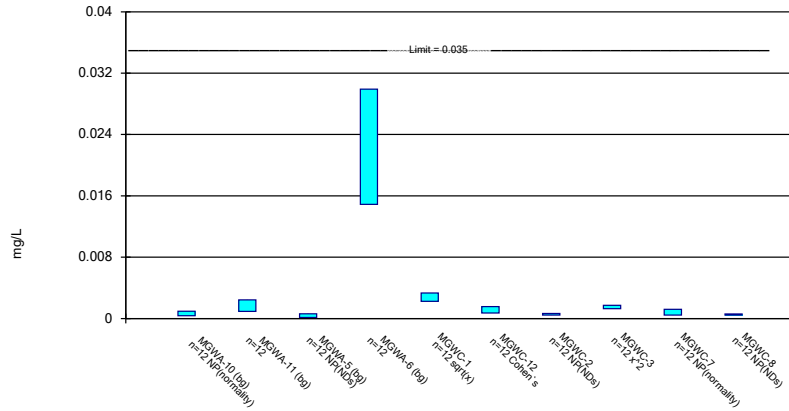
## Confidence Interval - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/3/2019, 12:04 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Fluoride (mg/L)	MGWA-10 (bg)	0.046	0.026	4	No	13	84.62	No	0.01	NP (NDs)
Fluoride (mg/L)	MGWA-11 (bg)	0.1394	0.08388	4	No	13	15.38	No	0.01	Param.
Fluoride (mg/L)	MGWA-5 (bg)	0.1146	0.05279	4	No	13	30.77	No	0.01	Param.
Fluoride (mg/L)	MGWA-6 (bg)	0.15	0.026	4	No	13	53.85	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-1	0.2714	0.1794	4	No	13	0	No	0.01	Param.
Fluoride (mg/L)	MGWC-12	0.2657	0.2097	4	No	13	0	No	0.01	Param.
Fluoride (mg/L)	MGWC-2	0.15	0.026	4	No	13	61.54	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-3	0.2	0.026	4	No	13	53.85	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-7	0.3879	0.2404	4	No	13	7.692	No	0.01	Param.
Fluoride (mg/L)	MGWC-8	0.1974	0.1036	4	No	13	30.77	No	0.01	Param.
Lithium (mg/L)	MGWA-10 (bg)	0.008358	0.005822	0.04	No	12	8.333	x^2	0.01	Param.
Lithium (mg/L)	MGWA-11 (bg)	0.02293	0.01424	0.04	No	12	0	No	0.01	Param.
Lithium (mg/L)	MGWA-5 (bg)	0.01086	0.005891	0.04	No	12	8.333	No	0.01	Param.
Lithium (mg/L)	MGWA-6 (bg)	0.0011	0.0011	0.04	No	12	100	No	0.01	NP (NDs)
Lithium (mg/L)	MGWC-1	0.01342	0.01018	0.04	No	12	0	No	0.01	Param.
Lithium (mg/L)	MGWC-12	0.02202	0.01324	0.04	No	12	0	sqrt(x)	0.01	Param.
Lithium (mg/L)	MGWC-2	0.006255	0.003762	0.04	No	12	8.333	No	0.01	Param.
Lithium (mg/L)	MGWC-3	0.01383	0.01044	0.04	No	12	0	No	0.01	Param.
<b>Lithium (mg/L)</b>	<b>MGWC-7</b>	<b>0.14</b>	<b>0.11</b>	<b>0.04</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>
Lithium (mg/L)	MGWC-8	0.04168	0.02482	0.04	No	12	0	No	0.01	Param.

### Parametric and Non-Parametric (NP) Confidence Interval

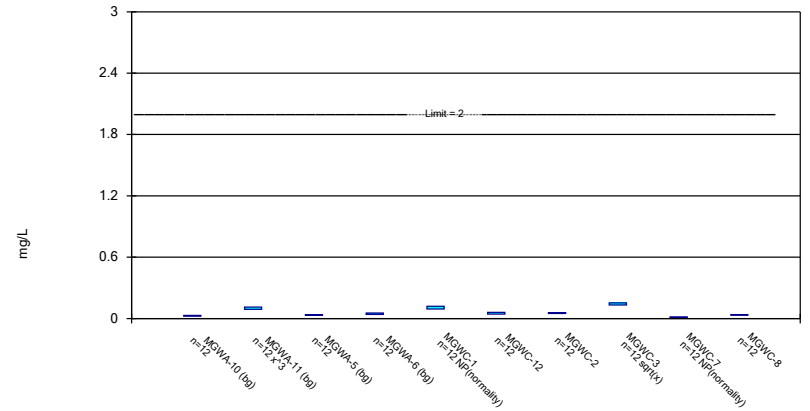
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 7/3/2019 12:01 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

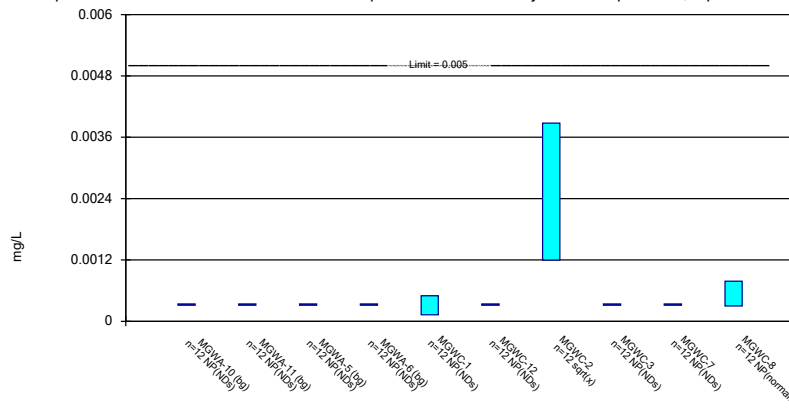
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 7/3/2019 12:01 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

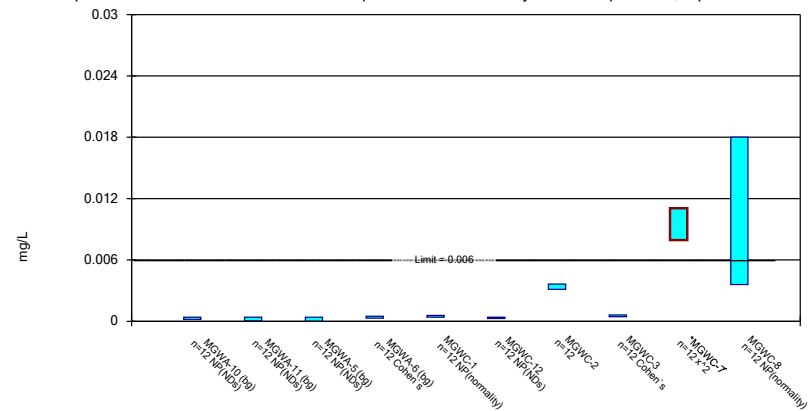
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 7/3/2019 12:01 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

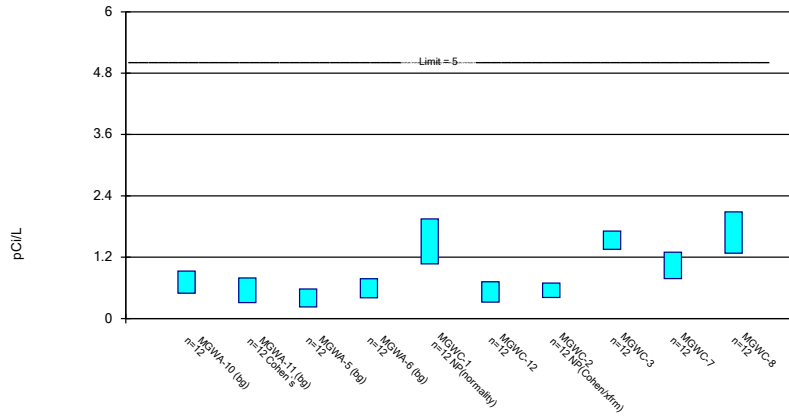
Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 7/3/2019 12:01 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

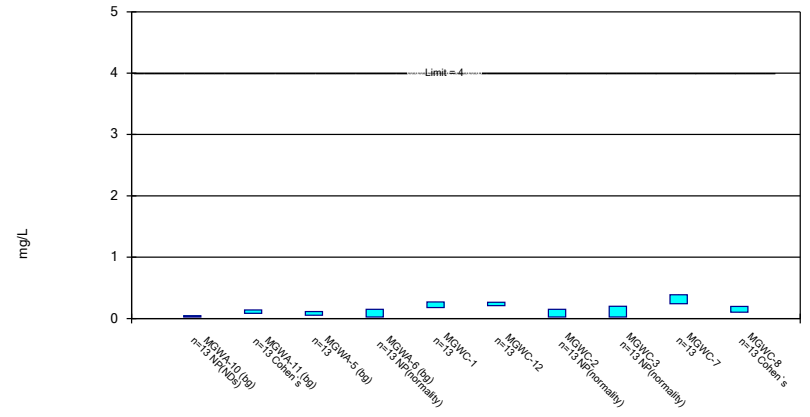
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 7/3/2019 12:01 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

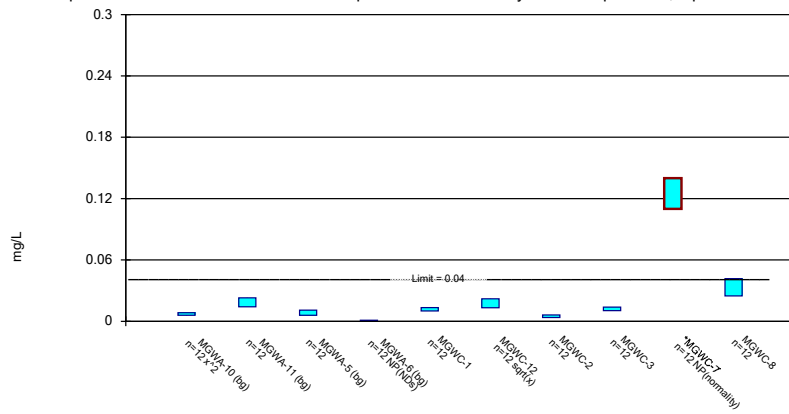
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 7/3/2019 12:01 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 7/3/2019 12:01 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



## **Appendix B2**

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### **Sanitas Outputs for Appendix III and IV Parameters – September 2019**

# Interwell Prediction Limit - Significant Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 11/7/2019, 12:20 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)	MGWC-1	0.18	n/a	9/10/2019	1.5	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-2	0.18	n/a	9/10/2019	2.4	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-3	0.18	n/a	9/10/2019	1.5	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-7	0.18	n/a	9/10/2019	1.5	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-8	0.18	n/a	9/10/2019	4.8	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
Chloride (mg/L)	MGWC-1	9.927	n/a	9/10/2019	13	Yes	54	0	No	0.0009403	Param 1 of 2
Chloride (mg/L)	MGWC-2	9.927	n/a	9/10/2019	13	Yes	54	0	No	0.0009403	Param 1 of 2
Chloride (mg/L)	MGWC-3	9.927	n/a	9/10/2019	13	Yes	54	0	No	0.0009403	Param 1 of 2
Chloride (mg/L)	MGWC-8	9.927	n/a	9/10/2019	10	Yes	54	0	No	0.0009403	Param 1 of 2
Fluoride (mg/L)	MGWC-12	0.18	n/a	9/10/2019	0.2	Yes	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
Sulfate (mg/L)	MGWC-1	25.8	n/a	9/10/2019	140	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2
Sulfate (mg/L)	MGWC-2	25.8	n/a	9/10/2019	180	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2
Sulfate (mg/L)	MGWC-3	25.8	n/a	9/10/2019	110	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2
Sulfate (mg/L)	MGWC-7	25.8	n/a	9/10/2019	180	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2
Sulfate (mg/L)	MGWC-8	25.8	n/a	9/10/2019	420	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2

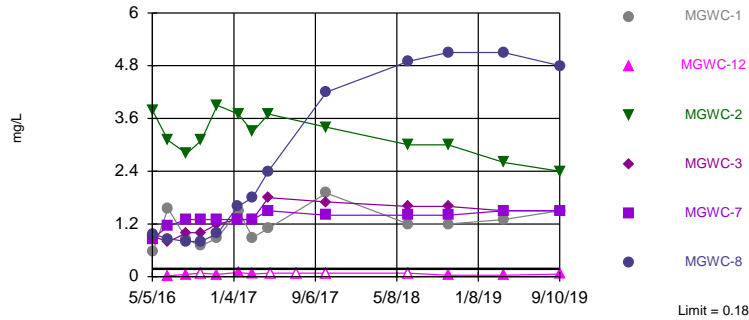
# Interwell Prediction Limit - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 11/7/2019, 12:20 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>
<b>Boron (mg/L)</b>	<b>MGWC-1</b>	<b>0.18</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>1.5</b>	<b>Yes</b>	<b>54</b>	<b>53.7</b>	<b>n/a</b>	<b>0.0006486</b>	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-12	0.18	n/a	9/10/2019	0.06	No	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
<b>Boron (mg/L)</b>	<b>MGWC-2</b>	<b>0.18</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>2.4</b>	<b>Yes</b>	<b>54</b>	<b>53.7</b>	<b>n/a</b>	<b>0.0006486</b>	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-3	0.18	n/a	9/10/2019	1.5	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
<b>Boron (mg/L)</b>	<b>MGWC-7</b>	<b>0.18</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>1.5</b>	<b>Yes</b>	<b>54</b>	<b>53.7</b>	<b>n/a</b>	<b>0.0006486</b>	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-8	0.18	n/a	9/10/2019	4.8	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-1</b>	<b>9.927</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>13</b>	<b>Yes</b>	<b>54</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
Chloride (mg/L)	MGWC-12	9.927	n/a	9/10/2019	4.1	No	54	0	No	0.0009403	Param 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-2</b>	<b>9.927</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>13</b>	<b>Yes</b>	<b>54</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
Chloride (mg/L)	MGWC-3	9.927	n/a	9/10/2019	13	Yes	54	0	No	0.0009403	Param 1 of 2
Chloride (mg/L)	MGWC-7	9.927	n/a	9/10/2019	9.9	No	54	0	No	0.0009403	Param 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-8</b>	<b>9.927</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>10</b>	<b>Yes</b>	<b>54</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
Fluoride (mg/L)	MGWC-1	0.18	n/a	9/10/2019	0.098	No	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
<b>Fluoride (mg/L)</b>	<b>MGWC-12</b>	<b>0.18</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>0.2</b>	<b>Yes</b>	<b>58</b>	<b>36.21</b>	<b>n/a</b>	<b>0.0005623</b>	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-2	0.18	n/a	9/10/2019	0.07	No	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-3	0.18	n/a	9/10/2019	0.073	No	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-7	0.18	n/a	9/10/2019	0.15	No	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-8	0.18	n/a	9/10/2019	0.083	No	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-1</b>	<b>25.8</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>140</b>	<b>Yes</b>	<b>54</b>	<b>14.81</b>	<b>ln(x)</b>	<b>0.0009403</b>	Param 1 of 2
Sulfate (mg/L)	MGWC-12	25.8	n/a	9/10/2019	2.5	No	54	14.81	ln(x)	0.0009403	Param 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-2</b>	<b>25.8</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>180</b>	<b>Yes</b>	<b>54</b>	<b>14.81</b>	<b>ln(x)</b>	<b>0.0009403</b>	Param 1 of 2
Sulfate (mg/L)	MGWC-3	25.8	n/a	9/10/2019	110	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-7</b>	<b>25.8</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>180</b>	<b>Yes</b>	<b>54</b>	<b>14.81</b>	<b>ln(x)</b>	<b>0.0009403</b>	Param 1 of 2
Sulfate (mg/L)	MGWC-8	25.8	n/a	9/10/2019	420	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2

Exceeds Limit: MGWC-1, MGWC-2, MGWC-3, MGWC-7, MGWC-8

Prediction Limit  
Interwell Non-parametric

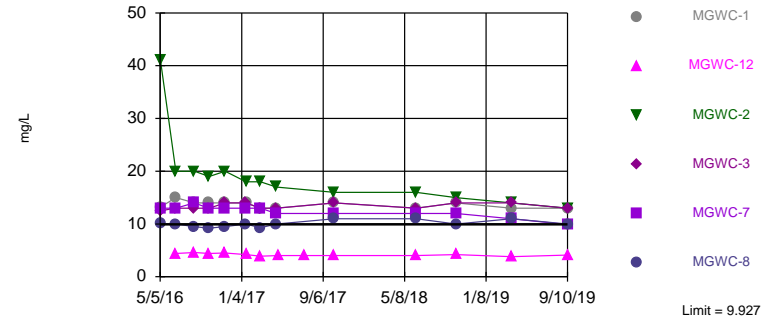


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 54 background values. 53.7% NDs. Annual per-constituent alpha = 0.01033. Individual comparison alpha = 0.0006486 (1 of 2). Comparing 6 points to limit. Assumes 2 future values.

Constituent: Boron Analysis Run 11/7/2019 12:14 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit: MGWC-1, MGWC-2, MGWC-3, MGWC-8

Prediction Limit  
Interwell Parametric

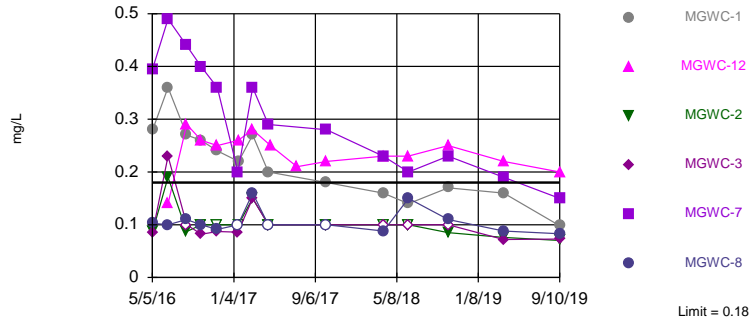


Background Data Summary: Mean=6.201, Std. Dev.=1.889, n=54. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9646, critical = 0.939. Kappa = 1.972 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 6 points to limit. Assumes 2 future values.

Constituent: Chloride Analysis Run 11/7/2019 12:14 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit: MGWC-12

Prediction Limit  
Interwell Non-parametric

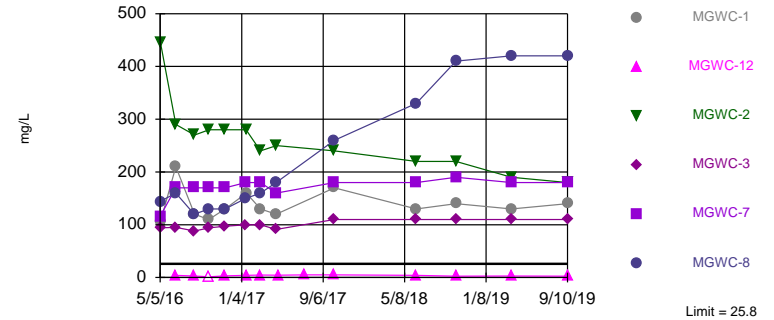


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 58 background values. 36.21% NDs. Annual per-constituent alpha = 0.008959. Individual comparison alpha = 0.0005623 (1 of 2). Comparing 6 points to limit. Assumes 2 future values.

Constituent: Fluoride Analysis Run 11/7/2019 12:14 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit: MGWC-1, MGWC-2, MGWC-3, MGWC-7, MGWC-8

Prediction Limit  
Interwell Parametric



Background Data Summary (based on natural log transformation): Mean=1.196, Std. Dev.=1.042, n=54, 14.81% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9484, critical = 0.939. Kappa = 1.972 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 6 points to limit. Assumes 2 future values.

Constituent: Sulfate Analysis Run 11/7/2019 12:14 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

# Intrawell Prediction Limit - Significant Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 10/31/2019, 2:57 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>
Calcium (mg/L)	MGWC-12	32	n/a	9/10/2019	33	Yes	8	0	n/a	0.02144	NP (normality) 1 of 2
Calcium (mg/L)	MGWC-8	69.75	n/a	9/10/2019	97	Yes	8	0	No	0.0009403	Param 1 of 2
pH (pH)	MGWC-2	7.87	7.33	9/10/2019	7.26	Yes	8	0	n/a	0.04288	NP (normality) 1 of 2
TDS (mg/L)	MGWC-8	432.2	n/a	9/10/2019	660	Yes	8	0	No	0.0009403	Param 1 of 2

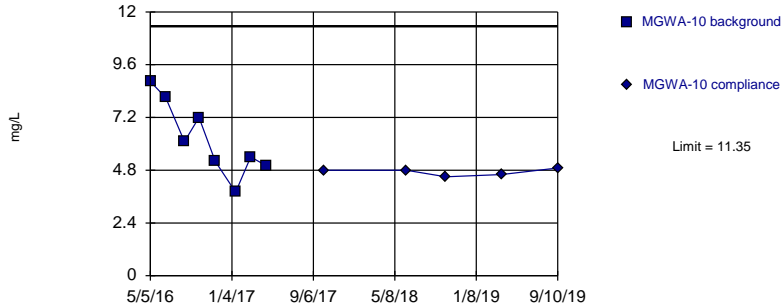
# Intrawell Prediction Limit - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 10/31/2019, 2:57 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Calcium (mg/L)	MGWA-10	11.35	n/a	9/10/2019	4.9	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWA-11	41.01	n/a	9/10/2019	36	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWA-5	33.26	n/a	9/10/2019	27	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWA-6	121.8	n/a	9/10/2019	110	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWC-1	134.5	n/a	9/10/2019	110	No	8	0	No	0.0009403	Param 1 of 2
<b>Calcium (mg/L)</b>	<b>MGWC-12</b>	<b>32</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>33</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>n/a</b>	<b>0.02144</b>	NP (normality) 1 of 2
Calcium (mg/L)	MGWC-2	148.4	n/a	9/10/2019	110	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWC-3	127.4	n/a	9/10/2019	99	No	8	0	No	0.0009403	Param 1 of 2
Calcium (mg/L)	MGWC-7	63.9	n/a	9/10/2019	53	No	8	0	No	0.0009403	Param 1 of 2
<b>Calcium (mg/L)</b>	<b>MGWC-8</b>	<b>69.75</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>97</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
pH (pH)	MGWA-10	6.122	5.251	9/10/2019	5.97	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWA-11	8.011	7.239	9/10/2019	7.54	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWA-5	7.822	7.083	9/10/2019	7.41	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWA-6	7.767	6.501	9/10/2019	6.99	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWC-1	7.24	6.25	9/10/2019	7.09	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWC-12	7.61	6.97	3/26/2019	7.29	No	8	0	n/a	0.04288	NP (normality) 1 of 2
<b>pH (pH)</b>	<b>MGWC-2</b>	<b>7.87</b>	<b>7.33</b>	<b>9/10/2019</b>	<b>7.26</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>n/a</b>	<b>0.04288</b>	NP (normality) 1 of 2
pH (pH)	MGWC-3	7.063	6.534	9/10/2019	6.67	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWC-7	8.184	5.744	9/10/2019	6.03	No	8	0	No	0.0004701	Param 1 of 2
pH (pH)	MGWC-8	6.592	4.535	9/10/2019	5.1	No	8	0	No	0.0004701	Param 1 of 2
TDS (mg/L)	MGWA-10	182.6	n/a	9/10/2019	14	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWA-11	326.4	n/a	9/10/2019	160	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWA-5	291.7	n/a	9/10/2019	110	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWA-6	450.9	n/a	9/10/2019	260	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-1	646.6	n/a	9/10/2019	360	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-12	261.8	n/a	9/10/2019	140	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-2	738.9	n/a	9/10/2019	470	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-3	449.9	n/a	9/10/2019	360	No	8	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-7	470.4	n/a	9/10/2019	260	No	8	0	No	0.0009403	Param 1 of 2
<b>TDS (mg/L)</b>	<b>MGWC-8</b>	<b>432.2</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>660</b>	<b>Yes</b>	<b>8</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2

Within Limit

Prediction Limit  
Intrawell Parametric

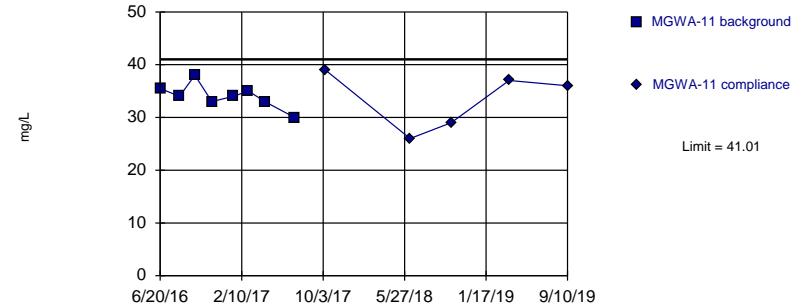


Background Data Summary: Mean=6.204, Std. Dev.=1.706, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9557, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

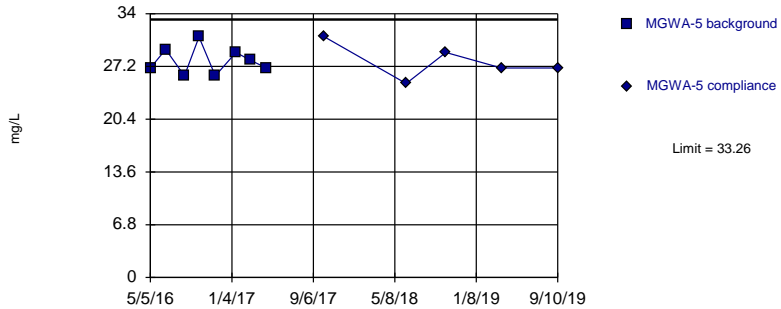


Background Data Summary: Mean=34.06, Std. Dev.=2.306, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9612, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

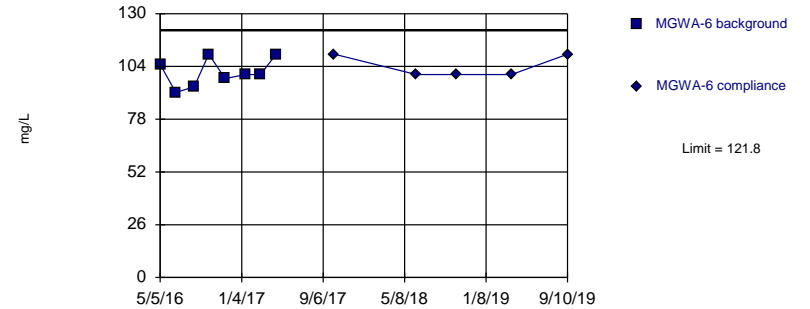


Background Data Summary: Mean=27.93, Std. Dev.=1.769, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9267, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric



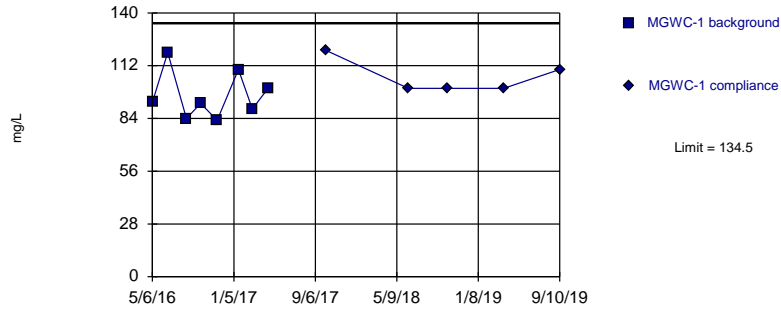
Background Data Summary: Mean=101, Std. Dev.=6.908, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9337, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



Within Limit

Prediction Limit  
Intrawell Parametric

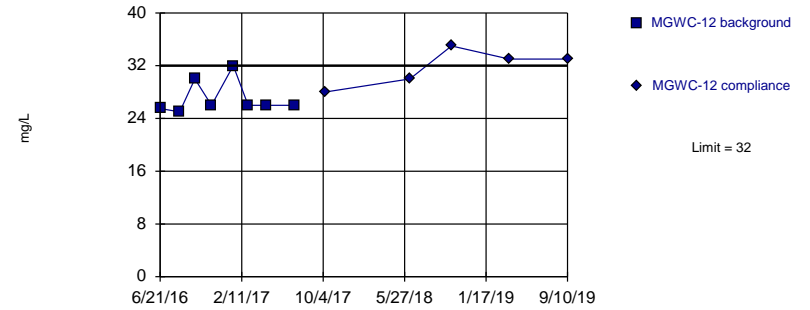


Background Data Summary: Mean=96.19, Std. Dev.=12.71, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9031, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit

Prediction Limit  
Intrawell Non-parametric

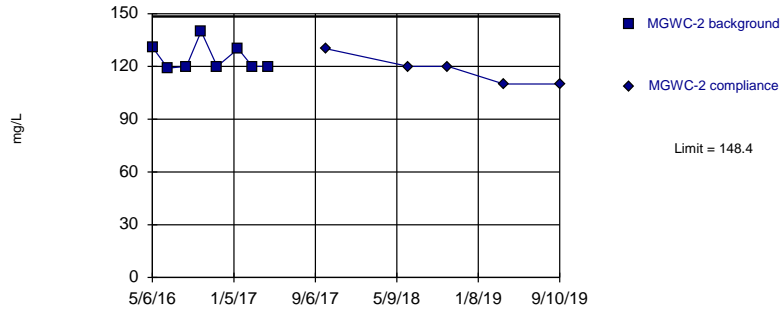


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

Constituent: Calcium Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

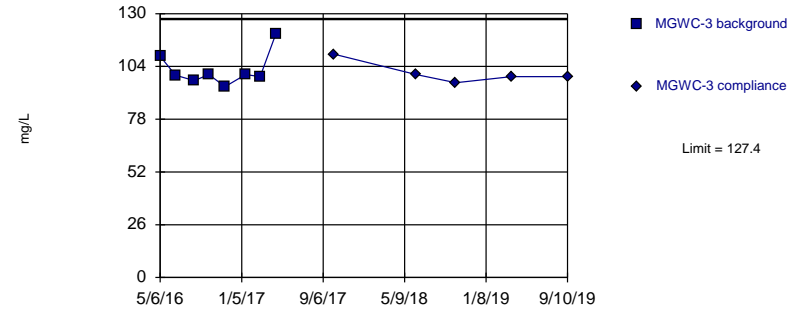


Background Data Summary: Mean=125, Std. Dev.=7.764, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.762, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

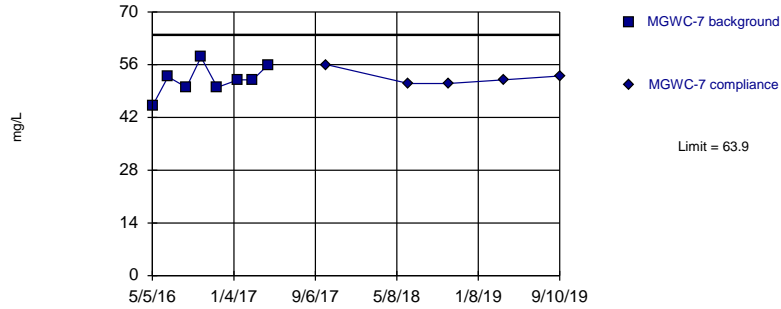


Background Data Summary: Mean=102.3, Std. Dev.=8.31, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8048, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

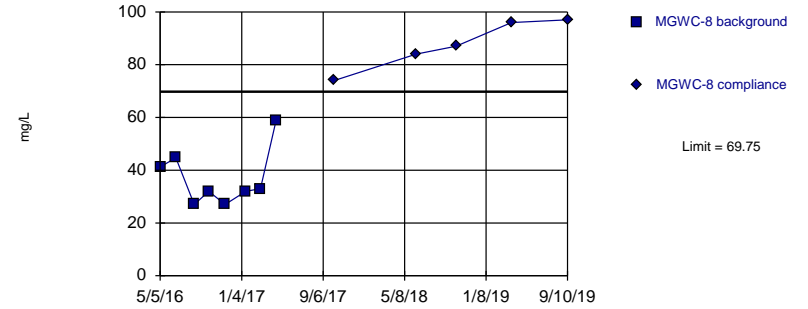


Background Data Summary: Mean=51.98, Std. Dev.=3.958, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.959, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit

Prediction Limit  
Intrawell Parametric

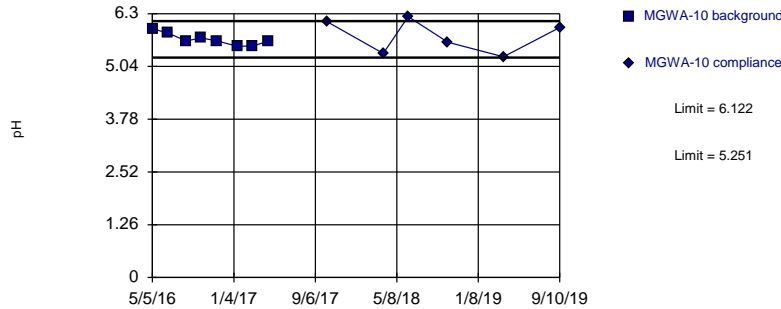


Background Data Summary: Mean=36.99, Std. Dev.=10.87, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8573, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: Calcium Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Parametric

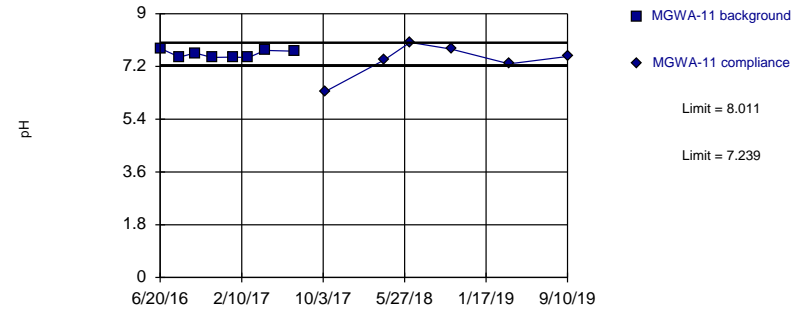


Background Data Summary: Mean=5.686, Std. Dev.=0.1444, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9186, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Parametric

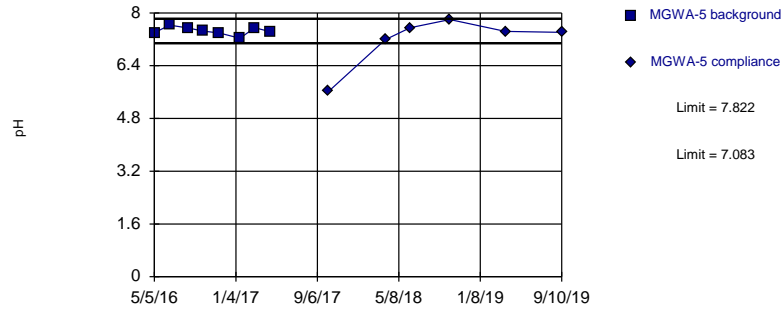


Background Data Summary: Mean=7.625, Std. Dev.=0.1281, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8497, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Parametric

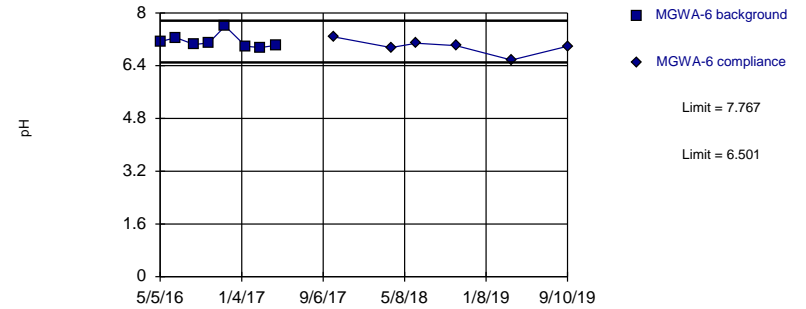


Background Data Summary: Mean=7.453, Std. Dev.=0.1227, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9613, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Parametric

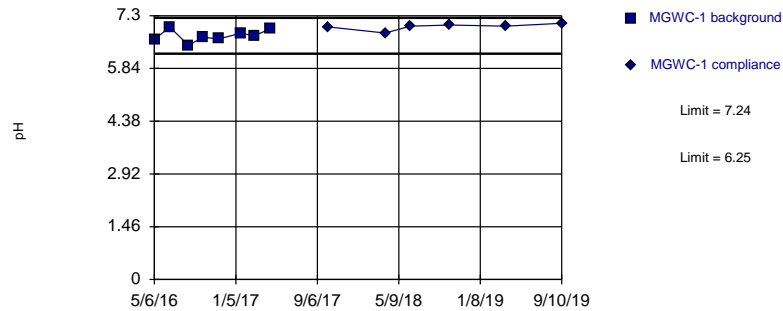


Background Data Summary: Mean=7.134, Std. Dev.=0.2101, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8014, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Parametric

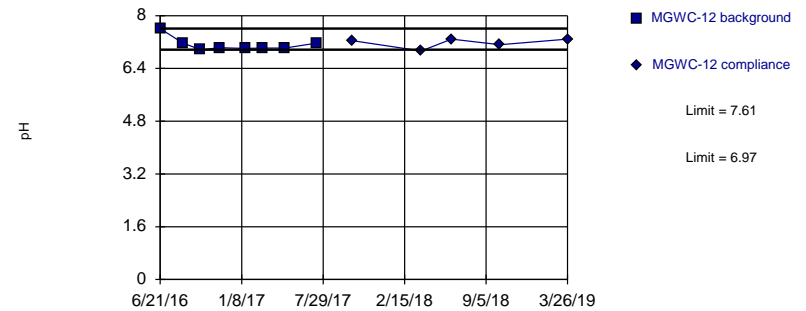


Background Data Summary: Mean=6.745, Std. Dev.=0.1643, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9754, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Non-parametric

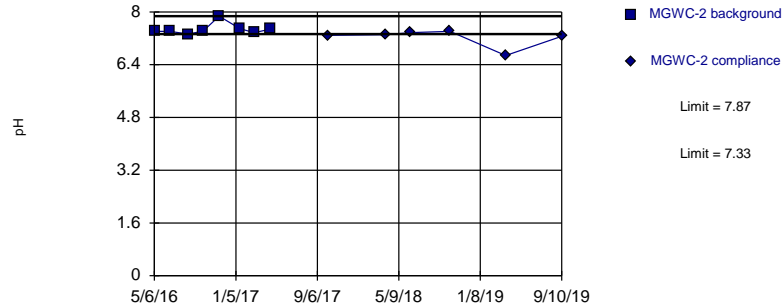


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 8 background values. Well-constituent pair annual alpha = 0.08484. Individual comparison alpha = 0.04288 (1 of 2).

Constituent: pH Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limits

Prediction Limit  
Intrawell Non-parametric

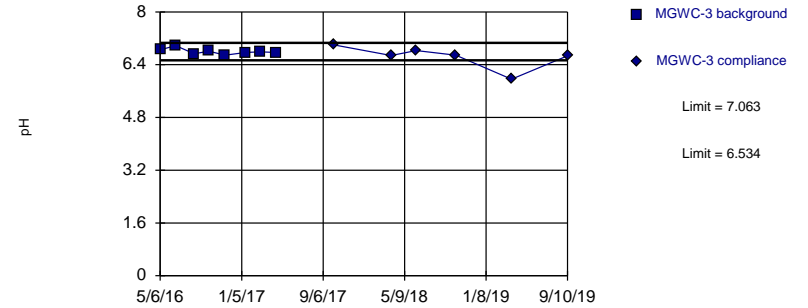


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 8 background values. Well-constituent pair annual alpha = 0.08484. Individual comparison alpha = 0.04288 (1 of 2).

Constituent: pH Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Parametric

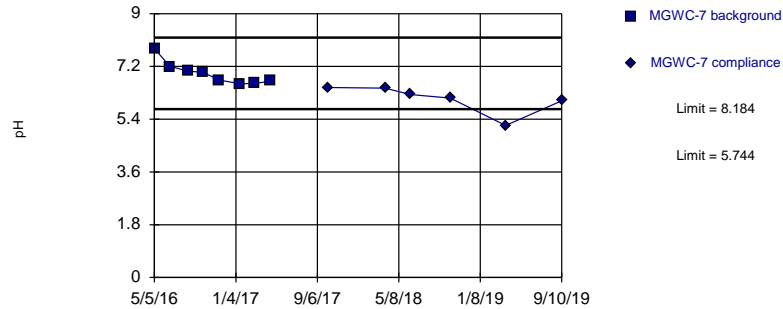


Background Data Summary: Mean=6.799, Std. Dev.=0.08774, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.911, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Parametric

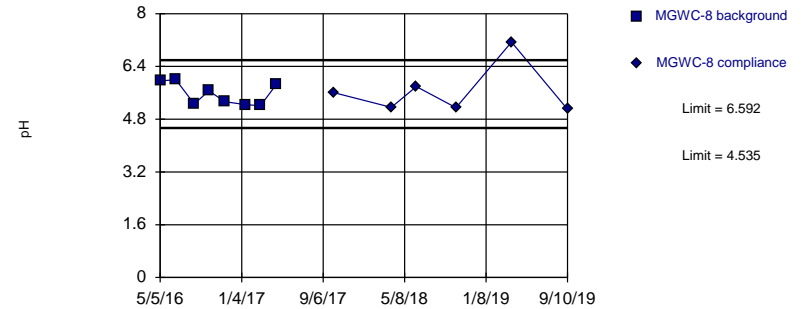


Background Data Summary: Mean=6.964, Std. Dev.=0.4047, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8447, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limits

Prediction Limit  
Intrawell Parametric

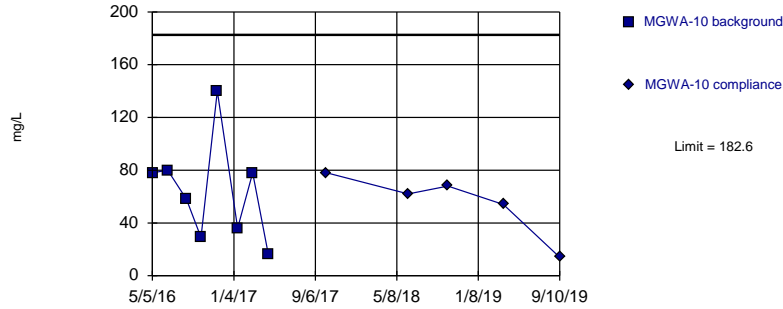


Background Data Summary: Mean=5.564, Std. Dev.=0.3413, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8393, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: pH Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

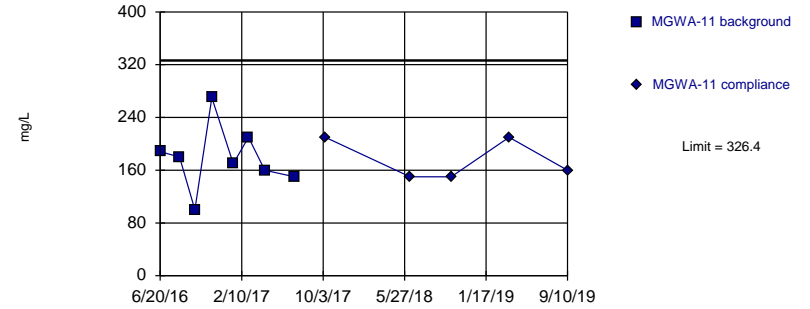


Background Data Summary: Mean=64.38, Std. Dev.=39.23, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9214, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

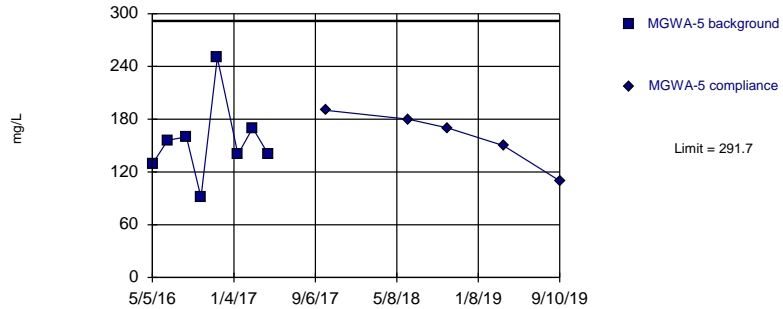


Background Data Summary: Mean=178.5, Std. Dev.=49.06, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9621, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

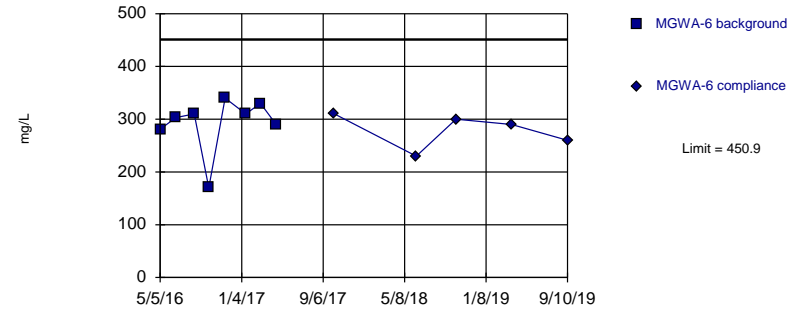


Background Data Summary: Mean=154.5, Std. Dev.=45.51, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.89, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

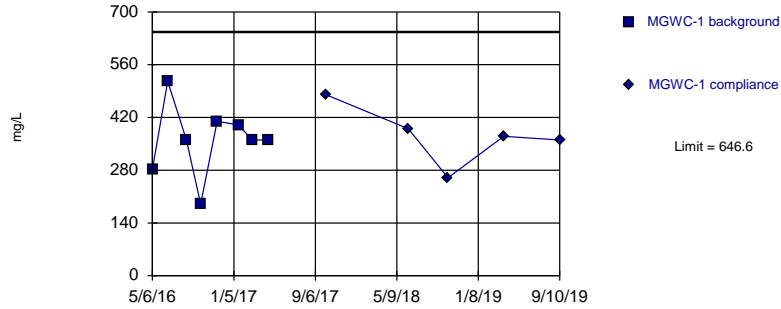


Background Data Summary: Mean=291.8, Std. Dev.=52.81, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7656, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

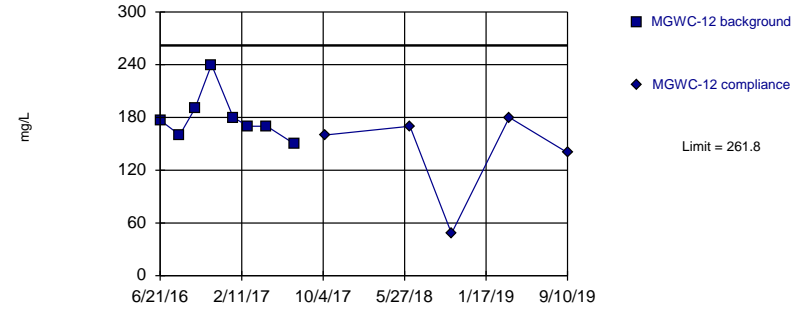


Background Data Summary: Mean=359.8, Std. Dev.=95.18, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9447, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

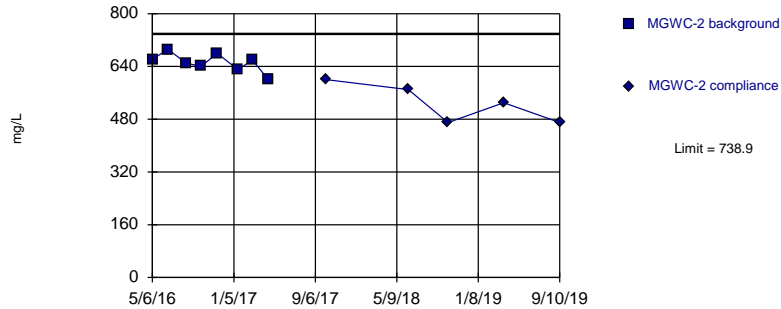


Background Data Summary: Mean=179.6, Std. Dev.=27.28, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8389, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

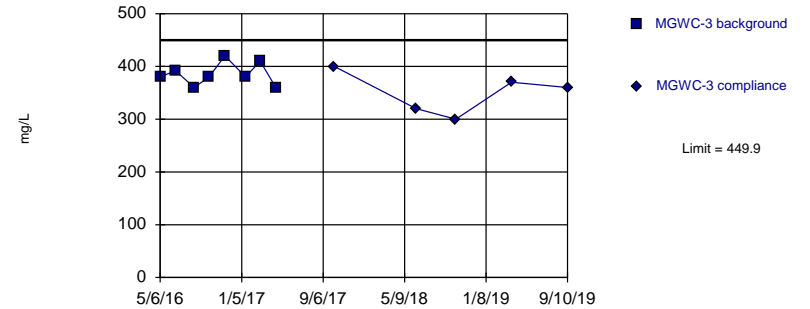


Background Data Summary: Mean=651.6, Std. Dev.=28.94, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9778, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

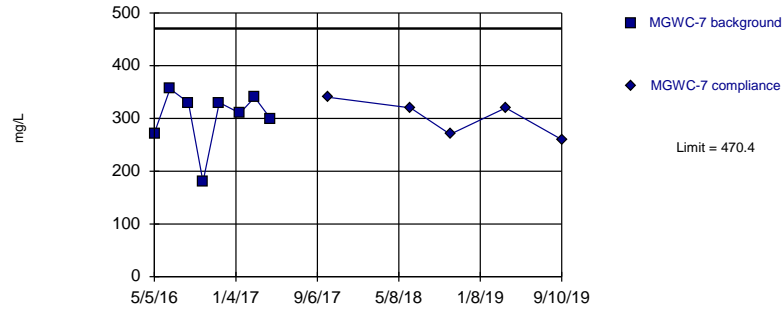


Background Data Summary: Mean=385.3, Std. Dev.=21.46, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9121, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Intrawell Parametric

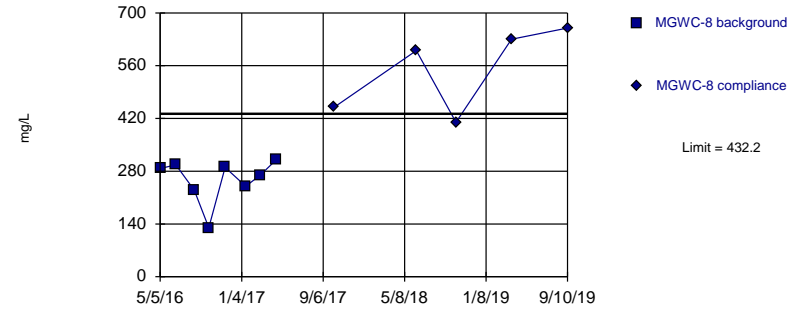


Background Data Summary: Mean=302.3, Std. Dev.=55.78, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8291, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit

Prediction Limit  
Intrawell Parametric

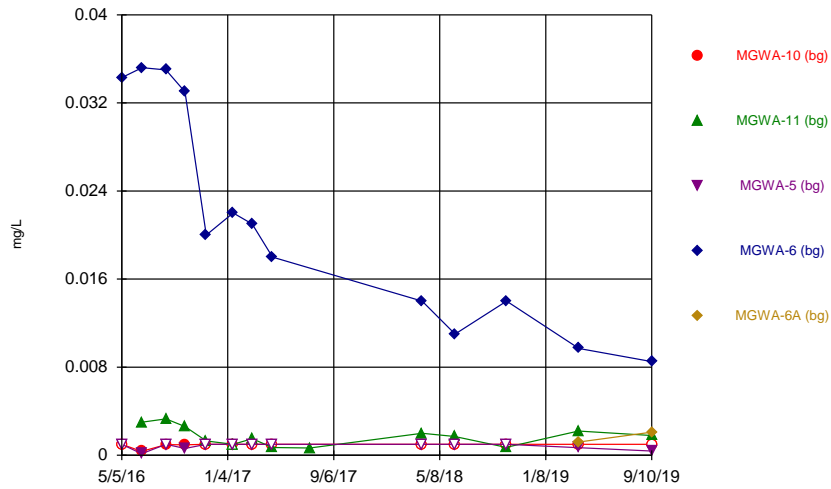


Background Data Summary: Mean=256.8, Std. Dev.=58.2, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8242, critical = 0.749. Kappa = 3.014 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.0009403.

Constituent: TDS Analysis Run 10/31/2019 2:56 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

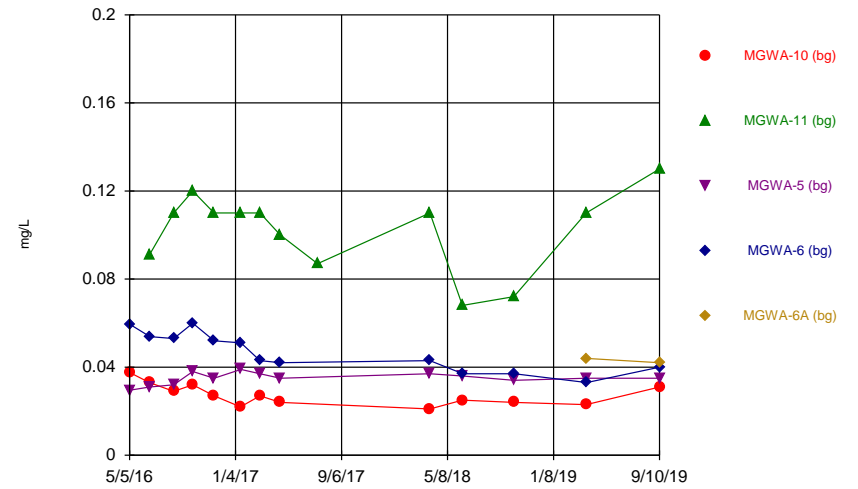


Time Series



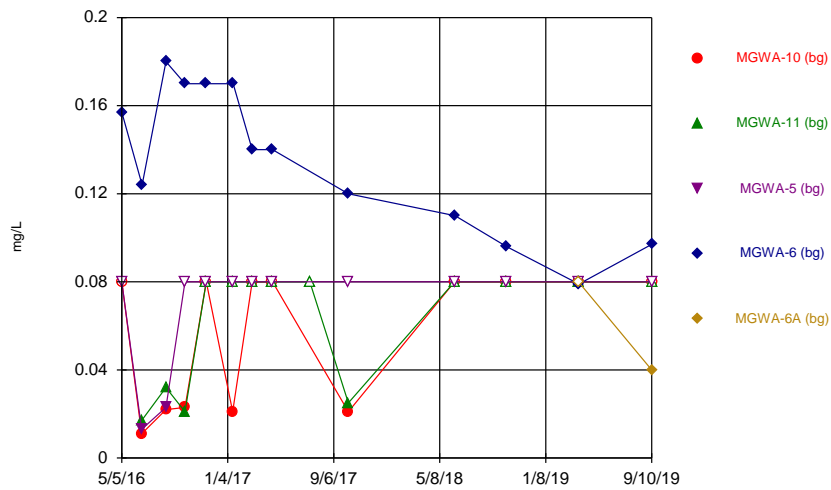
Constituent: Arsenic Analysis Run 11/11/2019 10:01 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



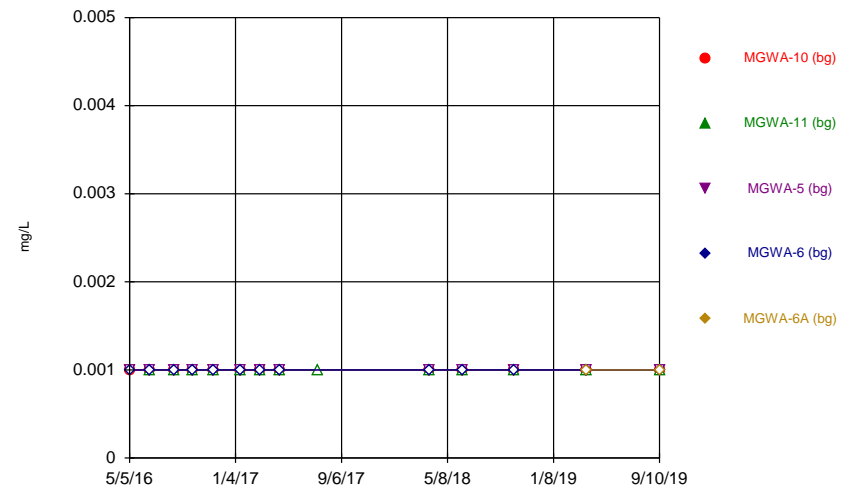
Constituent: Barium Analysis Run 11/11/2019 10:01 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



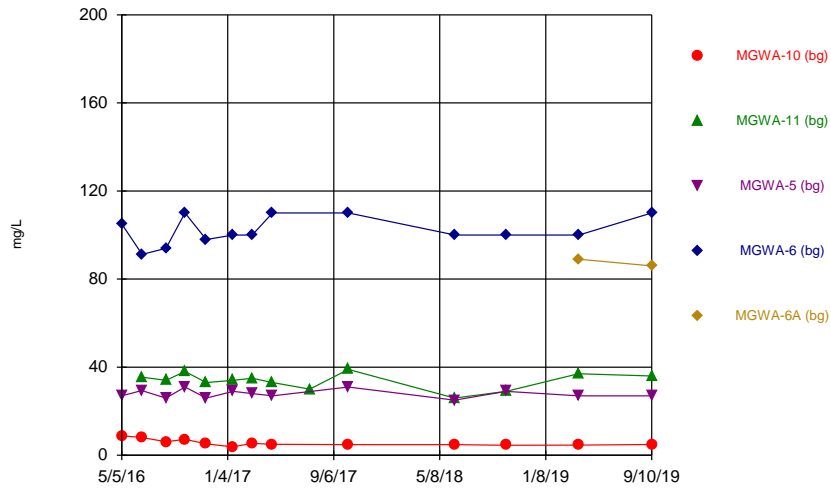
Constituent: Boron Analysis Run 11/11/2019 10:01 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



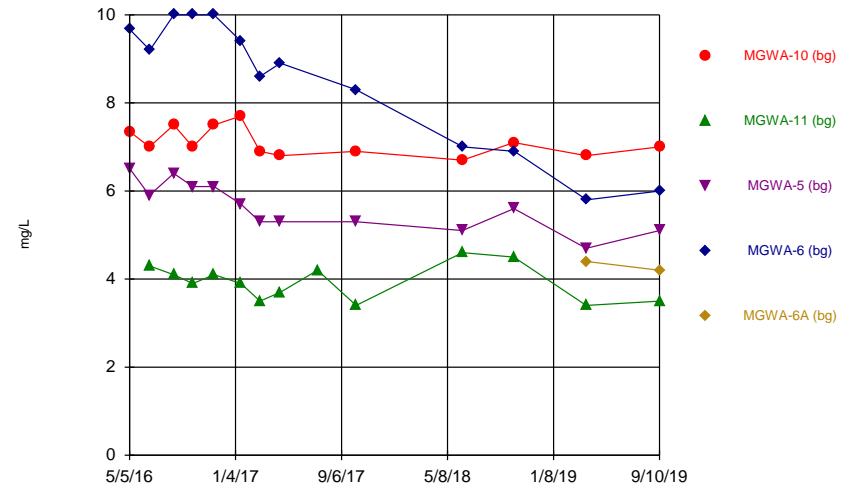
Constituent: Cadmium Analysis Run 11/11/2019 10:01 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



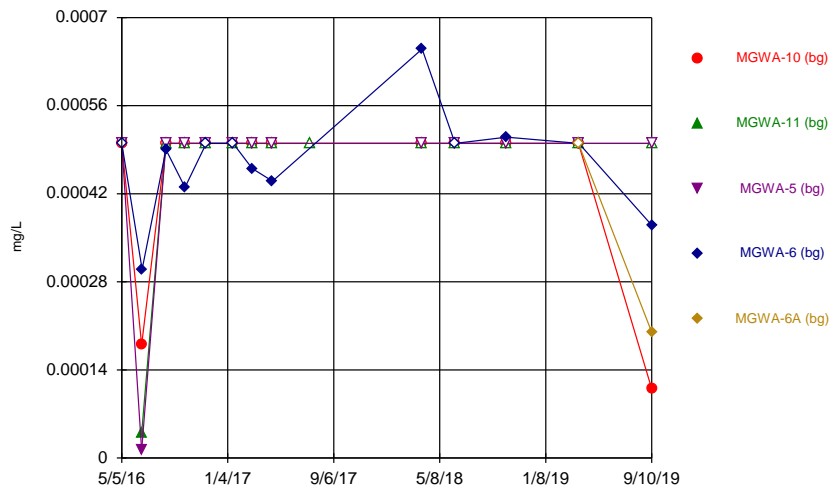
Constituent: Calcium Analysis Run 11/11/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



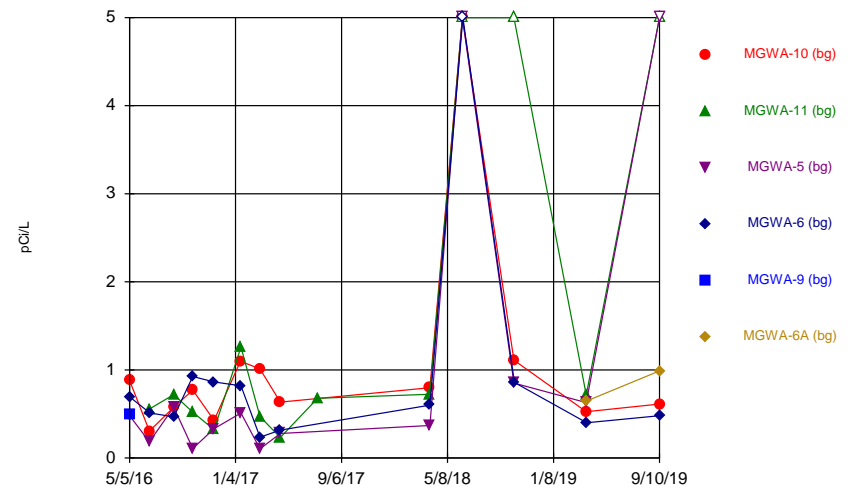
Constituent: Chloride Analysis Run 11/11/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



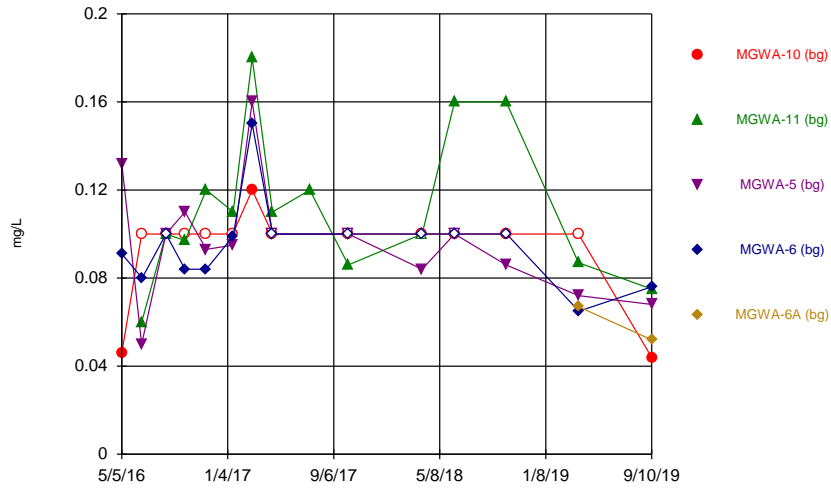
Constituent: Cobalt Analysis Run 11/11/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



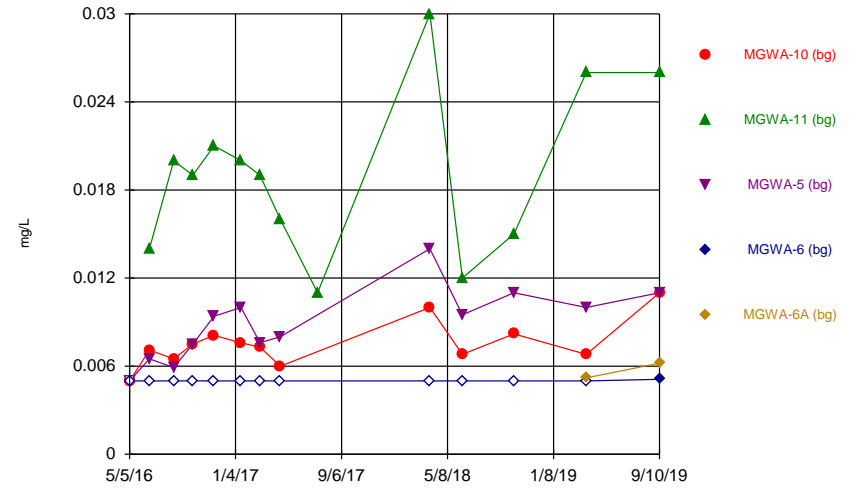
Constituent: Combined Radium 226 + 228 Analysis Run 11/11/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



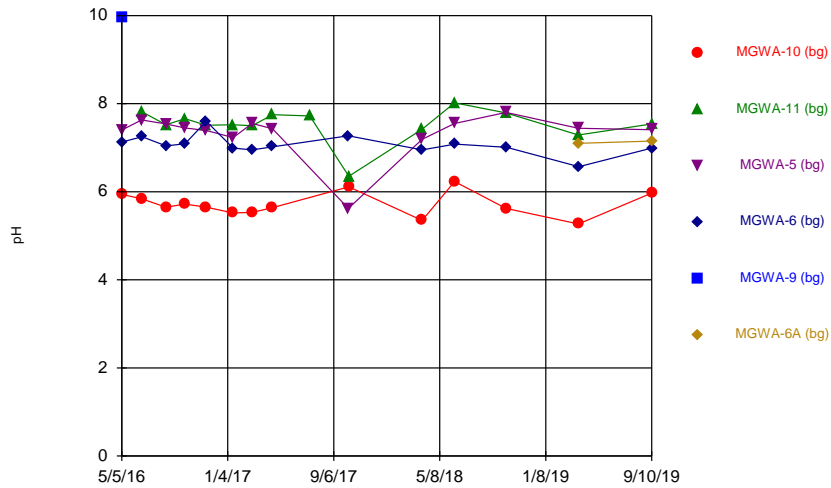
Constituent: Fluoride Analysis Run 11/11/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



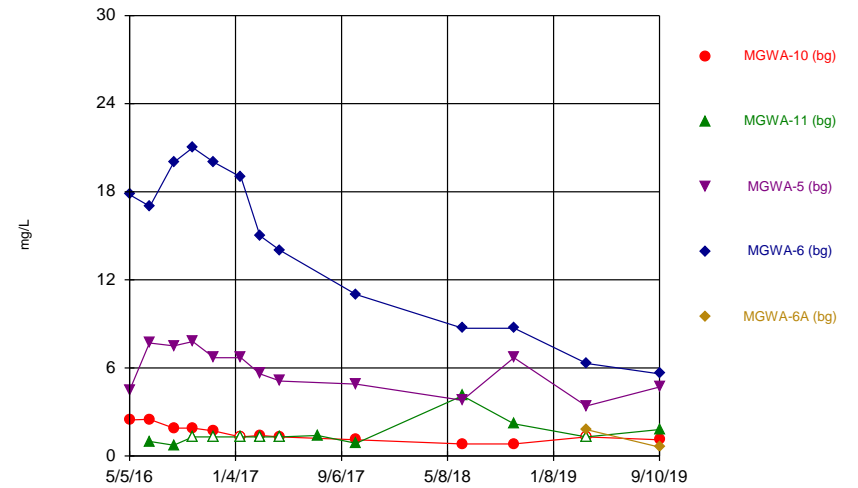
Constituent: Lithium Analysis Run 11/11/2019 10:01 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



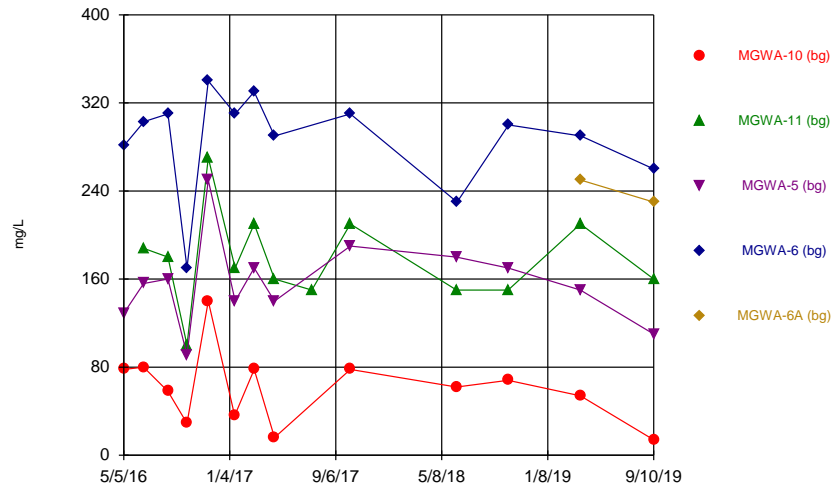
Constituent: pH Analysis Run 11/11/2019 10:02 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



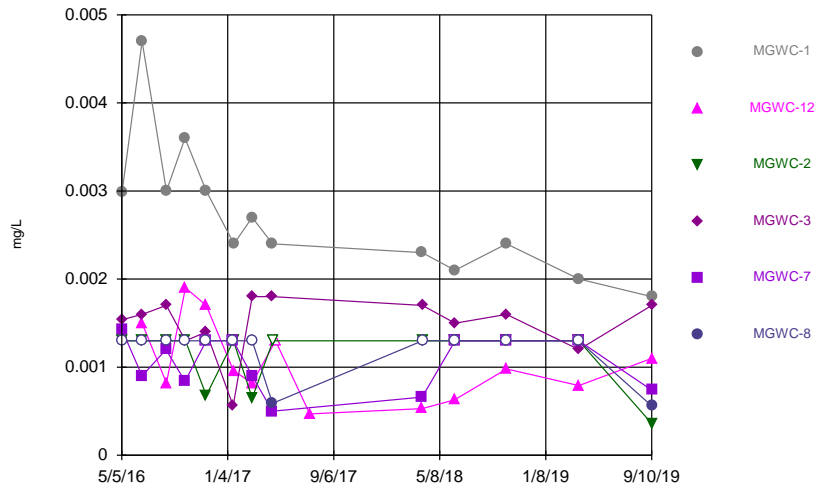
Constituent: Sulfate Analysis Run 11/11/2019 10:02 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



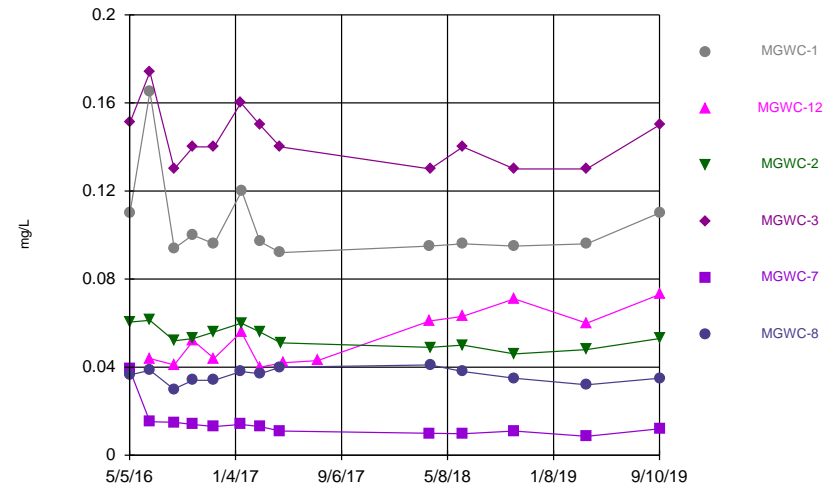
Constituent: TDS Analysis Run 11/11/2019 10:02 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



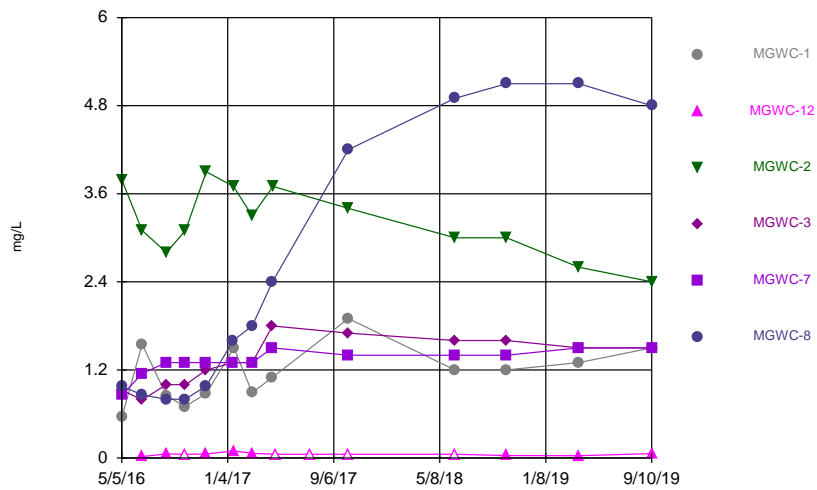
Constituent: Arsenic Analysis Run 11/11/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



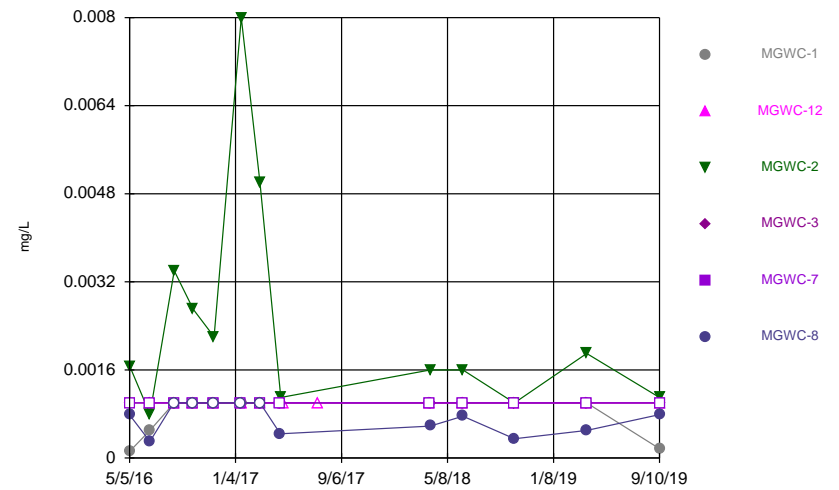
Constituent: Barium Analysis Run 11/11/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



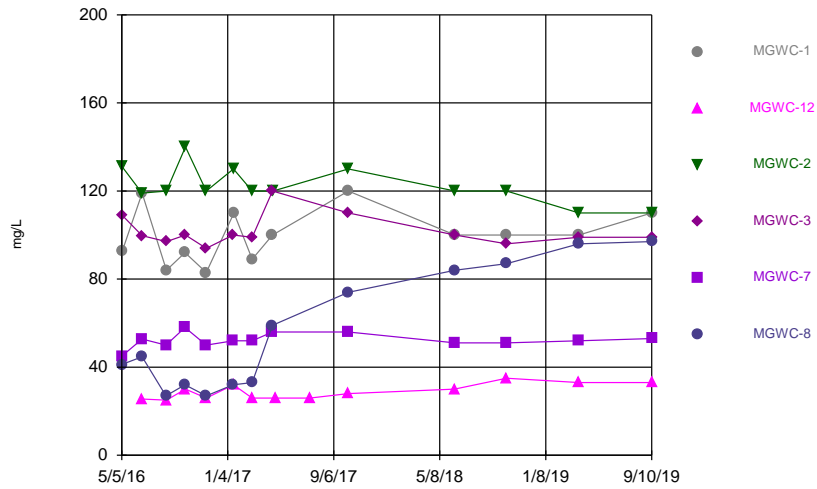
Constituent: Boron Analysis Run 11/11/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



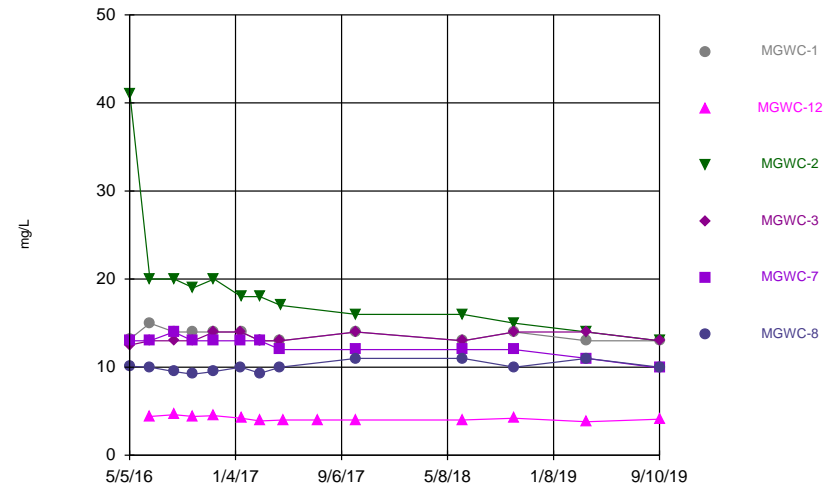
Constituent: Cadmium Analysis Run 11/11/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



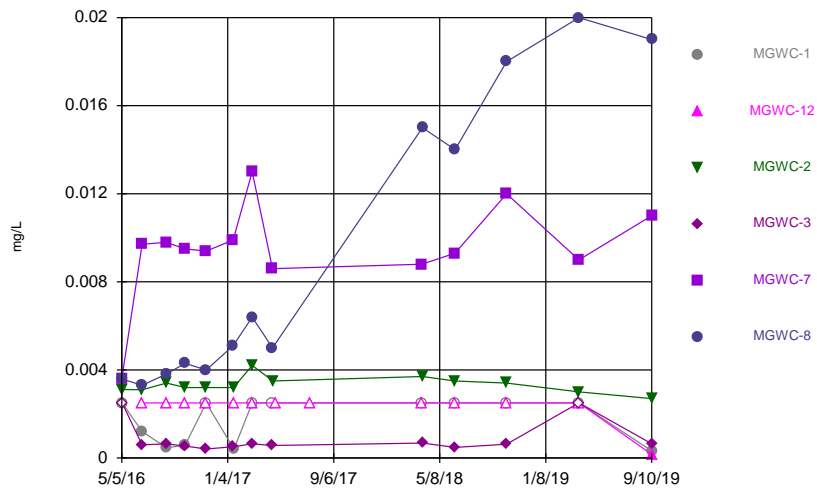
Constituent: Calcium Analysis Run 11/11/2019 10:00 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



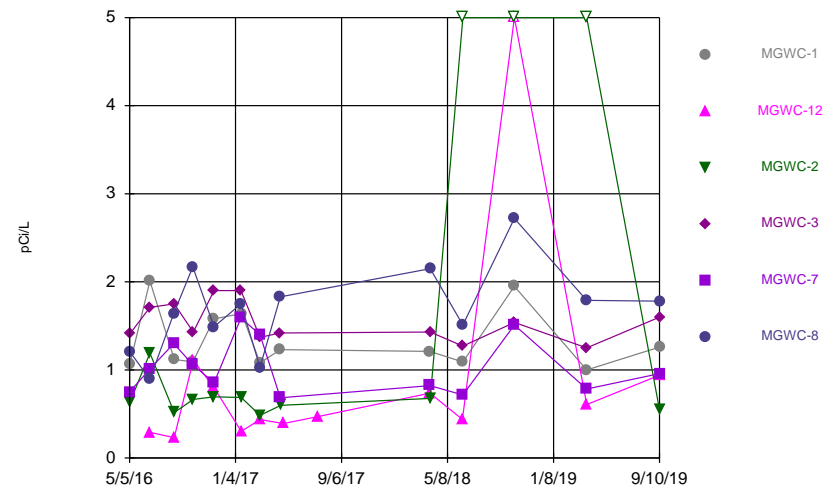
Constituent: Chloride Analysis Run 11/11/2019 10:00 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



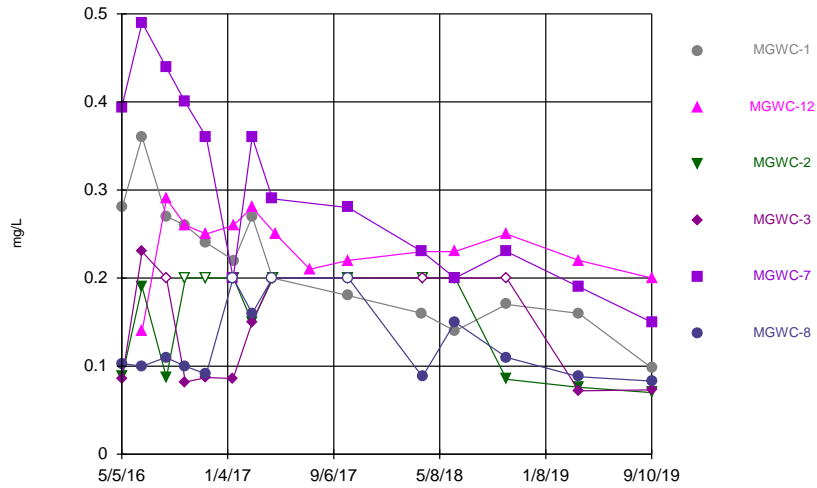
Constituent: Cobalt Analysis Run 11/11/2019 10:00 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Time Series



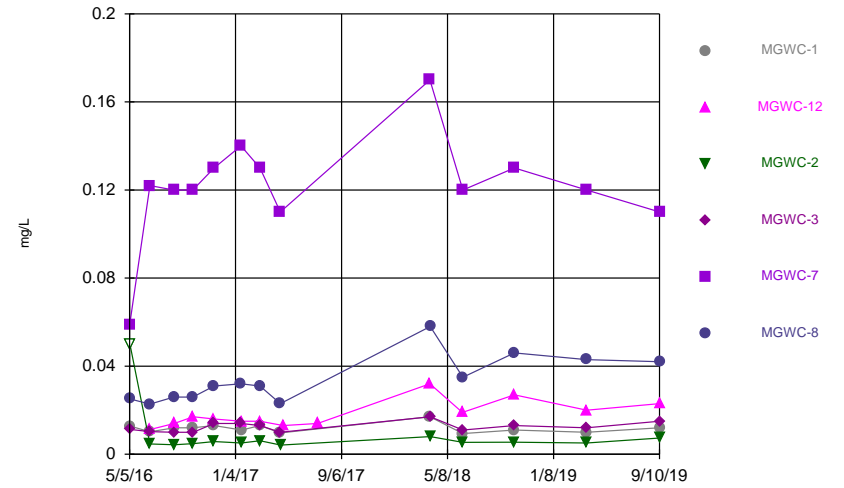
Constituent: Combined Radium 226 + 228 Analysis Run 11/11/2019 10:00 AM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



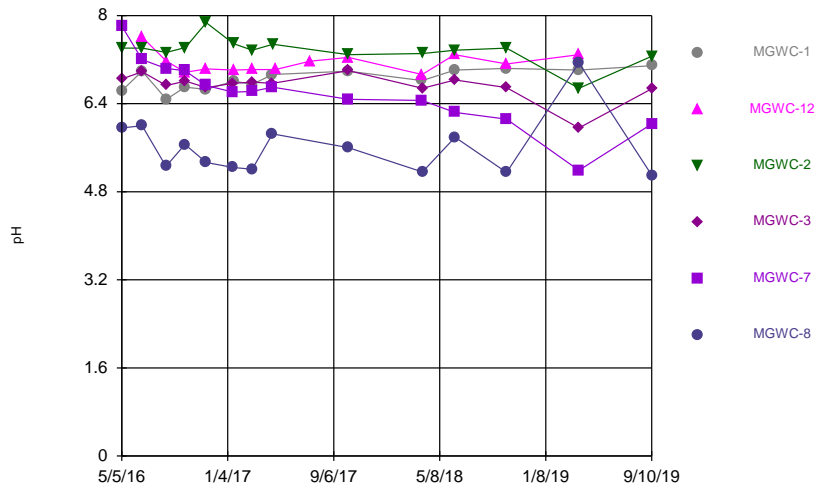
Constituent: Fluoride Analysis Run 11/11/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



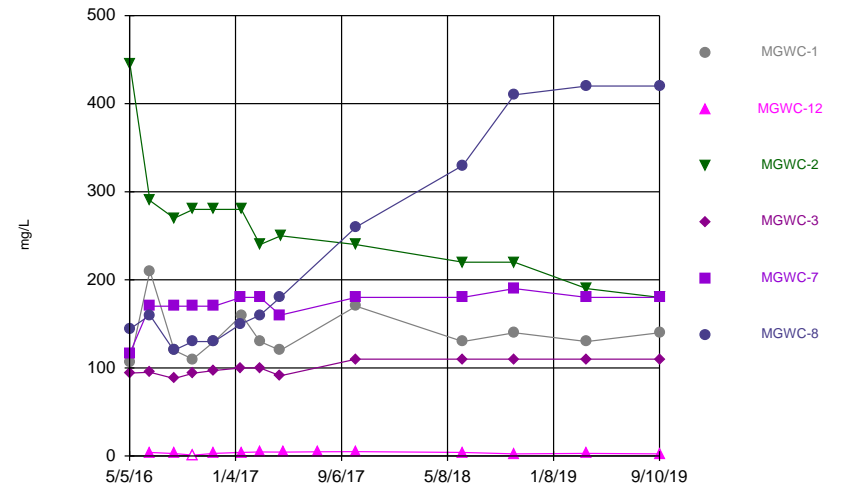
Constituent: Lithium Analysis Run 11/11/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Time Series



Constituent: pH Analysis Run 11/11/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

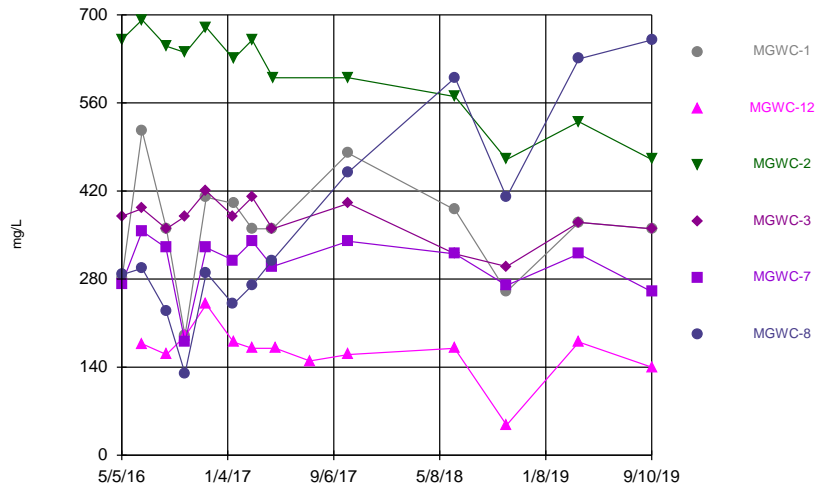
### Time Series



Constituent: Sulfate Analysis Run 11/11/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



### Time Series



Constituent: TDS Analysis Run 11/11/2019 10:00 AM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

# Trend Test - Significant Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 11/5/2019, 1:46 PM

<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)	MGWA-6 (bg)	-0.02701	-50	-39	Yes	13	0	n/a	n/a	0.02	NP
Boron (mg/L)	MGWC-3	0.2606	46	39	Yes	13	0	n/a	n/a	0.02	NP
Boron (mg/L)	MGWC-7	0.08264	56	39	Yes	13	0	n/a	n/a	0.02	NP
Boron (mg/L)	MGWC-8	1.653	60	39	Yes	13	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWA-10 (bg)	-0.9533	-49	-39	Yes	13	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWC-12	2.474	44	39	Yes	13	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWC-8	20.09	54	39	Yes	13	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MGWA-5 (bg)	-0.4462	-57	-39	Yes	13	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MGWA-6 (bg)	-1.345	-57	-39	Yes	13	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MGWC-2	-2.449	-71	-39	Yes	13	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MGWC-7	-0.7455	-53	-39	Yes	13	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWC-1	-0.05935	-75	-44	Yes	14	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWC-7	-0.08743	-70	-44	Yes	14	0	n/a	n/a	0.02	NP
pH (pH)	MGWC-1	0.1338	63	44	Yes	14	0	n/a	n/a	0.02	NP
pH (pH)	MGWC-7	-0.4687	-83	-44	Yes	14	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWA-10 (bg)	-0.4977	-56	-39	Yes	13	15.38	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWA-6 (bg)	-4.598	-58	-39	Yes	13	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWC-2	-35.3	-65	-39	Yes	13	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWC-3	6.467	47	39	Yes	13	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWC-7	5.628	41	39	Yes	13	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWC-8	102.5	61	39	Yes	13	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWC-2	-58.66	-60	-39	Yes	13	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWC-8	122	50	39	Yes	13	0	n/a	n/a	0.02	NP

# Trend Test - All Results

Plant McIntosh    Client: GEI    Data: McIntosh Ash Pond Export    Printed 11/5/2019, 1:46 PM

<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)	MGWA-10 (bg)	0	23	39	No	13	61.54	n/a	n/a	0.02	NP
Boron (mg/L)	MGWA-11 (bg)	0	28	39	No	13	69.23	n/a	n/a	0.02	NP
Boron (mg/L)	MGWA-5 (bg)	0	19	39	No	13	84.62	n/a	n/a	0.02	NP
<b>Boron (mg/L)</b>	<b>MGWA-6 (bg)</b>	<b>-0.02701</b>	<b>-50</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Boron (mg/L)	MGWC-1	0.2152	36	39	No	13	0	n/a	n/a	0.02	NP
Boron (mg/L)	MGWC-12	-0.00...	-11	-39	No	13	38.46	n/a	n/a	0.02	NP
Boron (mg/L)	MGWC-2	-0.2933	-33	-39	No	13	0	n/a	n/a	0.02	NP
<b>Boron (mg/L)</b>	<b>MGWC-3</b>	<b>0.2606</b>	<b>46</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Boron (mg/L)</b>	<b>MGWC-7</b>	<b>0.08264</b>	<b>56</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Boron (mg/L)</b>	<b>MGWC-8</b>	<b>1.653</b>	<b>60</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Calcium (mg/L)</b>	<b>MGWA-10 (bg)</b>	<b>-0.9533</b>	<b>-49</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Calcium (mg/L)	MGWA-11 (bg)	-1.09	-10	-39	No	13	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWA-5 (bg)	0	-7	-39	No	13	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWA-6 (bg)	1.382	22	39	No	13	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWC-1	4.053	19	39	No	13	0	n/a	n/a	0.02	NP
<b>Calcium (mg/L)</b>	<b>MGWC-12</b>	<b>2.474</b>	<b>44</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Calcium (mg/L)	MGWC-2	-3.405	-27	-39	No	13	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWC-3	-0.2354	-8	-39	No	13	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MGWC-7	0.537	16	39	No	13	0	n/a	n/a	0.02	NP
<b>Calcium (mg/L)</b>	<b>MGWC-8</b>	<b>20.09</b>	<b>54</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Chloride (mg/L)	MGWA-10 (bg)	-0.1259	-26	-39	No	13	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MGWA-11 (bg)	-0.1799	-18	-39	No	13	0	n/a	n/a	0.02	NP
<b>Chloride (mg/L)</b>	<b>MGWA-5 (bg)</b>	<b>-0.4462</b>	<b>-57</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Chloride (mg/L)</b>	<b>MGWA-6 (bg)</b>	<b>-1.345</b>	<b>-57</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Chloride (mg/L)	MGWC-1	-0.08216	-29	-39	No	13	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MGWC-12	-0.1605	-34	-39	No	13	0	n/a	n/a	0.02	NP
<b>Chloride (mg/L)</b>	<b>MGWC-2</b>	<b>-2.449</b>	<b>-71</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Chloride (mg/L)	MGWC-3	0	23	39	No	13	0	n/a	n/a	0.02	NP
<b>Chloride (mg/L)</b>	<b>MGWC-7</b>	<b>-0.7455</b>	<b>-53</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Chloride (mg/L)	MGWC-8	0.2338	20	39	No	13	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWA-10 (bg)	0	-2	-44	No	14	78.57	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWA-11 (bg)	0.01862	12	44	No	14	7.143	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWA-5 (bg)	-0.00...	-10	-44	No	14	21.43	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWA-6 (bg)	0	13	44	No	14	42.86	n/a	n/a	0.02	NP
<b>Fluoride (mg/L)</b>	<b>MGWC-1</b>	<b>-0.05935</b>	<b>-75</b>	<b>-44</b>	<b>Yes</b>	<b>14</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Fluoride (mg/L)	MGWC-12	-0.01763	-31	-44	No	14	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWC-2	0	-14	-44	No	14	50	n/a	n/a	0.02	NP
Fluoride (mg/L)	MGWC-3	0	-5	-44	No	14	42.86	n/a	n/a	0.02	NP
<b>Fluoride (mg/L)</b>	<b>MGWC-7</b>	<b>-0.08743</b>	<b>-70</b>	<b>-44</b>	<b>Yes</b>	<b>14</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Fluoride (mg/L)	MGWC-8	-0.00...	-17	-44	No	14	21.43	n/a	n/a	0.02	NP
pH (pH)	MGWA-10 (bg)	-0.09548	-18	-44	No	14	0	n/a	n/a	0.02	NP
pH (pH)	MGWA-11 (bg)	-0.04067	-10	-44	No	14	0	n/a	n/a	0.02	NP
pH (pH)	MGWA-5 (bg)	-0.01356	-6	-44	No	14	0	n/a	n/a	0.02	NP
pH (pH)	MGWA-6 (bg)	-0.08594	-37	-44	No	14	0	n/a	n/a	0.02	NP
<b>pH (pH)</b>	<b>MGWC-1</b>	<b>0.1338</b>	<b>63</b>	<b>44</b>	<b>Yes</b>	<b>14</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
pH (pH)	MGWC-12	0.05412	11	39	No	13	0	n/a	n/a	0.02	NP
pH (pH)	MGWC-2	-0.0474	-33	-44	No	14	0	n/a	n/a	0.02	NP
pH (pH)	MGWC-3	-0.06218	-37	-44	No	14	0	n/a	n/a	0.02	NP
<b>pH (pH)</b>	<b>MGWC-7</b>	<b>-0.4687</b>	<b>-83</b>	<b>-44</b>	<b>Yes</b>	<b>14</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
pH (pH)	MGWC-8	-0.06682	-29	-44	No	14	0	n/a	n/a	0.02	NP

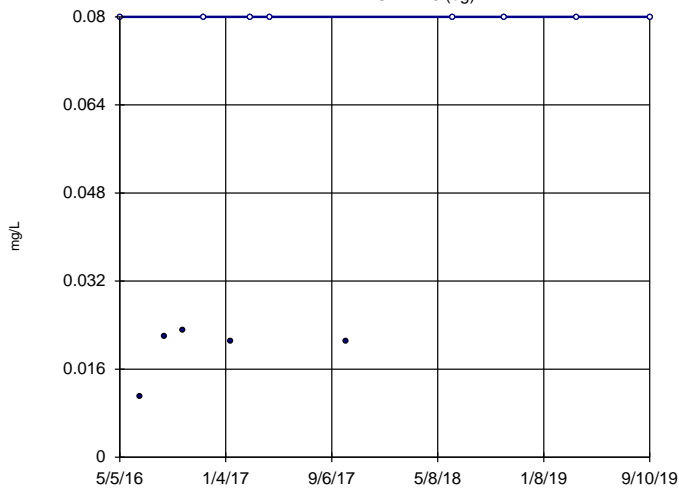
## Trend Test - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 11/5/2019, 1:46 PM

<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>
<b>Sulfate (mg/L)</b>	<b>MGWA-10 (bg)</b>	<b>-0.4977</b>	<b>-56</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>15.38</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Sulfate (mg/L)	MGWA-11 (bg)	0.2074	35	39	No	13	46.15	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWA-5 (bg)	-1.098	-39	-39	No	13	0	n/a	n/a	0.02	NP
<b>Sulfate (mg/L)</b>	<b>MGWA-6 (bg)</b>	<b>-4.598</b>	<b>-58</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
Sulfate (mg/L)	MGWC-1	5.849	20	39	No	13	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MGWC-12	0.04448	4	39	No	13	7.692	n/a	n/a	0.02	NP
<b>Sulfate (mg/L)</b>	<b>MGWC-2</b>	<b>-35.3</b>	<b>-65</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Sulfate (mg/L)</b>	<b>MGWC-3</b>	<b>6.467</b>	<b>47</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Sulfate (mg/L)</b>	<b>MGWC-7</b>	<b>5.628</b>	<b>41</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>Sulfate (mg/L)</b>	<b>MGWC-8</b>	<b>102.5</b>	<b>61</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
TDS (mg/L)	MGWA-10 (bg)	-8.705	-25	-39	No	13	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWA-11 (bg)	-6.642	-11	-39	No	13	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWA-5 (bg)	4.91	6	39	No	13	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWA-6 (bg)	-6.026	-12	-39	No	13	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWC-1	0	-4	-39	No	13	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWC-12	-12.25	-29	-39	No	13	0	n/a	n/a	0.02	NP
<b>TDS (mg/L)</b>	<b>MGWC-2</b>	<b>-58.66</b>	<b>-60</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
TDS (mg/L)	MGWC-3	-17.9	-24	-39	No	13	0	n/a	n/a	0.02	NP
TDS (mg/L)	MGWC-7	-8.02	-15	-39	No	13	0	n/a	n/a	0.02	NP
<b>TDS (mg/L)</b>	<b>MGWC-8</b>	<b>122</b>	<b>50</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>

### Sen's Slope Estimator

MGWA-10 (bg)

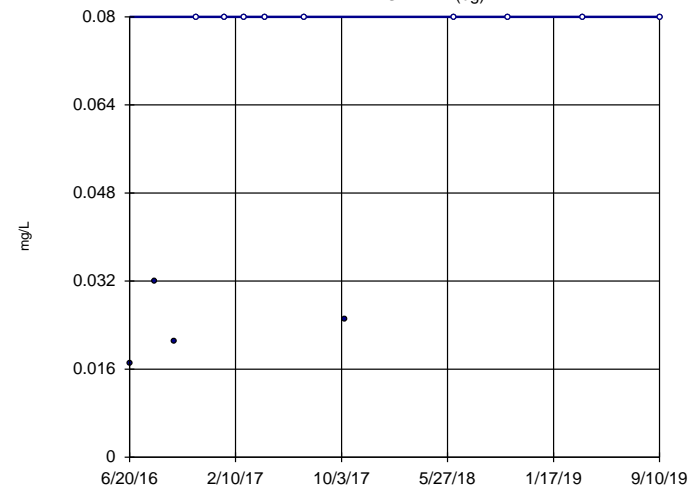


n = 13  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 23  
critical = 39  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Boron Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-11 (bg)

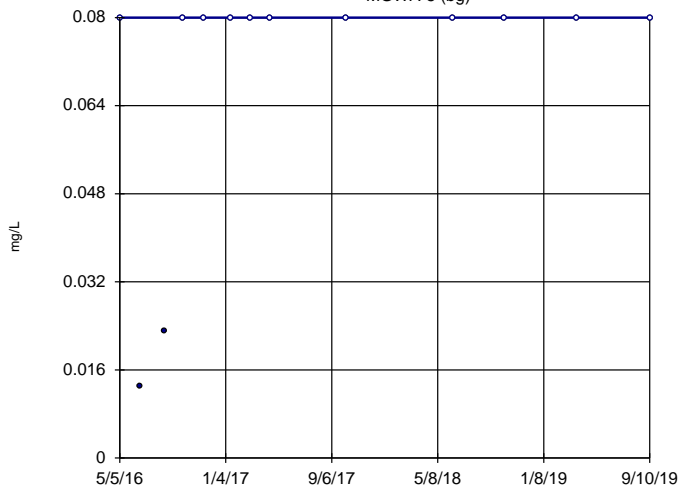


n = 13  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 28  
critical = 39  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Boron Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-5 (bg)

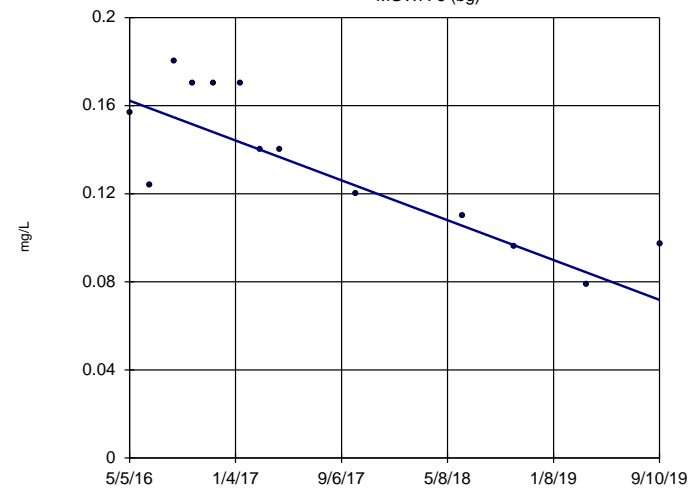


n = 13  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 19  
critical = 39  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Boron Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-6 (bg)

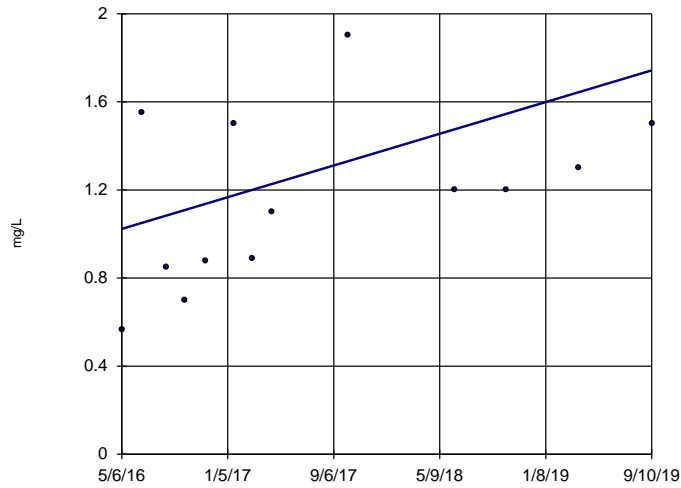


n = 13  
Slope = -0.02701  
units per year.  
Mann-Kendall  
statistic = -50  
critical = -39  
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Boron Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-1



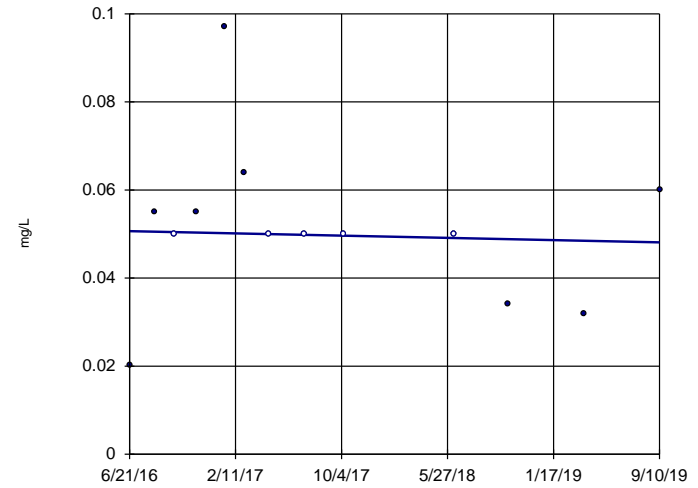
n = 13  
 Slope = 0.2152 units per year.  
 Mann-Kendall statistic = 36  
 critical = 39  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Boron Analysis Run 11/5/2019 1:44 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Hollow symbols indicate censored values.

### Sen's Slope Estimator

MGWC-12

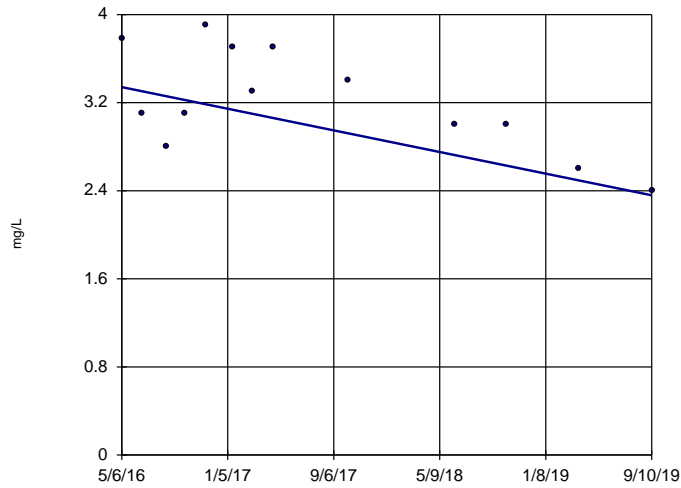


n = 13  
 Slope = -0.0007918 units per year.  
 Mann-Kendall statistic = -11  
 critical = -39  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Boron Analysis Run 11/5/2019 1:44 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-2

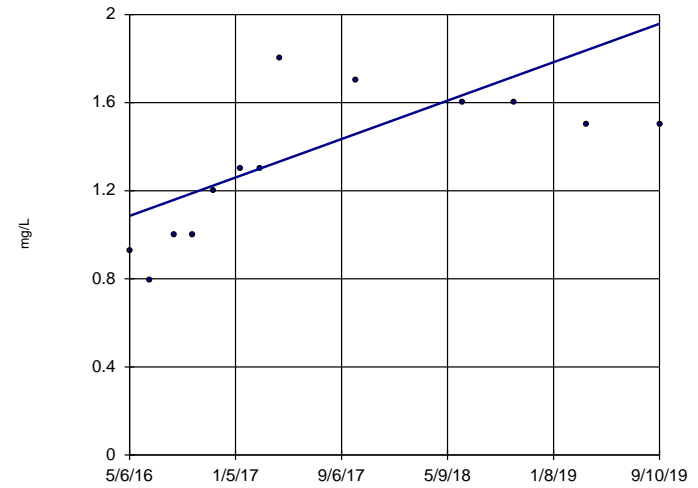


n = 13  
 Slope = -0.2933 units per year.  
 Mann-Kendall statistic = -33  
 critical = -39  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: Boron Analysis Run 11/5/2019 1:44 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

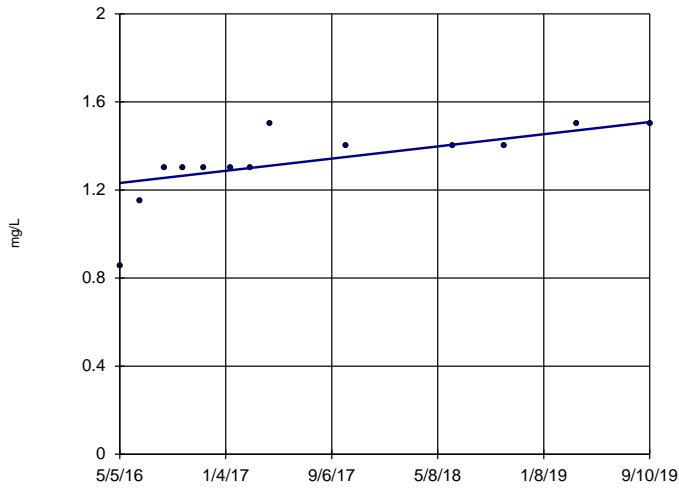
MGWC-3



n = 13  
 Slope = 0.2606 units per year.  
 Mann-Kendall statistic = 46  
 critical = 39  
 Increasing trend significant at 98% confidence level (α = 0.01 per tail).

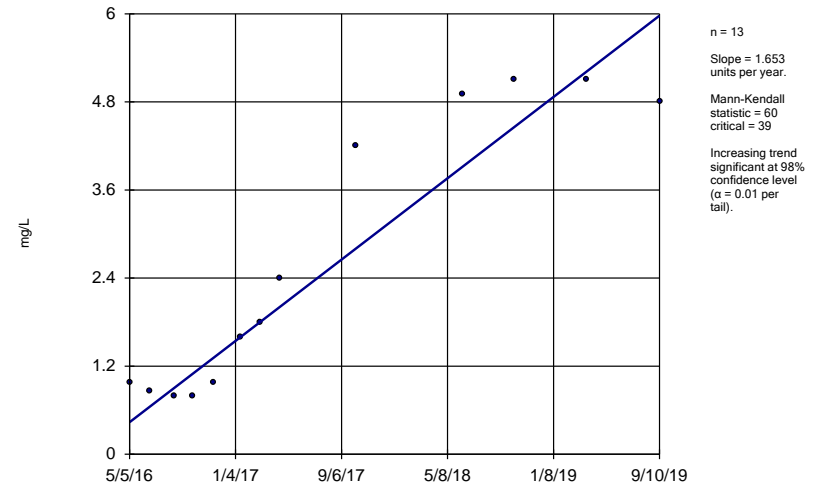
Constituent: Boron Analysis Run 11/5/2019 1:44 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator  
MGWC-7



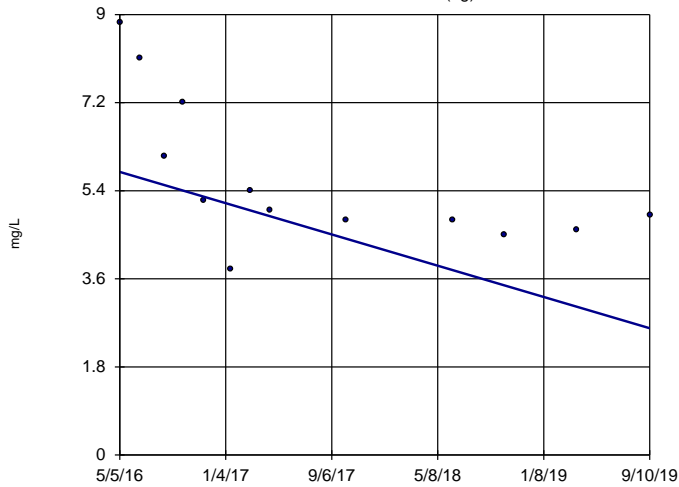
Constituent: Boron Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator  
MGWC-8



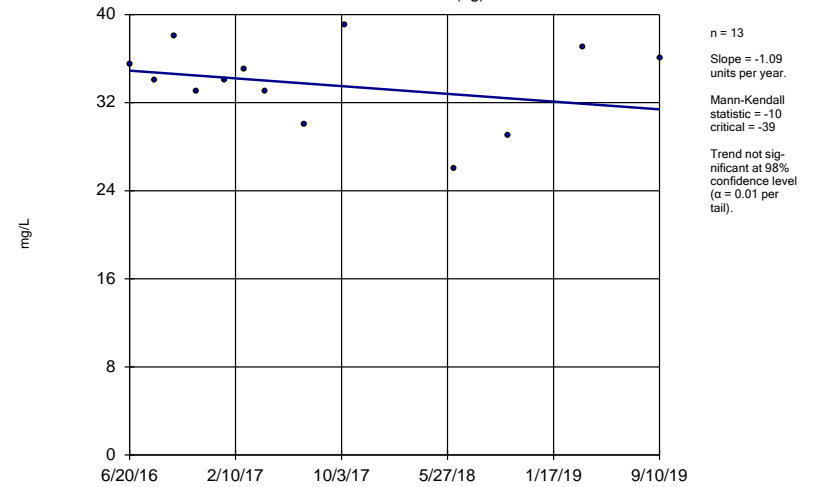
Constituent: Boron Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator  
MGWA-10 (bg)



Constituent: Calcium Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

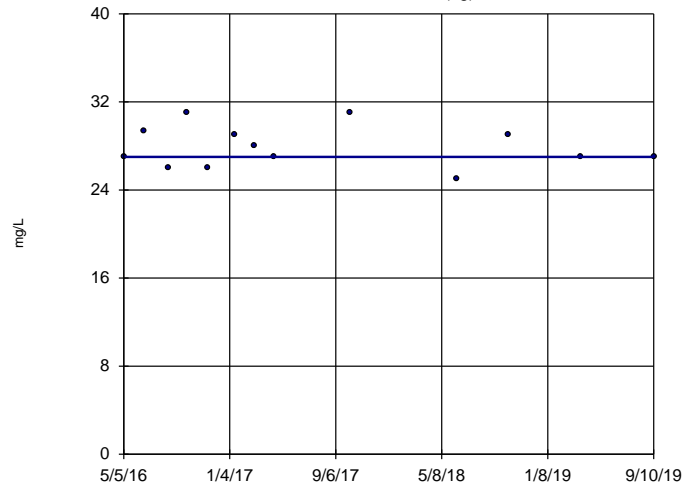
Sen's Slope Estimator  
MGWA-11 (bg)



Constituent: Calcium Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

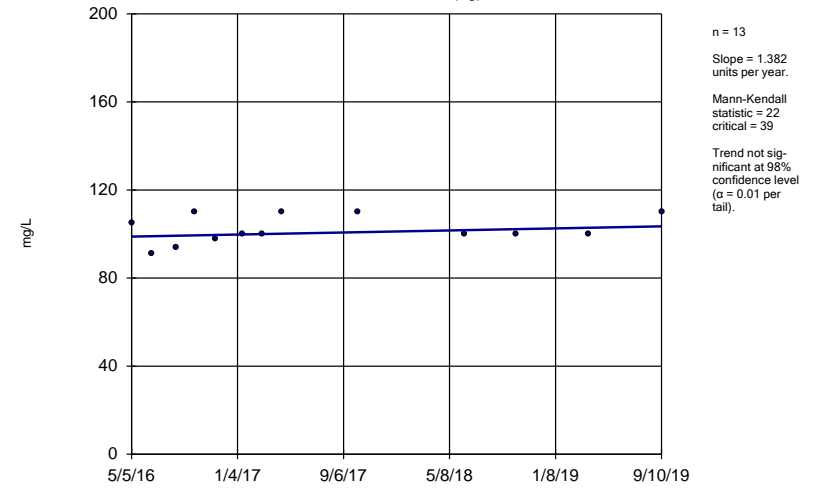


### Sen's Slope Estimator MGWA-5 (bg)



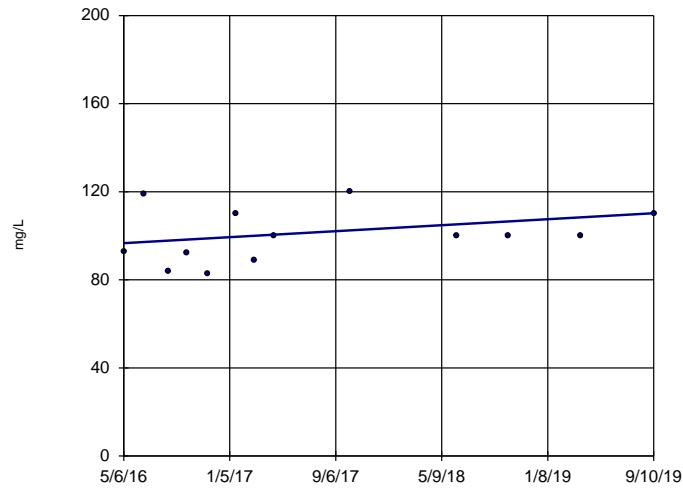
Constituent: Calcium Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator MGWA-6 (bg)



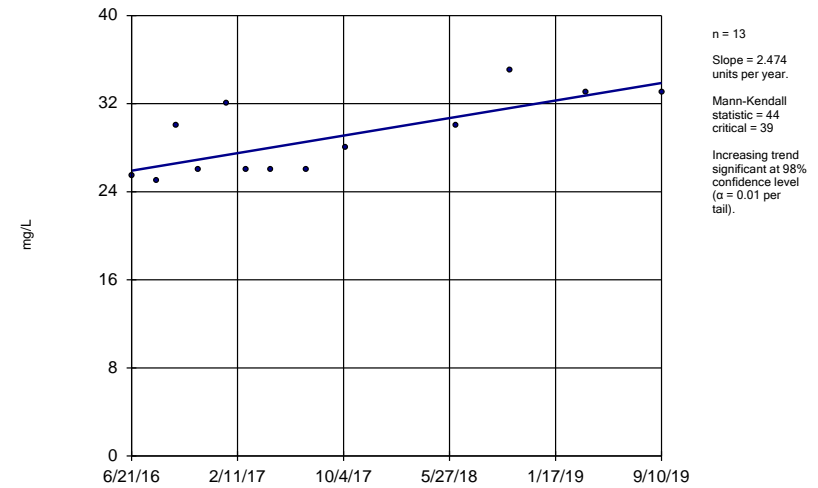
Constituent: Calcium Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator MGWC-1



Constituent: Calcium Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

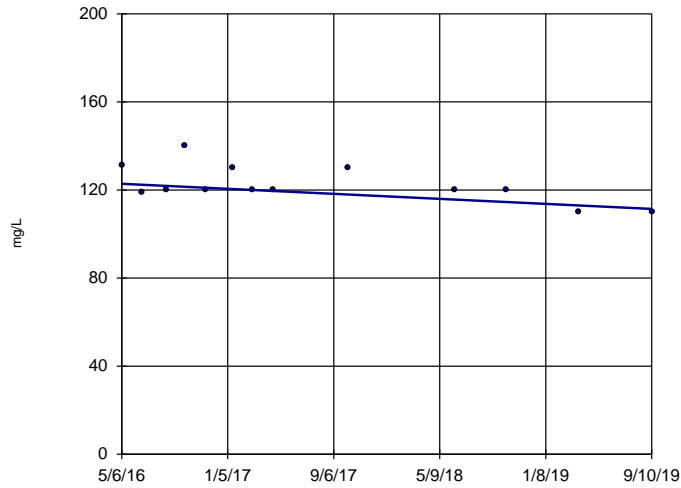
### Sen's Slope Estimator MGWC-12



Constituent: Calcium Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-2

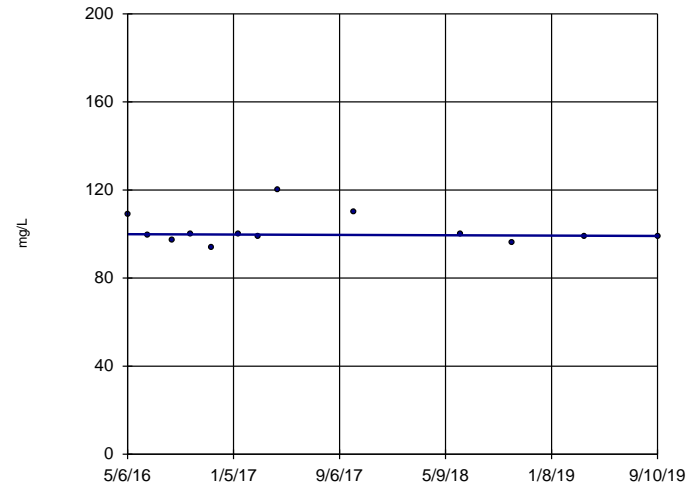


n = 13  
 Slope = -3.405  
 units per year.  
 Mann-Kendall  
 statistic = -27  
 critical = -39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Calcium Analysis Run 11/5/2019 1:44 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-3

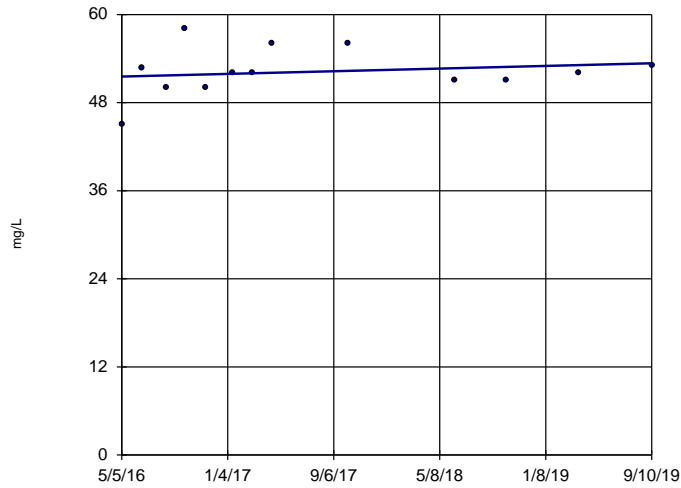


n = 13  
 Slope = -0.2354  
 units per year.  
 Mann-Kendall  
 statistic = -8  
 critical = -39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Calcium Analysis Run 11/5/2019 1:44 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-7

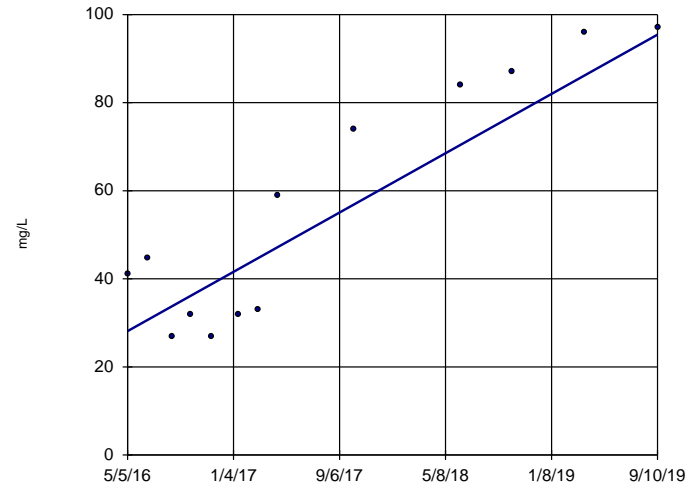


n = 13  
 Slope = 0.537  
 units per year.  
 Mann-Kendall  
 statistic = 16  
 critical = 39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Calcium Analysis Run 11/5/2019 1:44 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-8

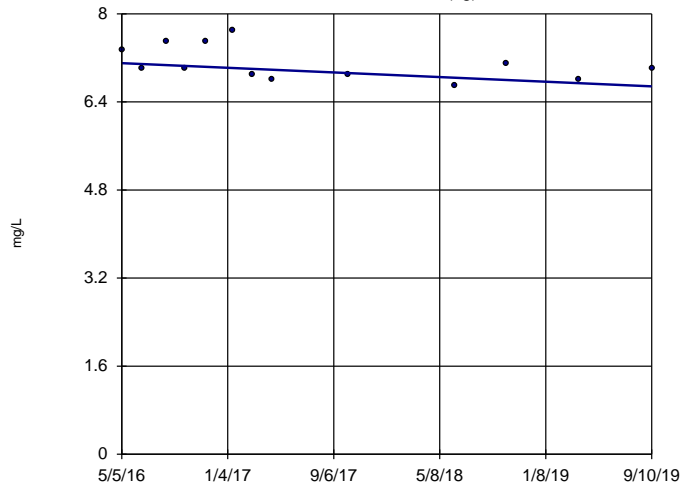


n = 13  
 Slope = 20.09  
 units per year.  
 Mann-Kendall  
 statistic = 54  
 critical = 39  
 Increasing trend  
 significant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Calcium Analysis Run 11/5/2019 1:44 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-10 (bg)

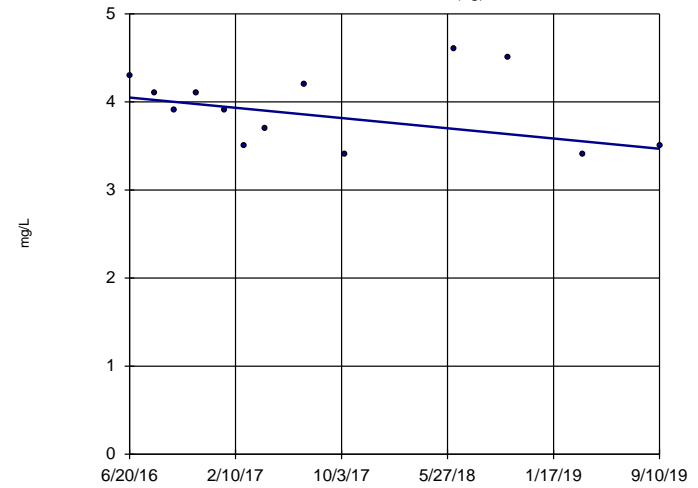


n = 13  
Slope = -0.1259 units per year.  
Mann-Kendall statistic = -26  
critical = -39  
Trend not significant at 98% confidence level ( $\alpha = 0.01$  per tail).

Constituent: Chloride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-11 (bg)

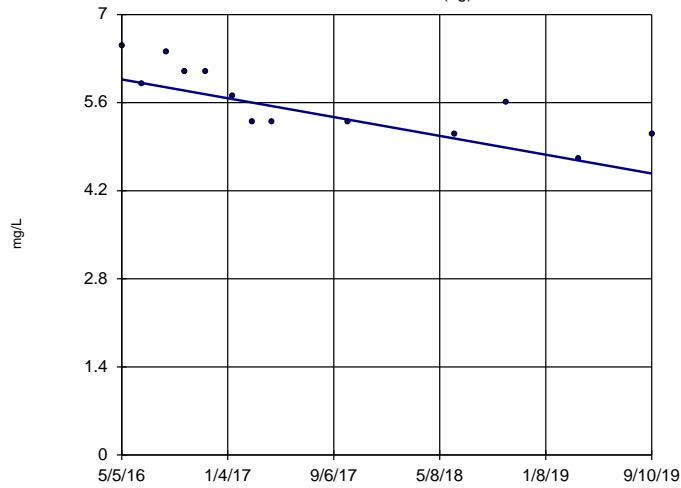


n = 13  
Slope = -0.1799 units per year.  
Mann-Kendall statistic = -18  
critical = -39  
Trend not significant at 98% confidence level ( $\alpha = 0.01$  per tail).

Constituent: Chloride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-5 (bg)

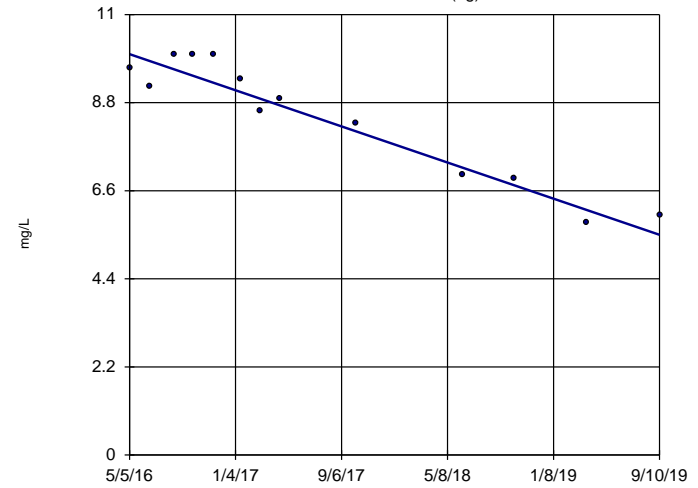


n = 13  
Slope = -0.4462 units per year.  
Mann-Kendall statistic = -57  
critical = -39  
Decreasing trend significant at 98% confidence level ( $\alpha = 0.01$  per tail).

Constituent: Chloride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-6 (bg)



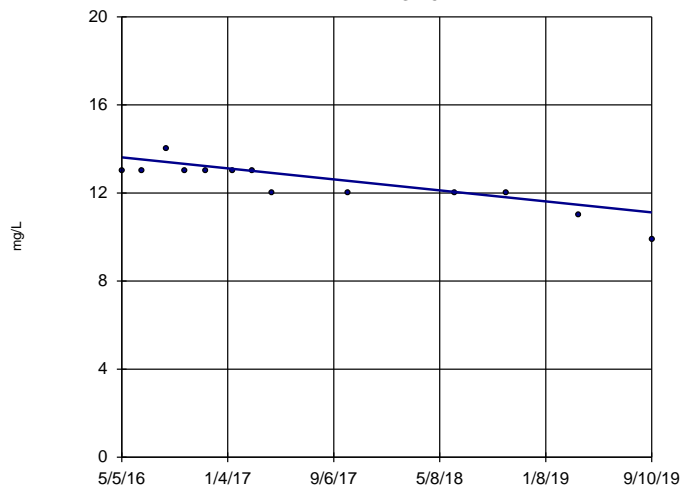
n = 13  
Slope = -1.345 units per year.  
Mann-Kendall statistic = -57  
critical = -39  
Decreasing trend significant at 98% confidence level ( $\alpha = 0.01$  per tail).

Constituent: Chloride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



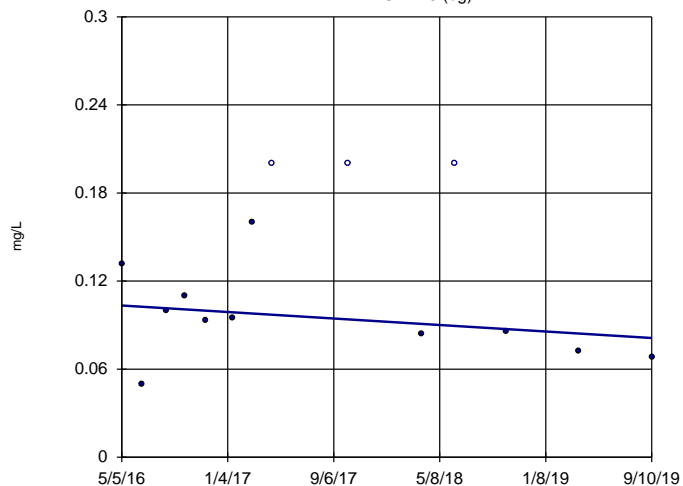
### Sen's Slope Estimator

MGWC-7



### Sen's Slope Estimator

MGWA-5 (bg)

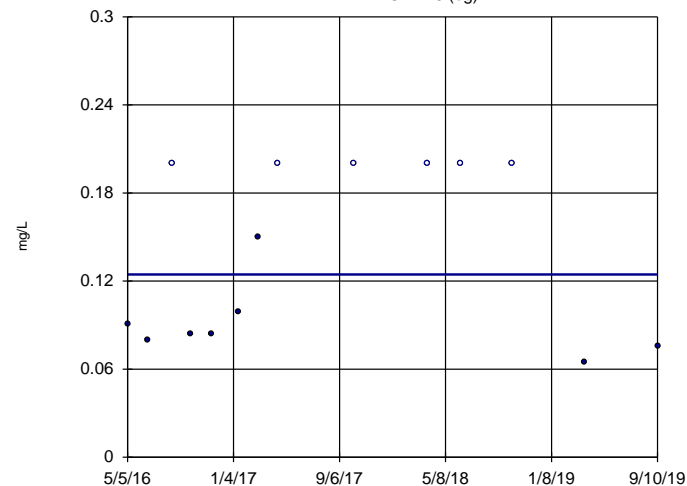


n = 14  
Slope = -0.006596  
units per year.  
Mann-Kendall  
statistic = -10  
critical = -44  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Fluoride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-6 (bg)

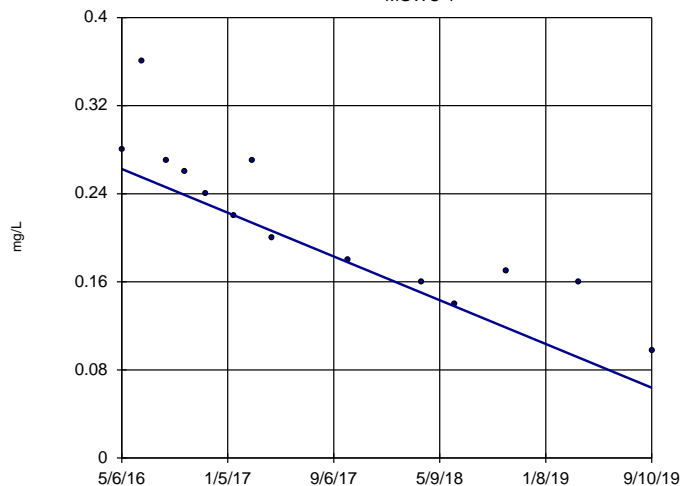


n = 14  
Slope = 0  
units per year.  
Mann-Kendall  
statistic = 13  
critical = 44  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Fluoride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-1

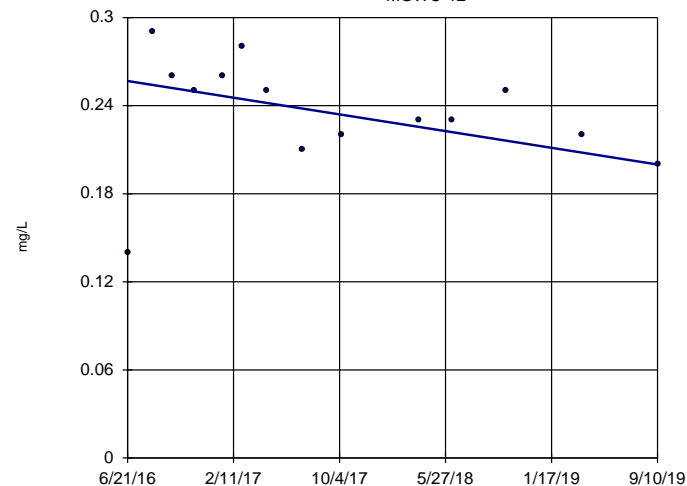


n = 14  
Slope = -0.05935  
units per year.  
Mann-Kendall  
statistic = -75  
critical = -44  
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: Fluoride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

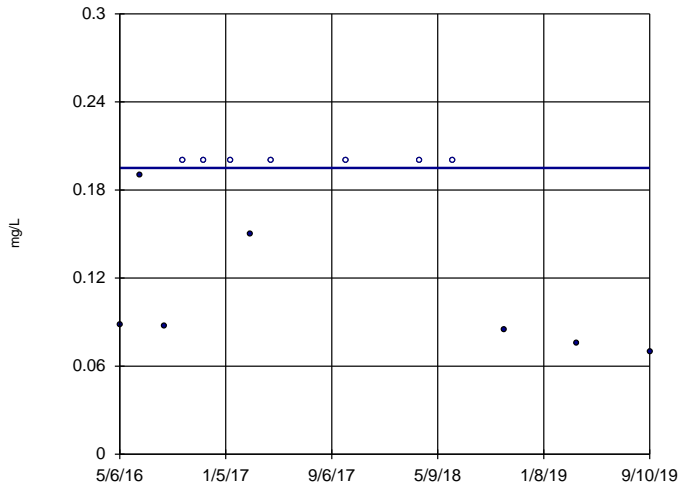
MGWC-12



n = 14  
Slope = -0.01763  
units per year.  
Mann-Kendall  
statistic = -31  
critical = -44  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

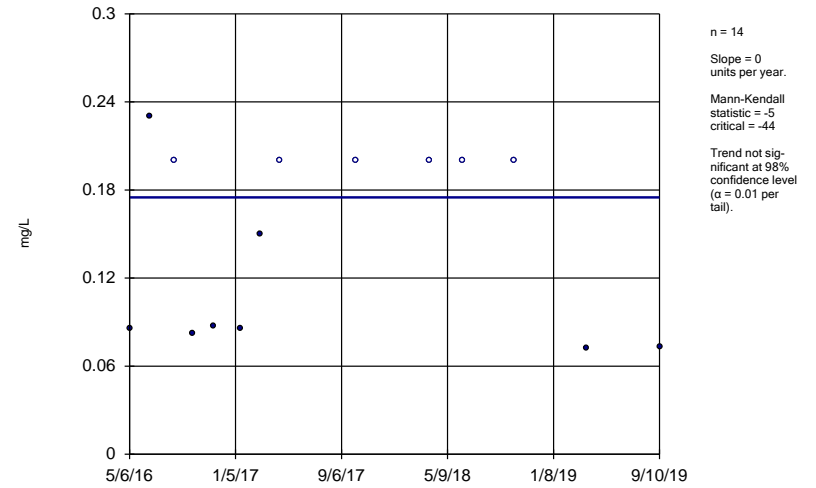
Constituent: Fluoride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator MGWC-2



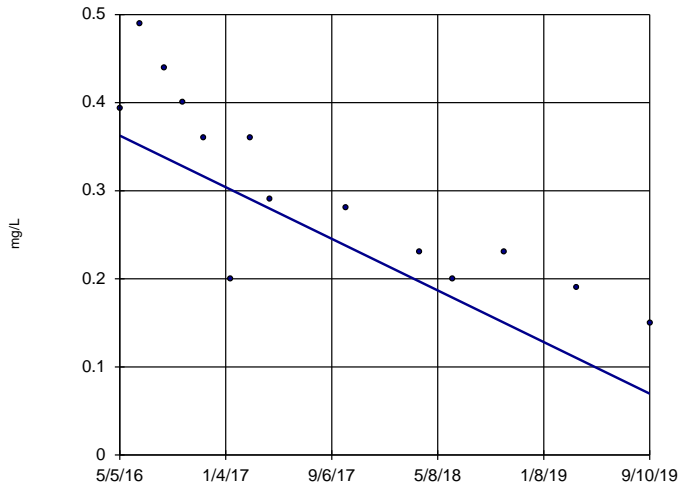
Constituent: Fluoride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator MGWC-3



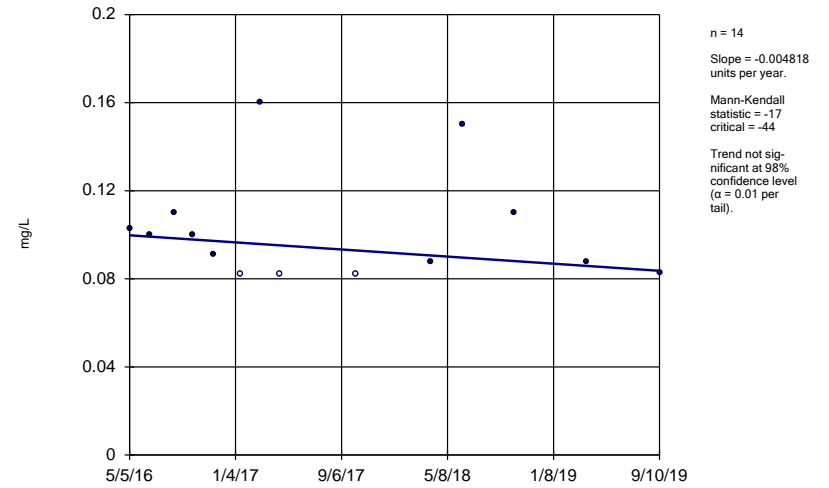
Constituent: Fluoride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator MGWC-7



Constituent: Fluoride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator MGWC-8

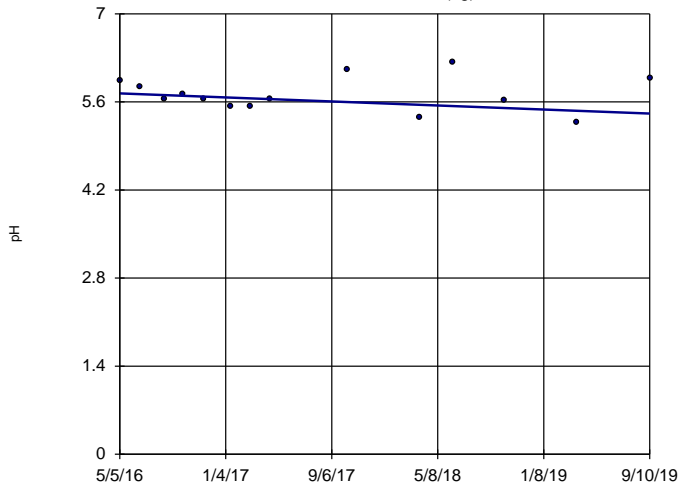


Constituent: Fluoride Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



Sen's Slope Estimator

MGWA-10 (bg)

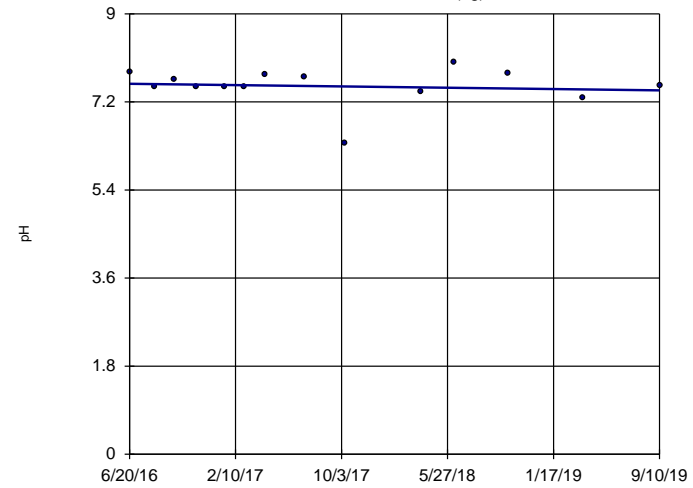


n = 14  
Slope = -0.09548 units per year.  
Mann-Kendall statistic = -18  
critical = -44  
Trend not significant at 98% confidence level ( $\alpha = 0.01$  per tail).

Constituent: pH Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator

MGWA-11 (bg)

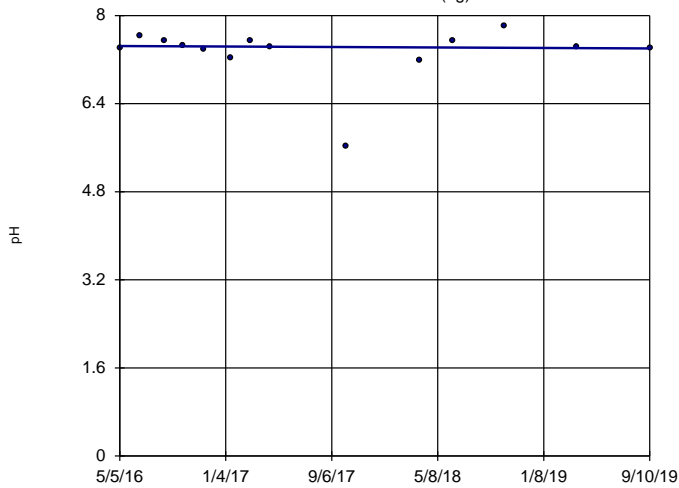


n = 14  
Slope = -0.04067 units per year.  
Mann-Kendall statistic = -10  
critical = -44  
Trend not significant at 98% confidence level ( $\alpha = 0.01$  per tail).

Constituent: pH Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator

MGWA-5 (bg)

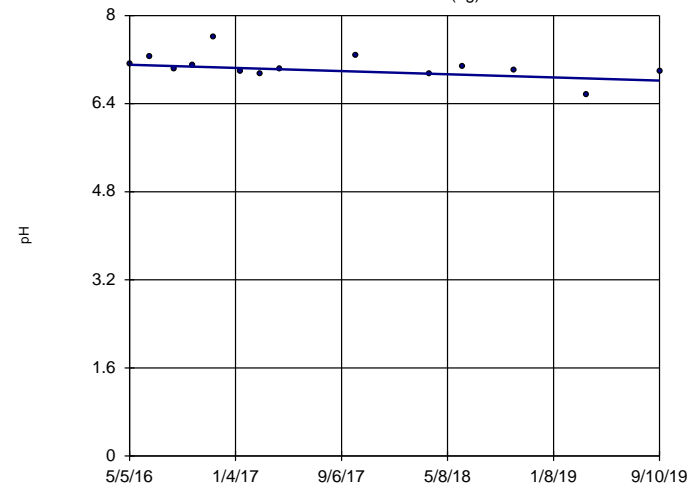


n = 14  
Slope = -0.01356 units per year.  
Mann-Kendall statistic = -6  
critical = -44  
Trend not significant at 98% confidence level ( $\alpha = 0.01$  per tail).

Constituent: pH Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Sen's Slope Estimator

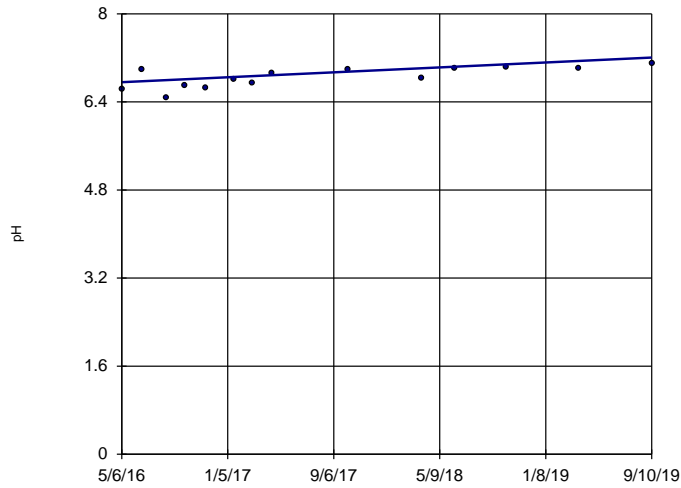
MGWA-6 (bg)



n = 14  
Slope = -0.08594 units per year.  
Mann-Kendall statistic = -37  
critical = -44  
Trend not significant at 98% confidence level ( $\alpha = 0.01$  per tail).

Constituent: pH Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

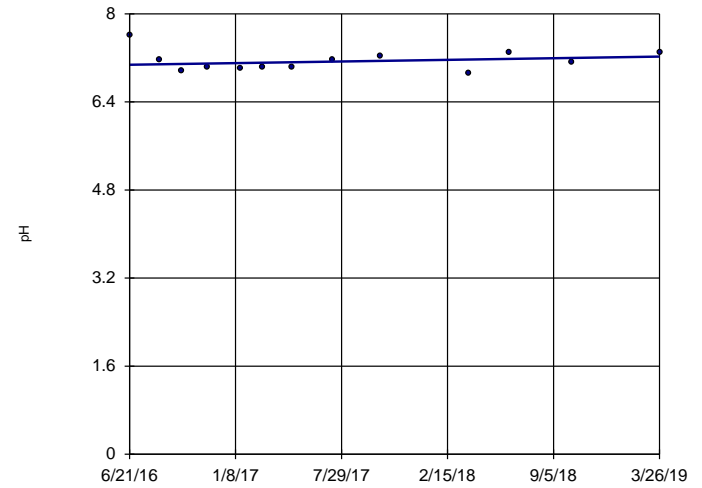
### Sen's Slope Estimator MGWC-1



n = 14  
Slope = 0.1338  
units per year.  
Mann-Kendall  
statistic = 63  
critical = 44  
Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: pH Analysis Run 11/5/2019 1:44 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

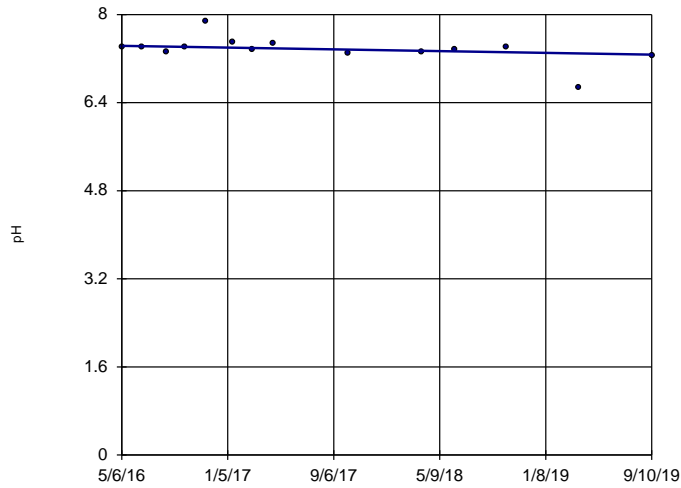
### Sen's Slope Estimator MGWC-12



n = 13  
Slope = 0.05412  
units per year.  
Mann-Kendall  
statistic = 11  
critical = 39  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: pH Analysis Run 11/5/2019 1:45 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

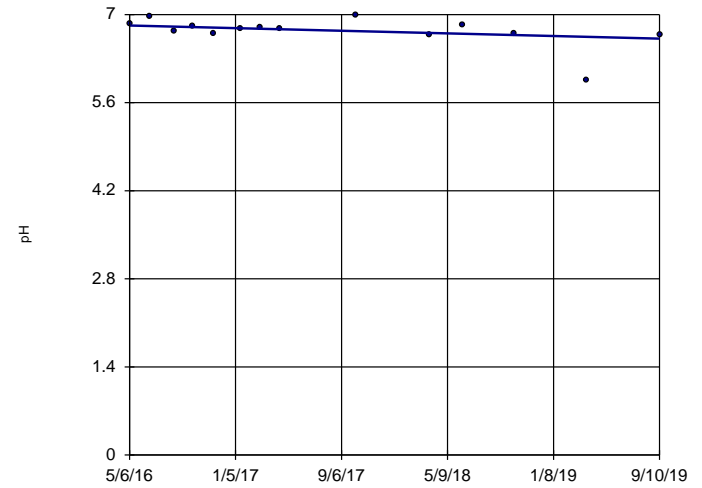
### Sen's Slope Estimator MGWC-2



n = 14  
Slope = -0.0474  
units per year.  
Mann-Kendall  
statistic = -33  
critical = -44  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: pH Analysis Run 11/5/2019 1:45 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

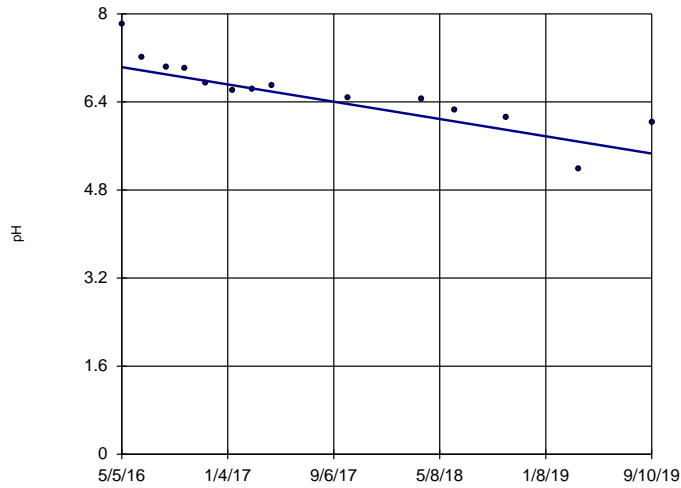
### Sen's Slope Estimator MGWC-3



n = 14  
Slope = -0.06218  
units per year.  
Mann-Kendall  
statistic = -37  
critical = -44  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: pH Analysis Run 11/5/2019 1:45 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

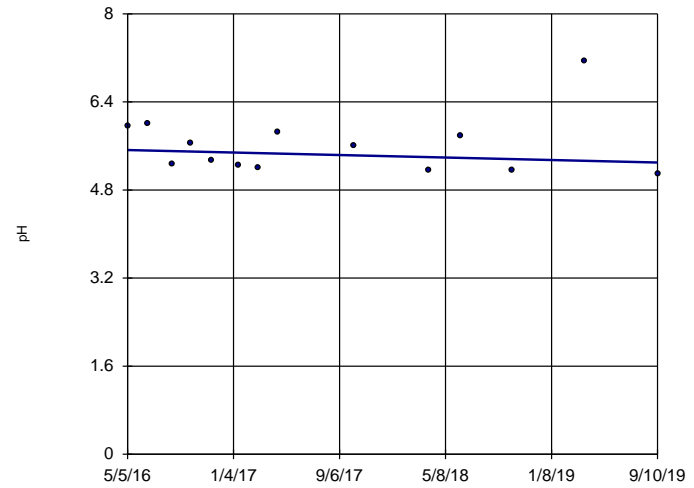
### Sen's Slope Estimator MGWC-7



n = 14  
 Slope = -0.4687  
 units per year.  
 Mann-Kendall  
 statistic = -83  
 critical = -44  
 Decreasing trend  
 significant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: pH Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

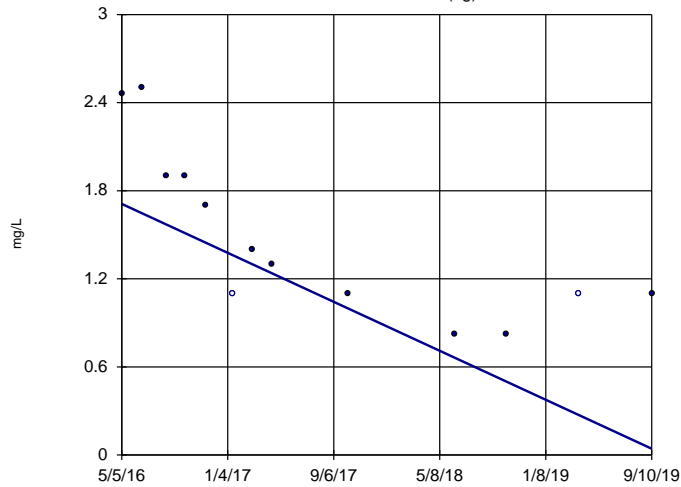
### Sen's Slope Estimator MGWC-8



n = 14  
 Slope = -0.06682  
 units per year.  
 Mann-Kendall  
 statistic = -29  
 critical = -44  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: pH Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

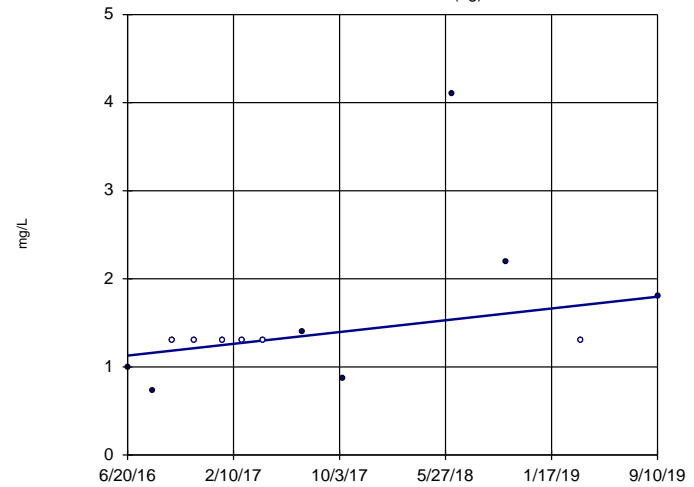
### Sen's Slope Estimator MGWA-10 (bg)



n = 13  
 Slope = -0.4977  
 units per year.  
 Mann-Kendall  
 statistic = -56  
 critical = -39  
 Decreasing trend  
 significant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Sulfate Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

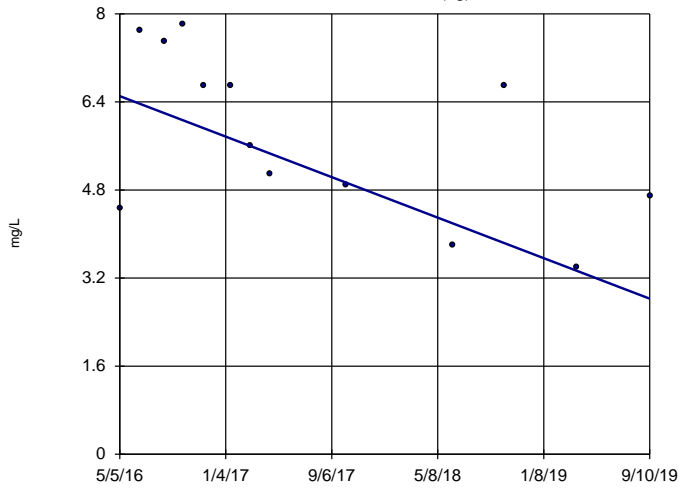
### Sen's Slope Estimator MGWA-11 (bg)



n = 13  
 Slope = 0.2074  
 units per year.  
 Mann-Kendall  
 statistic = 35  
 critical = 39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 ( $\alpha = 0.01$  per  
 tail).

Constituent: Sulfate Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

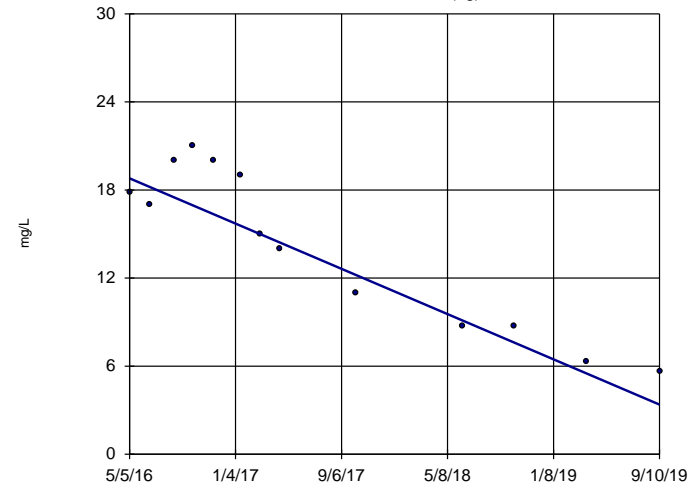
### Sen's Slope Estimator MGWA-5 (bg)



n = 13  
 Slope = -1.098  
 units per year.  
 Mann-Kendall  
 statistic = -39  
 critical = -39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 (α = 0.01 per  
 tail).

Constituent: Sulfate Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

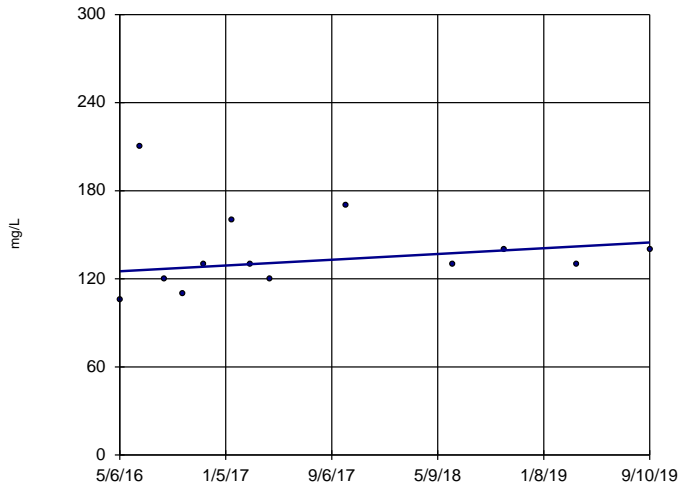
### Sen's Slope Estimator MGWA-6 (bg)



n = 13  
 Slope = -4.598  
 units per year.  
 Mann-Kendall  
 statistic = -58  
 critical = -39  
 Decreasing trend  
 significant at 98%  
 confidence level  
 (α = 0.01 per  
 tail).

Constituent: Sulfate Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

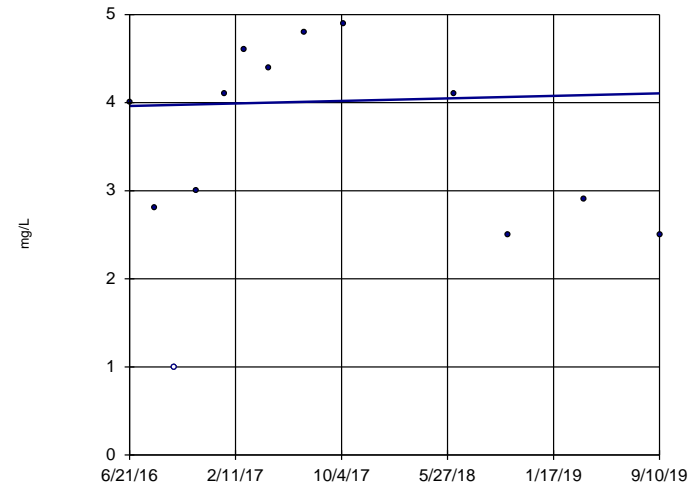
### Sen's Slope Estimator MGWC-1



n = 13  
 Slope = 5.849  
 units per year.  
 Mann-Kendall  
 statistic = 20  
 critical = 39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 (α = 0.01 per  
 tail).

Constituent: Sulfate Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator MGWC-12

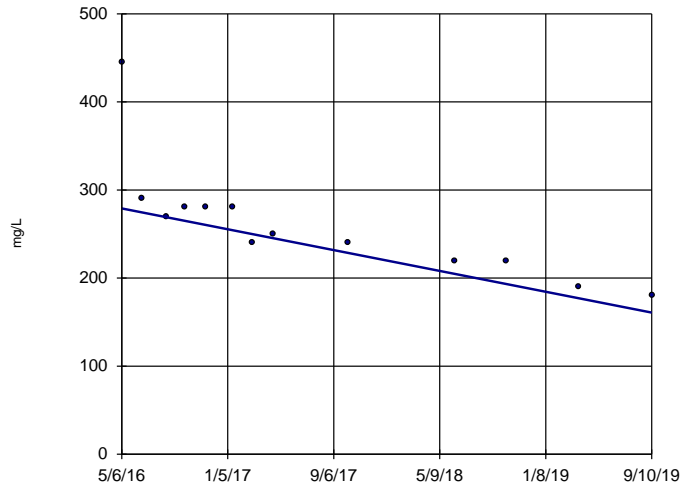


n = 13  
 Slope = 0.04448  
 units per year.  
 Mann-Kendall  
 statistic = 4  
 critical = 39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 (α = 0.01 per  
 tail).

Constituent: Sulfate Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

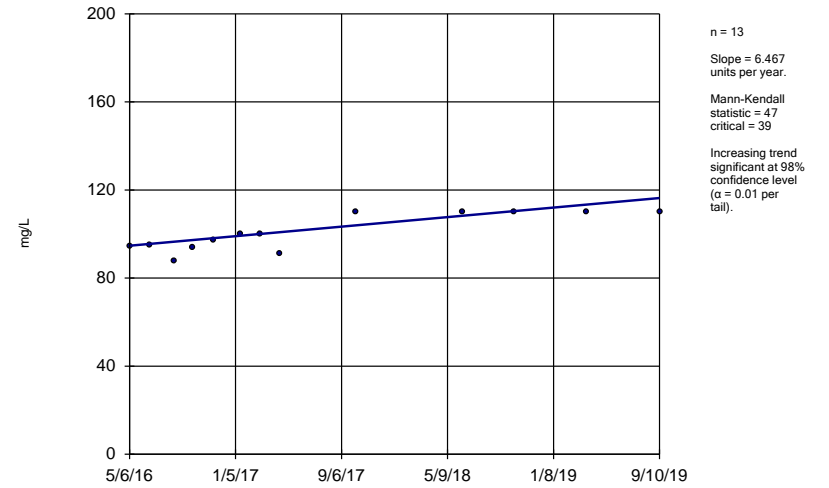
MGWC-2



Constituent: Sulfate Analysis Run 11/5/2019 1:45 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

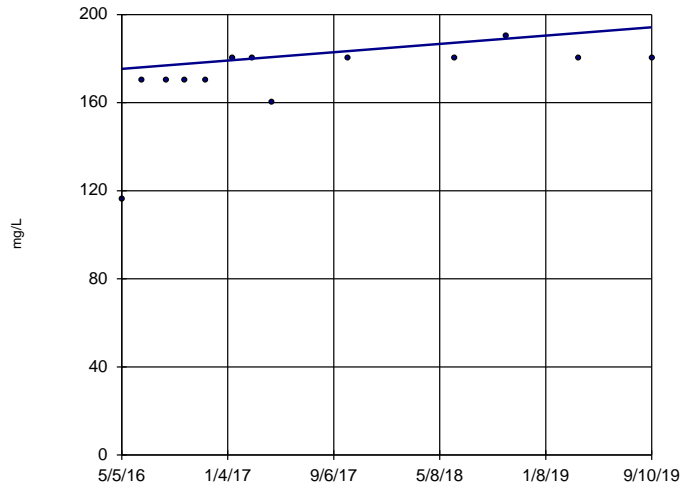
MGWC-3



Constituent: Sulfate Analysis Run 11/5/2019 1:45 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

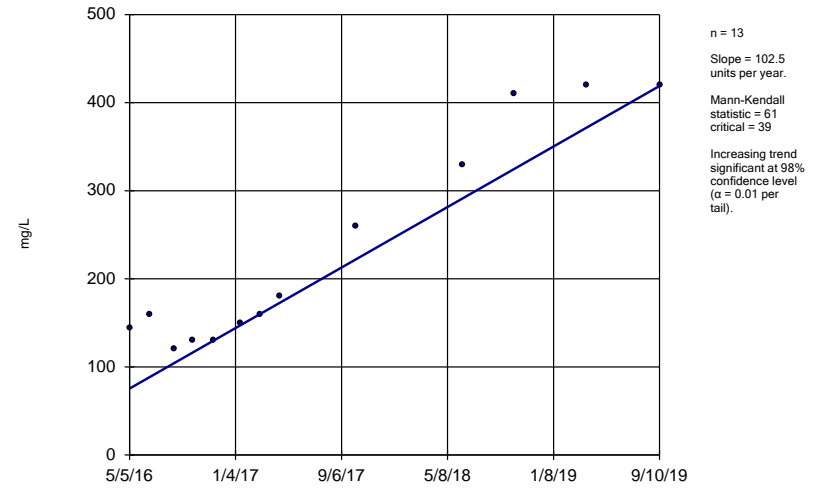
MGWC-7



Constituent: Sulfate Analysis Run 11/5/2019 1:45 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

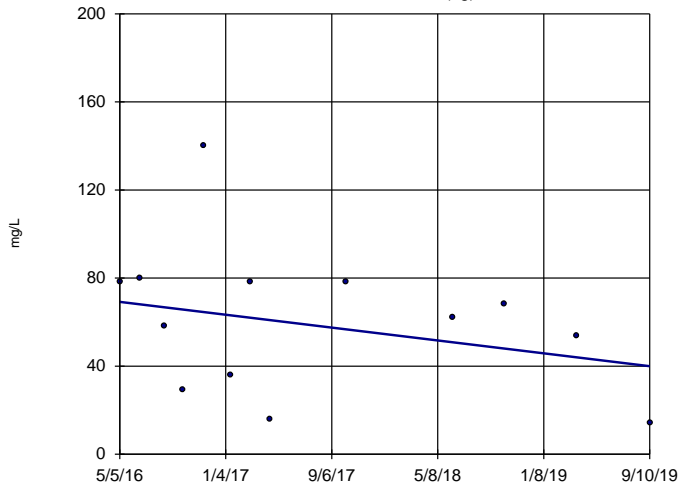
MGWC-8



Constituent: Sulfate Analysis Run 11/5/2019 1:45 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-10 (bg)

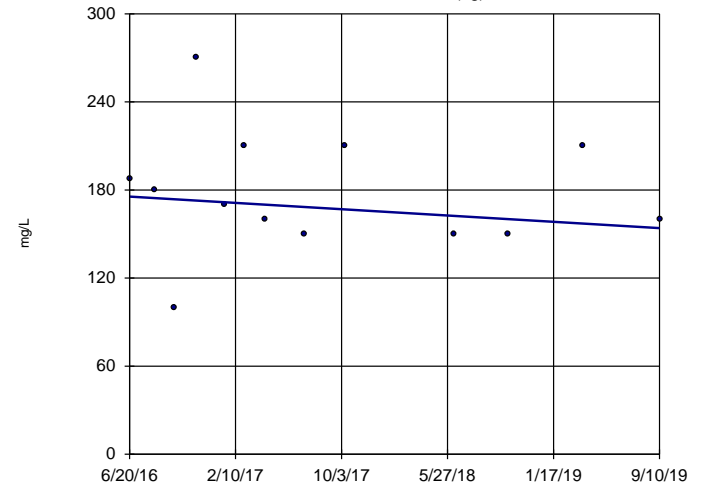


n = 13  
 Slope = -8.705 units per year.  
 Mann-Kendall statistic = -25  
 critical = -39  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: TDS Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-11 (bg)

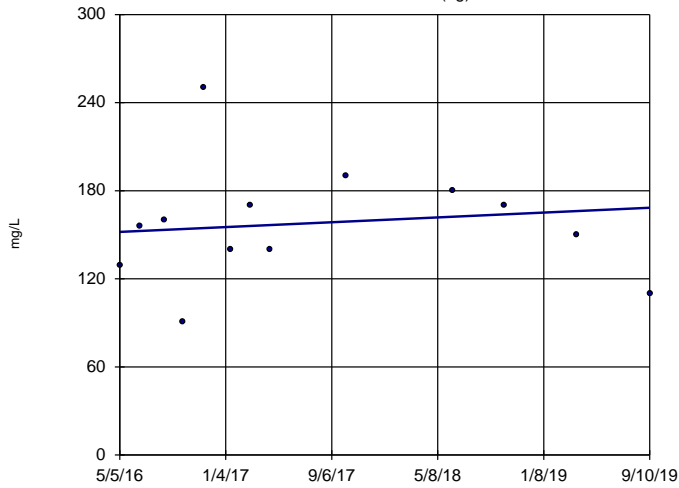


n = 13  
 Slope = -6.642 units per year.  
 Mann-Kendall statistic = -11  
 critical = -39  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: TDS Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-5 (bg)

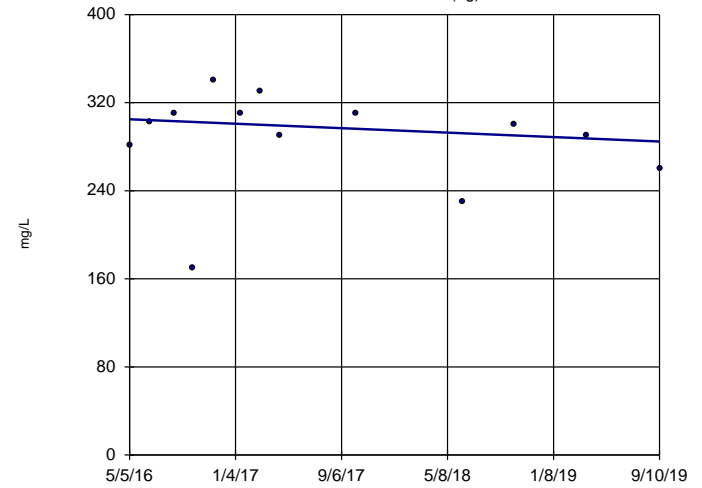


n = 13  
 Slope = 4.91 units per year.  
 Mann-Kendall statistic = 6  
 critical = 39  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: TDS Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWA-6 (bg)

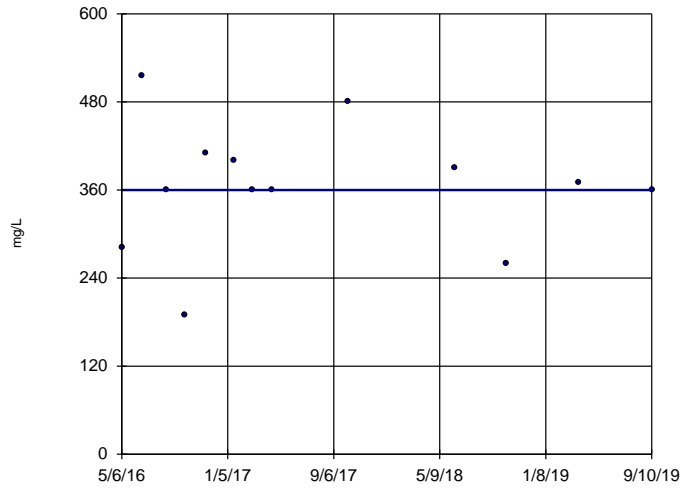


n = 13  
 Slope = -6.026 units per year.  
 Mann-Kendall statistic = -12  
 critical = -39  
 Trend not significant at 98% confidence level (α = 0.01 per tail).

Constituent: TDS Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-1

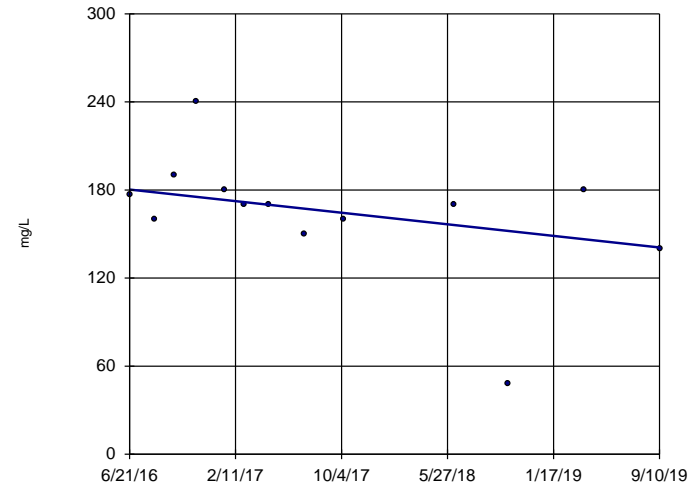


n = 13  
 Slope = 0  
 units per year.  
 Mann-Kendall  
 statistic = -4  
 critical = -39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 (α = 0.01 per  
 tail).

Constituent: TDS Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-12

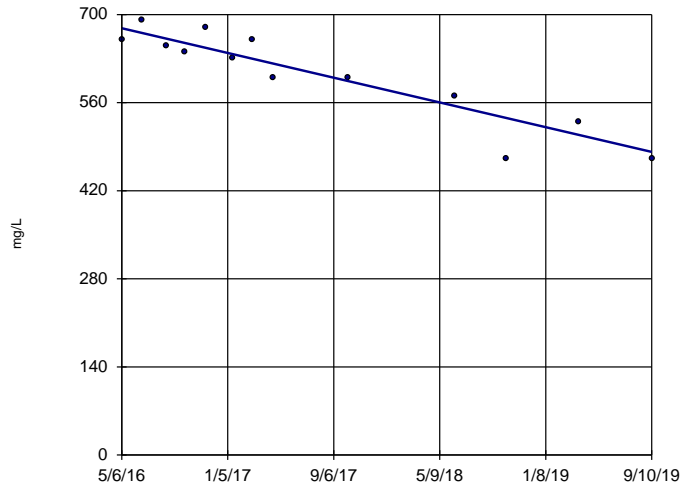


n = 13  
 Slope = -12.25  
 units per year.  
 Mann-Kendall  
 statistic = -29  
 critical = -39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 (α = 0.01 per  
 tail).

Constituent: TDS Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-2

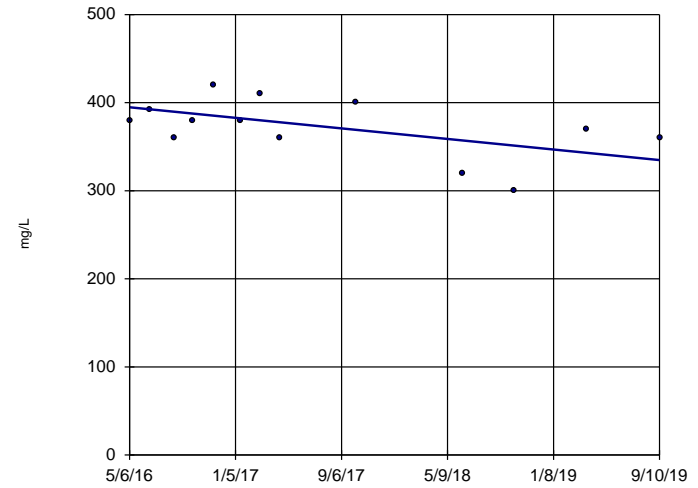


n = 13  
 Slope = -58.66  
 units per year.  
 Mann-Kendall  
 statistic = -60  
 critical = -39  
 Decreasing trend  
 significant at 98%  
 confidence level  
 (α = 0.01 per  
 tail).

Constituent: TDS Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator

MGWC-3

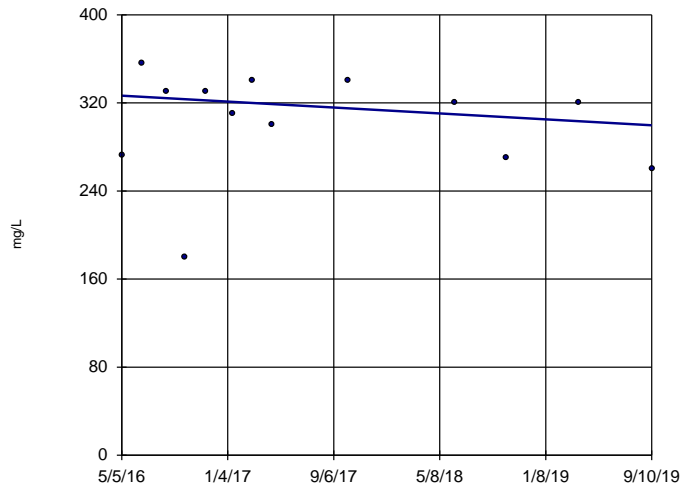


n = 13  
 Slope = -17.9  
 units per year.  
 Mann-Kendall  
 statistic = -24  
 critical = -39  
 Trend not sig-  
 nificant at 98%  
 confidence level  
 (α = 0.01 per  
 tail).

Constituent: TDS Analysis Run 11/5/2019 1:45 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



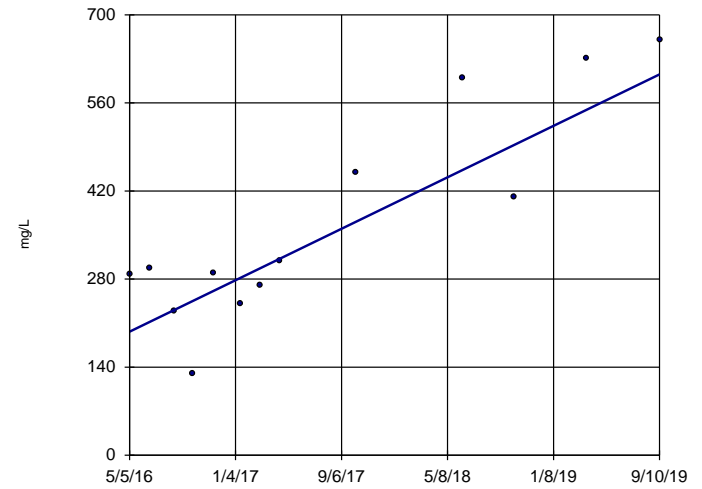
### Sen's Slope Estimator MGWC-7



n = 13  
Slope = -8.02  
units per year.  
Mann-Kendall  
statistic = -15  
critical = -39  
Trend not sig-  
nificant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: TDS Analysis Run 11/5/2019 1:45 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Sen's Slope Estimator MGWC-8



n = 13  
Slope = 122  
units per year.  
Mann-Kendall  
statistic = 50  
critical = 39  
Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

Constituent: TDS Analysis Run 11/5/2019 1:45 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

# Tolerance Limit

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 11/7/2019, 4:28 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	n/a	0.0352	n/a	n/a	n/a	49	38.78	n/a	0.08099	NP Inter(normal...
Barium (mg/L)	n/a	0.12	n/a	n/a	n/a	49	0	n/a	0.08099	NP Inter(normal...
Cadmium (mg/L)	n/a	0.0025	n/a	n/a	n/a	49	100	n/a	0.08099	NP Inter(NDs)
Cobalt (mg/L)	n/a	0.0025	n/a	n/a	n/a	49	79.59	n/a	0.08099	NP Inter(NDs)
Combined Radium 226 + 228 (pCi/L)	n/a	1.129	n/a	n/a	n/a	50	10	No	0.05	Inter
Fluoride (mg/L)	n/a	0.18	n/a	n/a	n/a	53	39.62	n/a	0.06597	NP Inter(normal...
Lithium (mg/L)	n/a	0.03	n/a	n/a	n/a	49	28.57	n/a	0.08099	NP Inter(normal...

# Confidence Interval - Significant Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 10/31/2019, 3:39 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
<b>Cobalt (mg/L)</b>	<b>MGWC-7</b>	<b>0.01106</b>	<b>0.008206</b>	<b>0.006</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>x^2</b>	<b>0.01</b>	<b>Param.</b>
<b>Lithium (mg/L)</b>	<b>MGWC-7</b>	<b>0.14</b>	<b>0.11</b>	<b>0.04</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>

# Confidence Interval - All Results

Plant McIntosh    Client: GEI    Data: McIntosh Ash Pond Export    Printed 10/31/2019, 3:39 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	MGWA-10 (bg)	0.001	0.00095	0.035	No	13	76.92	No	0.01	NP (NDs)
Arsenic (mg/L)	MGWA-11 (bg)	0.002378	0.001082	0.035	No	13	7.692	No	0.01	Param.
Arsenic (mg/L)	MGWA-5 (bg)	0.001	0.00039	0.035	No	13	69.23	No	0.01	NP (normality)
Arsenic (mg/L)	MGWA-6 (bg)	0.02868	0.01374	0.035	No	13	0	No	0.01	Param.
Arsenic (mg/L)	MGWC-1	0.003297	0.002148	0.035	No	13	0	No	0.01	Param.
Arsenic (mg/L)	MGWC-12	0.001341	0.0006894	0.035	No	13	7.692	No	0.01	Param.
Arsenic (mg/L)	MGWC-2	0.001	0.00065	0.035	No	13	76.92	No	0.01	NP (NDs)
Arsenic (mg/L)	MGWC-3	0.001715	0.001311	0.035	No	13	0	x^2	0.01	Param.
Arsenic (mg/L)	MGWC-7	0.001109	0.000763	0.035	No	13	38.46	No	0.01	Param.
Arsenic (mg/L)	MGWC-8	0.001	0.00059	0.035	No	13	84.62	No	0.01	NP (NDs)
Barium (mg/L)	MGWA-10 (bg)	0.03101	0.02369	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWA-11 (bg)	0.1156	0.08875	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWA-5 (bg)	0.03692	0.03285	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWA-6 (bg)	0.0531	0.03988	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWC-1	0.12	0.094	2	No	13	0	No	0.01	NP (normality)
Barium (mg/L)	MGWC-12	0.06177	0.04436	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWC-2	0.05719	0.04985	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWC-3	0.1533	0.1336	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWC-7	0.0152	0.0098	2	No	13	0	No	0.01	NP (normality)
Barium (mg/L)	MGWC-8	0.03842	0.03374	2	No	13	0	No	0.01	Param.
Cadmium (mg/L)	MGWA-10 (bg)	0.001	0.001	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-11 (bg)	0.001	0.001	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-5 (bg)	0.001	0.001	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-6 (bg)	0.001	0.001	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-1	0.001	0.00017	0.005	No	13	76.92	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-12	0.001	0.001	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-2	0.003439	0.00117	0.005	No	13	0	x^(1/3)	0.01	Param.
Cadmium (mg/L)	MGWC-3	0.001	0.001	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-7	0.001	0.001	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-8	0.001	0.00035	0.005	No	13	38.46	No	0.01	NP (normality)
Cobalt (mg/L)	MGWA-10 (bg)	0.0005	0.00018	0.006	No	13	84.62	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-11 (bg)	0.0005	0.000039	0.006	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-5 (bg)	0.0005	0.000012	0.006	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-6 (bg)	0.000594	0.0004248	0.006	No	13	38.46	No	0.01	Param.
Cobalt (mg/L)	MGWC-1	0.00058	0.0004	0.006	No	13	61.54	No	0.01	NP (normality)
Cobalt (mg/L)	MGWC-12	0.0005	0.00016	0.006	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWC-2	0.003597	0.003051	0.006	No	13	0	No	0.01	Param.
Cobalt (mg/L)	MGWC-3	0.0006257	0.0004875	0.006	No	13	15.38	No	0.01	Param.
<b>Cobalt (mg/L)</b>	<b>MGWC-7</b>	<b>0.01106</b>	<b>0.008206</b>	<b>0.006</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>x^2</b>	<b>0.01</b>	<b>Param.</b>
Cobalt (mg/L)	MGWC-8	0.019	0.00359	0.006	No	13	0	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MGWA-10 (bg)	1.11	0.427	5	No	13	7.692	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MGWA-11 (bg)	5	0.322	5	No	13	23.08	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MGWA-5 (bg)	0.85	0.107	5	No	13	15.38	No	0.01	NP (Cohens/xfrm)
Combined Radium 226 + 228 (pCi/L)	MGWA-6 (bg)	0.926	0.316	5	No	13	7.692	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MGWC-1	1.95	1.07	5	No	13	0	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MGWC-12	1.083	0.3335	5	No	13	7.692	ln(x)	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-2	5	0.516	5	No	13	23.08	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MGWC-3	1.7	1.374	5	No	13	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-7	1.268	0.7995	5	No	13	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-8	2.056	1.323	5	No	13	0	No	0.01	Param.

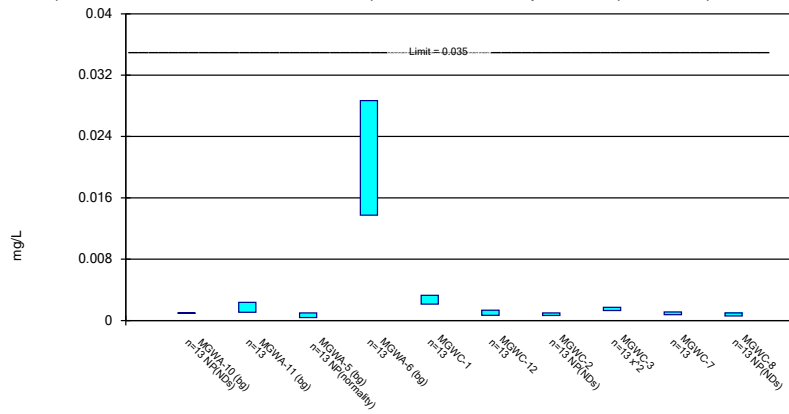
## Confidence Interval - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 10/31/2019, 3:39 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Fluoride (mg/L)	MGWA-10 (bg)	0.12	0.046	4	No	14	78.57	No	0.01	NP (NDs)
Fluoride (mg/L)	MGWA-11 (bg)	0.136	0.08752	4	No	14	7.143	No	0.01	Param.
Fluoride (mg/L)	MGWA-5 (bg)	0.1155	0.0774	4	No	14	21.43	No	0.01	Param.
Fluoride (mg/L)	MGWA-6 (bg)	0.15	0.08	4	No	14	42.86	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-1	0.2641	0.1656	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	MGWC-12	0.2616	0.2084	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	MGWC-2	0.15	0.085	4	No	14	50	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-3	0.15	0.082	4	No	14	42.86	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-7	0.3762	0.2258	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	MGWC-8	0.15	0.088	4	No	14	21.43	No	0.01	NP (normality)
Lithium (mg/L)	MGWA-10 (bg)	0.008707	0.006355	0.04	No	13	7.692	No	0.01	Param.
Lithium (mg/L)	MGWA-11 (bg)	0.02338	0.01493	0.04	No	13	0	No	0.01	Param.
Lithium (mg/L)	MGWA-5 (bg)	0.0107	0.007052	0.04	No	13	7.692	No	0.01	Param.
Lithium (mg/L)	MGWA-6 (bg)	0.0051	0.005	0.04	No	13	92.31	No	0.01	NP (NDs)
Lithium (mg/L)	MGWC-1	0.01327	0.01029	0.04	No	13	0	No	0.01	Param.
Lithium (mg/L)	MGWC-12	0.02264	0.0137	0.04	No	13	0	No	0.01	Param.
Lithium (mg/L)	MGWC-2	0.006328	0.004657	0.04	No	13	7.692	No	0.01	Param.
Lithium (mg/L)	MGWC-3	0.014	0.01071	0.04	No	13	0	No	0.01	Param.
<b>Lithium (mg/L)</b>	<b>MGWC-7</b>	<b>0.14</b>	<b>0.11</b>	<b>0.04</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>
Lithium (mg/L)	MGWC-8	0.04178	0.02607	0.04	No	13	0	No	0.01	Param.

Parametric and Non-Parametric (NP) Confidence Interval

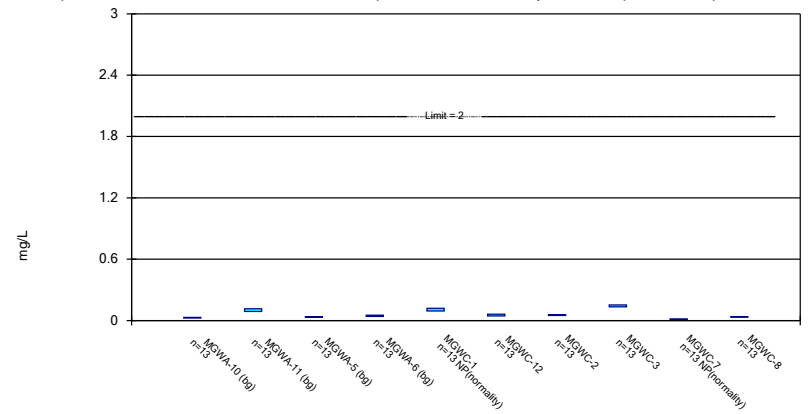
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 10/31/2019 3:37 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Parametric and Non-Parametric (NP) Confidence Interval

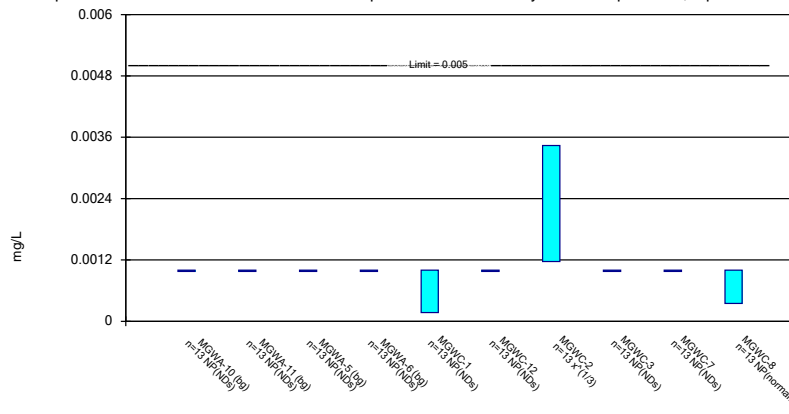
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 10/31/2019 3:37 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Parametric and Non-Parametric (NP) Confidence Interval

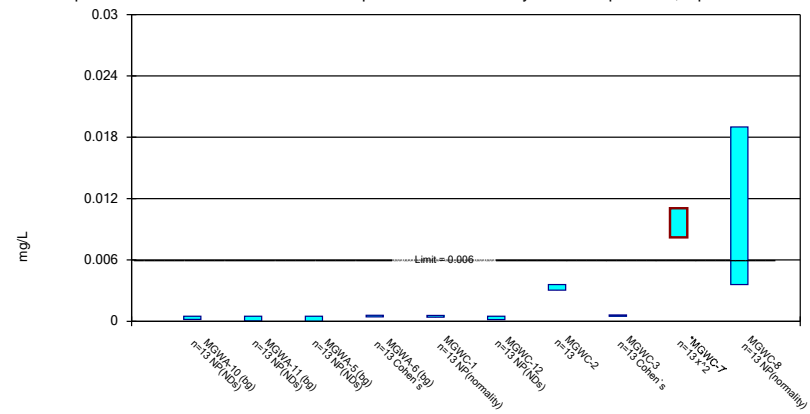
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 10/31/2019 3:37 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Parametric and Non-Parametric (NP) Confidence Interval

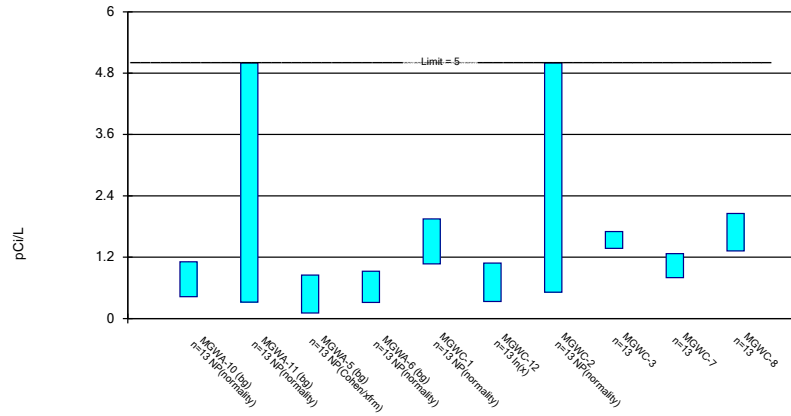
Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 10/31/2019 3:37 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

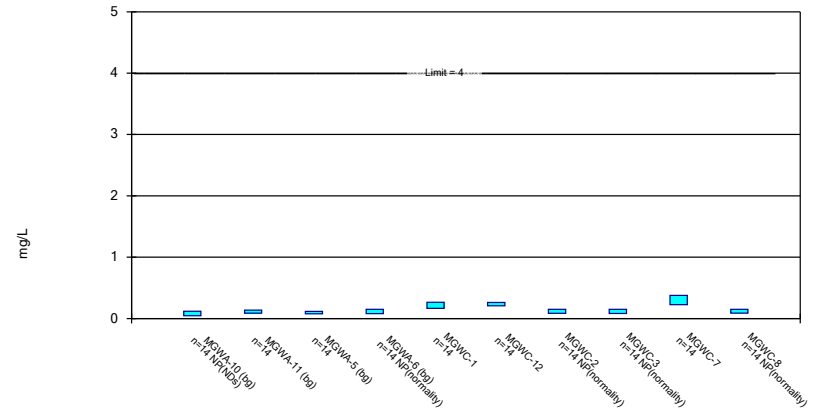
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 10/31/2019 3:37 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

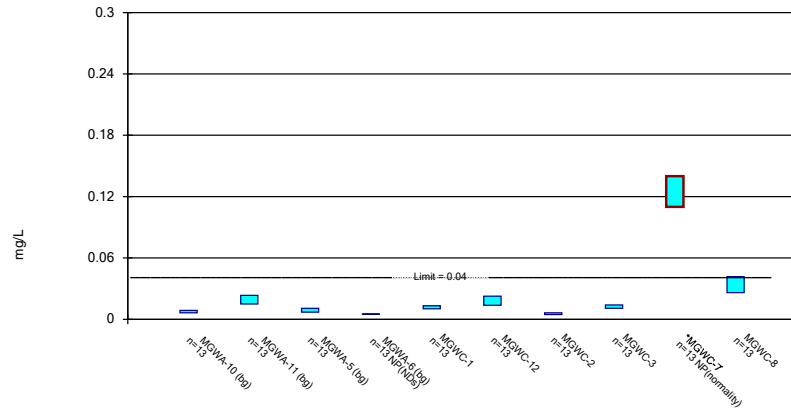
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 10/31/2019 3:37 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 10/31/2019 3:37 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export



## **Appendix C1**

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### **Sanitas Outputs for - State Compliance Methods – March 2019 (Appendix IV Confidence Intervals)**

# Confidence Interval - Significant Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/3/2019, 12:12 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	MGWC-2	0.003635	0.003117	0.0025	Yes	12	0	No	0.01	Param.
Cobalt (mg/L)	MGWC-7	0.01106	0.00794	0.0025	Yes	12	0	x^2	0.01	Param.
Cobalt (mg/L)	MGWC-8	0.018	0.00359	0.0025	Yes	12	0	No	0.01	NP (normality)
Lithium (mg/L)	MGWC-7	0.14	0.11	0.03	Yes	12	0	No	0.01	NP (normality)

# Confidence Interval - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/3/2019, 12:12 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	MGWA-10 (bg)	0.00095	0.00036	0.035	No	12	75	No	0.01	NP (normality)
Arsenic (mg/L)	MGWA-11 (bg)	0.002433	0.0009253	0.035	No	12	8.333	No	0.01	Param.
Arsenic (mg/L)	MGWA-5 (bg)	0.00062	0.00014	0.035	No	12	83.33	No	0.01	NP (NDs)
Arsenic (mg/L)	MGWA-6 (bg)	0.02992	0.01489	0.035	No	12	0	No	0.01	Param.
Arsenic (mg/L)	MGWC-1	0.003337	0.002243	0.035	No	12	0	sqrt(x)	0.01	Param.
Arsenic (mg/L)	MGWC-12	0.001551	0.0007234	0.035	No	12	16.67	No	0.01	Param.
Arsenic (mg/L)	MGWC-2	0.00065	0.00046	0.035	No	12	83.33	No	0.01	NP (NDs)
Arsenic (mg/L)	MGWC-3	0.001717	0.001289	0.035	No	12	8.333	x^2	0.01	Param.
Arsenic (mg/L)	MGWC-7	0.0012	0.00046	0.035	No	12	41.67	No	0.01	NP (normality)
Arsenic (mg/L)	MGWC-8	0.00059	0.00046	0.035	No	12	91.67	No	0.01	NP (NDs)
Barium (mg/L)	MGWA-10 (bg)	0.03098	0.02312	2	No	12	0	No	0.01	Param.
Barium (mg/L)	MGWA-11 (bg)	0.1123	0.08959	2	No	12	0	x^3	0.01	Param.
Barium (mg/L)	MGWA-5 (bg)	0.03712	0.03263	2	No	12	0	No	0.01	Param.
Barium (mg/L)	MGWA-6 (bg)	0.05413	0.04002	2	No	12	0	No	0.01	Param.
Barium (mg/L)	MGWC-1	0.12	0.094	2	No	12	0	No	0.01	NP (normality)
Barium (mg/L)	MGWC-12	0.05965	0.04316	2	No	12	0	No	0.01	Param.
Barium (mg/L)	MGWC-2	0.05761	0.04952	2	No	12	0	No	0.01	Param.
Barium (mg/L)	MGWC-3	0.1534	0.1323	2	No	12	0	sqrt(x)	0.01	Param.
Barium (mg/L)	MGWC-7	0.0152	0.0098	2	No	12	0	No	0.01	NP (normality)
Barium (mg/L)	MGWC-8	0.03873	0.0336	2	No	12	0	No	0.01	Param.
Cadmium (mg/L)	MGWA-10 (bg)	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-11 (bg)	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-5 (bg)	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-6 (bg)	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-1	0.0005	0.000126	0.005	No	12	83.33	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-12	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-2	0.003876	0.001197	0.005	No	12	8.333	sqrt(x)	0.01	Param.
Cadmium (mg/L)	MGWC-3	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-7	0.00034	0.00034	0.005	No	12	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-8	0.000784	0.0003	0.005	No	12	50	No	0.01	NP (normality)
Cobalt (mg/L)	MGWA-10 (bg)	0.0004	0.00018	0.0025	No	12	91.67	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-11 (bg)	0.0004	0.000039	0.0025	No	12	91.67	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-5 (bg)	0.0004	0.000012	0.0025	No	12	91.67	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-6 (bg)	0.0004944	0.0002995	0.0025	No	12	41.67	No	0.01	Param.
Cobalt (mg/L)	MGWC-1	0.00058	0.0004	0.0025	No	12	66.67	No	0.01	NP (normality)
Cobalt (mg/L)	MGWC-12	0.0004	0.0004	0.0025	No	12	100	No	0.01	NP (NDs)
<b>Cobalt (mg/L)</b>	<b>MGWC-2</b>	<b>0.003635</b>	<b>0.003117</b>	<b>0.0025</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Cobalt (mg/L)	MGWC-3	0.0006235	0.0004401	0.0025	No	12	16.67	No	0.01	Param.
<b>Cobalt (mg/L)</b>	<b>MGWC-7</b>	<b>0.01106</b>	<b>0.00794</b>	<b>0.0025</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>x^2</b>	<b>0.01</b>	<b>Param.</b>
<b>Cobalt (mg/L)</b>	<b>MGWC-8</b>	<b>0.018</b>	<b>0.00359</b>	<b>0.0025</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>
Combined Radium 226 + 228 (pCi/L)	MGWA-10 (bg)	0.9283	0.4967	5	No	12	8.333	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWA-11 (bg)	0.7924	0.3114	5	No	12	16.67	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWA-5 (bg)	0.5777	0.2285	5	No	12	8.333	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWA-6 (bg)	0.777	0.4066	5	No	12	8.333	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-1	1.95	1.07	5	No	12	0	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MGWC-12	0.7176	0.3199	5	No	12	8.333	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-2	0.694	0.412	5	No	12	25	No	0.01	NP (Cohens/xfrm)
Combined Radium 226 + 228 (pCi/L)	MGWC-3	1.711	1.353	5	No	12	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-7	1.298	0.7825	5	No	12	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-8	2.086	1.279	5	No	12	0	No	0.01	Param.

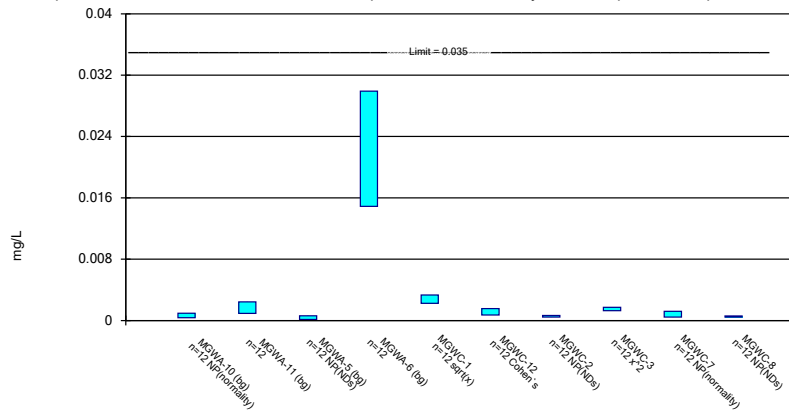
## Confidence Interval - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 7/3/2019, 12:12 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Fluoride (mg/L)	MGWA-10 (bg)	0.046	0.026	4	No	13	84.62	No	0.01	NP (NDs)
Fluoride (mg/L)	MGWA-11 (bg)	0.1394	0.08388	4	No	13	15.38	No	0.01	Param.
Fluoride (mg/L)	MGWA-5 (bg)	0.1146	0.05279	4	No	13	30.77	No	0.01	Param.
Fluoride (mg/L)	MGWA-6 (bg)	0.15	0.026	4	No	13	53.85	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-1	0.2714	0.1794	4	No	13	0	No	0.01	Param.
Fluoride (mg/L)	MGWC-12	0.2657	0.2097	4	No	13	0	No	0.01	Param.
Fluoride (mg/L)	MGWC-2	0.15	0.026	4	No	13	61.54	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-3	0.2	0.026	4	No	13	53.85	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-7	0.3879	0.2404	4	No	13	7.692	No	0.01	Param.
Fluoride (mg/L)	MGWC-8	0.1974	0.1036	4	No	13	30.77	No	0.01	Param.
Lithium (mg/L)	MGWA-10 (bg)	0.008358	0.005822	0.03	No	12	8.333	x^2	0.01	Param.
Lithium (mg/L)	MGWA-11 (bg)	0.02293	0.01424	0.03	No	12	0	No	0.01	Param.
Lithium (mg/L)	MGWA-5 (bg)	0.01086	0.005891	0.03	No	12	8.333	No	0.01	Param.
Lithium (mg/L)	MGWA-6 (bg)	0.0011	0.0011	0.03	No	12	100	No	0.01	NP (NDs)
Lithium (mg/L)	MGWC-1	0.01342	0.01018	0.03	No	12	0	No	0.01	Param.
Lithium (mg/L)	MGWC-12	0.02202	0.01324	0.03	No	12	0	sqrt(x)	0.01	Param.
Lithium (mg/L)	MGWC-2	0.006255	0.003762	0.03	No	12	8.333	No	0.01	Param.
Lithium (mg/L)	MGWC-3	0.01383	0.01044	0.03	No	12	0	No	0.01	Param.
<b>Lithium (mg/L)</b>	<b>MGWC-7</b>	<b>0.14</b>	<b>0.11</b>	<b>0.03</b>	<b>Yes</b>	<b>12</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>
Lithium (mg/L)	MGWC-8	0.04168	0.02482	0.03	No	12	0	No	0.01	Param.

### Parametric and Non-Parametric (NP) Confidence Interval

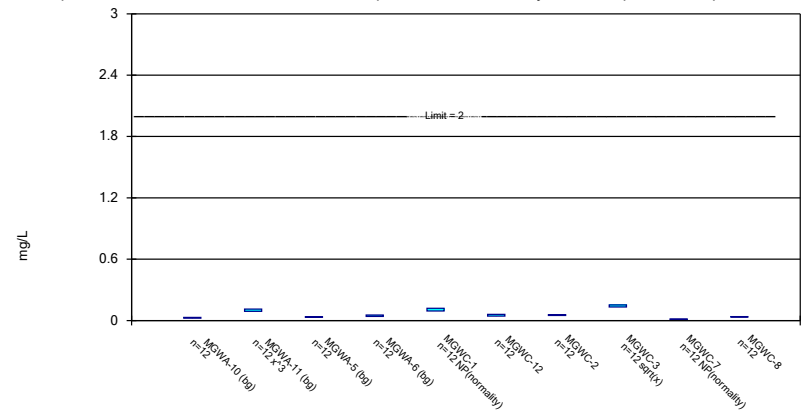
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 7/3/2019 12:11 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

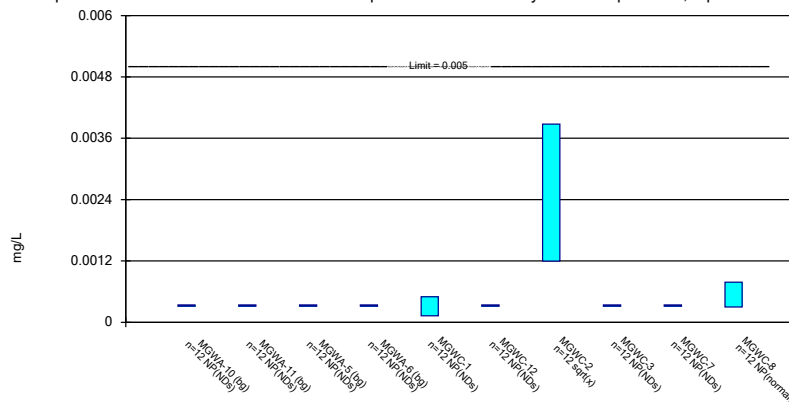
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 7/3/2019 12:11 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

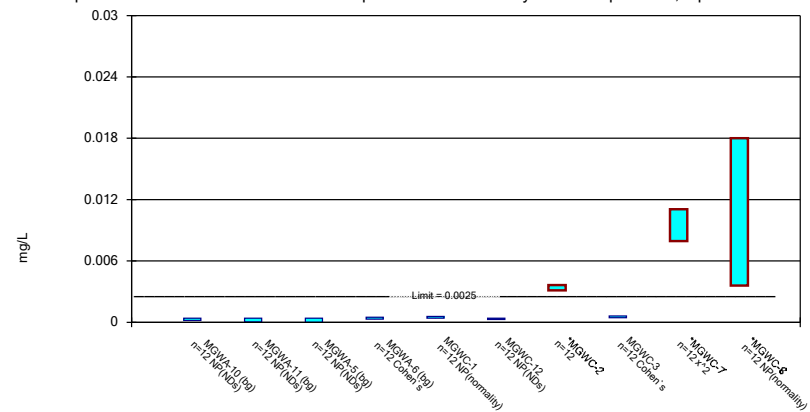
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 7/3/2019 12:11 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

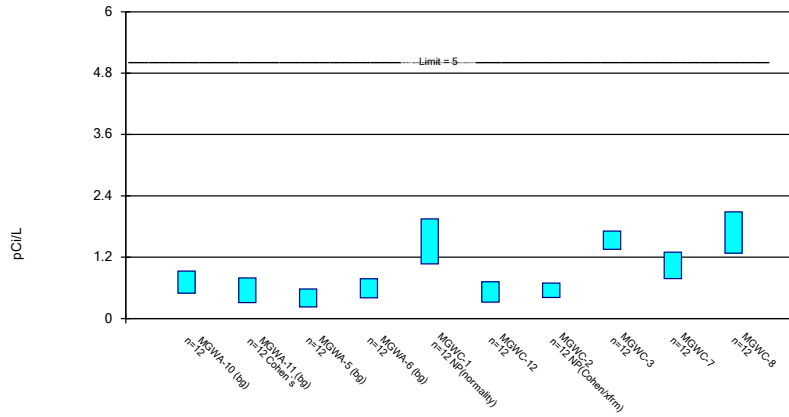
Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 7/3/2019 12:11 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

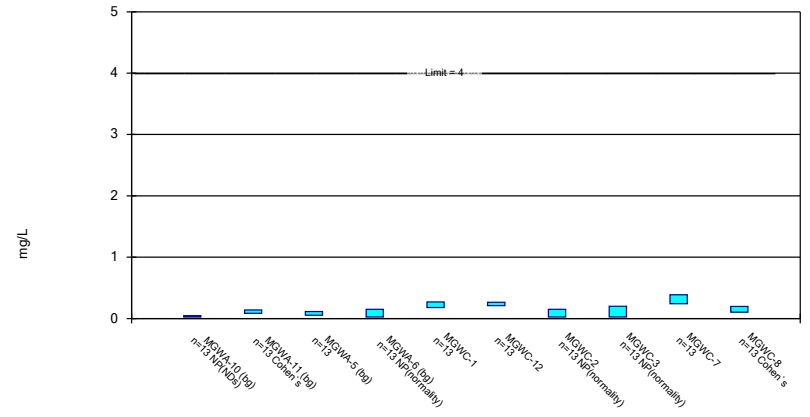
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 7/3/2019 12:11 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

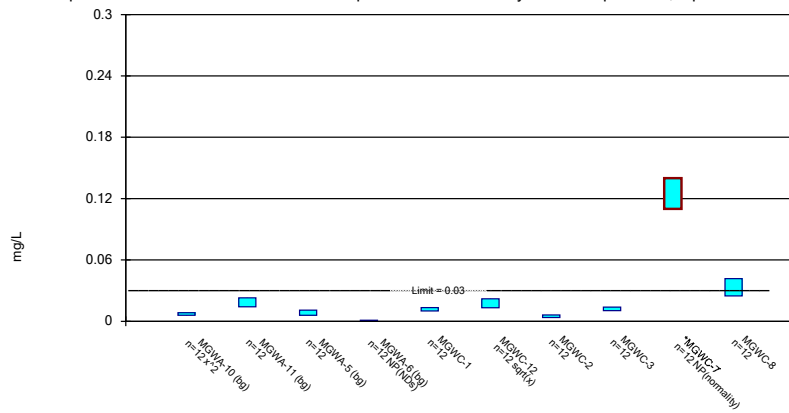
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 7/3/2019 12:12 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 7/3/2019 12:12 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

## **Appendix C2**

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### **Sanitas Outputs for State Compliance Methods – September 2019** (Appendix III Interwell Prediction Limits and Appendix IV Confidence Intervals)



# Interwell Prediction Limit - Significant Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 11/7/2019, 12:36 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)	MGWC-1	0.18	n/a	9/10/2019	1.5	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-2	0.18	n/a	9/10/2019	2.4	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-3	0.18	n/a	9/10/2019	1.5	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-7	0.18	n/a	9/10/2019	1.5	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-8	0.18	n/a	9/10/2019	4.8	Yes	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
Chloride (mg/L)	MGWC-1	9.927	n/a	9/10/2019	13	Yes	54	0	No	0.0009403	Param 1 of 2
Chloride (mg/L)	MGWC-2	9.927	n/a	9/10/2019	13	Yes	54	0	No	0.0009403	Param 1 of 2
Chloride (mg/L)	MGWC-3	9.927	n/a	9/10/2019	13	Yes	54	0	No	0.0009403	Param 1 of 2
Chloride (mg/L)	MGWC-8	9.927	n/a	9/10/2019	10	Yes	54	0	No	0.0009403	Param 1 of 2
Fluoride (mg/L)	MGWC-12	0.18	n/a	9/10/2019	0.2	Yes	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
pH (pH)	MGWC-8	9.96	5.27	9/10/2019	5.1	Yes	59	0	n/a	0.001082	NP (normality) 1 of 2
Sulfate (mg/L)	MGWC-1	25.8	n/a	9/10/2019	140	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2
Sulfate (mg/L)	MGWC-2	25.8	n/a	9/10/2019	180	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2
Sulfate (mg/L)	MGWC-3	25.8	n/a	9/10/2019	110	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2
Sulfate (mg/L)	MGWC-7	25.8	n/a	9/10/2019	180	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2
Sulfate (mg/L)	MGWC-8	25.8	n/a	9/10/2019	420	Yes	54	14.81	ln(x)	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-1	348.7	n/a	9/10/2019	360	Yes	54	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-2	348.7	n/a	9/10/2019	470	Yes	54	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-3	348.7	n/a	9/10/2019	360	Yes	54	0	No	0.0009403	Param 1 of 2
TDS (mg/L)	MGWC-8	348.7	n/a	9/10/2019	660	Yes	54	0	No	0.0009403	Param 1 of 2

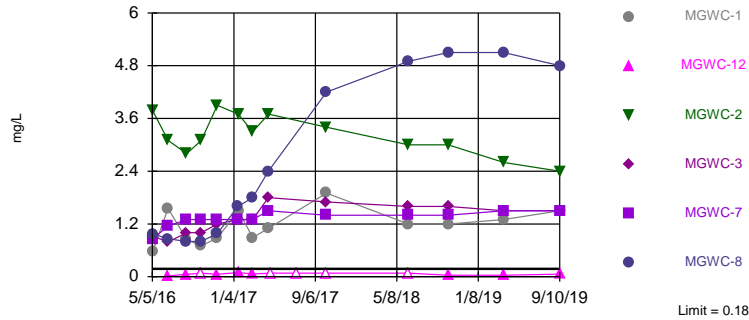
# Interwell Prediction Limit - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 11/7/2019, 12:36 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>
<b>Boron (mg/L)</b>	<b>MGWC-1</b>	<b>0.18</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>1.5</b>	<b>Yes</b>	<b>54</b>	<b>53.7</b>	<b>n/a</b>	<b>0.0006486</b>	NP (NDs) 1 of 2
Boron (mg/L)	MGWC-12	0.18	n/a	9/10/2019	0.06	No	54	53.7	n/a	0.0006486	NP (NDs) 1 of 2
<b>Boron (mg/L)</b>	<b>MGWC-2</b>	<b>0.18</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>2.4</b>	<b>Yes</b>	<b>54</b>	<b>53.7</b>	<b>n/a</b>	<b>0.0006486</b>	NP (NDs) 1 of 2
<b>Boron (mg/L)</b>	<b>MGWC-3</b>	<b>0.18</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>1.5</b>	<b>Yes</b>	<b>54</b>	<b>53.7</b>	<b>n/a</b>	<b>0.0006486</b>	NP (NDs) 1 of 2
<b>Boron (mg/L)</b>	<b>MGWC-7</b>	<b>0.18</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>1.5</b>	<b>Yes</b>	<b>54</b>	<b>53.7</b>	<b>n/a</b>	<b>0.0006486</b>	NP (NDs) 1 of 2
<b>Boron (mg/L)</b>	<b>MGWC-8</b>	<b>0.18</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>4.8</b>	<b>Yes</b>	<b>54</b>	<b>53.7</b>	<b>n/a</b>	<b>0.0006486</b>	NP (NDs) 1 of 2
Calcium (mg/L)	MGWC-1	110	n/a	9/10/2019	110	No	54	0	n/a	0.0006486	NP (normality) 1 of 2
Calcium (mg/L)	MGWC-12	110	n/a	9/10/2019	33	No	54	0	n/a	0.0006486	NP (normality) 1 of 2
Calcium (mg/L)	MGWC-2	110	n/a	9/10/2019	110	No	54	0	n/a	0.0006486	NP (normality) 1 of 2
Calcium (mg/L)	MGWC-3	110	n/a	9/10/2019	99	No	54	0	n/a	0.0006486	NP (normality) 1 of 2
Calcium (mg/L)	MGWC-7	110	n/a	9/10/2019	53	No	54	0	n/a	0.0006486	NP (normality) 1 of 2
Calcium (mg/L)	MGWC-8	110	n/a	9/10/2019	97	No	54	0	n/a	0.0006486	NP (normality) 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-1</b>	<b>9.927</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>13</b>	<b>Yes</b>	<b>54</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
Chloride (mg/L)	MGWC-12	9.927	n/a	9/10/2019	4.1	No	54	0	No	0.0009403	Param 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-2</b>	<b>9.927</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>13</b>	<b>Yes</b>	<b>54</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-3</b>	<b>9.927</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>13</b>	<b>Yes</b>	<b>54</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
Chloride (mg/L)	MGWC-7	9.927	n/a	9/10/2019	9.9	No	54	0	No	0.0009403	Param 1 of 2
<b>Chloride (mg/L)</b>	<b>MGWC-8</b>	<b>9.927</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>10</b>	<b>Yes</b>	<b>54</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
Fluoride (mg/L)	MGWC-1	0.18	n/a	9/10/2019	0.098	No	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
<b>Fluoride (mg/L)</b>	<b>MGWC-12</b>	<b>0.18</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>0.2</b>	<b>Yes</b>	<b>58</b>	<b>36.21</b>	<b>n/a</b>	<b>0.0005623</b>	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-2	0.18	n/a	9/10/2019	0.07	No	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-3	0.18	n/a	9/10/2019	0.073	No	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-7	0.18	n/a	9/10/2019	0.15	No	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
Fluoride (mg/L)	MGWC-8	0.18	n/a	9/10/2019	0.083	No	58	36.21	n/a	0.0005623	NP (normality) 1 of 2
pH (pH)	MGWC-1	9.96	5.27	9/10/2019	7.09	No	59	0	n/a	0.001082	NP (normality) 1 of 2
pH (pH)	MGWC-12	9.96	5.27	3/26/2019	7.29	No	59	0	n/a	0.001082	NP (normality) 1 of 2
pH (pH)	MGWC-2	9.96	5.27	9/10/2019	7.26	No	59	0	n/a	0.001082	NP (normality) 1 of 2
pH (pH)	MGWC-3	9.96	5.27	9/10/2019	6.67	No	59	0	n/a	0.001082	NP (normality) 1 of 2
pH (pH)	MGWC-7	9.96	5.27	9/10/2019	6.03	No	59	0	n/a	0.001082	NP (normality) 1 of 2
<b>pH (pH)</b>	<b>MGWC-8</b>	<b>9.96</b>	<b>5.27</b>	<b>9/10/2019</b>	<b>5.1</b>	<b>Yes</b>	<b>59</b>	<b>0</b>	<b>n/a</b>	<b>0.001082</b>	NP (normality) 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-1</b>	<b>25.8</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>140</b>	<b>Yes</b>	<b>54</b>	<b>14.81</b>	<b>ln(x)</b>	<b>0.0009403</b>	Param 1 of 2
Sulfate (mg/L)	MGWC-12	25.8	n/a	9/10/2019	2.5	No	54	14.81	ln(x)	0.0009403	Param 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-2</b>	<b>25.8</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>180</b>	<b>Yes</b>	<b>54</b>	<b>14.81</b>	<b>ln(x)</b>	<b>0.0009403</b>	Param 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-3</b>	<b>25.8</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>110</b>	<b>Yes</b>	<b>54</b>	<b>14.81</b>	<b>ln(x)</b>	<b>0.0009403</b>	Param 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-7</b>	<b>25.8</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>180</b>	<b>Yes</b>	<b>54</b>	<b>14.81</b>	<b>ln(x)</b>	<b>0.0009403</b>	Param 1 of 2
<b>Sulfate (mg/L)</b>	<b>MGWC-8</b>	<b>25.8</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>420</b>	<b>Yes</b>	<b>54</b>	<b>14.81</b>	<b>ln(x)</b>	<b>0.0009403</b>	Param 1 of 2
<b>TDS (mg/L)</b>	<b>MGWC-1</b>	<b>348.7</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>360</b>	<b>Yes</b>	<b>54</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
TDS (mg/L)	MGWC-12	348.7	n/a	9/10/2019	140	No	54	0	No	0.0009403	Param 1 of 2
<b>TDS (mg/L)</b>	<b>MGWC-2</b>	<b>348.7</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>470</b>	<b>Yes</b>	<b>54</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
<b>TDS (mg/L)</b>	<b>MGWC-3</b>	<b>348.7</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>360</b>	<b>Yes</b>	<b>54</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2
TDS (mg/L)	MGWC-7	348.7	n/a	9/10/2019	260	No	54	0	No	0.0009403	Param 1 of 2
<b>TDS (mg/L)</b>	<b>MGWC-8</b>	<b>348.7</b>	<b>n/a</b>	<b>9/10/2019</b>	<b>660</b>	<b>Yes</b>	<b>54</b>	<b>0</b>	<b>No</b>	<b>0.0009403</b>	Param 1 of 2

Exceeds Limit: MGWC-1, MGWC-2, MGWC-3, MGWC-7, MGWC-8

Prediction Limit  
Interwell Non-parametric

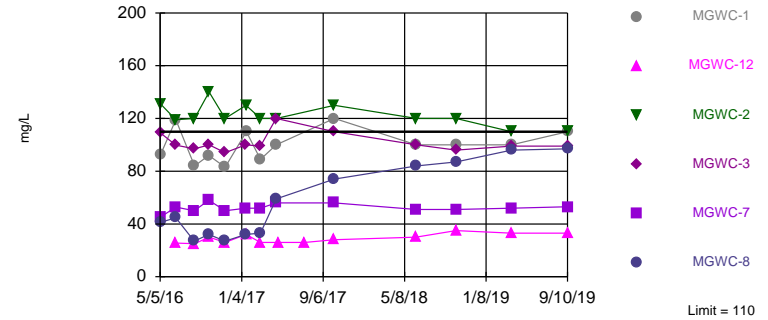


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 54 background values. 53.7% NDs. Annual per-constituent alpha = 0.01033. Individual comparison alpha = 0.0006486 (1 of 2). Comparing 6 points to limit. Assumes 2 future values.

Constituent: Boron Analysis Run 11/7/2019 12:35 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Within Limit

Prediction Limit  
Interwell Non-parametric

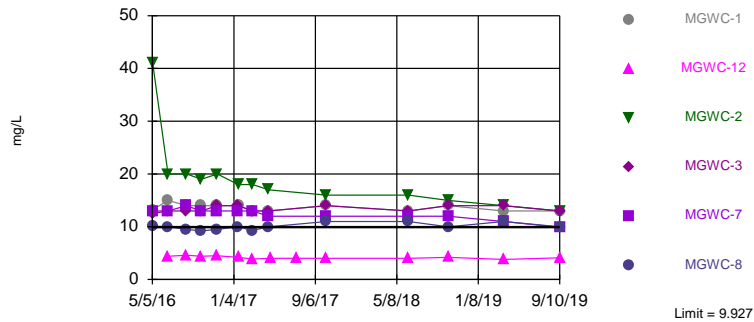


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 54 background values. Annual per-constituent alpha = 0.01033. Individual comparison alpha = 0.0006486 (1 of 2). Comparing 6 points to limit. Assumes 2 future values.

Constituent: Calcium Analysis Run 11/7/2019 12:35 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit: MGWC-1, MGWC-2, MGWC-3, MGWC-8

Prediction Limit  
Interwell Parametric

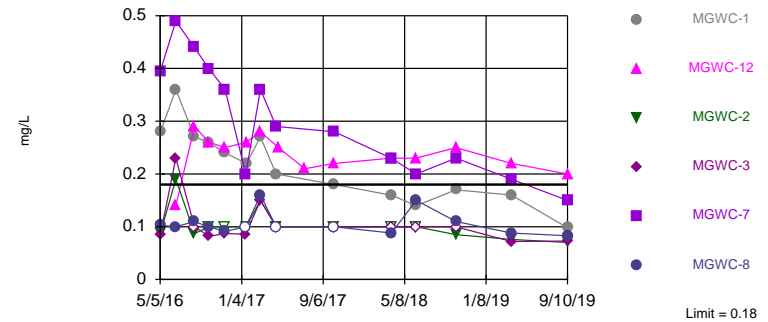


Background Data Summary: Mean=6.201, Std. Dev.=1.889, n=54. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9646, critical = 0.939. Kappa = 1.972 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 6 points to limit. Assumes 2 future values.

Constituent: Chloride Analysis Run 11/7/2019 12:35 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit: MGWC-12

Prediction Limit  
Interwell Non-parametric

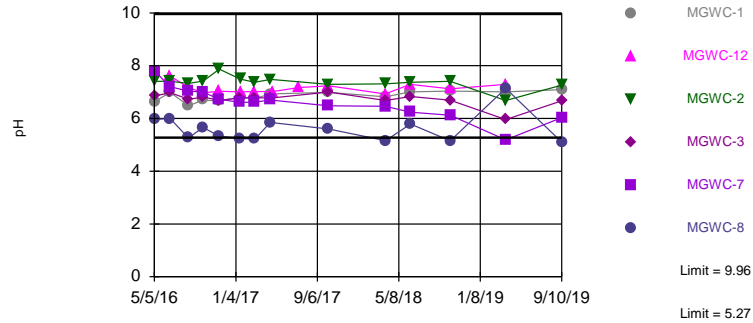


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 58 background values. 36.21% NDs. Annual per-constituent alpha = 0.008959. Individual comparison alpha = 0.0005623 (1 of 2). Comparing 6 points to limit. Assumes 2 future values.

Constituent: Fluoride Analysis Run 11/7/2019 12:35 PM  
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limits: MGWC-8

Prediction Limit  
Interwell Non-parametric



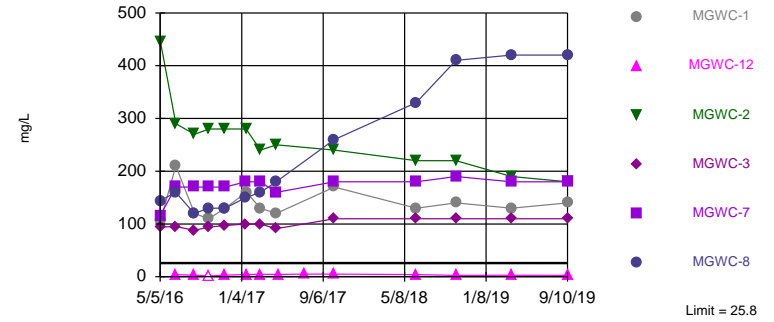
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 59 background values. Annual per-constituent alpha = 0.01723. Individual comparison alpha = 0.001082 (1 of 2). Comparing 6 points to limit. Assumes 2 future values.

Constituent: pH Analysis Run 11/7/2019 12:35 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Hollow symbols indicate censored values.

Exceeds Limit: MGWC-1, MGWC-2, MGWC-3, MGWC-7, MGWC-8

Prediction Limit  
Interwell Parametric

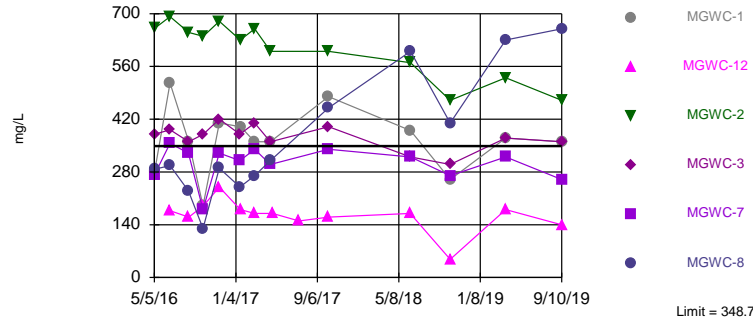


Background Data Summary (based on natural log transformation): Mean=1.196, Std. Dev.=1.042, n=54, 14.81% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9484, critical = 0.939. Kappa = 1.972 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 6 points to limit. Assumes 2 future values.

Constituent: Sulfate Analysis Run 11/7/2019 12:35 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Exceeds Limit: MGWC-1, MGWC-2, MGWC-3, MGWC-8

Prediction Limit  
Interwell Parametric



Background Data Summary: Mean=172.9, Std. Dev.=89.13, n=54. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9776, critical = 0.939. Kappa = 1.972 (c=7, w=8, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0009403. Comparing 6 points to limit. Assumes 2 future values.

Constituent: TDS Analysis Run 11/7/2019 12:35 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

# Confidence Interval - Significant Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 10/30/2019, 12:41 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (mg/L)	MGWC-2	0.003597	0.003051	0.0025	Yes	13	0	No	0.01	Param.
Cobalt (mg/L)	MGWC-7	0.01106	0.008206	0.0025	Yes	13	0	x^2	0.01	Param.
Cobalt (mg/L)	MGWC-8	0.019	0.00359	0.0025	Yes	13	0	No	0.01	NP (normality)
Lithium (mg/L)	MGWC-7	0.14	0.11	0.03	Yes	13	0	No	0.01	NP (normality)

# Confidence Interval - All Results

Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 10/30/2019, 12:41 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	MGWA-10 (bg)	0.00095	0.00032	0.035	No	13	76.92	No	0.01	NP (NDs)
Arsenic (mg/L)	MGWA-11 (bg)	0.002374	0.0009811	0.035	No	13	7.692	No	0.01	Param.
Arsenic (mg/L)	MGWA-5 (bg)	0.001	0.00014	0.035	No	13	84.62	No	0.01	NP (NDs)
Arsenic (mg/L)	MGWA-6 (bg)	0.02873	0.01393	0.035	No	13	0	No	0.01	Param.
Arsenic (mg/L)	MGWC-1	0.003298	0.002139	0.035	No	13	0	No	0.01	Param.
Arsenic (mg/L)	MGWC-12	0.001502	0.0007591	0.035	No	13	15.38	No	0.01	Param.
Arsenic (mg/L)	MGWC-2	0.00068	0.00032	0.035	No	13	84.62	No	0.01	NP (NDs)
Arsenic (mg/L)	MGWC-3	0.001716	0.001324	0.035	No	13	7.692	x^2	0.01	Param.
Arsenic (mg/L)	MGWC-7	0.0009781	0.0004126	0.035	No	13	46.15	No	0.01	Param.
Arsenic (mg/L)	MGWC-8	0.00059	0.00032	0.035	No	13	92.31	No	0.01	NP (NDs)
Barium (mg/L)	MGWA-10 (bg)	0.03101	0.02369	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWA-11 (bg)	0.1156	0.08875	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWA-5 (bg)	0.03692	0.03285	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWA-6 (bg)	0.05308	0.0399	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWC-1	0.12	0.094	2	No	13	0	No	0.01	NP (normality)
Barium (mg/L)	MGWC-12	0.06177	0.04436	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWC-2	0.05719	0.04985	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWC-3	0.1533	0.1336	2	No	13	0	No	0.01	Param.
Barium (mg/L)	MGWC-7	0.0152	0.0098	2	No	13	0	No	0.01	NP (normality)
Barium (mg/L)	MGWC-8	0.03842	0.03374	2	No	13	0	No	0.01	Param.
Cadmium (mg/L)	MGWA-10 (bg)	0.00013	0.00013	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-11 (bg)	0.00013	0.00013	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-5 (bg)	0.00013	0.00013	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWA-6 (bg)	0.00013	0.00013	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-1	0.0005	0.000126	0.005	No	13	84.62	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-12	0.00013	0.00013	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-2	0.003623	0.001178	0.005	No	13	7.692	sqrt(x)	0.01	Param.
Cadmium (mg/L)	MGWC-3	0.00013	0.00013	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-7	0.00013	0.00013	0.005	No	13	100	No	0.01	NP (NDs)
Cadmium (mg/L)	MGWC-8	0.001	0.00013	0.005	No	13	53.85	No	0.01	NP (Cohens/xfrm)
Cobalt (mg/L)	MGWA-10 (bg)	0.00018	0.000075	0.0025	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-11 (bg)	0.000075	0.000039	0.0025	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-5 (bg)	0.000075	0.000012	0.0025	No	13	92.31	No	0.01	NP (NDs)
Cobalt (mg/L)	MGWA-6 (bg)	0.0005	0.000075	0.0025	No	13	46.15	No	0.01	NP (normality)
Cobalt (mg/L)	MGWC-1	0.00058	0.000075	0.0025	No	13	69.23	No	0.01	NP (normality)
Cobalt (mg/L)	MGWC-12	0.0005	0.000075	0.0025	No	13	100	No	0.01	NP (NDs)
<b>Cobalt (mg/L)</b>	<b>MGWC-2</b>	<b>0.003597</b>	<b>0.003051</b>	<b>0.0025</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
Cobalt (mg/L)	MGWC-3	0.00065	0.00041	0.0025	No	13	15.38	No	0.01	NP (Cohens/xfrm)
<b>Cobalt (mg/L)</b>	<b>MGWC-7</b>	<b>0.01106</b>	<b>0.008206</b>	<b>0.0025</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>x^2</b>	<b>0.01</b>	<b>Param.</b>
<b>Cobalt (mg/L)</b>	<b>MGWC-8</b>	<b>0.019</b>	<b>0.00359</b>	<b>0.0025</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>
Combined Radium 226 + 228 (pCi/L)	MGWA-10 (bg)	0.9016	0.5062	5	No	13	7.692	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWA-11 (bg)	0.7568	0.2822	5	No	13	23.08	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWA-5 (bg)	0.5605	0.2437	5	No	13	15.38	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWA-6 (bg)	0.7523	0.412	5	No	13	7.692	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-1	1.95	1.07	5	No	13	0	No	0.01	NP (normality)
Combined Radium 226 + 228 (pCi/L)	MGWC-12	0.7508	0.3497	5	No	13	7.692	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-2	0.694	0.401	5	No	13	23.08	No	0.01	NP (Cohens/xfrm)
Combined Radium 226 + 228 (pCi/L)	MGWC-3	1.7	1.374	5	No	13	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-7	1.268	0.7995	5	No	13	0	No	0.01	Param.
Combined Radium 226 + 228 (pCi/L)	MGWC-8	2.056	1.323	5	No	13	0	No	0.01	Param.

## Confidence Interval - All Results

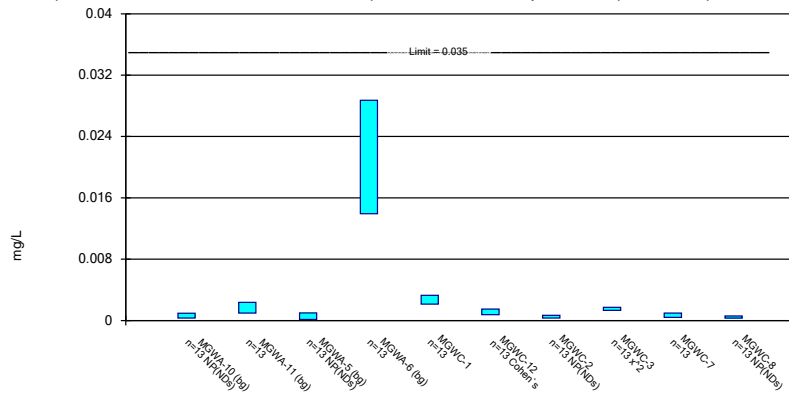
Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export Printed 10/30/2019, 12:41 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Fluoride (mg/L)	MGWA-10 (bg)	0.046	0.026	4	No	14	85.71	No	0.01	NP (NDs)
Fluoride (mg/L)	MGWA-11 (bg)	0.1356	0.08166	4	No	14	21.43	No	0.01	Param.
Fluoride (mg/L)	MGWA-5 (bg)	0.1133	0.05641	4	No	14	35.71	No	0.01	Param.
Fluoride (mg/L)	MGWA-6 (bg)	0.1	0.026	4	No	14	57.14	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-1	0.2648	0.1681	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	MGWC-12	0.2616	0.2084	4	No	14	0	No	0.01	Param.
Fluoride (mg/L)	MGWC-2	0.15	0.026	4	No	14	64.29	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-3	0.15	0.026	4	No	14	57.14	No	0.01	NP (normality)
Fluoride (mg/L)	MGWC-7	0.3768	0.2281	4	No	14	7.143	No	0.01	Param.
Fluoride (mg/L)	MGWC-8	0.2074	0.1102	4	No	14	35.71	No	0.01	Param.
Lithium (mg/L)	MGWA-10 (bg)	0.00888	0.005961	0.03	No	13	7.692	x^2	0.01	Param.
Lithium (mg/L)	MGWA-11 (bg)	0.02338	0.01493	0.03	No	13	0	No	0.01	Param.
Lithium (mg/L)	MGWA-5 (bg)	0.01089	0.006259	0.03	No	13	7.692	No	0.01	Param.
Lithium (mg/L)	MGWA-6 (bg)	0.00425	0.0011	0.03	No	13	92.31	No	0.01	NP (NDs)
Lithium (mg/L)	MGWC-1	0.01321	0.01026	0.03	No	13	0	No	0.01	Param.
Lithium (mg/L)	MGWC-12	0.02264	0.0137	0.03	No	13	0	No	0.01	Param.
Lithium (mg/L)	MGWC-2	0.006426	0.003959	0.03	No	13	7.692	No	0.01	Param.
Lithium (mg/L)	MGWC-3	0.014	0.01071	0.03	No	13	0	No	0.01	Param.
<b>Lithium (mg/L)</b>	<b>MGWC-7</b>	<b>0.14</b>	<b>0.11</b>	<b>0.03</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>
Lithium (mg/L)	MGWC-8	0.04178	0.02607	0.03	No	13	0	No	0.01	Param.



Parametric and Non-Parametric (NP) Confidence Interval

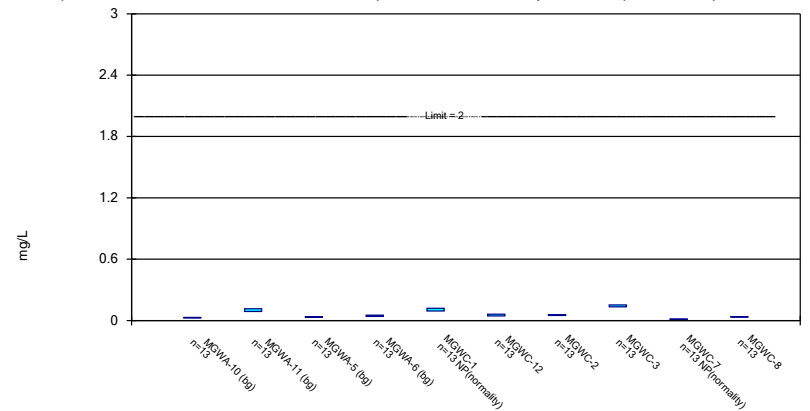
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 10/30/2019 12:40 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Parametric and Non-Parametric (NP) Confidence Interval

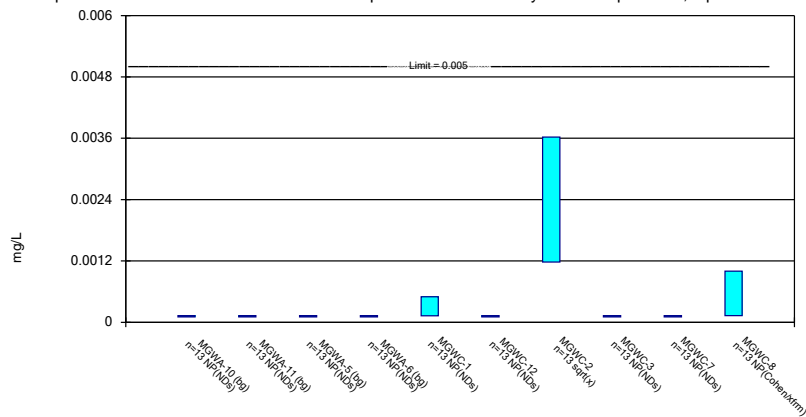
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 10/30/2019 12:40 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Parametric and Non-Parametric (NP) Confidence Interval

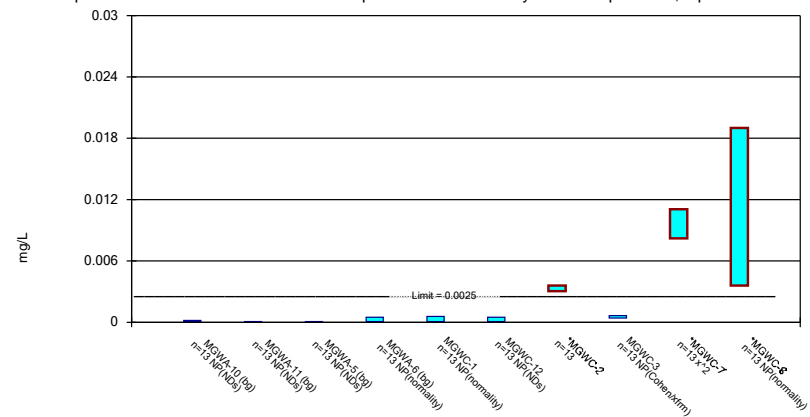
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 10/30/2019 12:40 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

Parametric and Non-Parametric (NP) Confidence Interval

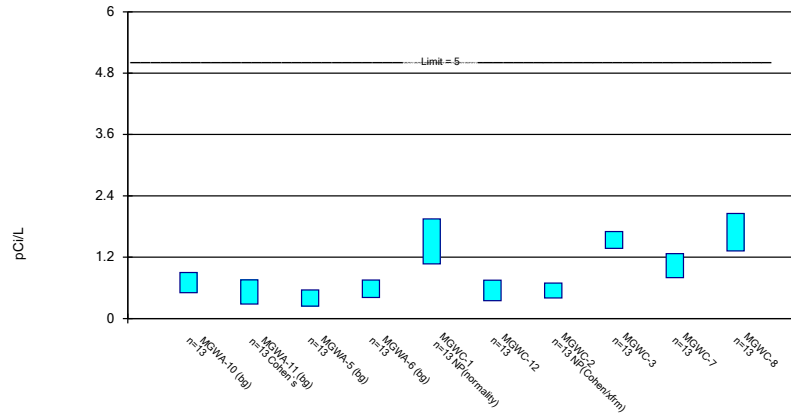
Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 10/30/2019 12:40 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

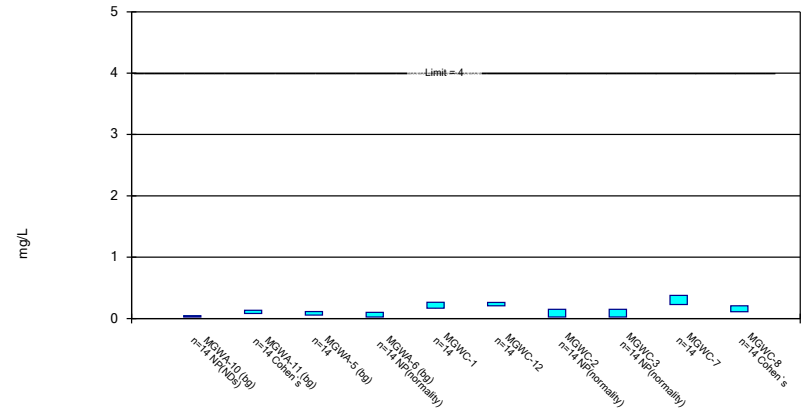
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Combined Radium 226 + 228 Analysis Run 10/30/2019 12:40 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

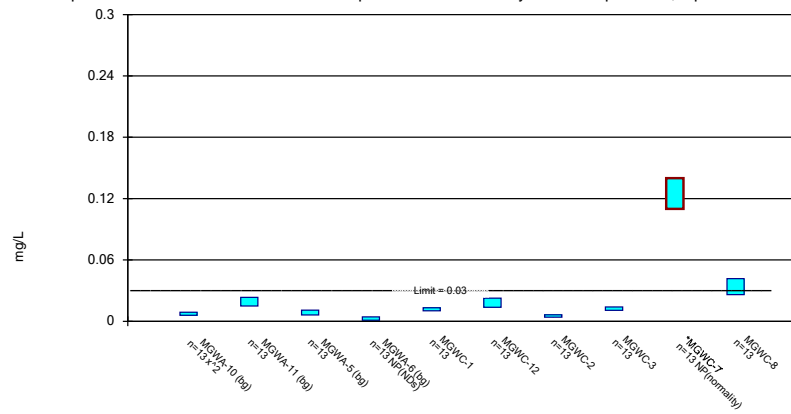
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 10/30/2019 12:40 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

### Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 10/30/2019 12:40 PM  
 Plant McIntosh Client: GEI Data: McIntosh Ash Pond Export

## **Appendix D**

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### **Supplemental Information for the Ash Pond 1 Alternate Source Demonstration**

November 21, 2019

Mr. John Sayer, P.G.  
Solid Waste Management Program  
Environmental Protection Division  
4244 International Parkway, Suite 104  
Atlanta, Georgia 30354

Subject: Georgia Power Company – Plant McIntosh  
Supplemental Information for the Ash Pond 1 Alternate Source Demonstration  
Effingham County, Georgia

Dear Mr. Sayer:

Georgia Power Company and GEI Consultants, Inc. (GEI) are providing the results of the additional sampling and analysis conducted at Plant McIntosh Ash Pond 1 (AP-1) as requested by the Solid Waste Management Program of Georgia Environmental Protection Division (EPD) in their correspondence to Georgia Power Company (GPC) dated May 7, 2019, Alternate Source Demonstration - Review Comments. In a response letter back to EPD dated September 5, 2019, GPC noted it would prepare a generalized geologic cross-section depicting subsurface conditions and an updated Piper Trilinear Diagram, as well as provide data representative of pond water on or before November 21, 2019.

GEI prepared four generalized geologic cross-sections depicting subsurface conditions across AP-1 to further support the conceptual site model (CSM). Geologic cross-section profile lines are shown on the site map on Figure 1. The following cross sections are included:

- D to D' (Figure 2) trends in a southwest to northeast direction along the northern corner of AP-1,
- E to E' (Figure 3) trends in a southwest to northeast direction generally parallel and across AP-1,
- F to F' (Figure 4) trends in a northwest to southeast direction across the northern end of AP-1, and
- G to G' (Figure 5) trends in a southwest to northeast direction generally parallel and across AP-1.

The cross-sections show site stratigraphy, approximate pond water sampling locations, porewater monitoring points, depth of AP-1, monitoring wells MGWC-2, MGWC-7, and MGWC-8, and groundwater elevation at AP-1. The attached cross-sections are part of a larger set of cross-

sections that were prepared for the Revised Hydrogeological Assessment Report (HAR) to be submitted under separate cover.

To supplement the previously prepared Piper Trilinear Diagram included with the January 2019 Alternative Source Demonstration (ASD), in September 2019 GEI collected samples for analysis of Appendix III parameters, cobalt, lithium, and major ions from the following locations:

- Groundwater samples from background monitoring wells MGWA-5, MGWA-6A, MGWA-10, MGWA-11, and MGWA-24,
- Groundwater samples from downgradient wells MGWC-2, MGWC-7, and MGWC-8,
- Pond water samples from AP-1, and
- Porewater samples from existing sample points PW-01D, PW-02S, and PW-02D.

Pond water samples designated SW-A through SW-D were collected from each of the four cells at locations shown on Figure 1. Access to the pond water sampling locations was obtained by walking out onto the pond manway bridges. Two samples were collected at each location, one at 2 feet below top of water surface to represent near surface conditions, and a second at the mid-point between the pond surface and pond bottom thereby minimizing the possibility of disturbing CCR material settled on the pond bottom. The depth in feet below the water surface is indicated by the number following the sample identification (e.g., SW-A-2 sampled at two feet below pond surface). Porewater was collected from two sampling points because sample point PW-01S was dry during the September sampling event. Analytical results for samples collected and analyzed are summarized in Table 1 and laboratory data reports are included in Attachment 1.

The Piper Trilinear Diagram included in the January 2019 ASD was updated to data collected in September 2019. The Piper Trilinear diagram on Figure 6 shows AP-1 porewater, pond water, and groundwater sample results. AP-1 porewater and pond water exhibit cation-anion variability but generally group in the sodium-sulfate type cation-anion field in the central to upper right side of the diagram. Background groundwater samples are identified on the left-central side of the diagram and are grouped in the area represented by magnesium-bicarbonate type water. Downgradient groundwater samples MGWC-7 and MGWC-8 group on the right-upper quadrant of the diagram in the area represented by calcium-sulfate type water. Downgradient groundwater sample MGWC-2 plots in the mixed-water type field along the mixing line shown on the diagram. These results are consistent with the interpretation of cation-anion relationships presented in the January 2019 ASD and support the groundwater flow path discussion included in the January 2019 ASD.

In groundwater, the lithium and cobalt concentrations at downgradient and upgradient monitoring wells collected in September 2019 are similar to those reported in the January 2019 ASD. Cobalt and lithium were detected in each of the media sampled and could exist in aqueous form under the pH-Eh conditions observed in the samples. Cobalt and lithium concentrations in porewater, pond water, upgradient, and downgradient monitoring wells occurred within the following concentration ranges:

<b>Constituent</b>	<b>Pond Water</b>	<b>Porewater</b>	<b>Upgradient Wells</b>	<b>Downgradient Wells</b>
Cobalt	0.00013 J to 0.00053	0.001 J to 0.00019	< 0.00007 to 0.00010 J	0.0028 to 0.011
Lithium	<0.0034 to 0.008	0.013 to 0.053	0.0048 J to 0.022	0.028 B to 0.14 B

**Notes:**

Concentrations are in milligrams per liter (mg/L).

J - Concentration is estimated below the laboratory reporting limit.

B - Constituent detected in the laboratory method blank providing high sample bias.

The September 2019 sampling event and data summary provided herein provides additional lines of evidence to support conclusions presented in the January 2019 ASD that,

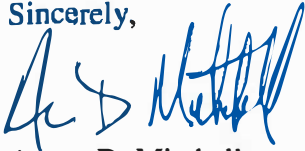
“the statistically significant levels (SSLs) for cobalt in monitoring wells MGWC-2, MGWC-7, and MGWC-8 and lithium in well MGWC-7 are attributed to natural groundwater variability due to soil heterogeneity and mineralogy containing these naturally-occurring trace elements.”

The September 2019 sampling results further demonstrate that cobalt and lithium concentrations in AP-1 are not the cause of higher concentrations of those constituents in downgradient wells. Based on the groundwater flow direction and mixing exhibited by the Piper Trilinear Diagram, if AP-1 were the source of the cobalt and lithium the highest concentrations of cobalt and lithium would occur in the pond water and porewater. It would be expected to observe lower concentrations of each constituent in downgradient monitoring wells than in AP-1 samples. Since concentrations of cobalt and lithium are highest in groundwater, a source, likely natural, other than AP-1 is contributing cobalt and lithium into the groundwater system. As discussed in the January 2019 ASD, cobalt and lithium are naturally occurring constituents and are present in groundwater at trace level concentrations near the Savannah River ([Cocker,1998], [Cook, 1978], [Windom, 1989]). The information presented in the January 2019 ASD, and data compiled from the September 2019 samples, support the conclusion that AP-1 is not a source of cobalt and lithium. In addition, a naturally occurring source of these trace elements is present in the aquifer matrix at AP-1 based on the depositional environment.

We trust that the information provided herein is sufficient to address EPD’s comments regarding the ASD for AP-1 at Plant McIntosh. The additional information provided continues to support the ASD for statistical exceedances of cobalt and lithium at AP-1 at Plant McIntosh, and, as a result, it will remain in assessment monitoring.

If you have any questions about this submittal, please contact Ben Hodges at 404-506-4830.

Sincerely,



Aaron D. Mitchell  
General Manager, Environmental Affairs

#### Attachments

- Figure 1 – Site Map and Sample Locations
- Figure 2 – Geologic Cross Section D-D'
- Figure 3 – Geologic Cross Section E-E'
- Figure 4 – Geologic Cross Section F-F'
- Figure 5 – Geologic Cross Section G-G'
- Figure 6 – Piper Trilinear Diagram
- Table 1 – Analytical Summary
- Attachment 1 - Laboratory Analytical Data Reports

#### References

- Cocker, 1998. *Distribution of Selected Elements in Stream Sediments, Stream Hydrogeochemistry, and Geology of the Flint River Basin, Georgia*, Georgia Department of Natural Resources- Environmental Protection Division Bulletin Number 129, prepared by Mark D. Cocker, 1998.
- Cook, 1978. *Minerals of Georgia*, State of Georgia Department of Natural Resources-Geologic and Water Resources Division Bulletin 92, prepared by Robert B. Cook, 1978.
- Windom, Herbert L., et al., 1989. *Natural Trace Metal Concentrations in Estuarine and Coastal Marine Sediments of the Southeastern United States*, American Chemical Society-*Journal of Environmental Science and Technology* Vol. 23, No. 3, prepared by Windom, Herbert L., et al., 1989.



## **FIGURES**

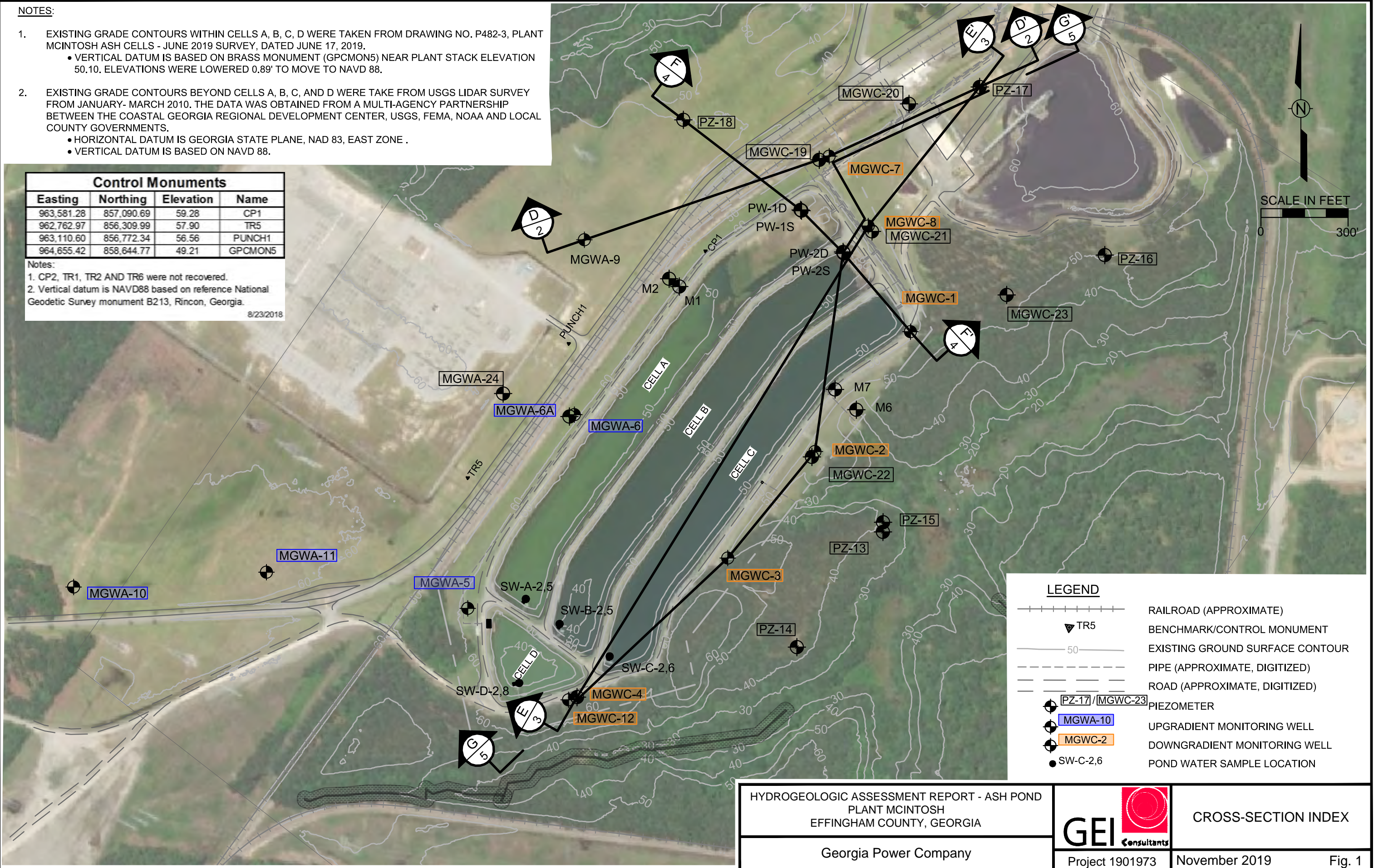


**NOTES:**

- EXISTING GRADE CONTOURS WITHIN CELLS A, B, C, D WERE TAKEN FROM DRAWING NO. P482-3, PLANT MCINTOSH ASH CELLS - JUNE 2019 SURVEY, DATED JUNE 17, 2019.
  - VERTICAL DATUM IS BASED ON BRASS MONUMENT (GPCMON5) NEAR PLANT STACK ELEVATION 50.10. ELEVATIONS WERE LOWERED 0.89' TO MOVE TO NAVD 88.
- EXISTING GRADE CONTOURS BEYOND CELLS A, B, C, AND D WERE TAKE FROM USGS LIDAR SURVEY FROM JANUARY- MARCH 2010. THE DATA WAS OBTAINED FROM A MULTI-AGENCY PARTNERSHIP BETWEEN THE COASTAL GEORGIA REGIONAL DEVELOPMENT CENTER, USGS, FEMA, NOAA AND LOCAL COUNTY GOVERNMENTS.
  - HORIZONTAL DATUM IS GEORGIA STATE PLANE, NAD 83, EAST ZONE .
  - VERTICAL DATUM IS BASED ON NAVD 88.

Control Monuments			
Easting	Northing	Elevation	Name
963,581.28	857,090.69	59.28	CP1
962,762.97	856,309.99	57.90	TR5
963,110.60	856,772.34	56.56	PUNCH1
964,655.42	858,644.77	49.21	GPCMON5

Notes:  
 1. CP2, TR1, TR2 AND TR6 were not recovered.  
 2. Vertical datum is NAVD88 based on reference National Geodetic Survey monument B213, Rincon, Georgia.  
 8/23/2018

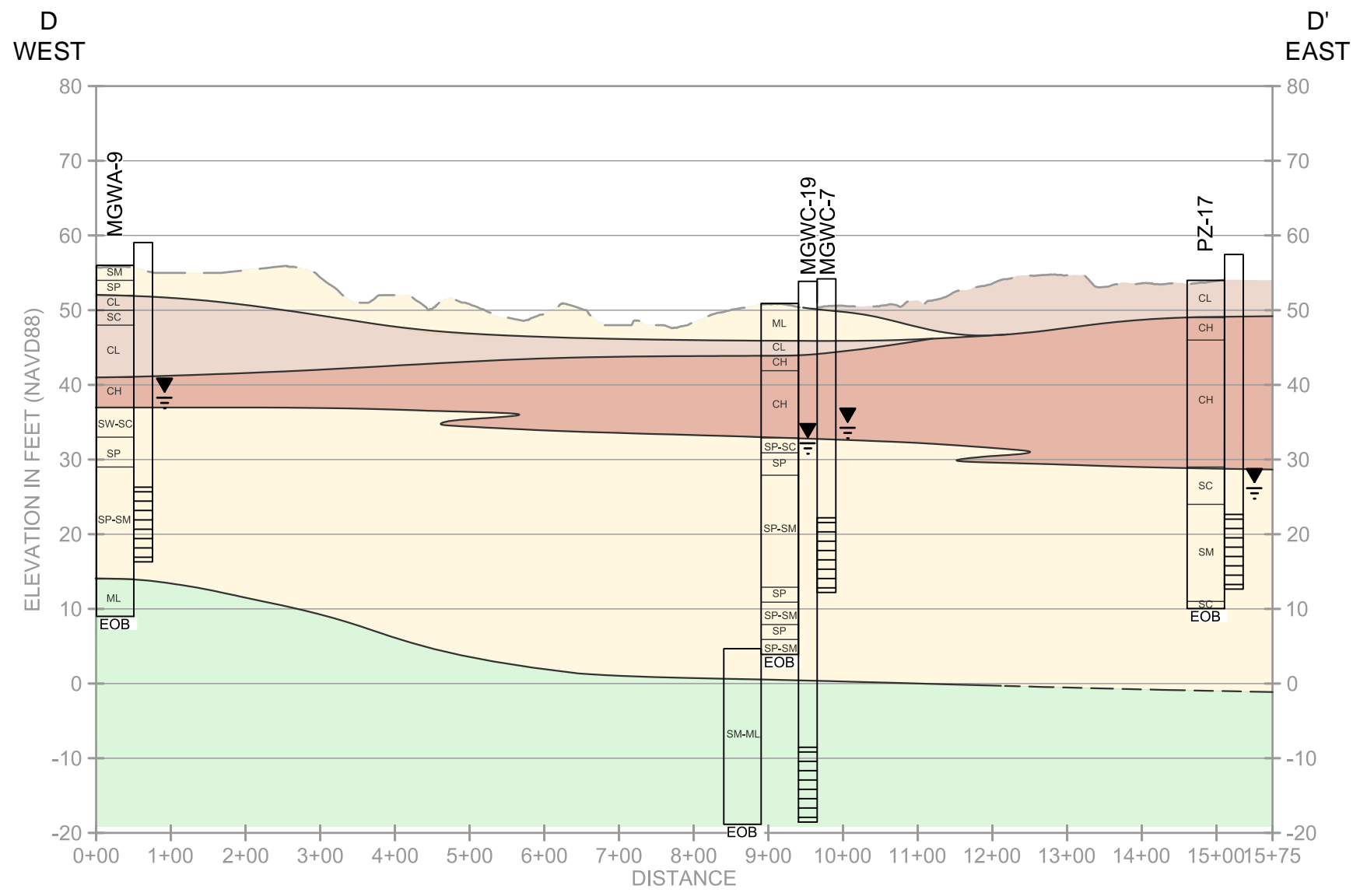


**LEGEND**

- RAILROAD (APPROXIMATE)
- ▼ TR5 BENCHMARK/CONTROL MONUMENT
- 50 --- EXISTING GROUND SURFACE CONTOUR
- - - - - PIPE (APPROXIMATE, DIGITIZED)
- - - - - ROAD (APPROXIMATE, DIGITIZED)
- [PZ-17]/[MGWC-23] PIEZOMETER
- [MGWA-10] UPGRADIENT MONITORING WELL
- [MGWC-2] DOWNGRADIENT MONITORING WELL
- SW-C-2,6 POND WATER SAMPLE LOCATION

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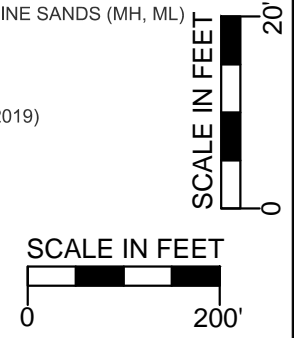


**CROSS-SECTION D-D'**  
 SCALE: HORIZ. 1"=200'  
 VERT. 1"=20'

**LEGEND**

- PIEZOMETER OR MONITORING WELL
- GROUND SURFACE
- GROUNDWATER ELEVATION (MARCH 2019)
- SCREEN INTERVAL
- END OF BORING
- 1' COMPACTED CLAY
- COAL COMBUSTION RESIDUALS (CCR)
- COMPACTED CLAY FILL (CC)
- SURFICIAL SOILS: LEAN CLAY WITH SANDS AND SILTS (CL)
- REDDISH BROWN FAT CLAY WITH OCCASIONAL INTERBEDDED SANDS (CH)
- SANDS WITH VARYING CLAY AND SILT CONTENT, FINE TO COARSE GRAVEL INCLUDING SHELLS (SP, SC, SM, SW)
- SILTS WITH CLAY, FINE SANDS (MH, ML)

NOTE:  
 GROUNDWATER ELEVATION (MARCH 2019)

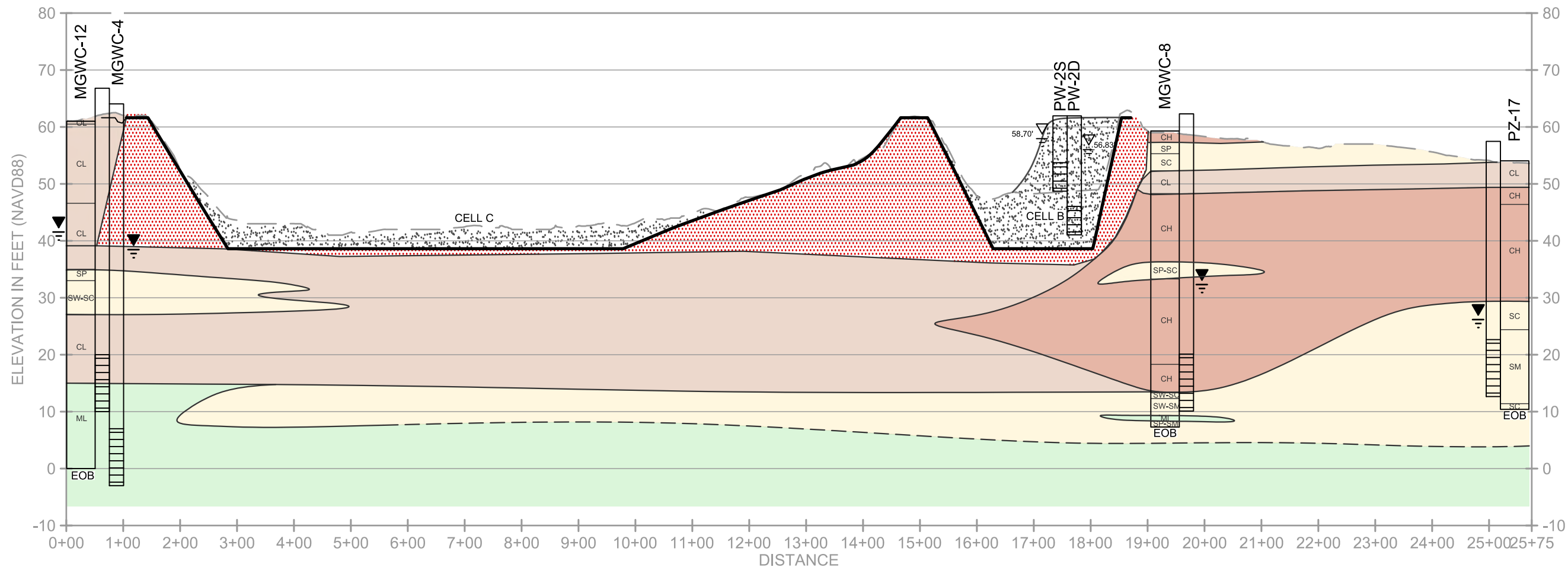


HYDROGEOLOGIC ASSESSMENT REPORT - ASH POND PLANT MCINTOSH EFFINGHAM COUNTY, GEORGIA		CROSS-SECTION D-D'
Georgia Power Company	Project 1901973	November 2019 <span style="float: right;">Fig. 2</span>

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E  
SOUTH

E'  
NORTH

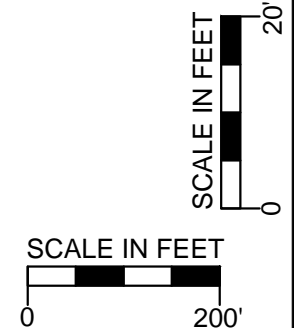


**CROSS-SECTION E-E'**  
SCALE: HORIZ. 1"=200'  
VERT. 1"=20'

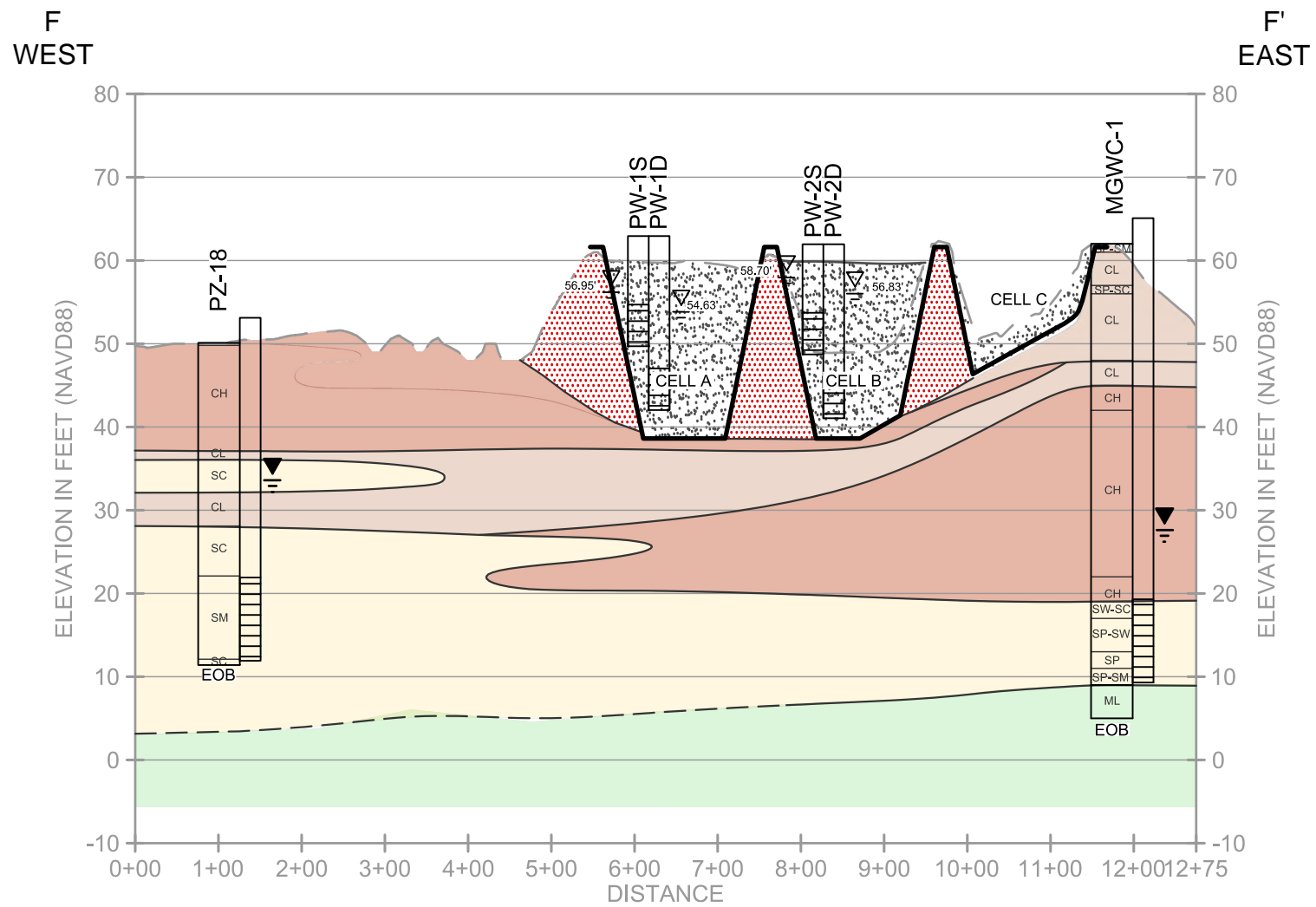
**LEGEND**

MGWC-1 OR PW-1S	PIEZOMETER OR MONITORING WELL		1' COMPACTED CLAY
	GROUND SURFACE		COAL COMBUSTION RESIDUALS (CCR)
	PORE WATER ELEVATION		COMPACTED CLAY FILL (CC)
	GROUNDWATER ELEVATION (MARCH 2019)		SURFICIAL SOILS: LEAN CLAY WITH SANDS AND SILTS (CL)
	SCREEN INTERVAL		REDDISH BROWN FAT CLAY WITH OCCASIONAL INTERBEDDED SANDS (CH)
	END OF BORING		SANDS WITH VARYING CLAY AND SILT CONTENT, FINE TO COARSE GRAVEL INCLUDING SHELLS (SP, SC, SM, SW)
			SILTS WITH CLAY, FINE SANDS (MH, ML)

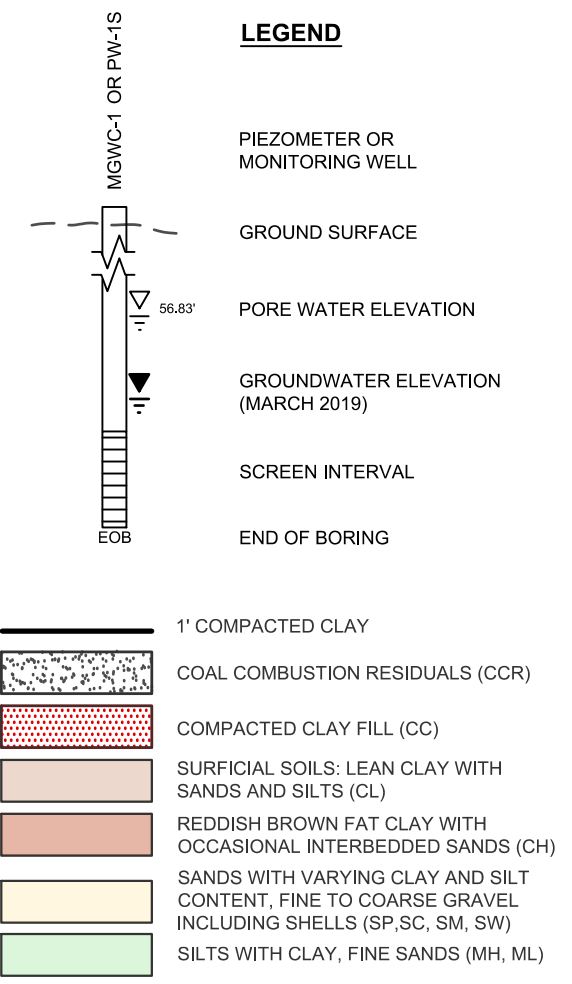
NOTE:  
GROUNDWATER ELEVATION (MARCH 2019)



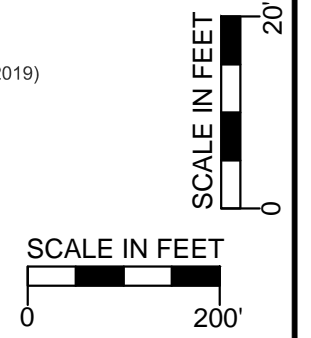
HYDROGEOLOGIC ASSESSMENT REPORT - ASH POND PLANT MCINTOSH EFFINGHAM COUNTY, GEORGIA  Georgia Power Company		CROSS-SECTION E-E'  Project 1901973    November 2019    Fig. 3
	J:\Landfills\Georgia Power\McIntosh\1901973_ap1 xs gwdwg\1901973001 xs wells gw_ASD LETTER	



**CROSS-SECTION F-F'**  
 SCALE: HORIZ. 1"=200'  
 VERT. 1"=20'



NOTE:  
 GROUNDWATER ELEVATION (MARCH 2019)



HYDROGEOLOGIC ASSESSMENT REPORT - ASH POND  
 PLANT MCINTOSH  
 EFFINGHAM COUNTY, GEORGIA



CROSS-SECTION F-F'

Georgia Power Company

Project 1901973

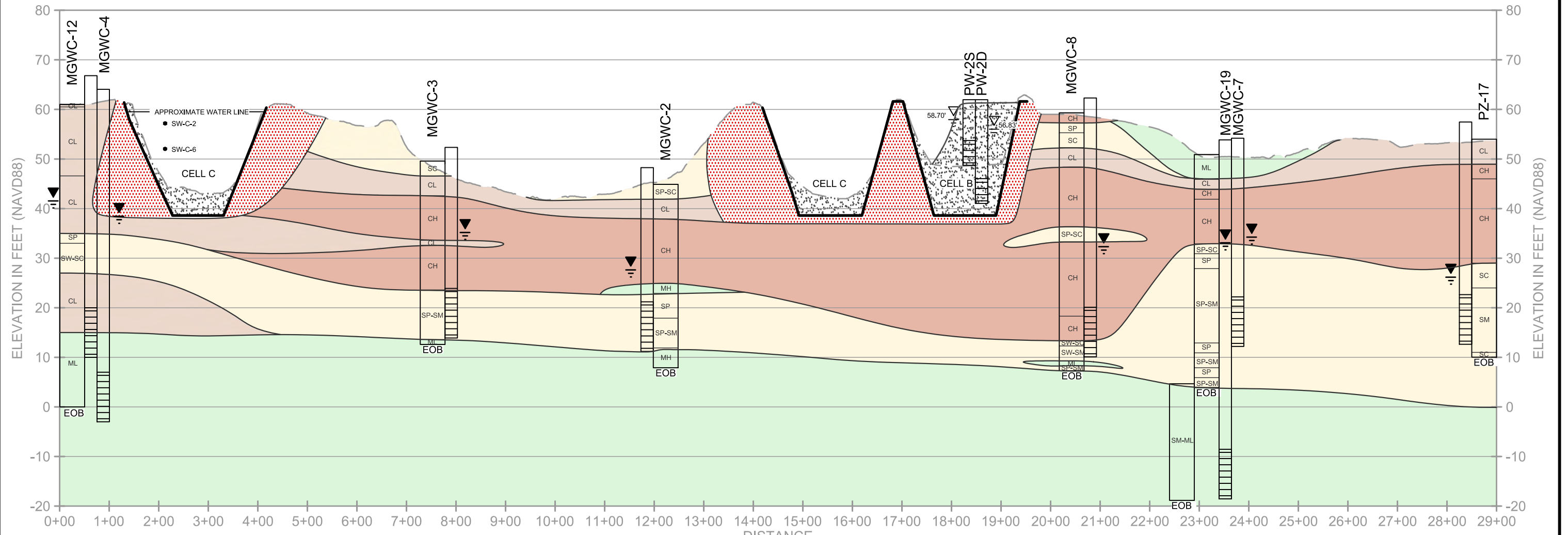
November 2019

Fig. 4

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G  
SOUTH

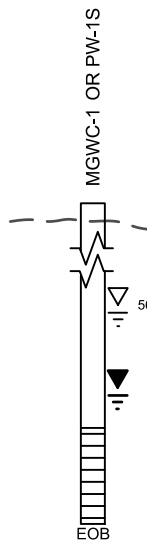
G'  
NORTH



**CROSS-SECTION G-G'**

SCALE: HORIZ. 1"=200'  
VERT. 1"=20'

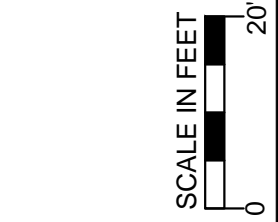
**LEGEND**



- PIEZOMETER OR MONITORING WELL
- GROUND SURFACE
- PORE WATER ELEVATION
- GROUNDWATER ELEVATION (MARCH 2019)
- SCREEN INTERVAL
- END OF BORING

- 1' COMPACTED CLAY
- COAL COMBUSTION RESIDUALS (CCR)
- COMPACTED CLAY FILL (CC)
- SURFICIAL SOILS: LEAN CLAY WITH SANDS AND SILTS (CL)
- REDDISH BROWN FAT CLAY WITH OCCASIONAL INTERBEDDED SANDS (CH)
- SANDS WITH VARYING CLAY AND SILT CONTENT, FINE TO COARSE GRAVEL INCLUDING SHELLS (SP, SC, SM, SW)
- SILTS WITH CLAY, FINE SANDS (MH, ML)
- SW-C-2.6 POND WATER SAMPLE LOCATION

NOTE:  
GROUNDWATER ELEVATION (MARCH 2019)  
POND WATER SAMPLES (SEPTEMBER 2019)



HYDROGEOLOGIC ASSESSMENT REPORT - ASH POND  
PLANT MCINTOSH  
EFFINGHAM COUNTY, GEORGIA



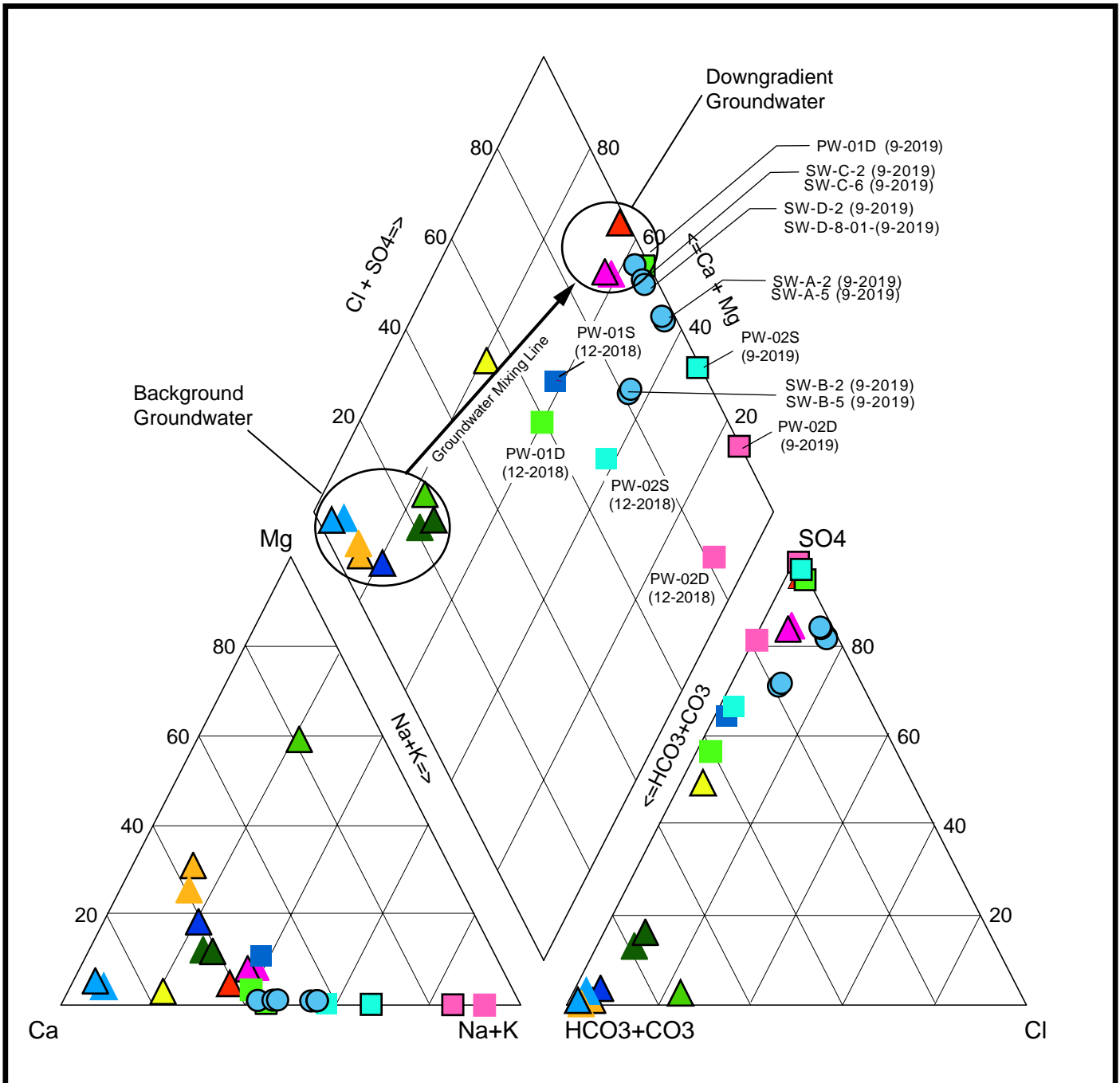
CROSS-SECTION G-G'

Georgia Power Company

Project 1901973

November 2019

Fig. 5



LEGEND		Groundwater Sampling Locations		Ash Pond 1 Pond Water Sampling Locations	Ash Pond 1 Porewater Sampling Locations
		Upgradient Monitoring Wells		Downgradient Monitoring Wells	
▲ MGWC-6A (9-2019)	▲ MGWA-5 (9-2019)	▲ MGWC-8 (9-2019)		● SW-A-2 (9-2019)	■ PW-01S (12-2018)
▲ MGWC-6A (1-2019)	▲ MGWA-10 (9-2019)	▲ MGWC-7 (9-2019)		● SW-A-5 (9-2019)	■ PW-01D (12-2018)
▲ MGWC-11 (9-2019)	▲ MGWA-24 (9-2019)	▲ MGWC-7 (12-2018)		● SW-B-2 (9-2019)	■ PW-01D (9-2019)
▲ MGWC-11 (12-2018)	▲ MGWA-24 (1-2019)	▲ MGWC-2 (9-2019)		● SW-B-5 (9-2019)	■ PW-02S (12-2018)
				● SW-C-2 (9-2019)	■ PW-02S (9-2019)
				● SW-C-6 (9-2019)	■ PW-02D (12-2018)
				● SW-D-2 (9-2019)	■ PW-02D (9-2019)
				● SW-D-8-01 (9-2019)	
					<small>Location PW-01S was dry during the 9-2019 sampling event.</small>

Alternative Source Demonstration  
Plant McIntosh – Ash Pond 1  
Effingham County, Georgia

Georgia Power Company  
Atlanta, Georgia



PIPER TRILINEAR DIAGRAM

November 2019

Fig. 6



**TABLE**

**Table 1. Analytical Data Summary - Groundwater and AP-1 Porewater and Pond Water**  
**Alternative Source Demonstration - January 2019**  
**Georgia Power Company**  
**Plant McIntosh Ash Pond 1**  
**Effingham County, Georgia**

Location Name			MGWC-2	MGWA-5	MGWA-6A	MGWC-7	MGWC-8	MGWA-10	MGWA-11	MGWA-24	PW-1D	PW-2S	PW-2D	SW-A-2	SW-A-5	SW-B-2	SW-B-5	SW-C-2	SW-C-6	SW-D-2	SW-D-8-01	
Sample Date			9/10/2019	9/10/2019	9/10/2019	9/10/2019	9/10/2019	9/10/2019	9/10/2019	9/10/2019	9/18/2019	9/18/2019	9/18/2019	9/12/2019	9/12/2019	9/12/2019	9/12/2019	9/12/2019	9/12/2019	9/12/2019	9/12/2019	
Analyte	Units	CAS No.	Porewater										Pond Water									
<b>Field Parameters</b>																						
Specific Conductivity	mV	COND	756.36	249.00	447.20	479.70	866.46	73.40	291.31	297.20	584.10	2008.80	3245.00	267.30	267.00	241.30	241.30	257.10	257.10	238.90	237.80	
DO	mg/L	DO	0.22	3.97	0.25	0.51	2.47	4.90	0.31	0.20	0.38	0.28	0.19	9.67	9.82	8.81	8.74	8.68	8.74	9.93	5.27	
ORP	µS/cm	ORP	33.40	105.10	-177.5	54.70	97.90	134.90	-23.6	7.20	33.20	-9.90	-163.00	64.80	64.20	57.70	55.70	64.30	65.70	58.10	60.50	
pH	SU	pH	7.26	7.41	7.15	6.03	5.10	5.97	7.54	7.53	9.70	11.72	11.83	9.29	9.28	9.61	9.59	9.08	9.06	9.49	9.02	
Temperature	°Celsius	TEMP	26.19	26.40	25.51	25.68	26.05	24.19	23.23	23.72	25.08	26.46	24.67	31.05	30.60	30.20	30.14	29.16	29.11	27.87	27.73	
Turbidity	NTU	TURB	0.89	0.90	4.62	1.39	0.05	1.14	0.81	0.56	3.49	0.48	0.27	5.01	6.12	3.00	3.09	6.12	6.67	18.20	6.01	
<b>Appendix III Parameters</b>																						
Boron	mg/L	7440-42-8	2.6	0.077 J	0.043 J	1.5	4.7	< 0.039	0.054 J	< 0.039	4.8	3.0	4.0	0.34	0.34	0.50	0.50	0.27	0.27	0.39	0.38	
Calcium	mg/L	7440-70-2	110	27	88	50	91	5.0	38	39	67	94	79	23	24	22	22	26	26	24	22	
Chloride	mg/L	16887-00-6	13	5.2	4.2	10	9.9	6.9	3.5	9.4	7.2	7.0	7.2	7.5	7.4	5.7	5.8	7.0	7.1	6.0	5.7	
Fluoride	mg/L	16984-48-8	0.062 J	0.063 J	0.060 J	0.17	0.093 J	0.037 J	0.067 J	0.24	1.6	0.13 J	0.099 J	0.34	0.33	0.55	0.67	0.33	0.33	0.60	0.61	
pH	SU	pH	7.26	7.41	7.15	6.03	5.10	5.97	7.54	7.53	9.70	11.72	11.83	9.29	9.28	9.61	9.59	9.08	9.06	9.49	9.02	
Sulfate	mg/L	14808-79-8	180	4.7	0.72 J	180	420	1.2	1.7	23	210	380	910	54	53	52	52	50	50	51	50	
Total Dissolved Solids	mg/L	TDS	--	--	--	--	--	--	--	--	420	900	1600	180	290	300	340	320	310	260	150	
<b>Appendix IV Parameters</b>																						
Cobalt	mg/L	7440-48-4	0.0028	< 0.000075	0.00020 J	0.011	0.019	0.00010 J	< 0.000075	< 0.000075	0.00019 J	0.00010 J	0.000091 J	0.00053	0.00043 J	0.00016 J	0.00018 J	0.00013 J	0.00022 J	0.00021 J	0.00017 J	
Lithium	mg/L	7439-93-2	0.028 B	0.033 B	0.0048 J	0.14 B	0.060 B^	0.0089	0.022	0.012	0.053	0.013	0.045	0.0058	< 0.0034	< 0.0034	< 0.0034	0.0072	0.0080	0.0063	0.0048 J	
<b>Additional Cations/Anions</b>																						
Alkalinity	mg/L	ALK	210	120	230	27	6.7	38	150	110	68	290	350	65	63	54	54	64	64	53	54	
Bicarbonate alkalinity as CaCO3	mg/L	HCO3	210	120	230	27	6.7	38	150	110	< 5.0	< 5.0	< 5.0	65	63	38	40	64	64	53	54	
Phenolphthalein Alkalinity	mg/L	ALKP	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	35	260	300	< 5.0	< 5.0	7.7	7.0	< 5.0	< 5.0	< 5.0	< 5.0	
Carbonate Alkalinity as CaCO3	mg/L	CO3	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	66	77	89	< 5.0	< 5.0	15	14	< 5.0	< 5.0	< 5.0	< 5.0	
Magnesium	mg/L	7439-95-4	19	10	2.3	4.6	18	1.2	12	4.5	1.7	< 0.083	< 0.083	3.4	3.5	1.7	1.7	2.7	2.7	2.2	1.8	
Potassium	mg/L	7440-09-7	2.2	1.1	0.74	5.4	9.8	1.1	2.0	2.3	10	58	110	5.0	4.9	4.9	4.9	3.9	3.9	4.4	4.3	
Sodium	mg/L	7440-23-5	33	9.9	6.1	37	57	6.1	9.3	20	56	190	460	30	30	29	29	20	20	21	20	

**General Notes:**

CAS No. - Chemical Abstracts Service Registry Number

**Bolded** - detected value

-- - not analyzed for this constituent

µS/cm - microsiemens per centimeter

mg/L - milligrams per liter

mV - millivolts

ntu - nephelometric turbidity units

s.u.- Standard Units

Total metals analysis was performed. Temperature, specific conductance, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity were measured and recorded in the field.

PW-1S was dry during the September 2019 sampling and therefore, was not sampled.

**Validator Qualifiers:**

< - The analyte was not detected at a concentration above the specified laboratory reporting limit.

B - Compound was found in the blank and sample

J - The result is an estimated value.

**ATTACHMENT A**  
**LABORATORY ANALYTICAL DATA REPORTS**

## ANALYTICAL REPORT

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

Laboratory Job ID: 180-95641-1

Laboratory Sample Delivery Group: 1

Client Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

**For:**

Southern Company  
PO BOX 2641 GSC8  
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty



Authorized for release by:  
10/22/2019 9:40:21 PM

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

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
SDG: 1

**Job ID: 180-95641-1**

**Laboratory: Eurofins TestAmerica, Pittsburgh**

## Narrative

### Job Narrative 180-95641-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/13/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.1° C and 2.9° C.

#### GC Semi VOA

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

#### Metals

Methods 6020, 6020A: The continuing calibration verification (CCV) associated with batch 180-292548 recovered above the upper control limit for beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Methods 6020, 6020A: The continuing calibration verification (CCV) associated with batch 180-292548 recovered above the upper control limit for beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCV 180-292548/75) and (180-95709-E-1-A PDS).

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

#### General Chemistry

Method SM 2320B: The sample duplicate precision for the following sample associated with analytical batch 180-292142 was outside control limits for Carbonate Alkalinity as CaCO<sub>3</sub> and Phenolphthalein Alkalinity: SW-B-5 (180-95641-3) and (180-95641-B-3 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 McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
SDG: 1

## Qualifiers

### Metals

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

### General Chemistry

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

## 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 McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
 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
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 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

# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
SDG: 1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-95641-1	SW-A-2	Water	09/12/19 11:45	09/13/19 09:00	
180-95641-2	SW-A-5	Water	09/12/19 11:25	09/13/19 09:00	
180-95641-3	SW-B-5	Water	09/12/19 10:45	09/13/19 09:00	
180-95641-4	SW-B-2	Water	09/12/19 11:02	09/13/19 09:00	
180-95641-5	SW-C-6	Water	09/12/19 09:50	09/13/19 09:00	
180-95641-6	SW-C-2	Water	09/12/19 10:15	09/13/19 09:00	
180-95641-7	SW-D-2	Water	09/12/19 09:10	09/13/19 09:00	
180-95641-8	SW-D-8-01	Water	09/12/19 08:45	09/13/19 09:00	

# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
SDG: 1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

#### Protocol References:

EPA = US Environmental Protection Agency

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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 McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
 SDG: 1

**Client Sample ID: SW-A-2**

**Lab Sample ID: 180-95641-1**

**Date Collected: 09/12/19 11:45**

**Matrix: Water**

**Date Received: 09/13/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			292352	09/24/19 10:11	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	292055	09/20/19 10:28	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: M		1	1.0 mL	1.0 mL	294722	10/12/19 05:40	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291739	09/18/19 10:36	AVS	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			292142	09/19/19 21:31	AVS	TAL PIT

**Client Sample ID: SW-A-5**

**Lab Sample ID: 180-95641-2**

**Date Collected: 09/12/19 11:25**

**Matrix: Water**

**Date Received: 09/13/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			292352	09/24/19 10:27	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	292055	09/20/19 10:28	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: M		1	1.0 mL	1.0 mL	294722	10/12/19 05:16	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291811	09/18/19 15:00	AVS	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			292142	09/19/19 21:37	AVS	TAL PIT

**Client Sample ID: SW-B-5**

**Lab Sample ID: 180-95641-3**

**Date Collected: 09/12/19 10:45**

**Matrix: Water**

**Date Received: 09/13/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			292352	09/24/19 10:43	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	292055	09/20/19 10:28	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: M		1	1.0 mL	1.0 mL	294722	10/12/19 05:21	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291811	09/18/19 15:00	AVS	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			292142	09/19/19 21:56	AVS	TAL PIT

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
 SDG: 1

**Client Sample ID: SW-B-2**

**Lab Sample ID: 180-95641-4**

**Date Collected: 09/12/19 11:02**

**Matrix: Water**

**Date Received: 09/13/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			292352	09/24/19 12:34	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	292055	09/20/19 10:28	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: M		1	1.0 mL	1.0 mL	294722	10/12/19 05:26	WTR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291811	09/18/19 15:00	AVS	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			292142	09/19/19 22:09	AVS	TAL PIT

**Client Sample ID: SW-C-6**

**Lab Sample ID: 180-95641-5**

**Date Collected: 09/12/19 09:50**

**Matrix: Water**

**Date Received: 09/13/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			292352	09/24/19 12:50	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	292057	09/20/19 10:34	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			292548	09/24/19 17:18	RSK	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291811	09/18/19 15:00	AVS	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			292142	09/19/19 22:15	AVS	TAL PIT

**Client Sample ID: SW-C-2**

**Lab Sample ID: 180-95641-6**

**Date Collected: 09/12/19 10:15**

**Matrix: Water**

**Date Received: 09/13/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			292352	09/24/19 13:06	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	292057	09/20/19 10:34	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			292548	09/24/19 17:22	RSK	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291811	09/18/19 15:00	AVS	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			292142	09/19/19 22:22	AVS	TAL PIT

# Lab Chronicle

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
 SDG: 1

**Client Sample ID: SW-D-2**

**Lab Sample ID: 180-95641-7**

**Date Collected: 09/12/19 09:10**

**Matrix: Water**

**Date Received: 09/13/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			292352	09/24/19 13:21	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	292057	09/20/19 10:34	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			292548	09/24/19 17:25	RSK	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291811	09/18/19 15:00	AVS	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			292142	09/19/19 22:28	AVS	TAL PIT

**Client Sample ID: SW-D-8-01**

**Lab Sample ID: 180-95641-8**

**Date Collected: 09/12/19 08:45**

**Matrix: Water**

**Date Received: 09/13/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			292352	09/24/19 10:59	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	292057	09/20/19 10:34	MWW	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			292548	09/24/19 17:29	RSK	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	291811	09/18/19 15:00	AVS	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			292142	09/19/19 22:34	AVS	TAL PIT

**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

MWW = Margaret Wanyoike

Batch Type: Analysis

AVS = Abbey Smith

MJH = Matthew Hartman

RSK = Robert Kurtz

WTR = Bill Reinheimer

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
 SDG: 1

**Client Sample ID: SW-A-2**

**Lab Sample ID: 180-95641-1**

Date Collected: 09/12/19 11:45

Matrix: Water

Date Received: 09/13/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.5		1.0	0.71	mg/L			09/24/19 10:11	1
Fluoride	0.34		0.10	0.026	mg/L			09/24/19 10:11	1
Sulfate	54		1.0	0.38	mg/L			09/24/19 10:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.34		0.080	0.039	mg/L		09/20/19 10:28	10/12/19 05:40	1
Calcium	23		0.50	0.13	mg/L		09/20/19 10:28	10/12/19 05:40	1
Cobalt	0.00053		0.00050	0.000075	mg/L		09/20/19 10:28	10/12/19 05:40	1
Potassium	5.0		0.50	0.16	mg/L		09/20/19 10:28	10/12/19 05:40	1
Magnesium	3.4		0.50	0.083	mg/L		09/20/19 10:28	10/12/19 05:40	1
Sodium	30		0.50	0.35	mg/L		09/20/19 10:28	10/12/19 05:40	1
Lithium	0.0058		0.0050	0.0034	mg/L		09/20/19 10:28	10/12/19 05:40	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	180		10	10	mg/L			09/18/19 10:36	1
Total Alkalinity as CaCO3 to pH 4.!	65		5.0	5.0	mg/L			09/19/19 21:31	1
Bicarbonate Alkalinity as CaCO3	65		5.0	5.0	mg/L			09/19/19 21:31	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/19/19 21:31	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/19/19 21:31	1

**Client Sample ID: SW-A-5**

**Lab Sample ID: 180-95641-2**

Date Collected: 09/12/19 11:25

Matrix: Water

Date Received: 09/13/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.4		1.0	0.71	mg/L			09/24/19 10:27	1
Fluoride	0.33		0.10	0.026	mg/L			09/24/19 10:27	1
Sulfate	53		1.0	0.38	mg/L			09/24/19 10:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.34		0.080	0.039	mg/L		09/20/19 10:28	10/12/19 05:16	1
Calcium	24		0.50	0.13	mg/L		09/20/19 10:28	10/12/19 05:16	1
Cobalt	0.00043	J	0.00050	0.000075	mg/L		09/20/19 10:28	10/12/19 05:16	1
Potassium	4.9		0.50	0.16	mg/L		09/20/19 10:28	10/12/19 05:16	1
Magnesium	3.5		0.50	0.083	mg/L		09/20/19 10:28	10/12/19 05:16	1
Sodium	30		0.50	0.35	mg/L		09/20/19 10:28	10/12/19 05:16	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/20/19 10:28	10/12/19 05:16	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	290		10	10	mg/L			09/18/19 15:00	1
Total Alkalinity as CaCO3 to pH 4.!	63		5.0	5.0	mg/L			09/19/19 21:37	1
Bicarbonate Alkalinity as CaCO3	63		5.0	5.0	mg/L			09/19/19 21:37	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/19/19 21:37	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/19/19 21:37	1

Eurofins TestAmerica, Pittsburgh



# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
 SDG: 1

**Client Sample ID: SW-B-5**

**Lab Sample ID: 180-95641-3**

Date Collected: 09/12/19 10:45

Matrix: Water

Date Received: 09/13/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.8		1.0	0.71	mg/L			09/24/19 10:43	1
Fluoride	0.67		0.10	0.026	mg/L			09/24/19 10:43	1
Sulfate	52		1.0	0.38	mg/L			09/24/19 10:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.50		0.080	0.039	mg/L		09/20/19 10:28	10/12/19 05:21	1
Calcium	22		0.50	0.13	mg/L		09/20/19 10:28	10/12/19 05:21	1
Cobalt	0.00018	J	0.00050	0.000075	mg/L		09/20/19 10:28	10/12/19 05:21	1
Potassium	4.9		0.50	0.16	mg/L		09/20/19 10:28	10/12/19 05:21	1
Magnesium	1.7		0.50	0.083	mg/L		09/20/19 10:28	10/12/19 05:21	1
Sodium	29		0.50	0.35	mg/L		09/20/19 10:28	10/12/19 05:21	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/20/19 10:28	10/12/19 05:21	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	340		10	10	mg/L			09/18/19 15:00	1
Total Alkalinity as CaCO3 to pH 4.!	54		5.0	5.0	mg/L			09/19/19 21:56	1
Bicarbonate Alkalinity as CaCO3	40		5.0	5.0	mg/L			09/19/19 21:56	1
Carbonate Alkalinity as CaCO3	14		5.0	5.0	mg/L			09/19/19 21:56	1
Phenolphthalein Alkalinity	7.0		5.0	5.0	mg/L			09/19/19 21:56	1

**Client Sample ID: SW-B-2**

**Lab Sample ID: 180-95641-4**

Date Collected: 09/12/19 11:02

Matrix: Water

Date Received: 09/13/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.7		1.0	0.71	mg/L			09/24/19 12:34	1
Fluoride	0.55		0.10	0.026	mg/L			09/24/19 12:34	1
Sulfate	52		1.0	0.38	mg/L			09/24/19 12:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.50		0.080	0.039	mg/L		09/20/19 10:28	10/12/19 05:26	1
Calcium	22		0.50	0.13	mg/L		09/20/19 10:28	10/12/19 05:26	1
Cobalt	0.00016	J	0.00050	0.000075	mg/L		09/20/19 10:28	10/12/19 05:26	1
Potassium	4.9		0.50	0.16	mg/L		09/20/19 10:28	10/12/19 05:26	1
Magnesium	1.7		0.50	0.083	mg/L		09/20/19 10:28	10/12/19 05:26	1
Sodium	29		0.50	0.35	mg/L		09/20/19 10:28	10/12/19 05:26	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/20/19 10:28	10/12/19 05:26	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	300		10	10	mg/L			09/18/19 15:00	1
Total Alkalinity as CaCO3 to pH 4.!	54		5.0	5.0	mg/L			09/19/19 22:09	1
Bicarbonate Alkalinity as CaCO3	38		5.0	5.0	mg/L			09/19/19 22:09	1
Carbonate Alkalinity as CaCO3	15		5.0	5.0	mg/L			09/19/19 22:09	1
Phenolphthalein Alkalinity	7.7		5.0	5.0	mg/L			09/19/19 22:09	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
SDG: 1

**Client Sample ID: SW-C-6**

**Lab Sample ID: 180-95641-5**

Date Collected: 09/12/19 09:50

Matrix: Water

Date Received: 09/13/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.1		1.0	0.71	mg/L			09/24/19 12:50	1
Fluoride	0.33		0.10	0.026	mg/L			09/24/19 12:50	1
Sulfate	50		1.0	0.38	mg/L			09/24/19 12:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.27		0.080	0.039	mg/L		09/20/19 10:34	09/24/19 17:18	1
Calcium	26		0.50	0.13	mg/L		09/20/19 10:34	09/24/19 17:18	1
Cobalt	0.00022	J	0.00050	0.000075	mg/L		09/20/19 10:34	09/24/19 17:18	1
Potassium	3.9		0.50	0.16	mg/L		09/20/19 10:34	09/24/19 17:18	1
Magnesium	2.7		0.50	0.083	mg/L		09/20/19 10:34	09/24/19 17:18	1
Sodium	20		0.50	0.35	mg/L		09/20/19 10:34	09/24/19 17:18	1
Lithium	0.0080		0.0050	0.0034	mg/L		09/20/19 10:34	09/24/19 17:18	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	310		10	10	mg/L			09/18/19 15:00	1
Total Alkalinity as CaCO3 to pH 4.5	64		5.0	5.0	mg/L			09/19/19 22:15	1
Bicarbonate Alkalinity as CaCO3	64		5.0	5.0	mg/L			09/19/19 22:15	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/19/19 22:15	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/19/19 22:15	1

**Client Sample ID: SW-C-2**

**Lab Sample ID: 180-95641-6**

Date Collected: 09/12/19 10:15

Matrix: Water

Date Received: 09/13/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.0		1.0	0.71	mg/L			09/24/19 13:06	1
Fluoride	0.33		0.10	0.026	mg/L			09/24/19 13:06	1
Sulfate	50		1.0	0.38	mg/L			09/24/19 13:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.27		0.080	0.039	mg/L		09/20/19 10:34	09/24/19 17:22	1
Calcium	26		0.50	0.13	mg/L		09/20/19 10:34	09/24/19 17:22	1
Cobalt	0.00013	J	0.00050	0.000075	mg/L		09/20/19 10:34	09/24/19 17:22	1
Potassium	3.9		0.50	0.16	mg/L		09/20/19 10:34	09/24/19 17:22	1
Magnesium	2.7		0.50	0.083	mg/L		09/20/19 10:34	09/24/19 17:22	1
Sodium	20		0.50	0.35	mg/L		09/20/19 10:34	09/24/19 17:22	1
Lithium	0.0072		0.0050	0.0034	mg/L		09/20/19 10:34	09/24/19 17:22	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	320		10	10	mg/L			09/18/19 15:00	1
Total Alkalinity as CaCO3 to pH 4.5	64		5.0	5.0	mg/L			09/19/19 22:22	1
Bicarbonate Alkalinity as CaCO3	64		5.0	5.0	mg/L			09/19/19 22:22	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/19/19 22:22	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/19/19 22:22	1

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# Client Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
 SDG: 1

**Client Sample ID: SW-D-2**

**Lab Sample ID: 180-95641-7**

Date Collected: 09/12/19 09:10

Matrix: Water

Date Received: 09/13/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.0		1.0	0.71	mg/L			09/24/19 13:21	1
Fluoride	0.60		0.10	0.026	mg/L			09/24/19 13:21	1
Sulfate	51		1.0	0.38	mg/L			09/24/19 13:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.39		0.080	0.039	mg/L		09/20/19 10:34	09/24/19 17:25	1
Calcium	24		0.50	0.13	mg/L		09/20/19 10:34	09/24/19 17:25	1
Cobalt	0.00021	J	0.00050	0.000075	mg/L		09/20/19 10:34	09/24/19 17:25	1
Potassium	4.4		0.50	0.16	mg/L		09/20/19 10:34	09/24/19 17:25	1
Magnesium	2.2		0.50	0.083	mg/L		09/20/19 10:34	09/24/19 17:25	1
Sodium	21		0.50	0.35	mg/L		09/20/19 10:34	09/24/19 17:25	1
Lithium	0.0063		0.0050	0.0034	mg/L		09/20/19 10:34	09/24/19 17:25	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	260		10	10	mg/L			09/18/19 15:00	1
Total Alkalinity as CaCO3 to pH 4.!	53		5.0	5.0	mg/L			09/19/19 22:28	1
Bicarbonate Alkalinity as CaCO3	53		5.0	5.0	mg/L			09/19/19 22:28	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/19/19 22:28	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/19/19 22:28	1

**Client Sample ID: SW-D-8-01**

**Lab Sample ID: 180-95641-8**

Date Collected: 09/12/19 08:45

Matrix: Water

Date Received: 09/13/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.7		1.0	0.71	mg/L			09/24/19 10:59	1
Fluoride	0.61		0.10	0.026	mg/L			09/24/19 10:59	1
Sulfate	50		1.0	0.38	mg/L			09/24/19 10:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.38		0.080	0.039	mg/L		09/20/19 10:34	09/24/19 17:29	1
Calcium	22		0.50	0.13	mg/L		09/20/19 10:34	09/24/19 17:29	1
Cobalt	0.00017	J	0.00050	0.000075	mg/L		09/20/19 10:34	09/24/19 17:29	1
Potassium	4.3		0.50	0.16	mg/L		09/20/19 10:34	09/24/19 17:29	1
Magnesium	1.8		0.50	0.083	mg/L		09/20/19 10:34	09/24/19 17:29	1
Sodium	20		0.50	0.35	mg/L		09/20/19 10:34	09/24/19 17:29	1
Lithium	0.0048	J	0.0050	0.0034	mg/L		09/20/19 10:34	09/24/19 17:29	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	150		10	10	mg/L			09/18/19 15:00	1
Total Alkalinity as CaCO3 to pH 4.!	54		5.0	5.0	mg/L			09/19/19 22:34	1
Bicarbonate Alkalinity as CaCO3	54		5.0	5.0	mg/L			09/19/19 22:34	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/19/19 22:34	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/19/19 22:34	1

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# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
 SDG: 1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

**Lab Sample ID: MB 180-292352/6**  
**Matrix: Water**  
**Analysis Batch: 292352**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			09/24/19 04:46	1
Fluoride	<0.026		0.10	0.026	mg/L			09/24/19 04:46	1
Sulfate	<0.38		1.0	0.38	mg/L			09/24/19 04:46	1

**Lab Sample ID: LCS 180-292352/5**  
**Matrix: Water**  
**Analysis Batch: 292352**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	23.2		mg/L		93	90 - 110
Fluoride	1.25	1.13		mg/L		90	90 - 110
Sulfate	25.0	23.5		mg/L		94	90 - 110

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

**Lab Sample ID: MB 180-292055/1-A**  
**Matrix: Water**  
**Analysis Batch: 294722**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292055**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		09/20/19 10:28	10/12/19 03:46	1
Calcium	<0.13		0.50	0.13	mg/L		09/20/19 10:28	10/12/19 03:46	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/20/19 10:28	10/12/19 03:46	1
Potassium	<0.16		0.50	0.16	mg/L		09/20/19 10:28	10/12/19 03:46	1
Magnesium	<0.083		0.50	0.083	mg/L		09/20/19 10:28	10/12/19 03:46	1
Sodium	<0.35		0.50	0.35	mg/L		09/20/19 10:28	10/12/19 03:46	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/20/19 10:28	10/12/19 03:46	1

**Lab Sample ID: LCS 180-292055/2-A**  
**Matrix: Water**  
**Analysis Batch: 294722**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292055**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.18		mg/L		94	80 - 120
Calcium	25.0	22.4		mg/L		89	80 - 120
Cobalt	0.500	0.499		mg/L		100	80 - 120
Potassium	25.0	23.3		mg/L		93	80 - 120
Magnesium	25.0	24.2		mg/L		97	80 - 120
Sodium	25.0	25.4		mg/L		102	80 - 120
Lithium	0.500	0.465		mg/L		93	80 - 120

**Lab Sample ID: 180-95641-1 MS**  
**Matrix: Water**  
**Analysis Batch: 294722**

**Client Sample ID: SW-A-2**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292055**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.34		1.25	1.63		mg/L		103	75 - 125
Calcium	23		25.0	50.3		mg/L		109	75 - 125
Cobalt	0.00053		0.500	0.484		mg/L		97	75 - 125
Potassium	5.0		25.0	31.3		mg/L		105	75 - 125

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# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
 SDG: 1

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

**Lab Sample ID: 180-95641-1 MS**  
**Matrix: Water**  
**Analysis Batch: 294722**

**Client Sample ID: SW-A-2**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292055**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	3.4		25.0	31.7		mg/L		113	75 - 125
Sodium	30		25.0	61.1		mg/L		125	75 - 125
Lithium	0.0058		0.500	0.458		mg/L		90	75 - 125

**Lab Sample ID: 180-95641-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 294722**

**Client Sample ID: SW-A-2**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292055**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.34		1.25	1.69		mg/L		108	75 - 125	4	20
Calcium	23		25.0	49.4		mg/L		105	75 - 125	2	20
Cobalt	0.00053		0.500	0.439		mg/L		88	75 - 125	10	20
Potassium	5.0		25.0	31.0		mg/L		104	75 - 125	1	20
Magnesium	3.4		25.0	31.4		mg/L		112	75 - 125	1	20
Sodium	30		25.0	60.0		mg/L		121	75 - 125	2	20
Lithium	0.0058		0.500	0.430		mg/L		85	75 - 125	6	20

**Lab Sample ID: MB 180-292057/1-A**  
**Matrix: Water**  
**Analysis Batch: 292548**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292057**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<0.13		0.50	0.13	mg/L		09/20/19 10:34	09/24/19 17:01	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/20/19 10:34	09/24/19 17:01	1
Potassium	<0.16		0.50	0.16	mg/L		09/20/19 10:34	09/24/19 17:01	1
Magnesium	<0.083		0.50	0.083	mg/L		09/20/19 10:34	09/24/19 17:01	1
Sodium	<0.35		0.50	0.35	mg/L		09/20/19 10:34	09/24/19 17:01	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/20/19 10:34	09/24/19 17:01	1

**Lab Sample ID: MB 180-292057/1-A**  
**Matrix: Water**  
**Analysis Batch: 292595**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292057**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<39		80	39	ug/L		09/20/19 10:34	09/25/19 09:33	1

**Lab Sample ID: LCS 180-292057/2-A**  
**Matrix: Water**  
**Analysis Batch: 292548**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292057**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25.0	26.0		mg/L		104	80 - 120
Cobalt	0.500	0.468		mg/L		94	80 - 120
Potassium	25.0	25.1		mg/L		100	80 - 120
Magnesium	25.0	25.9		mg/L		104	80 - 120
Sodium	25.0	22.8		mg/L		91	80 - 120
Lithium	0.500	0.492		mg/L		98	80 - 120

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
 SDG: 1

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 180-291739/2**  
**Matrix: Water**  
**Analysis Batch: 291739**

**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			09/18/19 10:36	1

**Lab Sample ID: LCS 180-291739/1**  
**Matrix: Water**  
**Analysis Batch: 291739**

**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	604		mg/L		95	80 - 120

**Lab Sample ID: MB 180-291811/2**  
**Matrix: Water**  
**Analysis Batch: 291811**

**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			09/18/19 15:00	1

**Lab Sample ID: LCS 180-291811/1**  
**Matrix: Water**  
**Analysis Batch: 291811**

**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	606		mg/L		96	80 - 120

## Method: SM2320 B - Alkalinity, Total

**Lab Sample ID: MB 180-292142/111**  
**Matrix: Water**  
**Analysis Batch: 292142**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.0		5.0	5.0	mg/L			09/19/19 20:47	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/19/19 20:47	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/19/19 20:47	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/19/19 20:47	1

**Lab Sample ID: LCS 180-292142/110**  
**Matrix: Water**  
**Analysis Batch: 292142**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	250	239		mg/L		95	90 - 110

**Lab Sample ID: 180-95641-3 DU**  
**Matrix: Water**  
**Analysis Batch: 292142**

**Client Sample ID: SW-B-5**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	54		54.3		mg/L		1	20
Bicarbonate Alkalinity as CaCO3	40		36.4		mg/L		9	20

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# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
SDG: 1

## Method: SM2320 B - Alkalinity, Total (Continued)

Lab Sample ID: 180-95641-3 DU  
Matrix: Water  
Analysis Batch: 292142

Client Sample ID: SW-B-5  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Carbonate Alkalinity as CaCO <sub>3</sub>	14		17.9	F5	mg/L		25	20
Phenolphthalein Alkalinity	7.0		8.96	F5	mg/L		25	20

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# QC Association Summary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
 SDG: 1

## HPLC/IC

### Analysis Batch: 292352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95641-1	SW-A-2	Total/NA	Water	EPA 300.0 R2.1	
180-95641-2	SW-A-5	Total/NA	Water	EPA 300.0 R2.1	
180-95641-3	SW-B-5	Total/NA	Water	EPA 300.0 R2.1	
180-95641-4	SW-B-2	Total/NA	Water	EPA 300.0 R2.1	
180-95641-5	SW-C-6	Total/NA	Water	EPA 300.0 R2.1	
180-95641-6	SW-C-2	Total/NA	Water	EPA 300.0 R2.1	
180-95641-7	SW-D-2	Total/NA	Water	EPA 300.0 R2.1	
180-95641-8	SW-D-8-01	Total/NA	Water	EPA 300.0 R2.1	
MB 180-292352/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-292352/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

## Metals

### Prep Batch: 292055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95641-1	SW-A-2	Total Recoverable	Water	3005A	
180-95641-2	SW-A-5	Total Recoverable	Water	3005A	
180-95641-3	SW-B-5	Total Recoverable	Water	3005A	
180-95641-4	SW-B-2	Total Recoverable	Water	3005A	
MB 180-292055/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-292055/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-95641-1 MS	SW-A-2	Total Recoverable	Water	3005A	
180-95641-1 MSD	SW-A-2	Total Recoverable	Water	3005A	

### Prep Batch: 292057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95641-5	SW-C-6	Total Recoverable	Water	3005A	
180-95641-6	SW-C-2	Total Recoverable	Water	3005A	
180-95641-7	SW-D-2	Total Recoverable	Water	3005A	
180-95641-8	SW-D-8-01	Total Recoverable	Water	3005A	
MB 180-292057/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-292057/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Analysis Batch: 292548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95641-5	SW-C-6	Total Recoverable	Water	EPA 6020	292057
180-95641-6	SW-C-2	Total Recoverable	Water	EPA 6020	292057
180-95641-7	SW-D-2	Total Recoverable	Water	EPA 6020	292057
180-95641-8	SW-D-8-01	Total Recoverable	Water	EPA 6020	292057
MB 180-292057/1-A	Method Blank	Total Recoverable	Water	EPA 6020	292057
LCS 180-292057/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	292057

### Analysis Batch: 292595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-292057/1-A	Method Blank	Total Recoverable	Water	EPA 6020	292057

### Analysis Batch: 294722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95641-1	SW-A-2	Total Recoverable	Water	EPA 6020	292055
180-95641-2	SW-A-5	Total Recoverable	Water	EPA 6020	292055
180-95641-3	SW-B-5	Total Recoverable	Water	EPA 6020	292055

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# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1 Addition

Job ID: 180-95641-1  
SDG: 1

## Metals (Continued)

### Analysis Batch: 294722 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95641-4	SW-B-2	Total Recoverable	Water	EPA 6020	292055
MB 180-292055/1-A	Method Blank	Total Recoverable	Water	EPA 6020	292055
LCS 180-292055/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	292055
180-95641-1 MS	SW-A-2	Total Recoverable	Water	EPA 6020	292055
180-95641-1 MSD	SW-A-2	Total Recoverable	Water	EPA 6020	292055

## General Chemistry

### Analysis Batch: 291739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95641-1	SW-A-2	Total/NA	Water	SM 2540C	
MB 180-291739/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-291739/1	Lab Control Sample	Total/NA	Water	SM 2540C	

### Analysis Batch: 291811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95641-2	SW-A-5	Total/NA	Water	SM 2540C	
180-95641-3	SW-B-5	Total/NA	Water	SM 2540C	
180-95641-4	SW-B-2	Total/NA	Water	SM 2540C	
180-95641-5	SW-C-6	Total/NA	Water	SM 2540C	
180-95641-6	SW-C-2	Total/NA	Water	SM 2540C	
180-95641-7	SW-D-2	Total/NA	Water	SM 2540C	
180-95641-8	SW-D-8-01	Total/NA	Water	SM 2540C	
MB 180-291811/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-291811/1	Lab Control Sample	Total/NA	Water	SM 2540C	

### Analysis Batch: 292142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95641-1	SW-A-2	Total/NA	Water	SM2320 B	
180-95641-2	SW-A-5	Total/NA	Water	SM2320 B	
180-95641-3	SW-B-5	Total/NA	Water	SM2320 B	
180-95641-4	SW-B-2	Total/NA	Water	SM2320 B	
180-95641-5	SW-C-6	Total/NA	Water	SM2320 B	
180-95641-6	SW-C-2	Total/NA	Water	SM2320 B	
180-95641-7	SW-D-2	Total/NA	Water	SM2320 B	
180-95641-8	SW-D-8-01	Total/NA	Water	SM2320 B	
MB 180-292142/111	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-292142/110	Lab Control Sample	Total/NA	Water	SM2320 B	
180-95641-3 DU	SW-B-5	Total/NA	Water	SM2320 B	

<b>Client Information</b> Client Contact: Ms. Lauren Petty Company: Southern Company Address: PO BOX 2641 GSC8 Birmingham State: Zn AL, 35291 Phone: 205-992-5417(Tel) Email: Impetty@southernco.com Project Name: CCR - Plant McIntosh Ash Pond 1 Addt Site: Georgia		Lab PM: Bortot, Veronica E-Mail: veronica.bortot@testamericainc.com		COC No: 180-54310-11325.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): PO #: SCS10347656 WO #: Project #: 180199556 SSOW#:		Carrier Tracking No(s): Analysis Requested:			
Sample Identification SW-A-2 SW-A-5 SW-B-5 SW-B-2 SW-C-6 SW-C-2 SW-D-2 SW-E-8-01		Sample Date 9/12/19 9/12/19 9/12/19 9/12/19 9/12/19 9/12/19 9/12/19 9/12/19		Sample Time 1145 1125 1045 1102 0950 1015 0910 0845	
Sample Type (C=Comp, G=grab) G G G G G G G		Matrix (W=water, S=solid, O=oil, BT=Trace, AA=Air) Water Water Water Water Water Water Water Water		Field Filtered Sample (Yes or No) N N N N N N N N	
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 - EDTA Other: 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 Z - other (specify)		Total Number of Containers X X X X X X X X		Spec: 180-95641 Chain of Custody	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		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			
Empty Kit Relinquished by: Relinquished by: <i>Luven</i> Relinquished by: Relinquished by: Custody Seals Intact: Δ Yes Δ No		Special Instructions/QC Requirements: Method of Shipment: Date: 9/12/19 1900 Received by: <i>Gei</i> Company: <i>Gei</i> Date/Time: 9/13-19 Received by: <i>Public Water</i> Company: <i>JAP, H</i> Date/Time: 9:00 Received by: Company: Cooler: Temperature(s) °C and Other Remarks:			



# Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-95641-1

SDG Number: 1

**Login Number: 95641**

**List Number: 1**

**Creator: Watson, Debbie**

**List Source: Eurofins TestAmerica, Pittsburgh**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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: 180-95925-1

Client Project/Site: CCR - Plant McIntosh Ash Pond 1  
Revision: 1

**For:**

Southern Company  
PO BOX 2641 GSC8  
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty



Authorized for release by:  
10/29/2019 8:37:57 AM

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

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

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**Job ID: 180-95925-1**

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**Laboratory: Eurofins TestAmerica, Pittsburgh**

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**Narrative**

**Job Narrative  
180-95925-1**

Revised : to remove unnecessary flag from sodium blank

**Comments**

No additional comments.

**Receipt**

The samples were received on 9/19/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° C.

**GC Semi VOA**

Methods 300.0, 9056A: The continuing calibration verification (CCV) associated with batch 180-293618 recovered above the upper control limit for Fluoride. The samples associated with this CCV were non-detects or below the RL (J-value) for the affected analytes; therefore, the data have been reported. The following samples are impacted: PW-2D (180-95925-2) and PW-2S (180-95925-3).

Methods 300.0, 9056A: Standard analyzed after midnight but still within 48 hours of creation. Standard is valid

(CCVL 180-293733/69)

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.



# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

## 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 McIntosh Ash Pond 1

Job ID: 180-95925-1

## 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 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



# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-95925-1	PW-1D	Water	09/18/19 13:25	09/19/19 09:00	
180-95925-2	PW-2D	Water	09/18/19 12:20	09/19/19 09:00	
180-95925-3	PW-2S	Water	09/18/19 11:35	09/19/19 09:00	
180-95925-4	PW-1D	Water	09/18/19 13:25	09/19/19 09:00	
180-95925-5	PW-2D	Water	09/18/19 12:20	09/19/19 09:00	
180-95925-6	PW-2S	Water	09/18/19 11:35	09/19/19 09:00	

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# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

#### Protocol References:

EPA = US Environmental Protection Agency

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

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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 McIntosh Ash Pond 1

Job ID: 180-95925-1

## Client Sample ID: PW-1D

Date Collected: 09/18/19 13:25

Date Received: 09/19/19 09:00

## Lab Sample ID: 180-95925-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHIC2100A		1			293733	10/04/19 12:08	CMR	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2000		1			293618	10/03/19 19:59	CMR	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2000		5			293618	10/03/19 20:13	CMR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	292615	09/25/19 11:53	AVS	TAL PIT

## Client Sample ID: PW-2D

Date Collected: 09/18/19 12:20

Date Received: 09/19/19 09:00

## Lab Sample ID: 180-95925-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2000		2.5			293618	10/03/19 20:28	CMR	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2000		25			293618	10/03/19 20:43	CMR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	50 mL	100 mL	292615	09/25/19 11:53	AVS	TAL PIT

## Client Sample ID: PW-2S

Date Collected: 09/18/19 11:35

Date Received: 09/19/19 09:00

## Lab Sample ID: 180-95925-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2000		25			293618	10/03/19 20:58	CMR	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2000		2.5			293618	10/03/19 21:43	CMR	TAL PIT
Total/NA	Analysis	SM 2540C Instrument ID: NOEQUIP		1	100 mL	100 mL	292615	09/25/19 11:53	AVS	TAL PIT

## Client Sample ID: PW-1D

Date Collected: 09/18/19 13:25

Date Received: 09/19/19 09:00

## Lab Sample ID: 180-95925-4

Matrix: Water

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	292562	09/25/19 09:13	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			295459	10/18/19 16:32	RSK	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	292562	09/25/19 09:13	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			295479	10/19/19 16:02	WTR	TAL PIT

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

**Client Sample ID: PW-1D**  
**Date Collected: 09/18/19 13:25**  
**Date Received: 09/19/19 09:00**

**Lab Sample ID: 180-95925-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM2320 B		1			292719	09/25/19 15:21	AVS	TAL PIT

**Client Sample ID: PW-2D**  
**Date Collected: 09/18/19 12:20**  
**Date Received: 09/19/19 09:00**

**Lab Sample ID: 180-95925-5**  
**Matrix: Water**

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	292562	09/25/19 09:13	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295459	10/18/19 16:35	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	292562	09/25/19 09:13	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295479	10/19/19 16:06	WTR	TAL PIT
Instrument ID: A										
Total/NA	Analysis	SM2320 B		1			292719	09/25/19 15:29	AVS	TAL PIT
Instrument ID: PCTITRATOR										

**Client Sample ID: PW-2S**  
**Date Collected: 09/18/19 11:35**  
**Date Received: 09/19/19 09:00**

**Lab Sample ID: 180-95925-6**  
**Matrix: Water**

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	292562	09/25/19 09:13	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295459	10/18/19 16:45	RSK	TAL PIT
Instrument ID: A										
Total Recoverable	Prep	3005A			50 mL	50 mL	292562	09/25/19 09:13	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020		1			295479	10/19/19 16:09	WTR	TAL PIT
Instrument ID: A										
Total/NA	Analysis	SM2320 B		1			292719	09/25/19 15:37	AVS	TAL PIT
Instrument ID: PCTITRATOR										

**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

KEM = Kimberly Mahoney

Batch Type: Analysis

AVS = Abbey Smith

CMR = Carl Reagle

RSK = Robert Kurtz

WTR = Bill Reinheimer

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

## Client Sample ID: PW-1D

Date Collected: 09/18/19 13:25

Date Received: 09/19/19 09:00

## Lab Sample ID: 180-95925-1

Matrix: Water

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.2		1.0	0.71	mg/L			10/03/19 19:59	1
Fluoride	1.6		0.10	0.026	mg/L			10/04/19 12:08	1
Sulfate	210		5.0	1.9	mg/L			10/03/19 20:13	5

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	420		10	10	mg/L			09/25/19 11:53	1

## Client Sample ID: PW-2D

Date Collected: 09/18/19 12:20

Date Received: 09/19/19 09:00

## Lab Sample ID: 180-95925-2

Matrix: Water

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.2		2.5	1.8	mg/L			10/03/19 20:28	2.5
Fluoride	0.099	J	0.25	0.066	mg/L			10/03/19 20:28	2.5
Sulfate	910		25	9.5	mg/L			10/03/19 20:43	25

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1600		20	20	mg/L			09/25/19 11:53	1

## Client Sample ID: PW-2S

Date Collected: 09/18/19 11:35

Date Received: 09/19/19 09:00

## Lab Sample ID: 180-95925-3

Matrix: Water

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.0		2.5	1.8	mg/L			10/03/19 21:43	2.5
Fluoride	0.13	J	0.25	0.066	mg/L			10/03/19 21:43	2.5
Sulfate	380		25	9.5	mg/L			10/03/19 20:58	25

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	900		10	10	mg/L			09/25/19 11:53	1

## Client Sample ID: PW-1D

Date Collected: 09/18/19 13:25

Date Received: 09/19/19 09:00

## Lab Sample ID: 180-95925-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	4.8		0.080	0.039	mg/L		09/25/19 09:13	10/19/19 16:02	1
Calcium	67		0.50	0.13	mg/L		09/25/19 09:13	10/18/19 16:32	1
Cobalt	0.00019	J	0.00050	0.000075	mg/L		09/25/19 09:13	10/18/19 16:32	1
Potassium	10		0.50	0.16	mg/L		09/25/19 09:13	10/18/19 16:32	1
Magnesium	1.7		0.50	0.083	mg/L		09/25/19 09:13	10/18/19 16:32	1
Sodium	56		0.50	0.35	mg/L		09/25/19 09:13	10/19/19 16:02	1
Lithium	0.053		0.0050	0.0034	mg/L		09/25/19 09:13	10/18/19 16:32	1

Eurofins TestAmerica, Pittsburgh



# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

**Client Sample ID: PW-1D**  
Date Collected: 09/18/19 13:25  
Date Received: 09/19/19 09:00

**Lab Sample ID: 180-95925-4**  
Matrix: Water

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Alkalinity as CaCO3 to pH 4.!</b>	<b>68</b>		5.0	5.0	mg/L			09/25/19 15:21	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/25/19 15:21	1
<b>Carbonate Alkalinity as CaCO3</b>	<b>66</b>		5.0	5.0	mg/L			09/25/19 15:21	1
<b>Phenolphthalein Alkalinity</b>	<b>35</b>		5.0	5.0	mg/L			09/25/19 15:21	1

**Client Sample ID: PW-2D**  
Date Collected: 09/18/19 12:20  
Date Received: 09/19/19 09:00

**Lab Sample ID: 180-95925-5**  
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>4.0</b>		0.080	0.039	mg/L		09/25/19 09:13	10/19/19 16:06	1
<b>Calcium</b>	<b>79</b>		0.50	0.13	mg/L		09/25/19 09:13	10/18/19 16:35	1
<b>Cobalt</b>	<b>0.000091</b>	<b>J</b>	0.00050	0.000075	mg/L		09/25/19 09:13	10/18/19 16:35	1
<b>Potassium</b>	<b>110</b>		0.50	0.16	mg/L		09/25/19 09:13	10/18/19 16:35	1
Magnesium	<0.083		0.50	0.083	mg/L		09/25/19 09:13	10/18/19 16:35	1
<b>Sodium</b>	<b>460</b>		0.50	0.35	mg/L		09/25/19 09:13	10/19/19 16:06	1
<b>Lithium</b>	<b>0.045</b>		0.0050	0.0034	mg/L		09/25/19 09:13	10/18/19 16:35	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Alkalinity as CaCO3 to pH 4.!</b>	<b>350</b>		5.0	5.0	mg/L			09/25/19 15:29	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/25/19 15:29	1
<b>Carbonate Alkalinity as CaCO3</b>	<b>89</b>		5.0	5.0	mg/L			09/25/19 15:29	1
<b>Phenolphthalein Alkalinity</b>	<b>300</b>		5.0	5.0	mg/L			09/25/19 15:29	1

**Client Sample ID: PW-2S**  
Date Collected: 09/18/19 11:35  
Date Received: 09/19/19 09:00

**Lab Sample ID: 180-95925-6**  
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>3.0</b>		0.080	0.039	mg/L		09/25/19 09:13	10/19/19 16:09	1
<b>Calcium</b>	<b>94</b>		0.50	0.13	mg/L		09/25/19 09:13	10/18/19 16:45	1
<b>Cobalt</b>	<b>0.00010</b>	<b>J</b>	0.00050	0.000075	mg/L		09/25/19 09:13	10/18/19 16:45	1
<b>Potassium</b>	<b>58</b>		0.50	0.16	mg/L		09/25/19 09:13	10/18/19 16:45	1
Magnesium	<0.083		0.50	0.083	mg/L		09/25/19 09:13	10/18/19 16:45	1
<b>Sodium</b>	<b>190</b>		0.50	0.35	mg/L		09/25/19 09:13	10/19/19 16:09	1
<b>Lithium</b>	<b>0.013</b>		0.0050	0.0034	mg/L		09/25/19 09:13	10/18/19 16:45	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Alkalinity as CaCO3 to pH 4.!</b>	<b>290</b>		5.0	5.0	mg/L			09/25/19 15:37	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/25/19 15:37	1
<b>Carbonate Alkalinity as CaCO3</b>	<b>77</b>		5.0	5.0	mg/L			09/25/19 15:37	1
<b>Phenolphthalein Alkalinity</b>	<b>260</b>		5.0	5.0	mg/L			09/25/19 15:37	1

Eurofins TestAmerica, Pittsburgh

# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

**Lab Sample ID: MB 180-293618/6**  
**Matrix: Water**  
**Analysis Batch: 293618**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			10/03/19 14:59	1
Fluoride	<0.026		0.10	0.026	mg/L			10/03/19 14:59	1
Sulfate	<0.38		1.0	0.38	mg/L			10/03/19 14:59	1

**Lab Sample ID: LCS 180-293618/5**  
**Matrix: Water**  
**Analysis Batch: 293618**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.2		mg/L		105	90 - 110
Fluoride	1.25	1.24		mg/L		99	90 - 110
Sulfate	25.0	27.4		mg/L		110	90 - 110

**Lab Sample ID: MB 180-293733/6**  
**Matrix: Water**  
**Analysis Batch: 293733**

**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		0.10	0.026	mg/L			10/04/19 10:39	1

**Lab Sample ID: LCS 180-293733/5**  
**Matrix: Water**  
**Analysis Batch: 293733**

**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	1.30		mg/L		104	90 - 110

**Lab Sample ID: LCSD 180-293733/12**  
**Matrix: Water**  
**Analysis Batch: 293733**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.25	1.34		mg/L		108	90 - 110	4	20

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

**Lab Sample ID: MB 180-292562/1-A**  
**Matrix: Water**  
**Analysis Batch: 295459**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292562**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<0.13		0.50	0.13	mg/L		09/25/19 09:13	10/18/19 15:52	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/25/19 09:13	10/18/19 15:52	1
Potassium	<0.16		0.50	0.16	mg/L		09/25/19 09:13	10/18/19 15:52	1
Magnesium	<0.083		0.50	0.083	mg/L		09/25/19 09:13	10/18/19 15:52	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/25/19 09:13	10/18/19 15:52	1

Eurofins TestAmerica, Pittsburgh

# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

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

**Lab Sample ID: MB 180-292562/1-A**  
**Matrix: Water**  
**Analysis Batch: 295479**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292562**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.039		0.080	0.039	mg/L		09/25/19 09:13	10/19/19 15:12	1

**Lab Sample ID: MB 180-292562/1-A**  
**Matrix: Water**  
**Analysis Batch: 295479**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292562**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	<0.35		0.50	0.35	mg/L		09/25/19 09:13	10/19/19 17:03	1

**Lab Sample ID: LCS 180-292562/2-A**  
**Matrix: Water**  
**Analysis Batch: 295459**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292562**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25.0	25.4		mg/L		102	80 - 120
Cobalt	0.500	0.596		mg/L		119	80 - 120
Potassium	25.0	26.6		mg/L		106	80 - 120
Magnesium	25.0	26.6		mg/L		106	80 - 120
Lithium	0.500	0.489		mg/L		98	80 - 120

**Lab Sample ID: LCS 180-292562/2-A**  
**Matrix: Water**  
**Analysis Batch: 295479**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 292562**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.27		mg/L		102	80 - 120
Sodium	25.0	28.6		mg/L		115	80 - 120

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 180-292615/2**  
**Matrix: Water**  
**Analysis Batch: 292615**

**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			09/25/19 11:53	1

**Lab Sample ID: LCS 180-292615/1**  
**Matrix: Water**  
**Analysis Batch: 292615**

**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	658		mg/L		104	80 - 120

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# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

## Method: SM2320 B - Alkalinity, Total

**Lab Sample ID: MB 180-292719/61**  
**Matrix: Water**  
**Analysis Batch: 292719**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.0		5.0	5.0	mg/L			09/25/19 14:50	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/25/19 14:50	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/25/19 14:50	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/25/19 14:50	1

**Lab Sample ID: LCS 180-292719/60**  
**Matrix: Water**  
**Analysis Batch: 292719**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	250	239		mg/L		96	90 - 110

# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

## HPLC/IC

### Analysis Batch: 293618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95925-1	PW-1D	Total/NA	Water	EPA 300.0 R2.1	
180-95925-1	PW-1D	Total/NA	Water	EPA 300.0 R2.1	
180-95925-2	PW-2D	Total/NA	Water	EPA 300.0 R2.1	
180-95925-2	PW-2D	Total/NA	Water	EPA 300.0 R2.1	
180-95925-3	PW-2S	Total/NA	Water	EPA 300.0 R2.1	
180-95925-3	PW-2S	Total/NA	Water	EPA 300.0 R2.1	
MB 180-293618/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-293618/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 293733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95925-1	PW-1D	Total/NA	Water	EPA 300.0 R2.1	
MB 180-293733/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-293733/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 180-293733/12	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

## Metals

### Prep Batch: 292562

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95925-4	PW-1D	Total Recoverable	Water	3005A	
180-95925-5	PW-2D	Total Recoverable	Water	3005A	
180-95925-6	PW-2S	Total Recoverable	Water	3005A	
MB 180-292562/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-292562/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Analysis Batch: 295459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95925-4	PW-1D	Total Recoverable	Water	EPA 6020	292562
180-95925-5	PW-2D	Total Recoverable	Water	EPA 6020	292562
180-95925-6	PW-2S	Total Recoverable	Water	EPA 6020	292562
MB 180-292562/1-A	Method Blank	Total Recoverable	Water	EPA 6020	292562
LCS 180-292562/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	292562

### Analysis Batch: 295479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95925-4	PW-1D	Total Recoverable	Water	EPA 6020	292562
180-95925-5	PW-2D	Total Recoverable	Water	EPA 6020	292562
180-95925-6	PW-2S	Total Recoverable	Water	EPA 6020	292562
MB 180-292562/1-A	Method Blank	Total Recoverable	Water	EPA 6020	292562
MB 180-292562/1-A	Method Blank	Total Recoverable	Water	EPA 6020	292562
LCS 180-292562/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	292562

## General Chemistry

### Analysis Batch: 292615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95925-1	PW-1D	Total/NA	Water	SM 2540C	
180-95925-2	PW-2D	Total/NA	Water	SM 2540C	
180-95925-3	PW-2S	Total/NA	Water	SM 2540C	
MB 180-292615/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-292615/1	Lab Control Sample	Total/NA	Water	SM 2540C	

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# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95925-1

## General Chemistry

### Analysis Batch: 292719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95925-4	PW-1D	Total/NA	Water	SM2320 B	
180-95925-5	PW-2D	Total/NA	Water	SM2320 B	
180-95925-6	PW-2S	Total/NA	Water	SM2320 B	
MB 180-292719/61	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-292719/60	Lab Control Sample	Total/NA	Water	SM2320 B	

- 1
- 2
- 3
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- 7
- 8
- 9
- 10
- 11
- 12
- 13



# Chain of Custody Record



<b>Client Information</b> Client Contact: Lauren Coker Company: Southern Company Services, Inc... Address: 3535 Colonnade Parkway City: Birmingham State, Zip: GA, 30309 Phone: 205-992-5417(Tel) Email: Impelty@southernco.com Project Name: CCR - Plant McIntosh Ash Pond 1 Site: Georgia		Sampler: J. Adcock Lab PM: Bortol, Veronica Phone: 404-592-0094 E-Mail: veronica.bortol@testamericainc.com Carrier Tracking No(s): COC No: 180-54264-10410.1 Page: Page 1 of 1 Job #: 1 of 2	
Due Date Requested: Standard TAT Requested (days): Standard PO #: SCS10347656 WO #: Project #: 1901973 SSOW#:		<b>Analysis Requested</b> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> 9316_Ra226_9320_Ra228 <input checked="" type="checkbox"/> 6020_B_Ca; plus As,B,Cd,Co,LI (detected App IV) <input checked="" type="checkbox"/> 2540C_Calcid_300_Chloride Sulfate, Fluoride, pH <input checked="" type="checkbox"/>	
<b>Sample Identification</b> Sample Date: 9/18/19 Sample Time: 1325 Sample Type (C=Comp, G=grab): G Matrix (Water, Sewage, Solid, Onwaste, Oil, BT-Tissue, Air): Water		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:	
Sample Date: 9/18/19 Sample Time: 1220 Sample Type (C=Comp, G=grab): G Matrix (Water, Sewage, Solid, Onwaste, Oil, BT-Tissue, Air): Water		Total Number of Containers: <input checked="" type="checkbox"/>	
Sample Date: 9/18/19 Sample Time: 1135 Sample Type (C=Comp, G=grab): G Matrix (Water, Sewage, Solid, Onwaste, Oil, BT-Tissue, Air): Water		Barcode: 180-95925 Chain of Custody	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)			
Empty Kit Relinquished by: Relinquished by: <i>John Coker</i> Date: 9/18/19 Time: 1600 Relinquished by: Relinquished by: Relinquished by:			
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:			
Relinquished by: <i>John Coker</i> Date: 9/18/19 Time: 1600 Relinquished by: <i>John Coker</i> Date: 9/18/19 Time: 1600 Relinquished by:		Method of Shipment: Date/Time: 9/18/19 1600 Date/Time: 9/19/19 Date/Time: 9:00	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Received by: <i>FedEx</i> Company: <i>FedEx</i> Received by: <i>John Coker</i> Company: <i>John Coker</i> Received by: <i>John Coker</i> Company: <i>John Coker</i>	
Cooler Temperature(s) °C and Other Remarks:			





<b>Client Information</b> Client Contact: Lauren Coker Company: Southern Company Services, Inc... Address: 3535 Colonnade Parkway City: Birmingham State, Zip: GA, 30309 Phone: 205-992-5417(Tel) Email: Impetty@southernco.com Project Name: CCR - Plant McIntosh Ash Pond 1 Site: Georgia			Sampler: J. Adcock Lab PM: Bortol, Veronica Phone: 404-592-0094 E-Mail: veronica.bortol@testamericainc.com Carrier Tracking No(s):			COC No: 180-54264-10410.1 Page: Page 1 of 1 Job #: 202		
Due Date Requested: <i>Standard</i> TAT Requested (days): <i>Standard</i> PO #: SCS10347656 WO #: Project #: 1901973 SSOW#:			<b>Analysis Requested</b>			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:		
<b>Sample Identification</b> Sample Date: 9/18/19 Sample Time: 1325 Sample Type (C=Comp, G=grab): G Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=air): Water			Field Filtered Sample (Yes or No): <input checked="" type="checkbox"/> Yes Perform MS/MSD (Yes or No): <input checked="" type="checkbox"/> Yes Cations-alkalinity, bicarbonate alkalinity as CaCO3, carbonate alkalinity as CaCO3, Mg, K, Na: <input checked="" type="checkbox"/> Yes Anions-alkalinity, bicarbonate alkalinity as CaCO3, carbonate alkalinity as CaCO3, Mg, K, Na: <input checked="" type="checkbox"/> Yes			Special Instructions/Note: Cations/Anions - alkalinity, bicarbonate alkalinity as CaCO3, carbonate alkalinity as CaCO3, magnesium, potassium, sodium		
PW-1D PW-1S PW-2D PW-2S			Total Number of containers:					
<b>Possible Hazard Identification</b> <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological								
Deliverable Requested: I, II, III, IV, Other (specify)								
Empty Kit Relinquished by:								
Relinquished by: <i>[Signature]</i> Relinquished by: <i>[Signature]</i> Relinquished by:			Date/Time: 9/18/19 1600 Date/Time: Date/Time:			Method of Shipment:		
Custody Seals Intact: Δ Yes Δ No			Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:		

## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-95925-1

**Login Number: 95925**

**List Source: Eurofins TestAmerica, Pittsburgh**

**List Number: 1**

**Creator: Watson, Debbie**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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: 180-95500-1

Client Project/Site: CCR - Plant McIntosh Ash Pond 1  
Revision: 3

**For:**

Southern Company  
PO BOX 2641 GSC8  
Birmingham, Alabama 35291

Attn: Ms. Lauren Petty



Authorized for release by:  
11/12/2019 4:00:09 PM

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

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

PA Lab ID: 02-00416



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# Case Narrative

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

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**Job ID: 180-95500-1**

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**Laboratory: Eurofins TestAmerica, Pittsburgh**

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## Narrative

### Job Narrative 180-95500-1

Revised: to add Boron & Calcium to metals list

Revised : to add cobalt & Lithium to metals list

**Revised:** to correct flagging on Fluoride results

## Comments

No additional comments.

## Receipt

The samples were received on 9/11/2019 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.1° C, 2.3° C, 25.8° C and 26.7° 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.



# Definitions/Glossary

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

## 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
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
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.

## 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 McIntosh Ash Pond 1

Job ID: 180-95500-1

## 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
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 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



# Sample Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-95500-1	MGWA-11	Water	09/10/19 08:12	09/11/19 09:00	
180-95500-2	MGWA-10	Water	09/10/19 08:26	09/11/19 09:00	
180-95500-3	MGWA-6A	Water	09/10/19 09:50	09/11/19 09:00	
180-95500-4	MGWA-24	Water	09/10/19 08:25	09/11/19 09:00	
180-95500-5	MGWA-5	Water	09/10/19 10:00	09/11/19 09:00	
180-95500-6	MGWC-2	Water	09/10/19 13:30	09/11/19 09:00	
180-95500-7	MGWC-7	Water	09/10/19 10:10	09/11/19 09:00	
180-95500-8	MGWC-8	Water	09/10/19 12:15	09/11/19 09:00	

# Method Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	TAL PIT
EPA 6020	Metals (ICP/MS)	SW846	TAL PIT
SM2320 B	Alkalinity, Total	SM18	TAL PIT
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT

#### Protocol References:

EPA = US Environmental Protection Agency

SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.

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 McIntosh Ash Pond 1

Job ID: 180-95500-1

## Client Sample ID: MGWA-11

Date Collected: 09/10/19 08:12

Date Received: 09/11/19 09:00

## Lab Sample ID: 180-95500-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291383	09/15/19 08:56	CMR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			293025	09/27/19 16:24	WTR	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			291175	09/12/19 12:13	AVS	TAL PIT

## Client Sample ID: MGWA-10

Date Collected: 09/10/19 08:26

Date Received: 09/11/19 09:00

## Lab Sample ID: 180-95500-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291383	09/15/19 09:12	CMR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			293025	09/27/19 16:28	WTR	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			291175	09/12/19 12:19	AVS	TAL PIT

## Client Sample ID: MGWA-6A

Date Collected: 09/10/19 09:50

Date Received: 09/11/19 09:00

## Lab Sample ID: 180-95500-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291383	09/15/19 09:59	CMR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			293025	09/27/19 16:31	WTR	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			291175	09/12/19 12:25	AVS	TAL PIT

## Client Sample ID: MGWA-24

Date Collected: 09/10/19 08:25

Date Received: 09/11/19 09:00

## Lab Sample ID: 180-95500-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291383	09/15/19 10:15	CMR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291481	09/16/19 12:16	NAM	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			293025	09/27/19 16:35	WTR	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			291175	09/12/19 12:31	AVS	TAL PIT

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

## Client Sample ID: MGWA-5

Lab Sample ID: 180-95500-5

Date Collected: 09/10/19 10:00

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291383	09/15/19 10:31	CMR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291622	09/17/19 12:56	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			293054	09/28/19 02:11	WTR	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			291175	09/12/19 13:01	AVS	TAL PIT

## Client Sample ID: MGWC-2

Lab Sample ID: 180-95500-6

Date Collected: 09/10/19 13:30

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291383	09/15/19 10:47	CMR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291622	09/17/19 12:56	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			293054	09/28/19 02:14	WTR	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			291175	09/12/19 13:07	AVS	TAL PIT

## Client Sample ID: MGWC-7

Lab Sample ID: 180-95500-7

Date Collected: 09/10/19 10:10

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291383	09/15/19 11:02	CMR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291622	09/17/19 12:56	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			293054	09/28/19 02:18	WTR	TAL PIT
Total/NA	Analysis	SM2320 B Instrument ID: PCTITRATOR		1			291175	09/12/19 13:13	AVS	TAL PIT

## Client Sample ID: MGWC-8

Lab Sample ID: 180-95500-8

Date Collected: 09/10/19 12:15

Matrix: Water

Date Received: 09/11/19 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	EPA 300.0 R2.1 Instrument ID: CHICS2000		10	1 mL	1.0 mL	291418	09/17/19 10:32	CMR	TAL PIT
Total/NA	Analysis	EPA 300.0 R2.1 Instrument ID: CHICS2100B		1			291383	09/15/19 11:18	CMR	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	291622	09/17/19 12:56	KAK	TAL PIT
Total Recoverable	Analysis	EPA 6020 Instrument ID: A		1			293054	09/28/19 02:28	WTR	TAL PIT

Eurofins TestAmerica, Pittsburgh

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

**Client Sample ID: MGWC-8**

**Lab Sample ID: 180-95500-8**

**Date Collected: 09/10/19 12:15**

**Matrix: Water**

**Date Received: 09/11/19 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	SM2320 B		1			291175	09/12/19 13:18	AVS	TAL PIT

**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

NAM = Nicole Marfisi

Batch Type: Analysis

AVS = Abbey Smith

CMR = Carl Reagle

WTR = Bill Reinheimer



# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

**Client Sample ID: MGWA-11**

**Lab Sample ID: 180-95500-1**

Date Collected: 09/10/19 08:12

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.5		1.0	0.71	mg/L			09/15/19 08:56	1
Fluoride	0.067	J	0.10	0.026	mg/L			09/15/19 08:56	1
Sulfate	1.7		1.0	0.38	mg/L			09/15/19 08:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	2.0		0.50	0.16	mg/L		09/16/19 12:16	09/27/19 16:24	1
Magnesium	12		0.50	0.083	mg/L		09/16/19 12:16	09/27/19 16:24	1
Sodium	9.3		0.50	0.35	mg/L		09/16/19 12:16	09/27/19 16:24	1
Lithium	0.022		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 16:24	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 16:24	1
Calcium	38		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 16:24	1
Boron	0.054	J	0.080	0.039	mg/L		09/16/19 12:16	09/27/19 16:24	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.!	150		5.0	5.0	mg/L			09/12/19 12:13	1
Bicarbonate Alkalinity as CaCO3	150		5.0	5.0	mg/L			09/12/19 12:13	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 12:13	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/12/19 12:13	1

**Client Sample ID: MGWA-10**

**Lab Sample ID: 180-95500-2**

Date Collected: 09/10/19 08:26

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.9		1.0	0.71	mg/L			09/15/19 09:12	1
Fluoride	0.037	J	0.10	0.026	mg/L			09/15/19 09:12	1
Sulfate	1.2		1.0	0.38	mg/L			09/15/19 09:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	1.1		0.50	0.16	mg/L		09/16/19 12:16	09/27/19 16:28	1
Magnesium	1.2		0.50	0.083	mg/L		09/16/19 12:16	09/27/19 16:28	1
Sodium	6.1		0.50	0.35	mg/L		09/16/19 12:16	09/27/19 16:28	1
Lithium	0.0089		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 16:28	1
Cobalt	0.00010	J	0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 16:28	1
Calcium	5.0		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 16:28	1
Boron	<0.039		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 16:28	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.!	38		5.0	5.0	mg/L			09/12/19 12:19	1
Bicarbonate Alkalinity as CaCO3	38		5.0	5.0	mg/L			09/12/19 12:19	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 12:19	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/12/19 12:19	1

Eurofins TestAmerica, Pittsburgh

# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

**Client Sample ID: MGWA-6A**

**Lab Sample ID: 180-95500-3**

Date Collected: 09/10/19 09:50

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.2		1.0	0.71	mg/L			09/15/19 09:59	1
Fluoride	0.060	J	0.10	0.026	mg/L			09/15/19 09:59	1
Sulfate	0.72	J	1.0	0.38	mg/L			09/15/19 09:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	0.74		0.50	0.16	mg/L		09/16/19 12:16	09/27/19 16:31	1
Magnesium	2.3		0.50	0.083	mg/L		09/16/19 12:16	09/27/19 16:31	1
Sodium	6.1		0.50	0.35	mg/L		09/16/19 12:16	09/27/19 16:31	1
Lithium	0.0048	J	0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 16:31	1
Cobalt	0.00020	J	0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 16:31	1
Calcium	88		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 16:31	1
Boron	0.043	J	0.080	0.039	mg/L		09/16/19 12:16	09/27/19 16:31	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	230		5.0	5.0	mg/L			09/12/19 12:25	1
Bicarbonate Alkalinity as CaCO3	230		5.0	5.0	mg/L			09/12/19 12:25	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 12:25	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/12/19 12:25	1

**Client Sample ID: MGWA-24**

**Lab Sample ID: 180-95500-4**

Date Collected: 09/10/19 08:25

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.4		1.0	0.71	mg/L			09/15/19 10:15	1
Fluoride	0.24		0.10	0.026	mg/L			09/15/19 10:15	1
Sulfate	23		1.0	0.38	mg/L			09/15/19 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	2.3		0.50	0.16	mg/L		09/16/19 12:16	09/27/19 16:35	1
Magnesium	4.5		0.50	0.083	mg/L		09/16/19 12:16	09/27/19 16:35	1
Sodium	20		0.50	0.35	mg/L		09/16/19 12:16	09/27/19 16:35	1
Lithium	0.012		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 16:35	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 16:35	1
Calcium	39		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 16:35	1
Boron	<0.039		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 16:35	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	110		5.0	5.0	mg/L			09/12/19 12:31	1
Bicarbonate Alkalinity as CaCO3	110		5.0	5.0	mg/L			09/12/19 12:31	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 12:31	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/12/19 12:31	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

**Client Sample ID: MGWA-5**

**Lab Sample ID: 180-95500-5**

Date Collected: 09/10/19 10:00

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.2		1.0	0.71	mg/L			09/15/19 10:31	1
Fluoride	0.063	J	0.10	0.026	mg/L			09/15/19 10:31	1
Sulfate	4.7		1.0	0.38	mg/L			09/15/19 10:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	1.1		0.50	0.16	mg/L		09/17/19 12:56	09/28/19 02:11	1
Magnesium	10		0.50	0.083	mg/L		09/17/19 12:56	09/28/19 02:11	1
Sodium	9.9		0.50	0.35	mg/L		09/17/19 12:56	09/28/19 02:11	1
Lithium	0.033	B	0.0050	0.0034	mg/L		09/17/19 12:56	09/28/19 02:11	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/17/19 12:56	09/28/19 02:11	1
Calcium	27		0.50	0.13	mg/L		09/17/19 12:56	09/28/19 02:11	1
Boron	0.077	J	0.080	0.039	mg/L		09/17/19 12:56	09/28/19 02:11	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.!	120		5.0	5.0	mg/L			09/12/19 13:01	1
Bicarbonate Alkalinity as CaCO3	120		5.0	5.0	mg/L			09/12/19 13:01	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 13:01	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/12/19 13:01	1

**Client Sample ID: MGWC-2**

**Lab Sample ID: 180-95500-6**

Date Collected: 09/10/19 13:30

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13		1.0	0.71	mg/L			09/15/19 10:47	1
Fluoride	0.062	J	0.10	0.026	mg/L			09/15/19 10:47	1
Sulfate	180		1.0	0.38	mg/L			09/15/19 10:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	2.2		0.50	0.16	mg/L		09/17/19 12:56	09/28/19 02:14	1
Magnesium	19		0.50	0.083	mg/L		09/17/19 12:56	09/28/19 02:14	1
Sodium	33		0.50	0.35	mg/L		09/17/19 12:56	09/28/19 02:14	1
Lithium	0.028	B	0.0050	0.0034	mg/L		09/17/19 12:56	09/28/19 02:14	1
Cobalt	0.0028		0.00050	0.000075	mg/L		09/17/19 12:56	09/28/19 02:14	1
Calcium	110		0.50	0.13	mg/L		09/17/19 12:56	09/28/19 02:14	1
Boron	2.6		0.080	0.039	mg/L		09/17/19 12:56	09/28/19 02:14	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.!	210		5.0	5.0	mg/L			09/12/19 13:07	1
Bicarbonate Alkalinity as CaCO3	210		5.0	5.0	mg/L			09/12/19 13:07	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 13:07	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/12/19 13:07	1

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

**Client Sample ID: MGWC-7**

**Lab Sample ID: 180-95500-7**

Date Collected: 09/10/19 10:10

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10		1.0	0.71	mg/L			09/15/19 11:02	1
Fluoride	0.17		0.10	0.026	mg/L			09/15/19 11:02	1
Sulfate	180		1.0	0.38	mg/L			09/15/19 11:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	5.4		0.50	0.16	mg/L		09/17/19 12:56	09/28/19 02:18	1
Magnesium	4.6		0.50	0.083	mg/L		09/17/19 12:56	09/28/19 02:18	1
Sodium	37		0.50	0.35	mg/L		09/17/19 12:56	09/28/19 02:18	1
Lithium	0.14	B	0.0050	0.0034	mg/L		09/17/19 12:56	09/28/19 02:18	1
Cobalt	0.011		0.00050	0.000075	mg/L		09/17/19 12:56	09/28/19 02:18	1
Calcium	50		0.50	0.13	mg/L		09/17/19 12:56	09/28/19 02:18	1
Boron	1.5		0.080	0.039	mg/L		09/17/19 12:56	09/28/19 02:18	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.!	27		5.0	5.0	mg/L			09/12/19 13:13	1
Bicarbonate Alkalinity as CaCO3	27		5.0	5.0	mg/L			09/12/19 13:13	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 13:13	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/12/19 13:13	1

**Client Sample ID: MGWC-8**

**Lab Sample ID: 180-95500-8**

Date Collected: 09/10/19 12:15

Matrix: Water

Date Received: 09/11/19 09:00

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.9		1.0	0.71	mg/L			09/15/19 11:18	1
Fluoride	0.093	J	0.10	0.026	mg/L			09/15/19 11:18	1
Sulfate	420		10	3.8	mg/L			09/17/19 10:32	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	9.8		0.50	0.16	mg/L		09/17/19 12:56	09/28/19 02:28	1
Magnesium	18		0.50	0.083	mg/L		09/17/19 12:56	09/28/19 02:28	1
Sodium	57		0.50	0.35	mg/L		09/17/19 12:56	09/28/19 02:28	1
Lithium	0.060	B ^	0.0050	0.0034	mg/L		09/17/19 12:56	09/28/19 02:28	1
Cobalt	0.019		0.00050	0.000075	mg/L		09/17/19 12:56	09/28/19 02:28	1
Calcium	91		0.50	0.13	mg/L		09/17/19 12:56	09/28/19 02:28	1
Boron	4.7		0.080	0.039	mg/L		09/17/19 12:56	09/28/19 02:28	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.!	6.7		5.0	5.0	mg/L			09/12/19 13:18	1
Bicarbonate Alkalinity as CaCO3	6.7		5.0	5.0	mg/L			09/12/19 13:18	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 13:18	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/12/19 13:18	1

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# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

**Lab Sample ID: MB 180-291383/6**  
**Matrix: Water**  
**Analysis Batch: 291383**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.71		1.0	0.71	mg/L			09/15/19 06:12	1
Fluoride	<0.026		0.10	0.026	mg/L			09/15/19 06:12	1
Sulfate	<0.38		1.0	0.38	mg/L			09/15/19 06:12	1

**Lab Sample ID: LCS 180-291383/5**  
**Matrix: Water**  
**Analysis Batch: 291383**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.4		mg/L		101	90 - 110
Fluoride	1.25	1.24		mg/L		100	90 - 110
Sulfate	25.0	25.1		mg/L		100	90 - 110

**Lab Sample ID: MB 180-291418/56**  
**Matrix: Water**  
**Analysis Batch: 291418**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<0.38		1.0	0.38	mg/L			09/16/19 21:04	1

**Lab Sample ID: LCS 180-291418/55**  
**Matrix: Water**  
**Analysis Batch: 291418**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	25.0	23.9		mg/L		96	90 - 110

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

**Lab Sample ID: MB 180-291481/1-A**  
**Matrix: Water**  
**Analysis Batch: 293025**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 291481**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	<0.16		0.50	0.16	mg/L		09/16/19 12:16	09/27/19 14:50	1
Magnesium	<0.083		0.50	0.083	mg/L		09/16/19 12:16	09/27/19 14:50	1
Sodium	<0.35		0.50	0.35	mg/L		09/16/19 12:16	09/27/19 14:50	1
Lithium	<0.0034		0.0050	0.0034	mg/L		09/16/19 12:16	09/27/19 14:50	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/16/19 12:16	09/27/19 14:50	1
Calcium	<0.13		0.50	0.13	mg/L		09/16/19 12:16	09/27/19 14:50	1
Boron	<0.039		0.080	0.039	mg/L		09/16/19 12:16	09/27/19 14:50	1

**Lab Sample ID: LCS 180-291481/2-A**  
**Matrix: Water**  
**Analysis Batch: 293025**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 291481**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Potassium	25.0	23.8		mg/L		95	80 - 120
Magnesium	25.0	24.9		mg/L		100	80 - 120
Sodium	25.0	24.9		mg/L		100	80 - 120

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# QC Sample Results

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

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

**Lab Sample ID: LCS 180-291481/2-A**  
**Matrix: Water**  
**Analysis Batch: 293025**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 291481**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lithium	0.500	0.478		mg/L		96	80 - 120
Cobalt	0.500	0.472		mg/L		94	80 - 120
Calcium	25.0	26.2		mg/L		105	80 - 120
Boron	1.25	1.19		mg/L		95	80 - 120

**Lab Sample ID: MB 180-291622/1-A**  
**Matrix: Water**  
**Analysis Batch: 293054**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 291622**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	<0.16		0.50	0.16	mg/L		09/17/19 12:56	09/28/19 01:04	1
Magnesium	<0.083		0.50	0.083	mg/L		09/17/19 12:56	09/28/19 01:04	1
Sodium	<0.35		0.50	0.35	mg/L		09/17/19 12:56	09/28/19 01:04	1
Lithium	0.00436	J	0.0050	0.0034	mg/L		09/17/19 12:56	09/28/19 01:04	1
Cobalt	<0.000075		0.00050	0.000075	mg/L		09/17/19 12:56	09/28/19 01:04	1
Calcium	<0.13		0.50	0.13	mg/L		09/17/19 12:56	09/28/19 01:04	1
Boron	<0.039		0.080	0.039	mg/L		09/17/19 12:56	09/28/19 01:04	1

**Lab Sample ID: LCS 180-291622/2-A**  
**Matrix: Water**  
**Analysis Batch: 293054**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 291622**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Potassium	25.0	23.5		mg/L		94	80 - 120
Magnesium	25.0	24.1		mg/L		96	80 - 120
Sodium	25.0	24.7		mg/L		99	80 - 120
Lithium	0.500	0.518		mg/L		104	80 - 120
Cobalt	0.500	0.475		mg/L		95	80 - 120
Calcium	25.0	25.5		mg/L		102	80 - 120
Boron	1.25	1.20		mg/L		96	80 - 120

## Method: SM2320 B - Alkalinity, Total

**Lab Sample ID: MB 180-291175/29**  
**Matrix: Water**  
**Analysis Batch: 291175**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.0		5.0	5.0	mg/L			09/12/19 12:55	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 12:55	1
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 12:55	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/12/19 12:55	1

**Lab Sample ID: MB 180-291175/5**  
**Matrix: Water**  
**Analysis Batch: 291175**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	<5.0		5.0	5.0	mg/L			09/12/19 10:32	1
Bicarbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 10:32	1

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# QC Sample Results

Client: Southern Company  
 Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

## Method: SM2320 B - Alkalinity, Total (Continued)

**Lab Sample ID: MB 180-291175/5**  
**Matrix: Water**  
**Analysis Batch: 291175**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Carbonate Alkalinity as CaCO3	<5.0		5.0	5.0	mg/L			09/12/19 10:32	1
Phenolphthalein Alkalinity	<5.0		5.0	5.0	mg/L			09/12/19 10:32	1

**Lab Sample ID: LCS 180-291175/28**  
**Matrix: Water**  
**Analysis Batch: 291175**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

**Lab Sample ID: LCS 180-291175/4**  
**Matrix: Water**  
**Analysis Batch: 291175**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

## HPLC/IC

### Analysis Batch: 291383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95500-1	MGWA-11	Total/NA	Water	EPA 300.0 R2.1	
180-95500-2	MGWA-10	Total/NA	Water	EPA 300.0 R2.1	
180-95500-3	MGWA-6A	Total/NA	Water	EPA 300.0 R2.1	
180-95500-4	MGWA-24	Total/NA	Water	EPA 300.0 R2.1	
180-95500-5	MGWA-5	Total/NA	Water	EPA 300.0 R2.1	
180-95500-6	MGWC-2	Total/NA	Water	EPA 300.0 R2.1	
180-95500-7	MGWC-7	Total/NA	Water	EPA 300.0 R2.1	
180-95500-8	MGWC-8	Total/NA	Water	EPA 300.0 R2.1	
MB 180-291383/6	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-291383/5	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 291418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95500-8	MGWC-8	Total/NA	Water	EPA 300.0 R2.1	
MB 180-291418/56	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 180-291418/55	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	

## Metals

### Prep Batch: 291481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95500-1	MGWA-11	Total Recoverable	Water	3005A	
180-95500-2	MGWA-10	Total Recoverable	Water	3005A	
180-95500-3	MGWA-6A	Total Recoverable	Water	3005A	
180-95500-4	MGWA-24	Total Recoverable	Water	3005A	
MB 180-291481/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-291481/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Prep Batch: 291622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95500-5	MGWA-5	Total Recoverable	Water	3005A	
180-95500-6	MGWC-2	Total Recoverable	Water	3005A	
180-95500-7	MGWC-7	Total Recoverable	Water	3005A	
180-95500-8	MGWC-8	Total Recoverable	Water	3005A	
MB 180-291622/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-291622/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Analysis Batch: 293025

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95500-1	MGWA-11	Total Recoverable	Water	EPA 6020	291481
180-95500-2	MGWA-10	Total Recoverable	Water	EPA 6020	291481
180-95500-3	MGWA-6A	Total Recoverable	Water	EPA 6020	291481
180-95500-4	MGWA-24	Total Recoverable	Water	EPA 6020	291481
MB 180-291481/1-A	Method Blank	Total Recoverable	Water	EPA 6020	291481
LCS 180-291481/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	291481

### Analysis Batch: 293054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95500-5	MGWA-5	Total Recoverable	Water	EPA 6020	291622
180-95500-6	MGWC-2	Total Recoverable	Water	EPA 6020	291622
180-95500-7	MGWC-7	Total Recoverable	Water	EPA 6020	291622

Eurofins TestAmerica, Pittsburgh

# QC Association Summary

Client: Southern Company  
Project/Site: CCR - Plant McIntosh Ash Pond 1

Job ID: 180-95500-1

## Metals (Continued)

### Analysis Batch: 293054 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95500-8	MGWC-8	Total Recoverable	Water	EPA 6020	291622
MB 180-291622/1-A	Method Blank	Total Recoverable	Water	EPA 6020	291622
LCS 180-291622/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020	291622

## General Chemistry

### Analysis Batch: 291175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-95500-1	MGWA-11	Total/NA	Water	SM2320 B	
180-95500-2	MGWA-10	Total/NA	Water	SM2320 B	
180-95500-3	MGWA-6A	Total/NA	Water	SM2320 B	
180-95500-4	MGWA-24	Total/NA	Water	SM2320 B	
180-95500-5	MGWA-5	Total/NA	Water	SM2320 B	
180-95500-6	MGWC-2	Total/NA	Water	SM2320 B	
180-95500-7	MGWC-7	Total/NA	Water	SM2320 B	
180-95500-8	MGWC-8	Total/NA	Water	SM2320 B	
MB 180-291175/29	Method Blank	Total/NA	Water	SM2320 B	
MB 180-291175/5	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-291175/28	Lab Control Sample	Total/NA	Water	SM2320 B	
LCS 180-291175/4	Lab Control Sample	Total/NA	Water	SM2320 B	



**Chain of Custody Record**

<b>Client Information</b>		Sampler: <b>J. Adcock, L. Coker, J. Nowles</b>		Lab PM: <b>Bortol, Veronica</b>		Carrier Tracking No(s):		COC No: <b>180-54264-10410.1</b>	
Client Contact: <b>Lauren Coker</b>		Phone: <b>404-592-0094</b>		E-Mail: <b>veronica.bortol@testamericainc.com</b>		Page: <b>1 of 1</b>		Job #:	
Company: <b>Southern Company Services, Inc.</b>		Address: <b>3535 Colonnade Parkway</b>		City: <b>Birmingham</b>		State, Zip: <b>GA, 30309</b>		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 - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - other (specify)	
Due Date Requested:		TAT Requested (days):		PO #: <b>SCS10347656</b>		WO #:		Project #: <b>18019956</b>	
Email: <b>Impetty@southernco.com</b>		Project Name: <b>CCR - Plant McIntosh Ash Pond 1</b>		Site: <b>Georgia</b>		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)	
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (Water, Swab, On-wastewater)	
MGWA-11		9/10/19		0812		G		Water	
MGWA-10		9/10/19		0826		G		Water	
MGWA-6A		9/10/19		0950		G		Water	
MGWA-24		9/10/19		0825		B		Water	
MGWA-5		9/10/19		1000		G		Water	
MGWC-2		9/10/19		1330		G		Water	
MGWC-7		9/10/19		1010		G		Water	
MGWC-8		9/10/19		1215		G		Water	
Special Instructions/Note:		Total Number of Containers		Analysis Requested		Carrier Tracking No(s)		COC No	
Analyze for Anion/Cation: Alkalinity, bicarbonate alkalinity as CaCO3, Carbonate alkalinity as CaCO3, Mg, K, Na		2		CATIONS ANIONS		180-95500 Chain of Custody		180-54264-10410.1	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		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:		Date Requested:		Date/Time:	
Deliverable Requested: I, II, III, IV, Other (specify)		Empty Kit Relinquished by:		Date: <b>9/10/19 1900</b>		Company: <b>GEI</b>		Received by: <b>[Signature]</b>	
Relinquished by: <b>[Signature]</b>		Date/Time:		Company:		Received by: <b>[Signature]</b>		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by: <b>[Signature]</b>		Date/Time:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		Method of Shipment:		Company:	



# Login Sample Receipt Checklist

Client: Southern Company

Job Number: 180-95500-1

**Login Number: 95500**

**List Source: Eurofins TestAmerica, Pittsburgh**

**List Number: 1**

**Creator: Colussy, Jill L**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (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	