

# **2019 Annual Groundwater Monitoring and Corrective Action Report**

## **PLANT McMANUS Ash Pond 1 (AP-1)**

**Prepared for:  
GEORGIA POWER COMPANY  
Atlanta, Georgia**

**Prepared by:**



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**August 1, 2019**

# **Georgia Power Company**

## 2019 Annual Groundwater Monitoring and Corrective Action Report

Plant McManus  
Ash Pond 1 (AP-1)

August 1, 2019



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*Principal*



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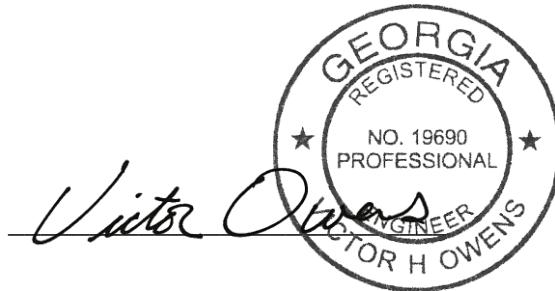
Trent Godwin, P.G.  
*Project Manager*

## CERTIFICATION STATEMENT

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

## RESOLUTE ENVIRONMENTAL & WATER RESOURCES CONSULTING, LLC

Signature:



Date:

7-27-2019

## **TABLE OF CONTENTS**

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	SITE LOCATION AND DESCRIPTION .....	1
1.1.1	Regional Geology .....	1
1.1.2	Site Geology and Hydrogeology .....	2
1.2	GROUNDWATER MONITORING SYSTEM .....	3
<b>2.0</b>	<b>GROUNDWATER MONITORING ACTIVITIES .....</b>	<b>3</b>
2.1	MONITORING WELL INSTALLATION AND MAINTENANCE .....	3
2.2	DETECTION MONITORING.....	4
2.2.1	Background Monitoring .....	4
2.2.2	Initial Detection Monitoring.....	4
<b>3.0</b>	<b>SAMPLE METHODOLOGY &amp; ANALYSES.....</b>	<b>4</b>
3.1	GROUNDWATER ELEVATION MEASUREMENT.....	4
3.2	GROUNDWATER GRADIENT AND FLOW VELOCITY.....	5
3.3	GROUNDWATER SAMPLING .....	6
3.4	LABORATORY ANALYSES .....	6
3.5	QUALITY ASSURANCE & QUALITY CONTROL.....	7
<b>4.0</b>	<b>STATISTICAL ANALYSIS .....</b>	<b>7</b>
4.1	STATISTICAL METHOD.....	7
4.2	STATISTICAL ANALYSES RESULTS .....	8
4.3	APPENDIX IV BACKGROUND DATA .....	9
<b>5.0</b>	<b>MONITORING PROGRAM STATUS.....</b>	<b>9</b>
<b>6.0</b>	<b>CONCLUSIONS &amp; FUTURE ACTIONS.....</b>	<b>9</b>
<b>7.0</b>	<b>REFERENCES .....</b>	<b>9</b>

## **FIGURES**

- Figure 1- Site Location Map
- Figure 2- Site Plan and Well Location Map
- Figure 3- Potentiometric Surface Map - High Tide - March 26, 2019

## **TABLES**

- Table 1- Summary of Historical Groundwater Elevations
- Table 2- Monitoring Well Network Summary
- Table 3- Groundwater Sampling Event Summary
- Table 4- Ash Pond 1 Analytical Data Summary, Plant McManus
- Table 5- Groundwater Flow Velocity Calculations – March 2019

## **APPENDICES**

- Appendix A- Analytical Data Reports
- Appendix B- Statistical Analyses

## **1.0 INTRODUCTION**

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (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, this *2019 Annual Groundwater Monitoring and Corrective Action Report* has been prepared to document groundwater monitoring activities conducted at Georgia Power Company's (GPC's) Plant McManus Ash Pond 1 (AP-1) (the Site) and satisfy the requirements of §257.90(e).

Groundwater monitoring and reporting for AP-1 is performed in accordance with the monitoring requirements of 40 CFR 257.90 through 257.91 and 257.93 through 257.94 of the USEPA CCR rule, and Georgia EPD Rules for Solid Waste Management 391-3-4-10(6). To specify groundwater monitoring requirements, Georgia EPD rule 391-3-4-10(6)(a) incorporates by reference the USEPA CCR Rule. For ease of reference, the USEPA CCR rules are cited within this report.

AP-1 ceased receiving waste prior to the effective date of the USEPA CCR rule promulgated in April 2015. A notification of intent to initiate closure of the inactive CCR surface impoundment was certified on December 7, 2015 and posted to GPC's website. Therefore, groundwater monitoring and reporting for AP-1 are being completed in accordance with the alternate schedule in § 257.100(e)(5) of the revised USEPA CCR rule (August 5, 2016).

This report documents the activities completed to establish the groundwater monitoring program and includes the required report components in accordance with 40 CFR 257.90(e).

### **1.1 SITE LOCATION AND DESCRIPTION**

The site is located at 1 Crispin Island Dr. in Glynn County, Georgia, approximately 5.37 miles northwest of the city of Brunswick. The plant property is bordered by the Turtle River to the west and by Burnett Creek to the north. (Figure 1, Site Location Map). AP-1 is located on the northeastern portion of the plant property (Figures 1 & 2).

AP-1 is an approximate 80-acres former ash pond that was built in the late 1950's. Ash sluicing operations at AP-1 commenced in 1959 and ceased in 1972. Closure of AP-1 commenced in 2016. As part of closure, AP-1 was dewatered sufficiently to remove the free liquids and ash was removed and disposed of in an offsite permitted landfill.

#### **1.1.1 Regional Geology**

The Brunswick area is underlain by three regional aquifer systems which extend to depths exceeding 1,100 feet. The uppermost regional aquifer is the surficial aquifer. In the Brunswick area, this aquifer extends to a depth of approximately 180 feet. Although the surficial aquifer is

defined on a regional scale as extending to approximately 180 feet below ground surface, Clarke and others (1990) acknowledge that localized lower permeability units can create confined or semi-confined conditions within limited areas of the surficial aquifer (ATC Associates Inc., 1997).

Regionally, the surficial aquifer is composed of geologic formations overlying the Hawthorn Formation. These formations include the Satilla, Charlton, and Raynor Formations, as well as undifferentiated Holocene, Pleistocene, Pliocene and late-Miocene deposits. These formations and deposits are comprised of sands, clays, and gravels. Depositionally, these sediments represent marginal to shallow marine beds which are overlain by marine terrace deposits. Fluvial or residual deposits overlay the terrace deposits (Miller, 1986; Clarke *et al*, 1990).

The regional surficial aquifer is underlain by approximately 90 feet of lower-permeability portions (Miocene Unit A) of the Hawthorn Formation. This stratum forms the upper confining bed for the Brunswick aquifer system. The Brunswick aquifer system is composed of two confined aquifers (the Upper Brunswick aquifer and the Lower Brunswick aquifer) which are separated and confined above and below by less permeable units of the Hawthorn Formation. The Upper Brunswick aquifer extends from approximately 270 feet to 350 feet below ground surface, and the Lower Brunswick aquifer extends from approximately 400 feet to 470 feet below ground surface (Clarke *et al*, 1990).

### 1.1.2 Site Geology and Hydrogeology

Based on information collected during subsurface investigations, Plant McManus is underlain by very fine sands and clays from land surface (or beneath a shallow fill layer) to depths of approximately 33 to 43 feet below land surface. Very fine sands are predominant, but discontinuous clay layers of varying thickness were encountered during drilling activities. The clay layers varied from less than one inch to approximately ten feet in thickness. These very fine sands and clays are interpreted to be the Upper Satilla Formation (ATC Associates, Inc., 1997).

Underlying the Upper Satilla Formation are fine to medium sands with greater silt content, and apparent lower hydraulic conductivity, than the sands of the Upper Satilla. These siltier sands, which were interpreted to be the Lower Satilla Formation, were encountered in several of the borings which extended to sufficient depth (35 feet below land surface) (ATC Associates Inc., 1997).

The potentiometric surface of the surficial aquifer at Plant McManus is characterized by a mounded area of groundwater on Crispen Island, with groundwater flowing radially away from the Island toward the marshes and tidal creeks to the north (including the marsh underlying the former AP-1), east, and west, as well as the Turtle River to the south (Figure 3). This groundwater mound has been present during each of the groundwater measurement events, including periods of high and low tide. The presence of the mound is likely a reflection of the topography of Crispen Island in the surficial aquifer, with groundwater recharge on the island

and groundwater discharge toward the marshes, creeks and River (ATC Associates Inc., 1997).

Groundwater flows from two directions toward the former AP-1. One groundwater flow component originates on the mainland, northeast of the facility, and flows southwest, while the other flow component originates on Crispen Island and flows north and northeast. Groundwater elevations in the monitoring wells and piezometers on the mainland (MCM-01, -02, -15, and -16) and on the island (MCM-08, -10, -11, and MW-05 through -09) have consistently been higher than and hydraulically upgradient of the groundwater elevations observed in the monitoring wells along the northwestern dike (MCM-04 through -07) and the Crispen Island Drive road dike (MCM-12, -14, and MCM-17) in the area of AP-1 (Table 1). The potentiometric surface of the surficial aquifer, and the resultant groundwater flow direction toward the marsh, is a reflection of the topography of the mainland, Crispen Island, and the tidal marsh. The wells along the northwestern dike and the Crispen Island Drive dike at AP-1 are tidally influenced.

## 1.2 GROUNDWATER MONITORING SYSTEM

Pursuant to §257.91, GPC installed a groundwater monitoring system within the uppermost aquifer around AP-1. The monitoring system is designed to monitor groundwater passing the waste boundary of AP-1 within the uppermost aquifer. Wells were located to serve as piezometers, upgradient or downgradient monitoring points based on groundwater flow direction (Table 2).

## 2.0 GROUNDWATER MONITORING ACTIVITIES

As required by §257.90(e), the following describes monitoring-related activities performed during the preceding year. Since this is the first *Annual Groundwater Monitoring and Corrective Action Report*, it also describes activities performed prior to 2019 to establish the groundwater monitoring program. All groundwater sampling was performed in accordance with §257.93. Samples were collected from 13 monitoring wells in the monitoring system shown on Figure 2.

Pursuant to §257.90(e)(3), Table 3 presents a summary of groundwater sampling events completed at AP-1.

### 2.1 MONITORING WELL INSTALLATION AND MAINTENANCE

In accordance with §257.91, a groundwater monitoring system was installed that (1) consists of a sufficient number of wells, (2) installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer, and (3) meets the performance standards of §257.91(a).

Twelve (12) groundwater monitoring wells (MCM-01, MCM-02, MCM-04, MCM-05, MCM-06, MCM-07, MCM-08, MCM-11, MCM-12, MCM-14, MCM-15, and MCM-16) and two (2)

piezometers (MCM-09 and MCM-10) were installed in June and July 2016. One (1) additional monitoring well (MCM-17) was installed in September 2016. Monitoring well and piezometer locations are shown on Figure 2.

The number, spacing, and depths of the groundwater monitoring wells were selected based on the characterization of site-specific hydrogeologic conditions and certified by a Professional Engineer (PE). Groundwater monitoring wells were designed to monitor the uppermost water-bearing zone.

## 2.2 DETECTION MONITORING

In accordance with §257.94(b), the detection groundwater monitoring program was implemented by collecting eight background groundwater samples. In addition, a ninth (9<sup>th</sup>) round of groundwater samples was collected as the initial detection monitoring event.

### 2.2.1 Background Monitoring

A minimum of eight independent samples were collected from each monitoring well within the well network and analyzed for Appendix III and IV constituents as part of the background monitoring period prior to April 17, 2019. Pursuant to §257.90(e)(3), data reports for the background sampling events are included in Appendix A, Analytical Data Reports. Background monitoring event analytical data are summarized in Table 4.

### 2.2.2 Initial Detection Monitoring

Following background monitoring (and prior to April 17, 2019), the initial detection monitoring event was completed by collecting an additional round of groundwater samples. Groundwater samples were collected from each monitoring well and analyzed for Appendix III constituents according to §257.94(a). Laboratory data reports for the initial detection monitoring event and data validation are included in Appendix A.

## 3.0 SAMPLE METHODOLOGY & ANALYSES

The following sections describe the methods used to conduct groundwater monitoring at AP-1.

### 3.1 GROUNDWATER ELEVATION MEASUREMENT

Prior to each sampling event, groundwater elevations were recorded from piezometers and monitoring wells in the network at AP-1. Groundwater elevations recorded during the background and detection monitoring events are summarized in Table 1. Groundwater elevation data were used to develop a potentiometric surface elevation contour map (Figure 3). Groundwater flow at the Site is discussed in Section 1.1.

### 3.2 GROUNDWATER GRADIENT AND FLOW VELOCITY

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

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

Where:

$$\begin{aligned} V &= \text{Groundwater flow velocity } \left( \frac{\text{feet}}{\text{day}} \right) \\ K &= \text{Average Hydraulic Conductivity } \left( \frac{\text{feet}}{\text{day}} \right) \\ i &= \text{Horizontal hydraulic gradient } \left( \frac{\text{feet}}{\text{feet}} \right) \\ n_e &= \text{Effective porosity} \end{aligned}$$

Horizontal hydraulic gradients were calculated for both the island and mainland flow using the March 26, 2019 potentiometric surface map. The horizontal gradients varied from a low of approximately 0.004 feet per foot (ft/ft) in at least two well pairs (between hydraulically upgradient well MCM-08 and hydraulically downgradient well MCM-07 to represent groundwater flow velocity from the island to AP-1; and between upgradient well MCM-15 and downgradient well MCM-04, to represent flow between the mainland and the northwestern dike) to approximately 0.012 ft/ft between upgradient wells MCM-16 and MCM-02 to represent groundwater flow velocity on the mainland as it flows toward AP-1. Intermediate hydraulic gradients of 0.008 ft/ft were observed in well pairs MCM-11 to MCM-12 and MCM-04 to MCM-05.

Hydraulic conductivity tests ("slug tests") were performed on the groundwater monitoring wells and piezometers around the ash pond (MCM-01 through MCM-17). Evaluation of these slug tests yielded a range of average hydraulic conductivity values from 0.837 ft/day ( $2.95 \times 10^{-4}$  centimeters per second {cm/s}) to 718 ft/day ( $2.5 \times 10^{-1}$  cm/s), with a geometric mean of 8.70 ft/day ( $3.07 \times 10^{-3}$  cm/s).

The effective porosity (percentage of interconnected pore space) of the surficial aquifer was conservatively estimated to be 35 percent, or 0.35. This estimate was based on the very fine sands observed in the borings, and a review of several sources (Driscoll, 1986; USEPA, 1989; Freeze and Cherry, 1979). Literature values for total porosity, which is the total pore space and a higher percentage than the effective porosity, of sands range from 25 to 50 percent (Freeze and Cherry, 1979) (ATC Associates Inc., 1997).

Groundwater flow velocities were calculated using the highest and lowest observed gradients from well pairs on the March 26, 2019 potentiometric surface map and the average hydraulic conductivity and effective porosity around AP-1 of 8.7 ft/day and 0.35, respectively. These

calculations are presented on Table 5. Based on these factors, the calculated groundwater flow velocities ranged from approximately 0.10 to 0.30 ft/day, and the average groundwater flow velocity at AP-1 was calculated as 0.20 ft/day, or 73 ft/year.

### 3.3 GROUNDWATER SAMPLING

Groundwater samples were collected in accordance with §257.93(a). Purging and sampling was performed using either a peristaltic pump with the intake tubing lowered to the midpoint of the well screen (or as appropriate determined by the water level) or a QED dedicated bladder pump. QED dedicated pumps are utilized in monitoring wells MCM-01, MCM-05, MCM-06, MCM-07, MCM-12, MCM-14, MCM-16, and MCM-17. All non-disposable equipment was decontaminated before use and between well locations using procedures described in the latest version of the Region IV USEPA Science and Ecosystem Support Division (SESD) *Operating Procedure for Field Equipment Cleaning and Decontamination* as a guide. Monitoring wells were purged and sampled using low-flow sampling procedures.

A SmarTroll® (In-Situ® field instrument) was used to monitor and record field water quality parameters (pH, conductivity, dissolved oxygen, temperature, and oxidation reduction potential [ORP]) during well purging to verify stabilization prior to sampling. Turbidity was monitored using a LaMotte 2020we® 1970-USEPA and ISO Compliant Model turbidity meter.

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

- ± 0.1 standard units for pH
- ± 10% for specific conductance
- ± 10% for DO > 0.5 mg/L. No criterion applies if DO < 0.5 mg/L
- Turbidity measurements less than or equal to 10 NTU
- Temperature - Record only, not used for stabilization criteria
- ORP - Record only, not used for stabilization criteria

Once stabilization was achieved, unfiltered samples were collected, placed in ice-packed coolers, and submitted to the analytical laboratory following chain-of-custody protocol.

### 3.4 LABORATORY ANALYSES

Groundwater samples collected for background monitoring included both Appendix III and Appendix IV parameters. Groundwater samples collected in March 2019 for detection monitoring were analyzed for Appendix III monitoring parameters only. Analytical methods used for groundwater sample analysis are listed on the analytical laboratory reports included in Appendix A.

Laboratory analyses were performed by Pace Analytical Services, LLC (Pace), of Peachtree Corners, Georgia and Greensberg, Pennsylvania. Pace is accredited by National Environmental Laboratory Accreditation Program (NELAP) and maintain a NELAP certification for all parameters analyzed. Groundwater data and chain of custody records for the monitoring events are presented in Appendix A.

### **3.5 QUALITY ASSURANCE & QUALITY CONTROL**

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

Groundwater quality data in this report were independently validated in accordance with USEPA guidance (USEPA, 2011) and the analytical methods. Data validation generally consisted of reviewing sample integrity, holding times, laboratory method blanks, laboratory control samples, matrix spikes/matrix spike duplicate recoveries and relative percent differences (RPDs), post digestion spikes, laboratory and field duplicate RPDs, field and equipment blanks, and reporting limits. Where appropriate, validation qualifiers and flags are applied to the data using USEPA procedures as guidance (USEPA, 2017). The associated data validation report is provided in Appendix A with the laboratory reports.

## **4.0 STATISTICAL ANALYSIS**

Statistical analysis of Appendix III groundwater monitoring data was performed pursuant to §257.93 following the PE certified statistical method for AP-1.

### **4.1 STATISTICAL METHOD**

The statistical test used to evaluate the groundwater monitoring data was the interwell prediction limit (PL) method Appendix III parameters (boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids [TDS]) combined with the option of a 1-of-2 resampling strategy. The interwell PLs pool background data from the network of upgradient wells to calculate a PL. An initial exceedance occurs when any downgradient well data exceed the PL.

If data from a sampling event initially exceed 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 determine whether the initial exceedance is verified. If the resample exceeds the PL, the initial exceedance is verified and a statistically significant increase (SSI) is determined. When the resample result does not verify the initial result, there is no SSI. If resampling is not performed, the initial exceedance is a confirmed exceedance.

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

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

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

#### 4.2 STATISTICAL ANALYSES RESULTS

Analytical data from the initial detection monitoring event in March 2019 at AP-1 were statistically analyzed in accordance with the PE - certified statistical method. Resampling to confirm SSIs was not performed; therefore, initial SSIs are treated as verified. The statistical analysis and comparison to PLs are included as Appendix B.

Based on the statistical results presented in Appendix B, the following summarizes parameters exhibiting SSIs at each monitoring well:

- Boron: MCM-05, MCM-06, MCM-07, MCM-12, MCM-14, and MCM-17
- Calcium: MCM-06, MCM-07, MCM-14, and MCM-17
- Chloride: MCM-06, MCM-07, MCM-14, and MCM-17
- Fluoride: MCM-12
- Sulfate: MCM-07 and MCM-14
- TDS: MCM-06, MCM-07, MCM-14, and MCM-17
- pH: MCM-05, MCM-06, MCM-07, MCM-12, MCM-14, and MCM-17

Note that the reporting limit for fluoride in downgradient well MCM-06 was elevated at <25 mg/L over historical reporting limits of <0.3 mg/L during the March 6, 2019 event, and was followed by a reported trace value of 0.19 mg/L. This value was flagged as an outlier in the database, and therefore not used to perform statistical evaluation.

Pursuant to §257.94(e), within 90 days from determining an SSI, GPC will either (1) prepare a demonstration that a source other than AP-1 was the cause, or (2) implement assessment monitoring per §257.95.

#### 4.3 APPENDIX IV BACKGROUND DATA

Pursuant to §257.95, Appendix IV groundwater quality data are only statistically analyzed and compared to groundwater protection standards if assessment monitoring is implemented. GPC is currently performing detection monitoring per §257.94 and has not implemented assessment monitoring at AP-1. Therefore, statistical analysis of the Appendix IV data has not been performed.

### 5.0 MONITORING PROGRAM STATUS

AP-1 is in detection monitoring. SSIs of Appendix III parameters have been identified. Pursuant to §257.94(e)(1), GPC has 90 days from the date of determination to either (1) prepare a demonstration that a source other than the CCR Unit was the cause, or (2) implement assessment monitoring per §257.95. GPC will address the reported SSIs in accordance with the requirements and options, of §257.94(e)(1-3) and (f).

### 6.0 CONCLUSIONS & FUTURE ACTIONS

Statistical evaluations of the groundwater monitoring data for AP-1 identified SSIs of Appendix III groundwater monitoring parameters. In accordance with §257.94(e)(1-2), GPC will conduct an alternate source demonstration or initiate an assessment monitoring program within 90 days.

The second 2019 semiannual detection monitoring event is planned for September 2019.

### 7.0 REFERENCES

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**Table 1**  
**Summary of Historical Groundwater Elevations**  
**Plant McManus**  
**Brunswick, GA**

	Collection Date	August 30, 2016	November 29, 2016		February 14, 2017	May 30, 2017	August 14, 2017	April 2/3, 2018	April 30, 2018	
	High Tide	8:46	9:17		11:51	14:38	15:26	11:46/12:12	10:36	
	Low Tide	14:22	15:04		17:31	7:42	19:09	17:26/17:59	16:16	
	Start Collection	9:50	9:27	15:25	8:50	12:10	14:05	13:24/12:15	9:51	15:40
	Stop Collection	12:56	15:23	18:18	15:57	15:28	17:08	15:20/12:58	10:39	16:52
Well ID	Top of Casing Elevation (ft NAVD 88)	Pre-Sample GW Elevation (ft NAVD 88)	High-Tide Pre-Sample GW Elevation (ft NAVD 88)	Low-Tide Pre-Sample GW Elevation (ft NAVD 88)	High-Tide Pre-Sample GW Elevation (ft NAVD 88)	Low-Tide Pre-Sample GW Elevation (ft NAVD 88)				
MCM-01	8.76	3.47	5.14	3.04	2.33	0.14	0.53	-0.12	NM	NM
MCM-02	10.58	4.45	5.89	5.85	5.62	2.80	3.82	2.98	NM	NM
MCM-04	12.47	1.89	2.60	1.87	2.35	1.08	0.95	0.09	NM	NM
MCM-05	10.09	0.09	1.32	-0.03	NM	0.68	-1.49	-1.91	-1.96	-3.03
MCM-06	10.17	-0.22	1.22	-0.52	0.10	2.27	-0.67	-1.84	-0.02	-1.53
MCM-07	10.22	1.71	1.90	1.18	1.23	1.48	1.56	1.53	1.47	0.74
MCM-08	9.41	1.88	2.86	2.76	2.45	2.46	3.35	2.89	NM	NM
MCM-09	9.77	2.43	2.23	2.22	2.92	2.12	3.07	2.66	NM	NM
MCM-10	11.77	4.34	4.22	3.87	5.27	4.69	5.65	4.77	NM	NM
MCM-11	10.37	3.37	3.85	3.88	4.71	3.42	NM	4.05	NM	NM
MCM-12	12.03	1.70	1.78	1.74	1.71	1.15	1.12	1.04	NM	NM
MCM-14	11.66	1.25	1.01	-0.28	NM	0.92	-0.24	-2.26	NM	NM
MCM-15	12.87	2.25	3.24	2.84	2.97	1.32	1.49	0.83	NM	NM
MCM-16	15.81	4.71	6.57	6.54	NM	3.62	4.80	3.97	NM	NM
MCM-17	11.67	not yet installed	1.61	0.79	0.89	0.92	0.23	-0.05	NM	NM

**Notes:**

1. High and low tide data pulled from the Crispen Island, Turtle River, Georgia tide chart generated using XTide: <http://tides.mobilegeographics.com/locations/1424>
2. MCM series construction details derived from survey work conducted by Southern Company E&CS Civil Field Services (July 28, 2016) except MCM-17 (October 5, 2016) & November 29, 2016 groundwater sampling event
3. MW & MWA series construction details derived from Plant McManus Substation Site Annual Report (Resolute, April 2016) & November 29, 2016 groundwater sampling event

Post-Dev - after developing wells

Pre-Sample - before sampling wells

NAVD 88 - North American Vertical Datum of 1988

GW - groundwater

NM - not measured

Updated by: AC 7/16/2019

Checked by: VF 7/16/2019

**Table 1**  
**Summary of Historical Groundwater Elevations**  
**Plant McManus**  
**Brunswick, GA**

Collection Date	May 8, 2018	June 18, 2018	September 24, 2018	November 5, 2018	November 6, 2018	March 26, 2019	March 27, 2019
High Tide	16:47	14:38	9:45	7:28	8:16	14:49	
Low Tide	10:03	7:41	15:25	13:10	14:01		8:44
Start Collection	8:25	12:10	12:38	13:45	8:20	15:24	8:57
Stop Collection	9:40	15:01	14:19	15:25	9:53	16:20	10:16
Well ID	Top of Casing Elevation (ft NAVD 88)	Pre-Sample GW Elevation (ft NAVD 88)	High-Tide Pre-Sample GW Elevation (ft NAVD 88)	Low Tide Pre-Sample GW Elevation (ft NAVD 88)	Low Tide Pre-Sample GW Elevation (ft NAVD 88)	High Tide Pre-Sample GW Elevation (ft NAVD 88)	High Tide Pre-Sample GW Elevation (ft NAVD 88)
MCM-01	8.76	-0.02	0.46	1.18	0.82	0.89	1.16
MCM-02	10.58	2.96	3.79	3.49	2.99	2.98	3.60
MCM-04	12.47	-1.04	-0.32	-1.51	-1.91	-1.08	-1.37
MCM-05	10.09	-3.44	-3.72	-5.81	-5.89	-4.57	-4.51
MCM-06	10.17	-1.59	-1.36	-2.89	-4.11	-2.28	-3.25
MCM-07	10.22	0.42	1.21	0.71	0.10	0.89	0.41
MCM-08	9.41	2.58	3.84	2.91	2.64	2.81	2.50
MCM-09	9.77	2.05	3.45	2.27	2.40	2.54	2.37
MCM-10	11.77	4.38	6.13	4.45	4.70	4.94	4.95
MCM-11	10.37	3.70	5.35	4.41	4.54	4.53	4.10
MCM-12	12.03	0.48	1.28	1.01	0.87	0.91	0.35
MCM-14	11.66	-2.53	-0.90	-2.17	-2.30	-0.54	-1.03
MCM-15	12.87	-0.16	0.66	-0.23	-0.78	-0.44	-0.32
MCM-16	15.81	3.97	4.77	4.54	3.89	3.87	4.51
MCM-17	11.67	-0.90	-0.08	-0.19	-0.53	0.38	-0.34

**Notes:**

1. High and low tide data pulled from the Crispin Island, Turtle River, Georgia tide chart generated using XTide: <http://tides.mobilegeographics.com/locations/1424>
2. MCM series construction details derived from survey work conducted by Southern Company E&CS Civil Field Services (July 28, 2016) except MCM-17 (October 5, 2016) & November 29, 2016 groundwater sampling event
3. MW & MWA series construction details derived from Plant McManus Substation Site Annual Report (Resolute, April 2016) & November 29, 2016 groundwater sampling event

Post-Dev - after developing wells

Pre-Sample - before sampling wells

NAVD 88 - North American Vertical Datum of 1988

GW - groundwater

NM - not measured

**Table 2**  
**Monitoring Well Network Summary**  
**Plant McManus**  
**Brunswick, GA**

Well ID	Hydraulic Location	Installation Date	Northing <sup>1</sup> (ft)	Easting <sup>1</sup> (ft)	Top of Casing Elevation <sup>1</sup> (ft NAVD 88)	Total Depth <sup>2</sup> (ft BTOC)	Top of Screen Elevation <sup>3</sup> (ft NAVD 88)	Bottom of Screen Elevation <sup>3</sup> (ft NAVD 88)
MCM-01	Upgradient	7/7/2016	443727.05	852732.97	8.76	27.32	-8.56	-18.56
MCM-02	Upgradient	7/6/2016	444497.35	852663.20	10.58	27.35	-6.77	-16.77
MCM-04	Downgradient	6/30/2016	444803.87	851694.66	12.47	28.57	-6.10	-16.10
MCM-05	Downgradient	7/9/2016	444716.62	851309.90	10.09	28.05	-7.96	-17.96
MCM-06	Downgradient	7/8/2016	444407.04	850782.25	10.17	27.20	-7.03	-17.03
MCM-07	Downgradient	7/8/2016	444059.47	850196.00	10.22	23.75	-3.53	-13.53
MCM-08	Upgradient	7/11/2016	443759.17	849718.14	9.41	28.29	-8.88	-18.88
MCM-09	Water Level	7/10/2019	443252.16	850147.75	9.77	28.46	-8.69	-18.69
MCM-10	Water Level	7/11/2016	442790.76	850452.79	11.77	23.96	-2.19	-12.19
MCM-11	Upgradient	7/12/2016	442430.10	851071.92	10.37	24.00	-3.63	-13.63
MCM-12	Downgradient	7/12/2016	442820.34	851313.25	12.03	29.00	-6.97	-16.97
MCM-14	Downgradient	7/9/2016	443359.49	852317.14	11.66	28.11	-6.45	-16.45
MCM-15	Upgradient	6/30/2016	444824.59	851948.43	12.87	26.60	-3.73	-13.73
MCM-16	Upgradient	7/6/2019	444550.36	852717.13	15.81	28.39	-2.58	-12.58
MCM-17	Downgradient	9/29/2016	443075.33	851899.07	11.67	27.44	-5.77	-15.77

**Notes:**

1. Georgia State Plane Coordinates. Data for MCM series derived from survey work conducted by Southern Company E&CS Civil Field Services (July 28, 2016) except MCM-17 (October 5, 2016)
2. Derived from November 29, 2016 and February 14, 2017 groundwater sampling events and Resolute well development/re-development, April 26 - 28, 2017
3. Calculated using survey data, groundwater sampling event data, and/or initial well construction information

NAVD 88 - North American Vertical Datum of 1988  
 ft BTOC - feet below top of casing

Updated By: AC 7/16/2019  
 Checked By: VF 7/16/2019

**Table 3**  
**Groundwater Sampling Event Summary**  
**Plant McManus**  
**Brunswick, GA**

Well ID	Hydraulic Location	Aug-2016	Oct-2016	Nov-2016	Feb-2017	May-2017	Aug 2, 2017	Aug 15-16, 2017	Apr-2018	May-2018	Jun 19-21, 2018	Jun 28, 2018	Background	Sep-2018	Background	Nov-2018	Resample	Mar 6, 2019	Detection	Mar 24-25, 2019	Status of Monitoring Well
Purpose of Sampling Event		<b>Background</b>	<b>Resample</b>	<b>Background</b>	<b>Background</b>	<b>Background</b>	<b>Resample</b>	<b>Detection</b>	<b>Mar 24-25, 2019</b>	<b>Status of Monitoring Well</b>											
<b>MCM-01</b>	Upgradient	BG01	--	BG02	BG03	BG04	--	BG05	--	BG06	--	BG07	BG08	--	D01	Detection					
<b>MCM-02</b>	Upgradient	--	--	--	--	BG01	BG02	BG03	BG04	BG05	BG06	--	BG07	BG08	--	D01	Detection				
<b>MCM-04</b>	Downgradient	--	--	--	--	BG01	BG02	BG03	BG04	--	BG05	--	BG06	--	BG07	BG08	--	D01	Detection		
<b>MCM-05</b>	Downgradient	BG01	--	BG02	BG03	BG04	--	BG05	--	BG06	--	BG07	BG08	--	D01	Detection					
<b>MCM-06</b>	Downgradient	BG01	--	BG02	BG03	BG04	--	BG05	--	BG06	--	BG07	BG08	R01	D01	Detection					
<b>MCM-07</b>	Downgradient	BG01	--	BG02	BG03	BG04	--	BG05	--	BG06	--	BG07	BG08	--	D01	Detection					
<b>MCM-08</b>	Upgradient	--	--	--	--	BG01	BG02	BG03	BG04	BG05	BG06	R01	BG07	BG08	--	D01	Detection				
<b>MCM-11</b>	Upgradient	--	--	--	--	BG01	BG02	BG03	BG04	BG05	BG06	--	BG07	BG08	--	D01	Detection				
<b>MCM-12</b>	Downgradient	BG01	--	BG02	BG03	BG04	--	BG05	--	BG06	--	BG07	BG08	--	D01	Detection					
<b>MCM-14</b>	Downgradient	BG01	--	BG02	BG03	BG04	--	BG05	--	BG06	--	BG07	BG08	--	D01	Detection					
<b>MCM-15</b>	Upgradient	--	--	--	--	BG01	BG02	BG03	BG04	BG05	BG06	--	BG07	BG08	--	D01	Detection				
<b>MCM-16</b>	Upgradient	BG01	--	BG02	BG03	BG04	--	BG05	--	BG06	--	BG07	BG08	--	D01	Detection					
<b>MCM-17</b>	Downgradient	--	BG01	BG02	BG03	BG04	--	BG05	--	BG06	--	BG07	BG08	--	D01	Detection					

Notes:

MCM-06 was resampled on March 16, 2019 for Background Event 8 on November 7, 2018

MCM-08 was resampled on June 28, 2019 for Background Event 6 on June 19-21, 2018

BGXX = Background Event and Number

DXX = Detection Event and Number

RXX = Resample Event and Number

-- = Not Sampled

Updated By: AC 7/16/2019

Checked By: VF 7/16/2019

**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID									
		MCM-01	MCM-01	MCM-01	MCM-01	MCM-01	MCM-01	MCM-01	MCM-01	MCM-01	
		8/30/2016	11/30/2016	2/15/2017	6/1/2017	8/16/2017	6/19/2018	9/26/2018	11/7/2018	3/25/2019	
APPENDIX III	Boron	0.1	ND (0.0325 J)	ND (0.0334 J)	0.254	0.0564	0.0435	ND (0.040 J)	ND (0.038 J)	ND (0.037 J)	ND (0.038J)
	Calcium	N/R	7.30	10.8	14.3	ND (12.7 J)	8.70	ND (11.6 J)	ND (12.8 J)	11.9	ND (12.6J)
	Chloride	(250)	9.7	19	21	12	14	24.4	23.4	21.8	19.4
	Fluoride	4	ND (0.03 J)	ND (0.04 J)	ND (0.007 J)	ND	ND (0.03 J)	ND	ND (0.12 J)	ND	ND ( 0.038J)
	Sulfate	(250)	17	33	83	51	36	50.3	54.1	45.6	43
	TDS	(500)	86	131	212	103	65	142	133	121	116
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND	
	Arsenic	0.01	ND	ND (0.0018 J)	ND (0.0022 J)	ND (0.0036 J)	ND (0.0038 J)	0.0069	0.0081	0.0069	
	Barium	2	0.0443	0.0524	0.124	0.0757	0.0522	0.083	0.073	0.071	
	Beryllium	0.004	ND	ND	ND	ND (0.00009 J)	ND	ND (0.00011 J)	ND (0.000092 J)	ND (0.00010 J)	
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND	
	Chromium	0.1	ND	ND	ND	ND	ND	ND	ND	ND	
	Cobalt	N/R	ND	ND	ND	ND	ND	ND	ND	ND	
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND	
	Lithium	0.04	ND	ND	ND	ND	ND	ND	ND	ND	
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND	
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND	
	Radium	5	0.929	5.64	1.41	1.51	1.01 U	1.23	0.72 U	0.616 U	
	Selenium	0.05	ND	ND (0.0011 J)	ND	ND	ND	ND	ND	ND	
	Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

Notes:

1. MCL indicates Environmental Protection Agency (EPA) and Georgia Environmental Protection Division (EPD) maximum contaminant level.
2. (SMCL) indicates a secondary MCL that is established by EPA as a general guideline only (not enforced).
3. Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
4. ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL).
5. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.
6. N/R indicates a substance does not have an MCL or SMCL, but will be further evaluated statistically at the conclusion of all the background sampling events, as required by EPA's CCR rule.
7. TDS indicates total dissolved solids.
8. U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated.
9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.

Updated By: AC 7/16/2019  
 Checked By: VF 7/16/2019

**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID								
		MCM-02	MCM-02	MCM-02	MCM-02	MCM-02	MCM-02	MCM-02	MCM-02	MCM-02
		5/31/2017	8/2/2017	8/16/2017	4/5/2018	5/9/2018	6/19/2018	9/26/2018	11/7/2018	3/25/2019
<b>APPENDIX III</b>	Boron	0.1	0.161	0.158	0.148	0.13	0.12	0.13	0.10	0.10
	Calcium	N/R	5.90	4.69	5.25	5.0	4.7	4.8	4.6	4.6
	Chloride	(250)	39	42	41	40.2	40.6	37.7	33.4	30.7
	Fluoride	4	ND (0.01 J)	ND (0.14 J)	ND (0.13 J)	ND	ND	ND (0.065 J)	ND	ND (0.039J)
	Sulfate	(250)	46	43	41	33.4	36	35.5	39.6	35.8
	TDS	(500)	123	136	124	128	127	143	132	134
<b>APPENDIX IV</b>	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND	ND (0.0011 J)	ND	ND (0.00098 J)	ND (0.0014 J)	ND (0.0011 J)	ND	ND (0.00059 J)
	Barium	2	0.127	0.121	0.116	0.12	0.11	0.1	0.11	0.097
	Beryllium	0.004	ND (0.0002 J)	ND (0.0002 J)	ND (0.0002 J)	ND	ND (0.00017 J)	ND (0.00017 J)	ND (0.00017 J)	ND (0.00015 J)
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	0.1	ND	ND	ND	ND	ND	ND	ND	ND
	Cobalt	N/R	ND (0.0005 J)	ND (0.0005 J)	ND (0.0005 J)	ND	ND	ND	ND	ND
	Lead	0.015	ND	ND (0.0001 J)	ND	ND	ND	ND	ND	ND
	Lithium	0.04	ND	ND	ND	ND	ND	ND	ND	ND
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Radium	5	1.17 U	0.704 U	1.11 U	0.868 U	0.888	0.483 U	0.73 U	0.429 U
	Selenium	0.05	ND	ND	ND	ND	ND	ND	ND	ND
	Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

1. MCL indicates Environmental Protection Agency (EPA) and Georgia Environmental Protection Division (EPD) maximum contaminant level.
2. (SMCL) indicates a secondary MCL that is established by EPA as a general guideline only (not enforced).
3. Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
4. ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL).
5. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.
6. N/R indicates a substance does not have an MCL or SMCL, but will be further evaluated statistically at the conclusion of all the background sampling events, as required by EPA's CCR rule.
7. TDS indicates total dissolved solids.
8. U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated.
9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.

**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID								
		MCM-04	MCM-04	MCM-04	MCM-04	MCM-04	MCM-04	MCM-04	MCM-04	MCM-04
		6/1/2017	8/2/2017	8/17/2017	4/4/2018	5/8/2018	6/20/2018	9/27/2018	11/6/2018*	3/25/2019
APPENDIX III	Boron	0.1	0.0608	0.137	0.128	0.10	0.074	0.045	0.060	0.060
	Calcium	N/R	3.65	12.4	8.17	6.8	5.7	4.3	ND (16.4 J)	39.5
	Chloride	(250)	22	230	210	156	140	27.5	101	107
	Fluoride	4	ND	ND (0.27 J)	ND (0.18 J)	ND	0.56	ND (0.033 J)	ND (0.12 J)	ND
	Sulfate	(250)	42	120	110	70.6	61.4	25.3	63.4	136
	TDS	(500)	97	538	445	365	304	114	255	388
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND (0.0040 J)	ND (0.0028 J)	ND (0.0021 J)	ND (0.0023 J)	ND (0.0048 J)	0.0099	0.010	0.013
	Barium	2	0.0195	0.0530	0.0475	0.035	0.027	0.027	0.14	0.31
	Beryllium	0.004	ND (0.0001 J)	ND (0.0003 J)	ND (0.0002 J)	ND	ND (0.00025 J)	ND (0.00021 J)	ND (0.00031 J)	ND (0.00077 J)
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	0.1	ND (0.0008 J)	ND (0.0012 J)	ND (0.0013 J)	ND	ND	ND	ND	ND (0.0017 J)
	Cobalt	N/R	ND	ND	ND	ND	ND	ND	ND	ND (0.0048 J)
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND
	Lithium	0.04	ND	ND	ND	ND (0.0013 J)	ND (0.0012 J)	ND (0.0015 J)	ND (0.0021 J)	ND (0.0038 J)
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	0.00071
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Radium	5	1.90	5.01	5.35	5.05	3.25	3.53	7.07	11.00
	Selenium	0.05	ND	ND	ND	ND	ND	ND	ND	ND (0.0025 J)
	Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

1. MCL indicates Environmental Protection Agency (EPA) and Georgia Environmental Protection Division (EPD) maximum contaminant level.
2. (SMCL) indicates a secondary MCL that is established by EPA as a general guideline only (not enforced).
3. Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
4. ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL).
5. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.
6. N/R indicates a substance does not have an MCL or SMCL, but will be further evaluated statistically at the conclusion of all the background sampling events, as required by EPA's CCR rule.
7. TDS indicates total dissolved solids.
8. U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated.
9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.
10. \* The field blank for 11/6/2018 had hits for both chloride and mercury, and the equipment blank had a hit for just mercury

**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID									
		MCM-05 8/31/2016	MCM-05 11/30/2016	MCM-05 2/16/2017	MCM-05 6/2/2017	MCM-05 8/17/2017	MCM-05 6/20/2018	MCM-05 9/27/2018	MCM-05 11/7/2018	MCM-05 3/24/2019	
		0.1	0.560	0.529	0.539	0.555	0.516	0.51	0.47	0.51	0.44
APPENDIX III	Boron	N/R	65.0	71.7	74.0	120	100	72.8	46.6	41.8	ND (20.9 J)
	Calcium	(250)	1800	1100	2100	3100	2600	1800	1300	1180	717
	Chloride	4	0.93	0.93	0.60	0.34	0.52	0.5	0.32	0.35	0.32
	Sulfate	(250)	37	63	90	210	80	ND (46.0 J)	ND (58.5 J)	ND (41.3 J)	131
	TDS	(500)	3620	4030	4080	5560	4620	3370	2360	2230	1450
	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND	
APPENDIX IV	Arsenic	0.01	ND	0.0132	0.0372	0.0335	0.0336	0.019	ND (0.0035 J)	ND (0.0020 J)	
	Barium	2	0.0289	0.0168	0.0160	ND (0.0393 J)	0.0188	0.014	ND (0.0097 J)	ND (0.0020 J)	
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND (0.000054 J)	
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND	
	Chromium	0.1	ND (0.0013 J)	ND (0.0012 J)	ND (0.0012 J)	ND	ND (0.0007 J)	ND	ND	ND	
	Cobalt	N/R	ND	ND	ND	ND	ND	ND	ND	ND	
	Lead	0.015	ND	ND (0.0002 J)	ND	ND	ND	ND	ND	ND	
	Lithium	0.04	ND (0.0219 J)	ND (0.0333 J)	ND (0.0376 J)	ND (0.0346 J)	ND (0.0367 J)	ND (0.034 J)	ND (0.023 J)	ND (0.022 J)	
	Mercury	0.002	ND	ND	ND	ND (0.000042 J)	ND	ND	ND	ND	
	Molybdenum	N/R	ND	ND	ND	ND	ND (0.0012 J)	ND	ND	ND	
	Radium	5	2.39	1.66	2.71	1.99	1.87	1.95	0.629 U	1.41 U	
	Selenium	0.05	ND (0.0020 J)	ND (0.0023 J)	ND (0.0020 J)	ND	ND	ND	ND	ND	
	Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

Notes:

1. MCL indicates Environmental Protection Agency (EPA) and Georgia Environmental Protection Division (EPD) maximum contaminant level.
2. (SMCL) indicates a secondary MCL that is established by EPA as a general guideline only (not enforced).
3. Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
4. ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL).
5. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.
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7. TDS indicates total dissolved solids.
8. U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated.
9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.

**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID										
		MCM-06	MCM-06	MCM-06	MCM-06	MCM-06	MCM-06	MCM-06	MCM-06 resample	MCM-06		
		8/31/2016	11/30/2016	2/16/2017	6/2/2017	8/17/2017	6/20/2018	9/27/2018	11/7/2018	3/6/2019	3/24/2019	
<b>APPENDIX III</b>	<b>Boron</b>	<b>0.1</b>	0.632	0.637	0.698	0.674	0.700	0.69	0.62	0.86	1.5	1.1
	<b>Calcium</b>	<b>N/R</b>	82.8	68.7	94.8	92.5	126	121	95.1	364	341	277
	<b>Chloride</b>	<b>(250)</b>	2200	2100	2500	2500	2700	3100	2510	8860	<b>11700</b>	6470
	<b>Fluoride</b>	<b>4</b>	0.41	0.61	ND (0.30 J)	ND (0.19 J)	ND (0.26 J)	ND (0.22 J)	ND (0.068 J)	10.3	ND (<25)	ND (0.19J)
	<b>Sulfate</b>	<b>(250)</b>	21	19	22	28	69	33	29.4	734	<b>1220J</b>	ND
	<b>TDS</b>	<b>(500)</b>	4160	3950	4600	4470	5450	4940	4480	15100	<b>19000</b>	13700
<b>APPENDIX IV</b>	<b>Antimony</b>	<b>0.006</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	<b>Arsenic</b>	<b>0.01</b>	0.212	0.129	0.257	0.0559	0.458	0.44	0.27	0.50	<b>0.49</b>	
	<b>Barium</b>	<b>2</b>	0.0498	0.0528	0.0555	0.0508	0.0596	0.06	0.060	0.19	0.16	
	<b>Beryllium</b>	<b>0.004</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	<b>Cadmium</b>	<b>0.005</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	<b>Chromium</b>	<b>0.1</b>	ND (0.0010 J)	ND	ND (0.0011 J)	ND	ND (0.0007 J)	ND	ND	ND	ND	
	<b>Cobalt</b>	<b>N/R</b>	ND	ND (0.0009 J)	ND	ND	ND (0.0003 J)	ND	ND	ND	ND	
	<b>Lead</b>	<b>0.015</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	<b>Lithium</b>	<b>0.04</b>	ND (0.0389 J)	ND (0.0303 J)	ND (0.0500 J)	ND (0.0477 J)	0.0645	ND (0.066 J)	ND (0.045 J)	0.11	0.12	
	<b>Mercury</b>	<b>0.002</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	<b>Molybdenum</b>	<b>N/R</b>	ND	ND	ND	ND	ND (0.0025 J)	ND	ND	ND (0.0024 J)	ND	
	<b>Radium</b>	<b>5</b>	2.47	1.60	1.83	2.45	3.33	2.84	1.94	8.58	Not Analyzed	
	<b>Selenium</b>	<b>0.05</b>	ND (0.0015 J)	ND (0.0054 J)	ND (0.0022 J)	ND	ND (0.0020 J)	ND	ND	ND (0.0075 J)	ND (0.0024J)	
	<b>Thallium</b>	<b>0.002</b>	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Notes:

1. MCL indicates Environmental Protection Agency (EPA) and Georgia Environmental Protection Division (EPD) maximum contaminant level.
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3. Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
4. ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL).
5. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.
6. N/R indicates a substance does not have an MCL or SMCL, but will be further evaluated statistically at the conclusion of all the background sampling events, as required by EPA's CCR rule.
7. TDS indicates total dissolved solids.
8. U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value.  
Therefore, the value followed by U is qualified by the laboratory as estimated.
9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.

**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID									
		MCM-07	MCM-07	MCM-07	MCM-07	MCM-07	MCM-07	MCM-07	MCM-07	MCM-07	
		8/31/2016	11/30/2016	2/16/2017	6/2/2017	8/17/2017	6/21/2018	9/27/2018	11/6/2018*	3/24/2019	
APPENDIX III	Boron	0.1	0.863	0.804	0.815	0.891	0.922	0.99	0.88	1.1	1.2
	Calcium	N/R	119	103	114	179	186	179	193	219	243
	Chloride	(250)	2600	2800	3100	4600	4600	3920	5660	6520	8720
	Fluoride	4	0.92	0.99	0.54	0.42	ND (0.27 J)	ND (0.28 J)	0.32	ND (0.086 J)	ND (0.14J)
	Sulfate	(250)	290	240	220	500	510	481	777	926	1070
	TDS	(500)	5100	4680	5080	8000	8320	7500	10200	11000	13700
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND	
	Arsenic	0.01	0.0066	0.0281	0.0295	0.0286	0.0211	ND (0.022 J)	0.015	0.012	
	Barium	2	0.0771	0.101	0.0865	0.123	0.124	0.1	0.12	0.12	
	Beryllium	0.004	ND	ND	ND	ND	ND	ND (0.000074 J)	ND (0.00012 J)		
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND	
	Chromium	0.1	ND (0.0022 J)	ND	ND (0.0028 J)	ND (0.0023 J)	ND (0.0022 J)	ND	ND (0.0024 J)	ND (0.0020 J)	
	Cobalt	N/R	ND	ND (0.0011 J)	ND	ND	ND	ND	ND	ND	
	Lead	0.015	ND	ND	ND (0.0002 J)	ND	ND (0.00008 J)	ND	ND	ND	
	Lithium	0.04	ND (0.0122 J)	ND (0.0110 J)	ND (0.0142 J)	ND (0.0229 J)	ND (0.0241 J)	ND (0.030 J)	ND (0.034 J)	ND (0.037 J)	
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	0.00067	
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND	
	Radium	5	5.40	3.13	3.09	7.56	6.38	5.24	6.11	6.10	
	Selenium	0.05	ND (0.0021 J)	ND	ND (0.0025 J)	ND	ND (0.0033 J)	ND	ND (0.0023 J)	ND (0.0048 J)	
	Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

Notes:

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3. Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
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7. TDS indicates total dissolved solids.
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9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.
10. \* The field blank for 11/6/2018 had hits for both chloride and mercury, and the equipment blank had a hit for just mercury

**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID										
		MCM-08	MCM-08	MCM-08	MCM-08	MCM-08	MCM-08 resample	MCM-08	MCM-08	MCM-08		
		6/1/2017	8/2/2017	8/15/2017	4/5/2018	5/8/2018	6/19/2018	6/28/2018	9/26/2018	11/8/2018	3/25/2019	
APPENDIX III	Boron	0.1	0.336	0.318	0.338	0.39	0.35	0.38	0.38	0.32	0.37	0.34
	Calcium	N/R	27.3	32.7	27.7	39.4	37	39.8	42.9	42.6	41.4	50.3
	Chloride	(250)	1400	1600	1700	1900	1870	1890	1910	2040	2050	2340
	Fluoride	4	ND	ND (0.16 J)	ND (0.21 J)	ND	ND (0.23 J)	ND (0.043 J)	ND (0.12 J)	ND	ND (0.040 J)	ND (0.12J)
	Sulfate	(250)	250	290	360	350	353	359	352	423	498	467
	TDS	(500)	2970	3100	3160	3460	3680	3600	3440	3610	3630	4020
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	Arsenic	0.01	0.0204	0.0208	0.0207	0.024	0.022	0.022	0.014	0.023	ND (0.022 J)	
	Barium	2	0.447	0.440	0.451	0.61	0.5	0.56	0.58	0.59	0.57	
	Beryllium	0.004	ND (0.0003 J)	ND (0.0003 J)	ND (0.0003 J)	ND	ND (0.00041 J)	ND (0.00044 J)	ND (0.00040 J)	ND (0.00040 J)	ND (0.00027 J)	
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	Chromium	0.1	ND (0.0076 J)	0.0150	ND (0.0078 J)	ND	ND (0.0080 J)	ND (0.0087 J)	ND (0.0079 J)	ND (0.0088 J)	ND (0.00080 J)	
	Cobalt	N/R	ND	ND (0.0018 J)	ND (0.0018 J)	ND	ND (0.0042 J)	ND (0.0048 J)	ND (0.0030 J)	ND (0.0049 J)	ND (0.0052 J)	
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	Lithium	0.04	ND (0.0017 J)	ND (0.0017 J)	ND (0.0016 J)	ND (0.0022 J)	ND (0.0020 J)	ND (0.0024 J)	ND (0.0033 J)	ND (0.0021 J)	ND	
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	Molybdenum	N/R	ND	ND (0.0029 J)	ND (0.0030 J)	ND (0.0031 J)	ND (0.0028 J)	ND (0.0028 J)	ND	ND (0.0028 J)	ND	
	Radium	5	19.8	18.1	20.6	20.1	19.5	20.3	20.8	22.6	16.3	
	Selenium	0.05	ND	ND (0.0055 J)	ND (0.0081 J)	ND	ND (0.0081 J)	ND (0.0095 J)	ND (0.0030 J)	ND (0.0059 J)	ND	
	Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	

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**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID									
		MCM-11	MCM-11	MCM-11	MCM-11	MCM-11	MCM-11	MCM-11	MCM-11	MCM-11	
		5/31/2017	8/2/2017	8/15/2017	4/4/2018	5/8/2018	6/19/2018	9/25/2018	11/6/2018*	3/25/2019	
APPENDIX III	Boron	0.1	0.0521	ND (0.0392 J)	0.0448	0.046	0.048	0.04	0.043	0.046	ND (0.030J)
	Calcium	N/R	18.6	18.5	4.09	ND	ND (18.4 J)	4.3	6.2	1.8	2.5
	Chloride	(250)	98	57	15	69	72.3	17.3	31.3	9.8	12.9
	Fluoride	4	0.85	0.69	ND (0.29 J)	0.32	0.63	ND (0.17 J)	ND (0.15 J)	ND	ND (0.12J)
	Sulfate	(250)	40	34	24	33.9	35.7	23.7	25.6	25.2	24.9
	TDS	(500)	257	183	90	197	225	112	137	89	74
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND	
	Arsenic	0.01	0.0259	0.0188	0.0117	0.017	0.016	0.011	0.011	ND (0.0043 J)	
	Barium	2	0.0646	0.0533	0.0247	0.057	0.062	0.031	0.041	0.031	
	Beryllium	0.004	ND (0.00007 J)	ND (0.0001 J)	ND (0.00009 J)	ND	ND (0.00010 J)	ND (0.00011 J)	ND (0.00010 J)	ND (0.00012 J)	
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND (0.00020 J)	ND	
	Chromium	0.1	ND	ND	ND (0.0006 J)	ND	ND	ND	ND	ND	
	Cobalt	N/R	ND	ND (0.0006 J)	ND (0.0004 J)	ND	ND	ND	ND	ND	
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND	
	Lithium	0.04	ND (0.0047 J)	ND (0.0036 J)	ND	ND (0.0041 J)	ND (0.0052 J)	ND (0.0017 J)	ND (0.0018 J)	ND	
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	0.0007	
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND	
	Radium	5	1.20	1.26	0.511 U	1.04	1.95	0.785 U	1.15 U	1.10	
	Selenium	0.05	ND	ND	ND	ND	ND	ND	ND	ND	
	Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

Notes:

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**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID									
		MCM-12 8/30/2016	MCM-12 11/30/2016	MCM-12 2/15/2017	MCM-12 5/31/2017	MCM-12 8/15/2017	MCM-12 6/19/2018	MCM-12 9/25/2018	MCM-12 11/7/2018	MCM-12 3/24/2019	
APPENDIX III	Boron	0.1	1.18	1.30	1.33	1.38	1.14	1.2	1.0	1.4	1
	Calcium	N/R	7.05	8.69	8.34	8.85	8.05	8.3	6.8	8.5	7.4
	Chloride	(250)	800	760	740	740	750	760	752	665	744
	Fluoride	4	1.5	1.4	1.3	1.2	1.2	0.91	1.1	ND	0.99
	Sulfate	(250)	4.3	7.6	3.0	2.5	3.2	1.6	1.0	ND (0.41 J)	1.5
	TDS	(500)	1910	1910	1870	1920	1840	1820	1760	1800	1770
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND	
	Arsenic	0.01	ND	ND	ND	ND (0.0007 J)	ND (0.0006 J)	ND (0.0010 J)	ND (0.0011 J)	ND	
	Barium	2	0.108	0.121	0.111	0.131	0.126	0.13	0.12	0.11	
	Beryllium	0.004	ND (0.0003 J)	ND (0.0004 J)	ND (0.0004 J)	ND (0.0005 J)	ND (0.0005 J)	ND (0.00065 J)	ND (0.00066 J)	ND (0.00058 J)	
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND	
	Chromium	0.1	ND (0.0054 J)	ND (0.0073 J)	ND (0.0045 J)	ND (0.0052 J)	ND (0.0050 J)	ND (0.0047 J)	ND	ND	
	Cobalt	N/R	ND	ND	ND	ND (0.0005 J)	ND (0.0005 J)	ND (0.00053 J)	ND	ND	
	Lead	0.015	ND (0.0001 J)	ND	ND	ND (0.0009 J)	ND	ND	ND	ND	
	Lithium	0.04	ND (0.0102 J)	ND (0.0106 J)	ND (0.0115 J)	ND (0.0110 J)	ND (0.0123 J)	ND (0.012 J)	ND (0.011 J)	ND (0.013 J)	
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND	
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND	
	Radium	5	1.40	4.37	2.21	2.62	2.69	2.96	2.23	2.14	
	Selenium	0.05	ND (0.0011 J)	ND (0.0023 J)	ND (0.0021 J)	ND	ND (0.0021 J)	ND (0.0017 J)	ND (0.0020 J)	ND	
	Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

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**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID									
		MCM-14	MCM-14	MCM-14	MCM-14	MCM-14	MCM-14	MCM-14	MCM-14	MCM-14	
		8/30/2016	11/30/2016	2/15/2017	5/31/2017	8/16/2017	6/19/2018	9/25/2018	11/6/2018*	3/24/2019	
APPENDIX III	Boron	0.1	0.726	0.565	0.647	0.503	0.539	0.76	0.61	0.75	0.95
	Calcium	N/R	42.8	33.2	56.1	73.6	99.6	285	283	297	338
	Chloride	(250)	450	310	490	820	1500	5180	7220	6020	7400
	Fluoride	4	0.50	0.49	0.58	0.56	0.45	ND	ND	ND (0.084 J)	ND (0.14J)
	Sulfate	(250)	6.4	4.5	37	61	130	498	790	875	1170
	TDS	(500)	1310	1050	1440	1740	3010	8630	10700	11100	14200
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND	
	Arsenic	0.01	ND	ND	ND	ND (0.0008 J)	ND (0.0007 J)	ND (0.0062 J)	ND (0.0031 J)	ND (0.0014 J)	
	Barium	2	0.0131	0.0105	0.0786	0.0199	0.0330	0.092	0.098	0.1	
	Beryllium	0.004	ND	ND	ND	ND (0.0001 J)	ND (0.0002 J)	ND	ND (0.000050 J)	ND (0.000097 J)	
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND	
	Chromium	0.1	ND (0.0026 J)	ND (0.0016 J)	ND (0.0018 J)	ND (0.0019 J)	ND (0.0019 J)	ND	ND	ND	
	Cobalt	N/R	ND (0.0006 J)	ND	ND	ND	ND	ND	ND	ND	
	Lead	0.015	ND	ND	ND	ND	ND (0.00008 J)	ND	ND	ND	
	Lithium	0.04	ND (0.0112 J)	ND	ND (0.0105 J)	ND (0.0106 J)	ND (0.0145 J)	ND (0.044 J)	ND (0.041 J)	ND (0.047 J)	
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	0.00066	
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND	
	Radium	5	1.31	0.438 U	0.300 U	1.77	2.26	5.39	6.22	5.38	
	Selenium	0.05	ND	ND	ND (0.0014 J)	ND	ND (0.0018 J)	ND	ND (0.0019 J)	ND (0.0057 J)	
	Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

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6. N/R indicates a substance does not have an MCL or SMCL, but will be further evaluated statistically at the conclusion of all the background sampling events, as required by EPA's CCR rule.
7. TDS indicates total dissolved solids.
8. U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated.
9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.
10. \* The field blank for 11/6/2018 had hits for both chloride and mercury, and the equipment blank had a hit for just mercury

**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID									
		MCM-15	MCM-15	MCM-15	MCM-15	MCM-15	MCM-15	MCM-15	MCM-15	MCM-15	
		6/2/2017	8/2/2017	8/17/2017	4/4/2018	5/8/2018	6/19/2018	9/26/2018	11/7/2018	3/25/2019	
APPENDIX III	Boron	0.1	0.0495	ND (0.0333 J)	0.0593	0.065	0.062	0.064	0.060	ND (0.062 J)	0.057
	Calcium	N/R	2.77	1.27	5.53	6.5	6.7	7.4	ND (8.5 J)	9.8	7.8
	Chloride	(250)	11	3.2	12	13.4	13.2	13.7	18.5	20.2	19.7
	Fluoride	4	ND	ND (0.05 J)	ND	ND	ND (0.057 J)	ND	ND	ND (0.036 J)	
	Sulfate	(250)	13	14	14	13.4	14.8	15.5	23.0	22.2	22.4
	TDS	(500)	69	35	51	90	89	110	124	125	98
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND	
	Arsenic	0.01	ND (0.0026 J)	ND (0.0047 J)	ND (0.0028 J)	ND (0.0029 J)	ND (0.0048 J)	ND (0.0019 J)	ND (0.0023 J)	ND	
	Barium	2	ND (0.0368 J)	0.0355	0.0370	0.039	0.037	0.038	0.049	0.05	
	Beryllium	0.004	ND (0.0001 J)	ND	ND (0.0001 J)	ND	ND (0.00031 J)	ND (0.00034 J)	ND (0.00039 J)	ND (0.00041 J)	
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND	
	Chromium	0.1	ND (0.0019 J)	ND (0.0017 J)	ND (0.0027 J)	ND	ND (0.0029 J)	ND (0.0020 J)	ND (0.0030 J)	ND	
	Cobalt	N/R	ND	ND	ND	ND	ND	ND	ND	ND	
	Lead	0.015	ND	ND (0.0001 J)	ND (0.0001 J)	ND	ND	ND	ND	ND	
	Lithium	0.04	ND	ND	ND	ND (0.0015 J)	ND (0.0014 J)	ND (0.0016 J)	ND (0.0018 J)	ND	
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND	
	Molybdenum	N/R	ND	ND	ND	ND	ND (0.0020 J)	ND	ND	ND	
	Radium	5	1.47	1.99	2.03	1.96	1.69	1.83	0.637 U	0.894 U	
	Selenium	0.05	ND	ND	ND	ND	ND (0.0016 J)	ND (0.0022 J)	ND (0.0015 J)	ND	
	Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

Notes:

1. MCL indicates Environmental Protection Agency (EPA) and Georgia Environmental Protection Division (EPD) maximum contaminant level.
2. (SMCL) indicates a secondary MCL that is established by EPA as a general guideline only (not enforced).
3. Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
4. ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL).
5. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.
6. N/R indicates a substance does not have an MCL or SMCL, but will be further evaluated statistically at the conclusion of all the background sampling events, as required by EPA's CCR rule.
7. TDS indicates total dissolved solids.
8. U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated.
9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.

**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID									
		MCM-16	MCM-16	MCM-16	MCM-16	MCM-16	MCM-16	MCM-16	MCM-16	MCM-16	
		8/30/2016	11/30/2016	2/15/2017	6/1/2017	8/17/2017	6/20/2018	9/26/2018	11/7/2018	3/25/2019	
APPENDIX III	Boron	0.1	ND (0.0972 J)	0.0964	0.398	0.0776	0.0853	0.079	0.072	0.074	0.067
	Calcium	N/R	4.02	4.87	6.61	6.42	5.62	5.7	5.3	5.3	5.7
	Chloride	(250)	26	27	30	27	32	30	28.4	25.1	21.8
	Fluoride	4	ND (0.04 J)	ND (0.18 J)	ND (0.02 J)	ND (0.005 J)	ND (0.04 J)	ND (0.038 J)	ND	ND	ND (0.041J)
	Sulfate	(250)	24	26	30	24	26	31.2	36.8	35	40.1
	TDS	(500)	99	111	170	98	84	123	117	120	101
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND	
	Arsenic	0.01	ND (0.0018 J)	ND	ND	ND	ND (0.00058 J)	ND	ND	ND	
	Barium	2	0.0973	0.110	0.0945	0.121	0.121	0.13	0.13	0.12	
	Beryllium	0.004	ND (0.0001 J)	ND (0.0002 J)	ND	ND (0.0002 J)	ND (0.0002 J)	ND (0.00024 J)	ND (0.00019 J)	ND (0.00019 J)	
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND	
	Chromium	0.1	ND	ND (0.0010 J)	ND	ND (0.0004 J)	ND (0.0005 J)	ND	ND	ND	
	Cobalt	N/R	ND	ND	ND	ND	ND (0.0004 J)	ND	ND	ND	
	Lead	0.015	ND	ND (0.0002 J)	ND	ND	ND	ND	ND	ND	
	Lithium	0.04	ND	ND	ND	ND	ND	ND	ND	ND	
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND	
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND	
	Radium	5	0.977 U	0.994 U	1.65	1.22	1.71	1.78	1.56	0.651 U	
	Selenium	0.05	ND	ND (0.0011 J)	ND	ND	ND	ND	ND	ND	
	Thallium	0.002	ND	ND	ND	ND (0.00006 J)	ND (0.00007 J)	ND	ND	ND	

Notes:

1. MCL indicates Environmental Protection Agency (EPA) and Georgia Environmental Protection Division (EPD) maximum contaminant level.
2. (SMCL) indicates a secondary MCL that is established by EPA as a general guideline only (not enforced).
3. Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
4. ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL).
5. ND (value J) indicates the substance was detected at such low levels that the precision of the laboratory instruments could not produce a reliable value. Therefore, the value displayed (value J) is qualified by the laboratory as an estimated number.
6. N/R indicates a substance does not have an MCL or SMCL, but will be further evaluated statistically at the conclusion of all the background sampling events, as required by EPA's CCR rule.
7. TDS indicates total dissolved solids.
8. U indicates the substance was detected below the Minimum Detection Concentration (MDC) and the precision of the laboratory instruments could not produce a reliable value. Therefore, the value followed by U is qualified by the laboratory as estimated.
9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.

**Table 4**  
**Ash Pond 1 Analytical Data Summary**  
**Plant McManus**  
**Brunswick, GA**

Substance	MCL/ (SMCL)	Well ID										
		MCM-17	MCM-17	MCM-17	MCM-17	MCM-17	MCM-17	MCM-17	MCM-17	MCM-17		
		10/25/2016	11/30/2016	2/15/2017	5/31/2017	8/15/2017	6/19/2018	9/26/2018	9/26/2018	11/6/2018*	3/24/2019	
APPENDIX III	Boron	0.1	1.73	2.12	2.14	2.24	2.10	1.7	1.3	1.7	1.8	1.4
	Calcium	N/R	69.4	83.9	96.3	122	117	136	148	137	24.7	136
	Chloride	(250)	1300	400	2000	2500	2500	3050	4050	3880	2230	3960
	Fluoride	4	1.1	1.3	1.3	1.3	1.2	0.6	0.42	0.46	0.4	0.31
	Sulfate	(250)	84	52	190	260	210	218	360	306	182	413
	TDS	(500)	2900	3970	3820	5050	4820	5640	6920	6620	4160	6840
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	Arsenic	0.01	ND	0.0072	ND (0.0017 J)	ND (0.0018 J)	ND (0.0015 J)	ND (0.0029 J)	ND (0.0015 J)	ND (0.0034 J)	ND	
	Barium	2	0.0630	0.0628	0.0102	0.0610	0.0579	0.076	0.099	0.084	0.052	
	Beryllium	0.004	ND (0.0004 J)	ND (0.0003 J)	ND	ND (0.0002 J)	ND (0.0002 J)	ND (0.00032 J)	ND (0.00024 J)	ND	ND (0.00026 J)	
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	Chromium	0.1	0.0160	ND (0.0151 J)	0.0137	0.0109	0.0117	ND (0.013 J)	ND (0.0092 J)	ND (0.0084 J)	ND	
	Cobalt	N/R	ND	ND (0.0007 J)	ND	ND	ND (0.0004 J)	ND	ND	ND	ND	
	Lead	0.015	ND	ND	ND	ND	ND (0.0002 J)	ND	ND	ND	ND	
	Lithium	0.04	ND (0.0070 J)	ND (0.0086 J)	ND (0.0149 J)	ND (0.0190 J)	ND (0.0160 J)	ND (0.021 J)	ND (0.020 J)	ND (0.022 J)	ND (0.017 J)	
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND	0.00064	
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND	ND	
	Radium	5	2.22	2.01	1.56	1.92	2.47	2.82	3.1	3.2	2.95	
	Selenium	0.05	ND (0.0030 J)	ND (0.0087 J)	ND (0.0067 J)	ND (0.0018 J)	ND (0.0025 J)	ND	ND (0.0016 J)	ND	ND	
	Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Notes:

1. MCL indicates Environmental Protection Agency (EPA) and Georgia Environmental Protection Division (EPD) maximum contaminant level.
2. (SMCL) indicates a secondary MCL that is established by EPA as a general guideline only (not enforced).
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Therefore, the value followed by U is qualified by the laboratory as estimated.
9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.
10. \* The field blank for 11/6/2018 had hits for both chloride and mercury, and the equipment blank had a hit for just mercury

**Table 5**  
**Groundwater Flow Velocity Calculations- March 2019**  
**Plant McManus**  
**Brunswick, GA**

<b>Well ID</b>		<b><math>h_1</math></b>	<b><math>h_2</math></b>	<b>K(ft/day) Average K of AP-1 wells</b>	<b><math>n_e</math></b>	<b><math>dh</math></b>	<b>L (ft)</b>	<b>i (ft/ft)</b>	<b>Velocity (ft/day)</b>
MCM-08	MCM-07	2.50	0.41	8.7	0.35	2.09	564.39	0.004	0.0994
MCM-16	MCM-02	4.51	3.60	8.7	0.35	0.91	75.63	0.012	0.2983
									<b>Avg. (ft/day)</b>
									0.1989

Notes:

K = hydraulic conductivity

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

I = hydraulic gradient

L = distance between locations 1 and 2

$n_e$  = effective porosity

ft = feet

$dh$  = change between  $h_1$  and  $h_2$



**Resolute**  
Environmental & Water Resources Consulting

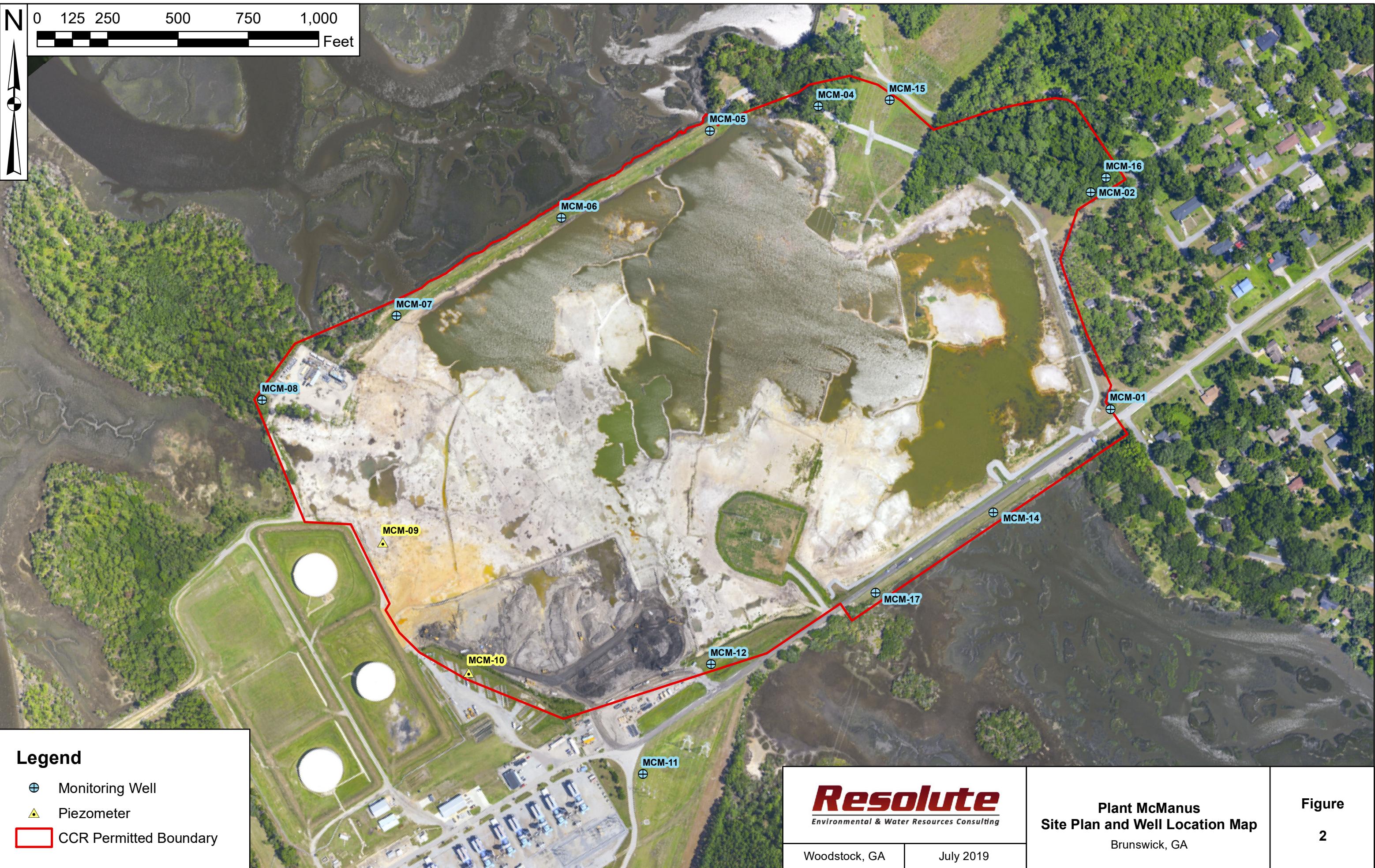
Woodstock, GA

July 2019

**Plant McManus  
Site Location Map**

Brunswick, GA

**Figure  
1**





## Appendix A

### Analytical Data Reports

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## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

**Prepared For:**

**Georgia Power  
2480 Maner Road  
Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AZH0947**

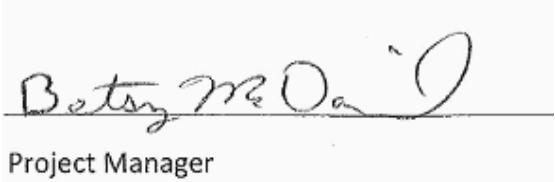
**September 08, 2016**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:



A handwritten signature in black ink, appearing to read "Betty McDaniel".

Project Manager

This report may not be reproduced, except in full, without written approval from Pace Analytical Services, Inc.  
All test results relate only to the samples analyzed.



## PACE ANALYTICAL SERVICES, INC.

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Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 08, 2016

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MCM-14	AZH0947-01	Ground Water	08/30/16 14:58	08/31/16 09:25
MCM-12	AZH0947-02	Ground Water	08/30/16 16:37	08/31/16 09:25
MCM-1	AZH0947-03	Ground Water	08/30/16 12:12	08/31/16 09:25
MCM-16	AZH0947-04	Ground Water	08/30/16 10:28	08/31/16 09:25



## PACE ANALYTICAL SERVICES, INC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 08, 2016

Report No.: AZH0947

Project: CCR Event

Client ID: MCM-14

Lab Number ID: AZH0947-01

Date/Time Sampled: 8/30/2016 2:58:00PM

Date/Time Received: 8/31/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1310	25	10	mg/L	SM 2540 C		1	09/02/16 10:45	09/02/16 10:45	6090046	JPT
<b>Inorganic Anions</b>											
Chloride	450	2.5	0.14	mg/L	EPA 300.0	B-01	10	08/31/16 10:53	09/01/16 22:24	6080842	RLC
Fluoride	0.50	0.30	0.02	mg/L	EPA 300.0		1	08/31/16 10:53	08/31/16 19:49	6080842	RLC
Sulfate	6.4	1.0	0.05	mg/L	EPA 300.0		1	08/31/16 10:53	08/31/16 19:49	6080842	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Barium	0.0131	0.0100	0.0004	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Boron	0.726	0.100	0.0064	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Calcium	42.8	2.50	0.155	mg/L	EPA 6020B		5	09/01/16 09:25	09/03/16 14:01	6080862	CSW
Chromium	0.0026	0.0100	0.0009	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Lithium	0.0112	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 15:56	6080862	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/01/16 09:35	09/01/16 14:25	6080864	MTC



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 08, 2016

Report No.: AZH0947

Project: CCR Event

Client ID: MCM-12

Lab Number ID: AZH0947-02

Date/Time Sampled: 8/30/2016 4:37:00PM

Date/Time Received: 8/31/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1910	25	10	mg/L	SM 2540 C		1	09/02/16 10:45	09/02/16 10:45	6090046	JPT
<b>Inorganic Anions</b>											
Chloride	800	5.0	0.28	mg/L	EPA 300.0	B-01	20	08/31/16 10:53	09/02/16 19:28	6080842	RLC
Fluoride	1.5	0.30	0.02	mg/L	EPA 300.0		1	08/31/16 10:53	08/31/16 20:10	6080842	RLC
Sulfate	4.3	1.0	0.05	mg/L	EPA 300.0		1	08/31/16 10:53	08/31/16 20:10	6080842	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Barium	0.108	0.0100	0.0004	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Beryllium	0.0003	0.0030	0.00008	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Boron	1.18	0.100	0.0064	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Calcium	7.05	0.500	0.0311	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Chromium	0.0054	0.0100	0.0009	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Lead	0.0001	0.0050	0.0001	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Selenium	0.0011	0.0100	0.0010	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Lithium	0.0102	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 16:02	6080862	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/01/16 09:35	09/01/16 14:28	6080864	MTC



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 08, 2016

Report No.: AZH0947

Project: CCR Event

Client ID: MCM-1

Lab Number ID: AZH0947-03

Date/Time Sampled: 8/30/2016 12:12:00PM

Date/Time Received: 8/31/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	86	25	10	mg/L	SM 2540 C		1	08/31/16 15:15	08/31/16 15:15	6080844	JPT
<b>Inorganic Anions</b>											
Chloride	9.7	0.25	0.01	mg/L	EPA 300.0	B-01	1	08/31/16 10:53	08/31/16 20:30	6080842	RLC
Fluoride	0.03	0.30	0.02	mg/L	EPA 300.0	J	1	08/31/16 10:53	08/31/16 20:30	6080842	RLC
Sulfate	17	1.0	0.05	mg/L	EPA 300.0		1	08/31/16 10:53	08/31/16 20:30	6080842	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Barium	0.0443	0.0100	0.0004	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Boron	0.0325	0.100	0.0064	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Calcium	7.30	0.500	0.0311	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:07	6080862	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/01/16 09:35	09/01/16 14:30	6080864	MTC



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 08, 2016

Report No.: AZH0947

Project: CCR Event

Client ID: MCM-16

Lab Number ID: AZH0947-04

Date/Time Sampled: 8/30/2016 10:28:00AM

Date/Time Received: 8/31/2016 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	99	25	10	mg/L	SM 2540 C		1	08/31/16 15:15	08/31/16 15:15	6080844	JPT
<b>Inorganic Anions</b>											
Chloride	26	0.25	0.01	mg/L	EPA 300.0	B-01	1	08/31/16 10:53	08/31/16 20:52	6080842	RLC
Fluoride	0.04	0.30	0.02	mg/L	EPA 300.0	J	1	08/31/16 10:53	08/31/16 20:52	6080842	RLC
Sulfate	24	1.0	0.05	mg/L	EPA 300.0		1	08/31/16 10:53	08/31/16 20:52	6080842	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Arsenic	0.0018	0.0050	0.0016	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Barium	0.0973	0.0100	0.0004	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Beryllium	0.0001	0.0030	0.00008	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Boron	0.0972	0.100	0.0064	mg/L	EPA 6020B	J	1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Calcium	4.02	0.500	0.0311	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/01/16 09:25	09/01/16 16:13	6080862	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/01/16 09:35	09/01/16 14:33	6080864	MTC



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September 08, 2016

**Report No.: AZH0947**

### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080844 - SM 2540 C</b>											
Blank (6080844-BLK1)							Prepared & Analyzed: 08/31/16				
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6080844-BS1)</b>											
Total Dissolved Solids	387	25	10	mg/L	400.00		97	84-108			
Duplicate (6080844-DUP1)					Source: AZH0946-03		Prepared & Analyzed: 08/31/16				
Total Dissolved Solids	131	25	10	mg/L		136			4	10	
Duplicate (6080844-DUP2)					Source: AZH0961-02		Prepared & Analyzed: 08/31/16				
Total Dissolved Solids	360	25	10	mg/L		365			1	10	
<b>Batch 6090046 - SM 2540 C</b>											
Blank (6090046-BLK1)							Prepared & Analyzed: 09/02/16				
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6090046-BS1)</b>											
Total Dissolved Solids	390	25	10	mg/L	400.00		98	84-108			
Duplicate (6090046-DUP1)					Source: AZH0947-02		Prepared & Analyzed: 09/02/16				
Total Dissolved Solids	1930	25	10	mg/L		1910			1	10	



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**Report No.: AZH0947**

### Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
<b>Batch 6080842 - EPA 300.0</b>											
<b>Blank (6080842-BLK1)</b>											
Prepared & Analyzed: 08/31/16											
Chloride	0.03	0.25	0.01	mg/L							J
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	ND	1.0	0.05	mg/L							
<b>LCS (6080842-BS1)</b>											
Prepared & Analyzed: 08/31/16											
Chloride	9.83	0.25	0.01	mg/L	10.010		98	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.010		101	90-110			
Sulfate	9.98	1.0	0.05	mg/L	10.010		100	90-110			
<b>Matrix Spike (6080842-MS1)</b>											
Source: AZH0942-01											
Chloride	16.1	0.25	0.01	mg/L	10.010	5.97	101	90-110			
Fluoride	12.9	0.30	0.02	mg/L	10.010	0.78	121	90-110			QM-05
Sulfate	202	1.0	0.05	mg/L	10.010	216	NR	90-110			QM-05
<b>Matrix Spike (6080842-MS2)</b>											
Source: AZH0946-03											
Chloride	13.2	0.25	0.01	mg/L	10.010	3.11	101	90-110			
Fluoride	10.4	0.30	0.02	mg/L	10.010	0.06	104	90-110			
Sulfate	12.1	1.0	0.05	mg/L	10.010	2.06	100	90-110			
<b>Matrix Spike Dup (6080842-MSD1)</b>											
Source: AZH0942-01											
Chloride	15.8	0.25	0.01	mg/L	10.010	5.97	99	90-110	2	15	
Fluoride	13.3	0.30	0.02	mg/L	10.010	0.78	125	90-110	3	15	QM-05
Sulfate	202	1.0	0.05	mg/L	10.010	216	NR	90-110	0.4	15	QM-05



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**Report No.: AZH0947**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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#### Batch 6080862 - EPA 3005A

Blank (6080862-BLK1)	Prepared & Analyzed: 09/01/16										
Antimony	0.0012	0.0030	0.0008	mg/L							J
Arsenic	ND	0.0050	0.0016	mg/L							
Barium	ND	0.0100	0.0004	mg/L							
Beryllium	ND	0.0030	0.00008	mg/L							
Boron	ND	0.100	0.0064	mg/L							
Cadmium	ND	0.0010	0.00007	mg/L							
Calcium	ND	0.500	0.0311	mg/L							
Chromium	ND	0.0100	0.0009	mg/L							
Cobalt	ND	0.0100	0.0005	mg/L							
Copper	ND	0.0050	0.0005	mg/L							
Lead	ND	0.0050	0.0001	mg/L							
Molybdenum	ND	0.0100	0.0017	mg/L							
Nickel	ND	0.0050	0.0006	mg/L							
Selenium	ND	0.0100	0.0010	mg/L							
Silver	ND	0.0050	0.0005	mg/L							
Thallium	ND	0.0010	0.0002	mg/L							
Vanadium	ND	0.0100	0.0071	mg/L							
Zinc	ND	0.0100	0.0021	mg/L							
Lithium	ND	0.0500	0.0021	mg/L							

LCS (6080862-BS1)	Prepared & Analyzed: 09/01/16						
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	103	80-120
Arsenic	0.100	0.0050	0.0016	mg/L	0.10000	100	80-120
Barium	0.0966	0.0100	0.0004	mg/L	0.10000	97	80-120
Beryllium	0.0964	0.0030	0.00008	mg/L	0.10000	96	80-120
Boron	0.942	0.100	0.0064	mg/L	1.0000	94	80-120
Cadmium	0.0996	0.0010	0.00007	mg/L	0.10000	100	80-120
Calcium	0.943	0.500	0.0311	mg/L	1.0000	94	80-120
Chromium	0.103	0.0100	0.0009	mg/L	0.10000	103	80-120
Cobalt	0.0969	0.0100	0.0005	mg/L	0.10000	97	80-120
Copper	0.0996	0.0050	0.0005	mg/L	0.10000	100	80-120
Lead	0.0967	0.0050	0.0001	mg/L	0.10000	97	80-120
Molybdenum	0.0995	0.0100	0.0017	mg/L	0.10000	100	80-120
Nickel	0.0956	0.0050	0.0006	mg/L	0.10000	96	80-120
Selenium	0.0980	0.0100	0.0010	mg/L	0.10000	98	80-120
Silver	0.0982	0.0050	0.0005	mg/L	0.10000	98	80-120
Thallium	0.0969	0.0010	0.0002	mg/L	0.10000	97	80-120
Vanadium	0.104	0.0100	0.0071	mg/L	0.10000	104	80-120
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	105	80-120
Lithium	0.101	0.0500	0.0021	mg/L	0.10000	101	80-120



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September 08, 2016

**Report No.: AZH0947**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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#### Batch 6080862 - EPA 3005A

Matrix Spike (6080862-MS1)		Source: AZH0941-02				Prepared & Analyzed: 09/01/16				
Antimony	0.106	0.0030	0.0008	mg/L	0.10000	0.0008	105	75-125		
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	ND	101	75-125		
Barium	0.152	0.0100	0.0004	mg/L	0.10000	0.0424	110	75-125		
Beryllium	0.0983	0.0030	0.00008	mg/L	0.10000	ND	98	75-125		
Boron	0.990	0.100	0.0064	mg/L	1.0000	0.0146	98	75-125		
Cadmium	0.0964	0.0010	0.00007	mg/L	0.10000	0.0001	96	75-125		
Calcium	21.5	2.50	0.155	mg/L	1.0000	22.6	NR	75-125		QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125		
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	0.0079	96	75-125		
Copper	0.0962	0.0050	0.0005	mg/L	0.10000	ND	96	75-125		
Lead	0.0950	0.0050	0.0001	mg/L	0.10000	ND	95	75-125		
Molybdenum	0.0981	0.0100	0.0017	mg/L	0.10000	ND	98	75-125		
Nickel	0.102	0.0050	0.0006	mg/L	0.10000	0.0036	98	75-125		
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	0.0021	99	75-125		
Silver	0.0966	0.0050	0.0005	mg/L	0.10000	ND	97	75-125		
Thallium	0.0958	0.0010	0.0002	mg/L	0.10000	ND	96	75-125		
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125		
Zinc	0.107	0.0100	0.0021	mg/L	0.10000	0.0038	103	75-125		
Lithium	0.109	0.0500	0.0021	mg/L	0.10000	0.0059	103	75-125		

Matrix Spike Dup (6080862-MSD1)		Source: AZH0941-02				Prepared & Analyzed: 09/01/16				
Antimony	0.104	0.0030	0.0008	mg/L	0.10000	0.0008	103	75-125	2	20
Arsenic	0.105	0.0050	0.0016	mg/L	0.10000	ND	105	75-125	4	20
Barium	0.150	0.0100	0.0004	mg/L	0.10000	0.0424	107	75-125	2	20
Beryllium	0.0914	0.0030	0.00008	mg/L	0.10000	ND	91	75-125	7	20
Boron	0.950	0.100	0.0064	mg/L	1.0000	0.0146	94	75-125	4	20
Cadmium	0.0978	0.0010	0.00007	mg/L	0.10000	0.0001	98	75-125	1	20
Calcium	22.5	2.50	0.155	mg/L	1.0000	22.6	NR	75-125	4	20
Chromium	0.103	0.0100	0.0009	mg/L	0.10000	ND	103	75-125	2	20
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	0.0079	96	75-125	0.5	20
Copper	0.0970	0.0050	0.0005	mg/L	0.10000	ND	97	75-125	0.9	20
Lead	0.0967	0.0050	0.0001	mg/L	0.10000	ND	97	75-125	2	20
Molybdenum	0.0998	0.0100	0.0017	mg/L	0.10000	ND	100	75-125	2	20
Nickel	0.104	0.0050	0.0006	mg/L	0.10000	0.0036	100	75-125	2	20
Selenium	0.106	0.0100	0.0010	mg/L	0.10000	0.0021	104	75-125	5	20
Silver	0.0970	0.0050	0.0005	mg/L	0.10000	ND	97	75-125	0.4	20
Thallium	0.0975	0.0010	0.0002	mg/L	0.10000	ND	98	75-125	2	20
Vanadium	0.107	0.0100	0.0071	mg/L	0.10000	ND	107	75-125	1	20
Zinc	0.107	0.0100	0.0021	mg/L	0.10000	0.0038	103	75-125	0.6	20
Lithium	0.103	0.0500	0.0021	mg/L	0.10000	0.0059	98	75-125	5	20



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Attention: Mr. Joju Abraham

September 08, 2016

**Report No.: AZH0947**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	Notes
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#### Batch 6080862 - EPA 3005A

Post Spike (6080862-PS1)		Source: AZH0941-02			Prepared & Analyzed: 09/01/16			
Antimony	92.8			ug/L	100.00	0.846	92	80-120
Arsenic	102			ug/L	100.00	0.707	101	80-120
Barium	152			ug/L	100.00	42.4	109	80-120
Beryllium	94.7			ug/L	100.00	0.0612	95	80-120
Boron	949			ug/L	1000.0	14.6	93	80-120
Cadmium	98.5			ug/L	100.00	0.0963	98	80-120
Calcium	23100			ug/L	1000.0	22600	48	80-120
Chromium	99.4			ug/L	100.00	0.280	99	80-120
Cobalt	103			ug/L	100.00	7.87	95	80-120
Copper	96.1			ug/L	100.00	0.182	96	80-120
Lead	94.3			ug/L	100.00	0.0288	94	80-120
Molybdenum	99.1			ug/L	100.00	0.668	98	80-120
Nickel	103			ug/L	100.00	3.61	99	80-120
Selenium	101			ug/L	100.00	2.13	99	80-120
Silver	95.9			ug/L	100.00	0.0094	96	80-120
Thallium	94.6			ug/L	100.00	0.0403	95	80-120
Vanadium	103			ug/L	100.00	0.528	103	80-120
Zinc	102			ug/L	100.00	3.81	98	80-120
Lithium	103			ug/L	100.00	5.90	97	80-120

#### Batch 6080864 - EPA 7470A

Blank (6080864-BLK1)					Prepared & Analyzed: 09/01/16			
Mercury	ND	0.00050	0.000041	mg/L				
LCS (6080864-BS1)					Prepared & Analyzed: 09/01/16			
Mercury	0.00258	0.00050	0.000041	mg/L	2.5000E-3	103	80-120	



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September 08, 2016

**Report No.: AZH0947**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
<b>Batch 6080864 - EPA 7470A</b>											
<b>Matrix Spike (6080864-MS1)</b>				<b>Source: AZH0947-03</b>			Prepared & Analyzed: 09/01/16				
Mercury	0.00252	0.00050	0.000041	mg/L	2.5000E-3	ND	101	75-125			
<b>Matrix Spike Dup (6080864-MSD1)</b>				<b>Source: AZH0947-03</b>			Prepared & Analyzed: 09/01/16				
Mercury	0.00249	0.00050	0.000041	mg/L	2.5000E-3	ND	100	75-125	1	20	
<b>Post Spike (6080864-PS1)</b>				<b>Source: AZH0947-03</b>			Prepared & Analyzed: 09/01/16				
Mercury	1.67			ug/L	1.6667	0.0131	99	80-120			



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September 08, 2016

## Legend

### Definition of Laboratory Terms

<b>ND</b>	- Not Detected at levels equal to or greater than the MDL
<b>BRL</b>	- Not Detected at levels equal to or greater than the RL
<b>RL</b>	- Reporting Limit
<b>MDL</b>	- Method Detection Limit
<b>SOP</b>	- Method run per Pace Standard Operating Procedure
<b>CFU</b>	- Colony Forming Units
<b>DF</b>	- Dilution Factor
<b>TIC</b>	- Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

- QM-05** The spike recovery was outside acceptance limits for the MS and/or MSD and/or PDS due to suspected matrix interference. Sample results for the QC batch were accepted based on acceptable LCS recoveries.
- QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.
- J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).
- B-01** Analyte was detected in the associated method blank at an estimated level equal to or greater than the MDL. Sample values reported as greater than the MDL and less than 10x the method blank value are reported as estimated values.

**Note: Unless otherwise noted, all results are reported on an as received basis.**





## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### LOG-IN CHECKLIST

Printed: 9/8/2016 9:12:09AM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 08/31/16 09:25

**Work Order:** AZH0947  
**Logged In By:** Mohammad M. Rahman

### OBSERVATIONS

<b>#Samples:</b> 4	<b>#Containers:</b> 12
<b>Minimum Temp(C):</b> 2.0	<b>Maximum Temp(C):</b> 2.0
	<b>Custody Seal(s) Used:</b> Yes

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

**Comments:**

September 30, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant McManus  
Pace Project No.: 30194838

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on September 01, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
Project Manager

Enclosures



#### REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus  
Pace Project No.: 30194838

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
L-A-B DOD-ELAP Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification  
Connecticut Certification #: PH-0694  
Delaware Certification  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: 90133  
Louisiana DHH/TNI Certification #: LA140008  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: PA00091  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification  
Missouri Certification #: 235

Montana Certification #: Cert 0082  
Nebraska Certification #: NE-05-29-14  
Nevada Certification #: PA014572015-1  
New Hampshire/TNI Certification #: 2976  
New Jersey/TNI Certification #: PA 051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Oregon/TNI Certification #: PA200002  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: TN2867  
Texas/TNI Certification #: T104704188-14-8  
Utah/TNI Certification #: PA014572015-5  
USDA Soil Permit #: P330-14-00213  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 460198  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Certification  
Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus  
Pace Project No.: 30194838

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30194838001	MCM-14	Water	08/30/16 14:58	09/01/16 10:00
30194838002	MCM-12	Water	08/30/16 16:37	09/01/16 10:00
30194838003	MCM-1	Water	08/30/16 12:12	09/01/16 10:00
30194838004	MCM-16	Water	08/30/16 10:28	09/01/16 10:00

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant McManus  
 Pace Project No.: 30194838

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30194838001	MCM-14	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30194838002	MCM-12	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30194838003	MCM-1	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30194838004	MCM-16	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

### REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.  
1638 Roseytown Road - Suites 2,3,4  
Greensburg, PA 15601  
(724)850-5600

## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus

Pace Project No.: 30194838

Sample: MCM-14		Lab ID: 30194838001	Collected: 08/30/16 14:58	Received: 09/01/16 10:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.323 ± 0.171 (0.277)</b> C:84% T:NA	pCi/L	09/14/16 08:09	13982-63-3	
Radium-228	EPA 9320	<b>0.988 ± 0.546 (0.992)</b> C:72% T:67%	pCi/L	09/27/16 12:11	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.31 ± 0.717 (1.27)</b>	pCi/L	09/29/16 14:55	7440-14-4	
Sample: MCM-12		Lab ID: 30194838002	Collected: 08/30/16 16:37	Received: 09/01/16 10:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.06 ± 0.273 (0.211)</b> C:89% T:NA	pCi/L	09/14/16 08:09	13982-63-3	
Radium-228	EPA 9320	<b>0.341 ± 0.402 (0.846)</b> C:78% T:69%	pCi/L	09/27/16 12:17	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.40 ± 0.675 (1.06)</b>	pCi/L	09/29/16 14:55	7440-14-4	
Sample: MCM-1		Lab ID: 30194838003	Collected: 08/30/16 12:12	Received: 09/01/16 10:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.281 ± 0.151 (0.231)</b> C:74% T:NA	pCi/L	09/14/16 08:10	13982-63-3	
Radium-228	EPA 9320	<b>0.648 ± 0.388 (0.689)</b> C:64% T:76%	pCi/L	09/22/16 02:22	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.929 ± 0.539 (0.920)</b>	pCi/L	09/29/16 14:55	7440-14-4	
Sample: MCM-16		Lab ID: 30194838004	Collected: 08/30/16 10:28	Received: 09/01/16 10:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.430 ± 0.185 (0.250)</b> C:76% T:NA	pCi/L	09/14/16 08:10	13982-63-3	
Radium-228	EPA 9320	<b>0.547 ± 0.434 (0.858)</b> C:77% T:68%	pCi/L	09/27/16 12:11	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.977 ± 0.619 (1.11)</b>	pCi/L	09/29/16 14:55	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601  
(724)850-5600

## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus

Pace Project No.: 30194838

---

QC Batch: 232400 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 30194838001, 30194838002, 30194838003, 30194838004

---

METHOD BLANK: 1138984 Matrix: Water

Associated Lab Samples: 30194838001, 30194838002, 30194838003, 30194838004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.973 ± 0.471 (0.817) C:83% T:71%	pCi/L	09/27/16 12:10	

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

## REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601  
(724)850-5600

## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus

Pace Project No.: 30194838

---

QC Batch: 232404 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 30194838001, 30194838002, 30194838003, 30194838004

---

METHOD BLANK: 1138989 Matrix: Water

Associated Lab Samples: 30194838001, 30194838002, 30194838003, 30194838004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.00141 ± 0.114 (0.281) C:80% T:NA	pCi/L	09/14/16 08:08	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus

Pace Project No.: 30194838

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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**CHAIN OF CUSTODY RECORD**

Pace Analytical Services, Inc  
 110 TECHNOLOGY PARKWAY  
 www.paeclabs.com

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

**CHAIN OF CUSTODY RECORD**

# Sample Condition Upon Receipt Pittsburgh



Client Name: Georgia Power Project # 30194838

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

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

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

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp N/A °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: BLM 9-1-16

Comments:	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:	/			4. <i>not signed, name is</i>
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:	/			5. <i>on the coc. 8/2/16</i>
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):	/			7.
Rush Turn Around Time Requested:	/			8.
Sufficient Volume:	/			9.
Correct Containers Used: -Pace Containers Used:	/			10.
Containers Intact:	/			11.
Filtered volume received for Dissolved tests		/		12.
All containers needing preservation have been checked.	/			13. <i>below 2 pH</i>
All containers needing preservation are found to be in compliance with EPA recommendation.	/			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>BLM</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):			/	14.
Trip Blank Present:			/	15.
Trip Blank Custody Seals Present				
Rad Aqueous Samples Screened > 0.5 mrem/hr	/			Initial when completed: <u>BLM</u> Date: <u>9-1-16</u>

## Client Notification/ Resolution:

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

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

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)  
 \*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.



## Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226		Analyst: WRR		Date: 9/9/2016		Worklist: 31288		Matrix: DW	
<b>Method Blank Assessment</b>									
MB Sample ID: 1138389		MB concentration: 0.001		MB Counting Uncertainty: 0.114		MB MDC: 0.281		MB Numerical Performance Indicator: 0.02	
MB Status vs Numerical Indicator: N/A		MB Status vs MDC: Pass							
<b>Laboratory Control Sample Assessment</b>									
LCSO (Y or N)? N		LCS31288		LCSD31288					
Count Date: 9/12/2016		Spike I.D.: 16-026		Spike Concentration (pCi/ml): 44.677		Volume Used (ml): 0.10		Aliquot Volume (L, g, F): 0.514	
Target Conc. (pCi/L, g, F): 8.654		Uncertainty (Calculated): 0.499		Result (pCi/L, g, F): 8.626		Numerical Performance Indicator: -0.17		Percent Recovery: 99.2%	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		N/A		Numerical Performance Indicator: N/A		Status vs Numerical Indicator: Pass		Status vs Recovery: Pass	
<b>Duplicate Sample Assessment</b>									
Sample I.D.: 30194944003		Duplicate Sample I.D.: 30194944003DUP		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.					
Sample Result (pCi/L, g, F): 0.015		Sample Result Counting Uncertainty (pCi/L, g, F): 0.146		Sample Duplicate Result (pCi/L, g, F): 0.213		Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.174		See Below ##	
Are sample and/or duplicate results below MDC? See Below ##		Duplicate Numerical Performance Indicator: -1.708		Duplicate RPD: 173.24%		Duplicate Status vs Numerical Indicator: N/A		Duplicate Status vs RPD: Fail**	
## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC. <b>Comments:</b> ***Batch must be re-prepped due to unacceptable precision.									



## Quality Control Sample Performance Assessment

*Analyst Must Manually Enter All Fields Highlighted in Yellow.*

Method Blank Assessment		Sample Matrix Spike Control Assessment	
MB Sample ID	1135984	Sample Collection Date:	Sample I.D.
MB Concentration:	0.973	Spike Concentration (pCi/mL):	Sample MS I.D.
M/B Counting Uncertainty:	0.438	Spike Volume Used in MS (mL):	Spike I.D.
MB MDC:	0.817	Spike Volume Used in MSD (mL):	Sample MSD I.D.
MB Numerical Performance Indicator:	4.35	MS Aliquot (L, g, F):	Sample Matrix Spike Result:
MB Status vs Numerical Indicator:	N/A	MS Target Conc. (pCi/L, g, F):	Sample Matrix Spike Uncertainty (pCi/L, g, F):
MB Status vs MDC:	See Comment*	MSD Aliquot (L, g, F):	Sample Matrix Spike Duplicate Result:
Laboratory Control Sample Assessment	LCS(LCSD) Y or N?	MSD Target Conc. (pCi/L, g, F):	Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
Count Date:	LCS(LCSD) 1284	Spike uncertainty (calculated):	MS Numerical Performance Indicator:
Spike I.D.:	9/27/2016	Sample Result Counting Uncertainty (pCi/L, g, F):	MSD Numerical Performance Indicator:
Spike Concentration (pCi/mL):	16-025	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	MS Percent Recovery:
Volume Used (mL):	25.565	Sample Matrix Spike Duplicate Result:	MSD Percent Recovery:
Aliquot Volume (L, g, F):	0.20	MS Status vs Numerical Indicator:	MS Status vs Numerical Indicator:
Target Conc. (pCi/L, g, F):	0.814	MS Status vs Recovery:	MSD Status vs Recovery:
Uncertainty (Calculated):	6.284		
Result (pCi/L, g, F):	0.452		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	5.336		
Numerical Performance Indicator:	0.693		
Percent Recovery:	-2.25		
Status vs Numerical Indicator:	84.92%		
Status vs Recovery:	N/A		
Duplicate Sample Assessment	Sample I.D.: LCS(LCSD) 1284	Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Duplicate Sample I.D.	LCSD31284	Enter Duplicate sample IDs if other than LCS(LCSD) in the space below.	Sample I.D.
Sample Result (pCi/L, g, F):	5.336		Sample MS I.D.
Sample Result Counting Uncertainty (pCi/L, g, F):	0.693		Sample MSD I.D.
Sample Duplicate Result (pCi/L, g, F):	6.148		Sample Matrix Spike Result:
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.789		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
Are sample and/or duplicate results below MDC?	NO		Sample Matrix Spike Duplicate Result:
Duplicate Numerical Performance Indicator:	-1.515		Matrix Spike Duplicate Numerical Performance Indicator:
(Based on the LCS/LCSD Percent Recovery) Duplicate RPD:	13.48%		(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
Duplicate Status vs Numerical Indicator:	N/A		MS/MSD Duplicate Status vs Numerical Indicator:
Duplicate Status vs RPD:	Pass		MS/MSD Duplicate Status vs RPD:

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

\*The method blank result is below the reporting limit for this analysis and is acceptable.



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

**Prepared For:**

**Georgia Power  
2480 Maner Road  
Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AZI0015**

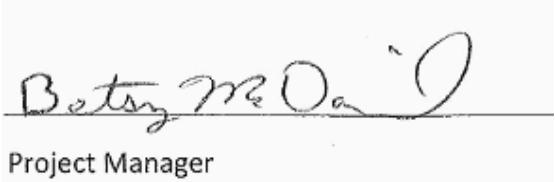
**September 09, 2016**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:



A handwritten signature in black ink, appearing to read "Betty McDaniel". Below the signature, the title "Project Manager" is printed in a small, black, sans-serif font.

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All test results relate only to the samples analyzed.



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MCM-6	AZI0015-01	Ground Water	08/31/16 14:53	09/01/16 09:20
MCM-9	AZI0015-02	Ground Water	08/31/16 10:11	09/01/16 09:20
MCM-5	AZI0015-03	Ground Water	08/31/16 16:24	09/01/16 09:20
Dup-1	AZI0015-04	Ground Water	08/31/16 00:00	09/01/16 09:20
MCM-7	AZI0015-05	Ground Water	08/31/16 12:17	09/01/16 09:20
FBL083116	AZI0015-06	DI Water	08/31/16 16:35	09/01/16 09:20
EQBL083116	AZI0015-07	DI Water	08/31/16 16:45	09/01/16 09:20



## PACE ANALYTICAL SERVICES, INC.

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(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0015

Project: CCR Event

Client ID: MCM-6

Lab Number ID: AZI0015-01

Date/Time Sampled: 8/31/2016 2:53:00PM

Date/Time Received: 9/1/2016 9:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4160	25	10	mg/L	SM 2540 C		1	09/06/16 18:00	09/06/16 18:00	6090101	JPT
<b>Inorganic Anions</b>											
Chloride	2200	50	2.8	mg/L	EPA 300.0		200	09/02/16 09:30	09/05/16 02:07	6090052	RLC
Fluoride	0.41	0.30	0.02	mg/L	EPA 300.0		1	09/02/16 09:30	09/03/16 13:32	6090052	RLC
Sulfate	21	1.0	0.05	mg/L	EPA 300.0		1	09/02/16 09:30	09/03/16 13:32	6090052	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 14:18	6090039	CSW
Arsenic	0.212	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:18	6090039	CSW
Barium	0.0498	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:18	6090039	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	09/02/16 10:10	09/07/16 15:22	6090039	CSW
Boron	0.632	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:18	6090039	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 14:18	6090039	CSW
Calcium	82.8	5.00	0.311	mg/L	EPA 6020B		10	09/02/16 10:10	09/03/16 17:19	6090039	CSW
Chromium	0.0010	0.0100	0.0009	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 20:18	6090039	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:18	6090039	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:18	6090039	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:18	6090039	CSW
Selenium	0.0015	0.0100	0.0010	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 20:18	6090039	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:18	6090039	CSW
Lithium	0.0389	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 20:18	6090039	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/02/16 08:45	09/02/16 14:05	6090042	MTC



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0015

Project: CCR Event

Client ID: MCM-9

Lab Number ID: AZI0015-02

Date/Time Sampled: 8/31/2016 10:11:00AM

Date/Time Received: 9/1/2016 9:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3860	25	10	mg/L	SM 2540 C		1	09/06/16 18:00	09/06/16 18:00	6090101	JPT
<b>Inorganic Anions</b>											
Chloride	1700	50	2.8	mg/L	EPA 300.0		200	09/02/16 09:30	09/05/16 02:29	6090052	RLC
Fluoride	0.10	0.30	0.02	mg/L	EPA 300.0	J	1	09/02/16 09:30	09/03/16 14:34	6090052	RLC
Sulfate	660	200	10	mg/L	EPA 300.0		200	09/02/16 09:30	09/05/16 02:29	6090052	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 14:58	6090039	CSW
Arsenic	0.0017	0.0050	0.0016	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 20:24	6090039	CSW
Barium	0.272	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:24	6090039	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	09/02/16 10:10	09/07/16 15:28	6090039	CSW
Boron	0.0586	0.100	0.0064	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 20:24	6090039	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 10:10	09/03/16 14:58	6090039	CSW
Calcium	284	25.0	1.55	mg/L	EPA 6020B		50	09/02/16 10:10	09/03/16 17:25	6090039	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:24	6090039	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:24	6090039	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:24	6090039	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:24	6090039	CSW
Selenium	0.0021	0.0100	0.0010	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 20:24	6090039	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 10:10	09/02/16 20:24	6090039	CSW
Lithium	0.0405	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/02/16 10:10	09/02/16 20:24	6090039	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/02/16 08:45	09/02/16 14:08	6090042	MTC



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0015

Project: CCR Event

Client ID: MCM-5

Lab Number ID: AZI0015-03

Date/Time Sampled: 8/31/2016 4:24:00PM

Date/Time Received: 9/1/2016 9:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3620	25	10	mg/L	SM 2540 C		1	09/06/16 18:00	09/06/16 18:00	6090101	JPT
<b>Inorganic Anions</b>											
Chloride	1800	50	2.8	mg/L	EPA 300.0		200	09/02/16 09:30	09/05/16 02:50	6090052	RLC
Fluoride	0.93	0.30	0.02	mg/L	EPA 300.0		1	09/02/16 09:30	09/03/16 17:20	6090052	RLC
Sulfate	37	1.0	0.05	mg/L	EPA 300.0		1	09/02/16 09:30	09/03/16 17:20	6090052	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 16:28	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Barium	0.0289	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Boron	0.560	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Calcium	65.0	5.00	0.311	mg/L	EPA 6020B		10	09/02/16 12:40	09/06/16 15:16	6090063	CSW
Chromium	0.0013	0.0100	0.0009	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Selenium	0.0020	0.0100	0.0010	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Lithium	0.0219	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 22:07	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/02/16 08:45	09/02/16 14:15	6090042	MTC



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0015

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AZI0015-04

Date/Time Sampled: 8/31/2016 12:00:00AM

Date/Time Received: 9/1/2016 9:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4310	25	10	mg/L	SM 2540 C		1	09/06/16 18:00	09/06/16 18:00	6090101	JPT
<b>Inorganic Anions</b>											
Chloride	2700	50	2.8	mg/L	EPA 300.0		200	09/02/16 09:30	09/05/16 04:39	6090052	RLC
Fluoride	0.41	0.30	0.02	mg/L	EPA 300.0		1	09/02/16 09:30	09/03/16 18:01	6090052	RLC
Sulfate	21	1.0	0.05	mg/L	EPA 300.0		1	09/02/16 09:30	09/03/16 18:01	6090052	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 16:33	6090063	CSW
Arsenic	0.219	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Barium	0.0501	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Boron	0.611	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Calcium	75.9	5.00	0.311	mg/L	EPA 6020B		10	09/02/16 12:40	09/06/16 15:22	6090063	CSW
Chromium	0.0011	0.0100	0.0009	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Selenium	0.0023	0.0100	0.0010	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Lithium	0.0399	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 22:13	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/02/16 08:45	09/02/16 14:17	6090042	MTC



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0015

Project: CCR Event

Client ID: MCM-7

Lab Number ID: AZI0015-05

Date/Time Sampled: 8/31/2016 12:17:00PM

Date/Time Received: 9/1/2016 9:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	5100	25	10	mg/L	SM 2540 C		1	09/06/16 18:00	09/06/16 18:00	6090101	JPT
<b>Inorganic Anions</b>											
Chloride	2600	50	2.8	mg/L	EPA 300.0		200	09/02/16 09:30	09/05/16 05:01	6090052	RLC
Fluoride	0.92	0.30	0.02	mg/L	EPA 300.0		1	09/02/16 09:30	09/03/16 19:03	6090052	RLC
Sulfate	290	200	10	mg/L	EPA 300.0		200	09/02/16 09:30	09/05/16 05:01	6090052	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 16:39	6090063	CSW
Arsenic	0.0066	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Barium	0.0771	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Boron	0.863	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Calcium	119	25.0	1.55	mg/L	EPA 6020B		50	09/02/16 12:40	09/06/16 15:28	6090063	CSW
Chromium	0.0022	0.0100	0.0009	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Selenium	0.0021	0.0100	0.0010	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Lithium	0.0122	0.0500	0.0021	mg/L	EPA 6020B	J	1	09/02/16 12:40	09/02/16 22:18	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/02/16 08:45	09/02/16 14:20	6090042	MTC



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0015

Project: CCR Event

Client ID: FBL083116

Lab Number ID: AZI0015-06

Date/Time Sampled: 8/31/2016 4:35:00PM

Date/Time Received: 9/1/2016 9:20:00AM

Matrix: DI Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	09/06/16 18:00	09/06/16 18:00	6090101	JPT
<b>Inorganic Anions</b>											
Chloride	0.06	0.25	0.01	mg/L	EPA 300.0	J	1	09/02/16 09:30	09/05/16 05:23	6090052	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	09/02/16 09:30	09/05/16 05:23	6090052	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	09/02/16 09:30	09/05/16 05:23	6090052	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 16:44	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:24	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/02/16 08:45	09/02/16 14:22	6090042	MTC



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

Report No.: AZI0015

Project: CCR Event

Client ID: EQBL083116

Lab Number ID: AZI0015-07

Date/Time Sampled: 8/31/2016 4:45:00PM

Date/Time Received: 9/1/2016 9:20:00AM

Matrix: DI Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	09/06/16 18:00	09/06/16 18:00	6090101	JPT
<b>Inorganic Anions</b>											
Chloride	0.37	0.25	0.01	mg/L	EPA 300.0		1	09/02/16 09:30	09/03/16 19:44	6090052	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	09/02/16 09:30	09/03/16 19:44	6090052	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	09/02/16 09:30	09/03/16 19:44	6090052	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	09/02/16 12:40	09/03/16 16:49	6090063	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Calcium	0.520	0.500	0.0311	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	09/02/16 12:40	09/02/16 22:30	6090063	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	09/02/16 08:45	09/02/16 14:24	6090042	MTC



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

**Report No.: AZI0015**

### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes					
<b>Batch 6090101 - SM 2540 C</b>																
Blank (6090101-BLK1)							Prepared & Analyzed: 09/06/16									
Total Dissolved Solids	ND	25	10	mg/L												
<b>LCS (6090101-BS1)</b>												Prepared & Analyzed: 09/06/16				
Total Dissolved Solids	393	25	10	mg/L	400.00		98	84-108								
<b>Duplicate (6090101-DUP1)</b>												Source: AZI0015-02	Prepared & Analyzed: 09/06/16			
Total Dissolved Solids	3870	25	10	mg/L		3860			0.2	10						
<b>Duplicate (6090101-DUP2)</b>												Source: AZI0018-04	Prepared & Analyzed: 09/06/16			
Total Dissolved Solids	80	25	10	mg/L		122			42	10	QR-03					



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September 09, 2016

**Report No.: AZI0015**

### Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
<b>Batch 6090052 - EPA 300.0</b>											
<b>Blank (6090052-BLK1)</b>											
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	ND	1.0	0.05	mg/L							
<b>LCS (6090052-BS1)</b>											
Chloride	10.0	0.25	0.01	mg/L	10.010		100	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.010		101	90-110			
Sulfate	10.2	1.0	0.05	mg/L	10.010		101	90-110			
<b>Matrix Spike (6090052-MS1)</b>											
Chloride	507	0.25	0.01	mg/L	10.010	587	NR	90-110			QM-05
Fluoride	11.2	0.30	0.02	mg/L	10.010	0.93	102	90-110			
Sulfate	315	1.0	0.05	mg/L	10.010	37.1	NR	90-110			QM-05
<b>Matrix Spike (6090052-MS2)</b>											
Chloride	22.8	0.25	0.01	mg/L	10.010	13.0	98	90-110			
Fluoride	11.5	0.30	0.02	mg/L	10.010	ND	114	90-110			QM-05
Sulfate	129	1.0	0.05	mg/L	10.010	133	NR	90-110			QM-05
<b>Matrix Spike Dup (6090052-MSD1)</b>											
Chloride	517	0.25	0.01	mg/L	10.010	587	NR	90-110	2	15	QM-05
Fluoride	11.2	0.30	0.02	mg/L	10.010	0.93	103	90-110	0.3	15	
Sulfate	315	1.0	0.05	mg/L	10.010	37.1	NR	90-110	0.002	15	QM-05



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**Report No.: AZI0015**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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#### Batch 6090039 - EPA 3005A

Blank (6090039-BLK1)	Prepared: 09/02/16 Analyzed: 09/03/16									
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Antimony	ND	0.0030	0.0008	mg/L							
Arsenic	ND	0.0050	0.0016	mg/L							
Barium	ND	0.0100	0.0004	mg/L							
Beryllium	ND	0.0030	0.00008	mg/L							
Boron	ND	0.100	0.0064	mg/L							
Cadmium	ND	0.0005	0.00007	mg/L							
Calcium	ND	0.500	0.0311	mg/L							
Chromium	ND	0.0100	0.0009	mg/L							
Cobalt	ND	0.0100	0.0005	mg/L							
Copper	ND	0.0050	0.0005	mg/L							
Lead	ND	0.0050	0.0001	mg/L							
Molybdenum	ND	0.0100	0.0017	mg/L							
Nickel	ND	0.0050	0.0006	mg/L							
Selenium	ND	0.0100	0.0010	mg/L							
Silver	ND	0.0050	0.0005	mg/L							
Thallium	ND	0.0010	0.0002	mg/L							
Vanadium	ND	0.0100	0.0071	mg/L							
Zinc	ND	0.0100	0.0021	mg/L							
Lithium	ND	0.0500	0.0021	mg/L							

#### LCS (6090039-BS1)

Prepared & Analyzed: 09/02/16

Antimony	0.107	0.0030	0.0008	mg/L	0.10000	107	80-120
Arsenic	0.0988	0.0050	0.0016	mg/L	0.10000	99	80-120
Barium	0.102	0.0100	0.0004	mg/L	0.10000	102	80-120
Beryllium	0.0950	0.0030	0.00008	mg/L	0.10000	95	80-120
Boron	0.984	0.100	0.0064	mg/L	1.0000	98	80-120
Cadmium	0.0997	0.0010	0.00007	mg/L	0.10000	100	80-120
Calcium	0.943	0.500	0.0311	mg/L	1.0000	94	80-120
Chromium	0.102	0.0100	0.0009	mg/L	0.10000	102	80-120
Cobalt	0.0962	0.0100	0.0005	mg/L	0.10000	96	80-120
Copper	0.0964	0.0050	0.0005	mg/L	0.10000	96	80-120
Lead	0.103	0.0050	0.0001	mg/L	0.10000	103	80-120
Molybdenum	0.100	0.0100	0.0017	mg/L	0.10000	100	80-120
Nickel	0.0973	0.0050	0.0006	mg/L	0.10000	97	80-120
Selenium	0.0984	0.0100	0.0010	mg/L	0.10000	98	80-120
Silver	0.0996	0.0050	0.0005	mg/L	0.10000	100	80-120
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	104	80-120
Vanadium	0.0999	0.0100	0.0071	mg/L	0.10000	100	80-120
Zinc	0.101	0.0100	0.0021	mg/L	0.10000	101	80-120
Lithium	0.0964	0.0500	0.0021	mg/L	0.10000	96	80-120



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September 09, 2016

**Report No.: AZI0015**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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#### Batch 6090039 - EPA 3005A

Matrix Spike (6090039-MS1)		Source: AZI0015-01			Prepared & Analyzed: 09/02/16					
Antimony	0.0992	0.0030	0.0008	mg/L	0.10000	ND	99	75-125		
Arsenic	0.313	0.0050	0.0016	mg/L	0.10000	0.212	101	75-125		
Barium	0.146	0.0100	0.0004	mg/L	0.10000	0.0498	96	75-125		
Beryllium	0.0763	0.0030	0.00008	mg/L	0.10000	ND	76	75-125		
Boron	1.22	0.100	0.0064	mg/L	1.0000	0.632	59	75-125		QM-02
Cadmium	0.0869	0.0010	0.00007	mg/L	0.10000	ND	87	75-125		
Calcium	81.8	5.00	0.311	mg/L	1.0000	82.8	NR	75-125		QM-02
Chromium	0.105	0.0100	0.0009	mg/L	0.10000	0.0010	104	75-125		
Cobalt	0.0941	0.0100	0.0005	mg/L	0.10000	ND	94	75-125		
Copper	0.0827	0.0050	0.0005	mg/L	0.10000	ND	83	75-125		
Lead	0.0884	0.0050	0.0001	mg/L	0.10000	ND	88	75-125		
Molybdenum	0.101	0.0100	0.0017	mg/L	0.10000	ND	101	75-125		
Nickel	0.0867	0.0050	0.0006	mg/L	0.10000	ND	87	75-125		
Selenium	0.0380	0.0100	0.0010	mg/L	0.10000	0.0015	36	75-125		QM-05
Silver	0.0820	0.0050	0.0005	mg/L	0.10000	ND	82	75-125		
Thallium	0.0908	0.0010	0.0002	mg/L	0.10000	ND	91	75-125		
Vanadium	0.113	0.0100	0.0071	mg/L	0.10000	ND	113	75-125		
Zinc	0.0878	0.0100	0.0021	mg/L	0.10000	ND	88	75-125		
Lithium	0.116	0.0500	0.0021	mg/L	0.10000	0.0389	77	75-125		

Matrix Spike Dup (6090039-MSD1)		Source: AZI0015-01			Prepared & Analyzed: 09/02/16					
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125	4	20
Arsenic	0.314	0.0050	0.0016	mg/L	0.10000	0.212	102	75-125	0.2	20
Barium	0.154	0.0100	0.0004	mg/L	0.10000	0.0498	104	75-125	5	20
Beryllium	0.0784	0.0030	0.00008	mg/L	0.10000	ND	78	75-125	3	20
Boron	1.29	0.100	0.0064	mg/L	1.0000	0.632	66	75-125	6	20
Cadmium	0.0882	0.0010	0.00007	mg/L	0.10000	ND	88	75-125	1	20
Calcium	83.2	5.00	0.311	mg/L	1.0000	82.8	44	75-125	2	20
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	0.0010	103	75-125	0.3	20
Cobalt	0.0918	0.0100	0.0005	mg/L	0.10000	ND	92	75-125	2	20
Copper	0.0829	0.0050	0.0005	mg/L	0.10000	ND	83	75-125	0.3	20
Lead	0.0885	0.0050	0.0001	mg/L	0.10000	ND	88	75-125	0.1	20
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	4	20
Nickel	0.0873	0.0050	0.0006	mg/L	0.10000	ND	87	75-125	0.7	20
Selenium	0.0394	0.0100	0.0010	mg/L	0.10000	0.0015	38	75-125	4	20
Silver	0.0858	0.0050	0.0005	mg/L	0.10000	ND	86	75-125	4	20
Thallium	0.0923	0.0010	0.0002	mg/L	0.10000	ND	92	75-125	2	20
Vanadium	0.113	0.0100	0.0071	mg/L	0.10000	ND	113	75-125	0.2	20
Zinc	0.0872	0.0100	0.0021	mg/L	0.10000	ND	87	75-125	0.7	20
Lithium	0.122	0.0500	0.0021	mg/L	0.10000	0.0389	83	75-125	5	20



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Attention: Mr. Joju Abraham

September 09, 2016

**Report No.: AZI0015**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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#### Batch 6090039 - EPA 3005A

Post Spike (6090039-PS1)		Source: AZI0015-01			Prepared & Analyzed: 09/02/16					
Antimony	94.7			ug/L	100.00	0.0900	95	80-120		
Arsenic	300			ug/L	100.00	212	88	80-120		
Barium	148			ug/L	100.00	49.8	98	80-120		
Beryllium	79.2			ug/L	100.00	0.0500	79	80-120		QM-05
Boron	1270			ug/L	1000.0	632	63	80-120		QM-02
Cadmium	85.5			ug/L	100.00	0.0100	85	80-120		
Calcium	78800			ug/L	1000.0	82800	NR	80-120		QM-02
Chromium	96.6			ug/L	100.00	1.04	96	80-120		
Cobalt	90.7			ug/L	100.00	0.402	90	80-120		
Copper	80.9			ug/L	100.00	0.155	81	80-120		
Lead	88.7			ug/L	100.00	0.0713	89	80-120		
Molybdenum	102			ug/L	100.00	0.877	101	80-120		
Nickel	84.7			ug/L	100.00	0.391	84	80-120		
Selenium	92.6			ug/L	100.00	1.51	91	80-120		
Silver	82.9			ug/L	100.00	-0.0178	83	80-120		
Thallium	92.1			ug/L	100.00	-0.0163	92	80-120		
Vanadium	108			ug/L	100.00	4.05	104	80-120		
Zinc	86.1			ug/L	100.00	1.52	85	80-120		
Lithium	120			ug/L	100.00	38.9	81	80-120		

#### Batch 6090042 - EPA 7470A

Blank (6090042-BLK1)					Prepared & Analyzed: 09/02/16			
Mercury	0.00004	0.00050	0.000041	mg/L				J
LCS (6090042-BS1)					Prepared & Analyzed: 09/02/16			
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3	98	80-120	



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September 09, 2016

**Report No.: AZI0015**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
<b>Batch 6090042 - EPA 7470A</b>											
<b>Matrix Spike (6090042-MS1)</b> <b>Source: AZI0015-02</b> Prepared & Analyzed: 09/02/16											
Mercury      0.00218      0.00050      0.000041      mg/L      2.5000E-3      ND      87      75-125											
<b>Matrix Spike Dup (6090042-MSD1)</b> <b>Source: AZI0015-02</b> Prepared & Analyzed: 09/02/16											
Mercury      0.00215      0.00050      0.000041      mg/L      2.5000E-3      ND      86      75-125      1      20											
<b>Post Spike (6090042-PS1)</b> <b>Source: AZI0015-02</b> Prepared & Analyzed: 09/02/16											
Mercury      1.58      ug/L      1.6667      0.0259      93      80-120											
<b>Batch 6090063 - EPA 3005A</b>											
<b>Blank (6090063-BLK1)</b> Prepared: 09/02/16 Analyzed: 09/03/16											
Antimony	ND	0.0030	0.0008	mg/L							
Arsenic	ND	0.0050	0.0016	mg/L							
Barium	ND	0.0100	0.0004	mg/L							
Beryllium	ND	0.0030	0.00008	mg/L							
Boron	ND	0.100	0.0064	mg/L							
Cadmium	ND	0.0010	0.00007	mg/L							
Calcium	ND	0.500	0.0311	mg/L							
Chromium	ND	0.0100	0.0009	mg/L							
Cobalt	ND	0.0100	0.0005	mg/L							
Copper	ND	0.0050	0.0005	mg/L							
Lead	ND	0.0050	0.0001	mg/L							
Molybdenum	ND	0.0100	0.0017	mg/L							
Nickel	ND	0.0050	0.0006	mg/L							
Selenium	ND	0.0100	0.0010	mg/L							
Silver	ND	0.0050	0.0005	mg/L							
Thallium	ND	0.0010	0.0002	mg/L							
Vanadium	ND	0.0100	0.0071	mg/L							
Zinc	ND	0.0100	0.0021	mg/L							
Lithium	ND	0.0500	0.0021	mg/L							



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September 09, 2016

**Report No.: AZI0015**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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#### Batch 6090063 - EPA 3005A

LCS (6090063-BS1)	Prepared & Analyzed: 09/02/16										
Antimony	0.106	0.0030	0.0008	mg/L	0.10000	106	80-120				
Arsenic	0.0977	0.0050	0.0016	mg/L	0.10000	98	80-120				
Barium	0.0953	0.0100	0.0004	mg/L	0.10000	95	80-120				
Beryllium	0.0878	0.0030	0.00008	mg/L	0.10000	88	80-120				
Boron	0.901	0.100	0.0064	mg/L	1.0000	90	80-120				
Cadmium	0.0994	0.0010	0.00007	mg/L	0.10000	99	80-120				
Calcium	0.963	0.500	0.0311	mg/L	1.0000	96	80-120				
Chromium	0.0995	0.0100	0.0009	mg/L	0.10000	99	80-120				
Cobalt	0.0958	0.0100	0.0005	mg/L	0.10000	96	80-120				
Copper	0.0944	0.0050	0.0005	mg/L	0.10000	94	80-120				
Lead	0.0976	0.0050	0.0001	mg/L	0.10000	98	80-120				
Molybdenum	0.0993	0.0100	0.0017	mg/L	0.10000	99	80-120				
Nickel	0.0949	0.0050	0.0006	mg/L	0.10000	95	80-120				
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	101	80-120				
Silver	0.100	0.0050	0.0005	mg/L	0.10000	100	80-120				
Thallium	0.0979	0.0010	0.0002	mg/L	0.10000	98	80-120				
Vanadium	0.0982	0.0100	0.0071	mg/L	0.10000	98	80-120				
Zinc	0.0982	0.0100	0.0021	mg/L	0.10000	98	80-120				
Lithium	0.0890	0.0500	0.0021	mg/L	0.10000	89	80-120				

Matrix Spike (6090063-MS1)	Source: AZI0015-03						Prepared & Analyzed: 09/02/16			
Antimony	0.104	0.0030	0.0008	mg/L	0.10000	ND	104	75-125		
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	ND	101	75-125		
Barium	0.130	0.0100	0.0004	mg/L	0.10000	0.0289	101	75-125		
Beryllium	0.0763	0.0030	0.00008	mg/L	0.10000	ND	76	75-125		
Boron	1.20	0.100	0.0064	mg/L	1.0000	0.560	64	75-125	QM-02	
Cadmium	0.0936	0.0010	0.00007	mg/L	0.10000	ND	94	75-125		
Calcium	64.9	5.00	0.311	mg/L	1.0000	65.0	NR	75-125	QM-02	
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	0.0013	107	75-125		
Cobalt	0.0979	0.0100	0.0005	mg/L	0.10000	ND	98	75-125		
Copper	0.0877	0.0050	0.0005	mg/L	0.10000	ND	88	75-125		
Lead	0.0905	0.0050	0.0001	mg/L	0.10000	ND	90	75-125		
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000	ND	109	75-125		
Nickel	0.0920	0.0050	0.0006	mg/L	0.10000	ND	92	75-125		
Selenium	0.0440	0.0100	0.0010	mg/L	0.10000	0.0020	42	75-125	QM-05	
Silver	0.0878	0.0050	0.0005	mg/L	0.10000	ND	88	75-125		
Thallium	0.0940	0.0010	0.0002	mg/L	0.10000	ND	94	75-125		
Vanadium	0.122	0.0100	0.0071	mg/L	0.10000	ND	122	75-125		
Zinc	0.0911	0.0100	0.0021	mg/L	0.10000	ND	91	75-125		
Lithium	0.103	0.0500	0.0021	mg/L	0.10000	0.0219	81	75-125		



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

**Report No.: AZI0015**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
---------	--------	----	-----	-------	-------------	---------------	------	-------------	---------	-----------	-------

#### Batch 6090063 - EPA 3005A

Matrix Spike Dup (6090063-MSD1)		Source: AZI0015-03			Prepared & Analyzed: 09/02/16						
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125	2	20	
Arsenic	0.100	0.0050	0.0016	mg/L	0.10000	ND	100	75-125	0.5	20	
Barium	0.127	0.0100	0.0004	mg/L	0.10000	0.0289	98	75-125	2	20	
Beryllium	0.0745	0.0030	0.00008	mg/L	0.10000	ND	74	75-125	2	20	QM-05
Boron	1.15	0.100	0.0064	mg/L	1.0000	0.560	59	75-125	5	20	QM-02
Cadmium	0.0896	0.0010	0.00007	mg/L	0.10000	ND	90	75-125	4	20	
Calcium	58.7	5.00	0.311	mg/L	1.0000	65.0	NR	75-125	10	20	QM-02
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	0.0013	106	75-125	0.2	20	
Cobalt	0.0961	0.0100	0.0005	mg/L	0.10000	ND	96	75-125	2	20	
Copper	0.0884	0.0050	0.0005	mg/L	0.10000	ND	88	75-125	0.8	20	
Lead	0.0869	0.0050	0.0001	mg/L	0.10000	ND	87	75-125	4	20	
Molybdenum	0.104	0.0100	0.0017	mg/L	0.10000	ND	104	75-125	4	20	
Nickel	0.0900	0.0050	0.0006	mg/L	0.10000	ND	90	75-125	2	20	
Selenium	0.0527	0.0100	0.0010	mg/L	0.10000	0.0020	51	75-125	18	20	QM-05
Silver	0.0855	0.0050	0.0005	mg/L	0.10000	ND	85	75-125	3	20	
Thallium	0.0894	0.0010	0.0002	mg/L	0.10000	ND	89	75-125	5	20	
Vanadium	0.118	0.0100	0.0071	mg/L	0.10000	ND	118	75-125	3	20	
Zinc	0.0920	0.0100	0.0021	mg/L	0.10000	ND	92	75-125	1	20	
Lithium	0.0984	0.0500	0.0021	mg/L	0.10000	0.0219	77	75-125	4	20	

Post Spike (6090063-PS1)		Source: AZI0015-03			Prepared & Analyzed: 09/02/16						
Antimony	98.9			ug/L	100.00	0.0800	99	80-120			
Arsenic	101			ug/L	100.00	1.53	99	80-120			
Barium	127			ug/L	100.00	28.9	98	80-120			
Beryllium	74.5			ug/L	100.00	0.0207	74	80-120			QM-05
Boron	1160			ug/L	1000.0	560	60	80-120			QM-02
Cadmium	92.6			ug/L	100.00	0.0183	93	80-120			
Calcium	61300			ug/L	1000.0	65000	NR	80-120			QM-02
Chromium	104			ug/L	100.00	1.25	102	80-120			
Cobalt	95.2			ug/L	100.00	0.401	95	80-120			
Copper	85.0			ug/L	100.00	0.195	85	80-120			
Lead	87.6			ug/L	100.00	0.0431	88	80-120			
Molybdenum	108			ug/L	100.00	0.480	108	80-120			
Nickel	92.6			ug/L	100.00	0.329	92	80-120			
Selenium	99.2			ug/L	100.00	2.03	97	80-120			
Silver	87.8			ug/L	100.00	0.0021	88	80-120			
Thallium	91.5			ug/L	100.00	0.0702	91	80-120			
Vanadium	115			ug/L	100.00	6.20	109	80-120			
Zinc	91.9			ug/L	100.00	1.01	91	80-120			
Lithium	102			ug/L	100.00	21.9	80	80-120			



## PACE ANALYTICAL SERVICES, INC.

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(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 09, 2016

## Legend

### Definition of Laboratory Terms

<b>ND</b>	- Not Detected at levels equal to or greater than the MDL
<b>BRL</b>	- Not Detected at levels equal to or greater than the RL
<b>RL</b>	- Reporting Limit
<b>MDL</b>	- Method Detection Limit
<b>SOP</b>	- Method run per Pace Standard Operating Procedure
<b>CFU</b>	- Colony Forming Units
<b>DF</b>	- Dilution Factor
<b>TIC</b>	- Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

- QR-03** The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to suspected matrix interference and/or non-homogeneous sample matrix.
- QM-05** The spike recovery was outside acceptance limits for the MS and/or MSD and/or PDS due to suspected matrix interference. Sample results for the QC batch were accepted based on acceptable LCS recoveries.
- QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.
- J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

**Note: Unless otherwise noted, all results are reported on an as received basis.**





## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### LOG-IN CHECKLIST

Printed: 9/9/2016 5:11:15PM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 09/01/16 09:20

**Work Order:** AZI0015  
**Logged In By:** Mohammad M. Rahman

### OBSERVATIONS

**#Samples:** 7                   **#Containers:** 22  
**Minimum Temp(C):** 1.0       **Maximum Temp(C):** 1.0       **Custody Seal(s) Used:** Yes

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

**Comments:**

October 06, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant McManus  
Pace Project No.: 30195006

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on September 02, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
Project Manager

Enclosures



#### REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus  
Pace Project No.: 30195006

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
L-A-B DOD-ELAP Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification  
Connecticut Certification #: PH-0694  
Delaware Certification  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: 90133  
Louisiana DHH/TNI Certification #: LA140008  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: PA00091  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification  
Missouri Certification #: 235

Montana Certification #: Cert 0082  
Nebraska Certification #: NE-05-29-14  
Nevada Certification #: PA014572015-1  
New Hampshire/TNI Certification #: 2976  
New Jersey/TNI Certification #: PA 051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Oregon/TNI Certification #: PA200002  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: TN2867  
Texas/TNI Certification #: T104704188-14-8  
Utah/TNI Certification #: PA014572015-5  
USDA Soil Permit #: P330-14-00213  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 460198  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Certification  
Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus  
Pace Project No.: 30195006

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30195006001	MCM-6	Water	08/31/16 14:53	09/02/16 10:20
30195006002	MCM-9	Water	08/31/16 10:11	09/02/16 10:20
30195006003	MCM-5	Water	08/31/16 16:24	09/02/16 10:20
30195006004	DUP-1	Water	08/31/16 00:01	09/02/16 10:20
30195006005	MCM-7	Water	08/31/16 12:17	09/02/16 10:20
30195006006	FBL083116	Water	08/31/16 16:35	09/02/16 10:20
30195006007	EQBL083116	Water	08/31/16 16:45	09/02/16 10:20

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus  
 Pace Project No.: 30195006

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30195006001	MCM-6	EPA 9315	WRR	1
		EPA 9320	JLW	1
30195006002	MCM-9	Total Radium Calculation	JAL	1
		EPA 9315	WRR	1
30195006003	MCM-5	EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195006004	DUP-1	EPA 9315	WRR	1
		EPA 9320	JLW	1
30195006005	MCM-7	Total Radium Calculation	JAL	1
		EPA 9315	WRR	1
30195006006	FBL083116	EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30195006007	EQBL083116	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
		EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus

Pace Project No.: 30195006

<b>Sample: MCM-6</b>	<b>Lab ID: 30195006001</b>	Collected: 08/31/16 14:53	Received: 09/02/16 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.01 ± 0.326 (0.325)</b> C:85% T:NA	pCi/L	09/14/16 11:29	13982-63-3	
Radium-228	EPA 9320	<b>1.46 ± 0.524 (0.696)</b> C:72% T:74%	pCi/L	09/22/16 21:46	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.47 ± 0.850 (1.02)</b>	pCi/L	09/23/16 13:04	7440-14-4	

<b>Sample: MCM-9</b>	<b>Lab ID: 30195006002</b>	Collected: 08/31/16 10:11	Received: 09/02/16 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.58 ± 0.554 (0.303)</b> C:80% T:NA	pCi/L	09/14/16 11:29	13982-63-3	
Radium-228	EPA 9320	<b>3.66 ± 0.888 (0.751)</b> C:77% T:82%	pCi/L	09/22/16 21:46	15262-20-1	
Total Radium	Total Radium Calculation	<b>6.24 ± 1.44 (1.05)</b>	pCi/L	09/23/16 13:04	7440-14-4	

<b>Sample: MCM-5</b>	<b>Lab ID: 30195006003</b>	Collected: 08/31/16 16:24	Received: 09/02/16 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.07 ± 0.311 (0.253)</b> C:81% T:NA	pCi/L	09/14/16 11:29	13982-63-3	
Radium-228	EPA 9320	<b>1.32 ± 0.533 (0.857)</b> C:69% T:78%	pCi/L	09/23/16 01:55	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.39 ± 0.844 (1.11)</b>	pCi/L	09/23/16 13:04	7440-14-4	

<b>Sample: DUP-1</b>	<b>Lab ID: 30195006004</b>	Collected: 08/31/16 00:01	Received: 09/02/16 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.00 ± 0.313 (0.321)</b> C:84% T:NA	pCi/L	09/14/16 11:30	13982-63-3	
Radium-228	EPA 9320	<b>1.71 ± 0.577 (0.828)</b> C:69% T:78%	pCi/L	09/23/16 01:42	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.71 ± 0.890 (1.15)</b>	pCi/L	09/23/16 13:04	7440-14-4	

<b>Sample: MCM-7</b>	<b>Lab ID: 30195006005</b>	Collected: 08/31/16 12:17	Received: 09/02/16 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.58 ± 0.548 (0.284)</b> C:89% T:NA	pCi/L	09/14/16 11:30	13982-63-3	
Radium-228	EPA 9320	<b>2.82 ± 0.703 (0.697)</b> C:69% T:89%	pCi/L	09/23/16 01:42	15262-20-1	

## REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC  
1638 Roseytown Road - Suites 2,3,4  
Greensburg, PA 15601  
(724)850-5600

## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus

Pace Project No.: 30195006

<b>Sample: MCM-7</b> PWS:	<b>Lab ID: 30195006005</b> Site ID:	Collected: 08/31/16 12:17	Received: 09/02/16 10:20	Matrix: Water
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Total Radium	Total Radium Calculation	<b>5.40 ± 1.25 (0.981)</b>	pCi/L	09/23/16 13:04
				7440-14-4
<b>Sample: FBL083116</b> PWS:	<b>Lab ID: 30195006006</b> Site ID:	Collected: 08/31/16 16:35	Received: 09/02/16 10:20	Matrix: Water
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>-0.0876 ± 0.161 (0.474)</b> C:87% T:NA	pCi/L	10/05/16 08:16
Radium-228	EPA 9320	<b>1.10 ± 0.445 (0.724)</b> C:77% T:85%	pCi/L	09/23/16 01:42
Total Radium	Total Radium Calculation	<b>1.10 ± 0.606 (1.20)</b>	pCi/L	10/05/16 11:20
				7440-14-4
<b>Sample: EQBL083116</b> PWS:	<b>Lab ID: 30195006007</b> Site ID:	Collected: 08/31/16 16:45	Received: 09/02/16 10:20	Matrix: Water
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.00 ± 0.123 (0.306)</b> C:84% T:NA	pCi/L	09/14/16 11:31
Radium-228	EPA 9320	<b>0.887 ± 0.465 (0.828)</b> C:71% T:77%	pCi/L	09/23/16 01:55
Total Radium	Total Radium Calculation	<b>0.887 ± 0.588 (1.13)</b>	pCi/L	09/23/16 13:04
				7440-14-4

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus

Pace Project No.: 30195006

---

QC Batch: 232409 Analysis Method: EPA 9320

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

Associated Lab Samples: 30195006001, 30195006002, 30195006003, 30195006004, 30195006005, 30195006006, 30195006007

---

METHOD BLANK: 1138994 Matrix: Water

Associated Lab Samples: 30195006001, 30195006002, 30195006003, 30195006004, 30195006005, 30195006006, 30195006007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.716 ± 0.356 (0.609) C:84% T:86%	pCi/L	09/22/16 21:46	

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

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Pace Analytical Services, LLC  
1638 Roseytown Road - Suites 2,3,4  
Greensburg, PA 15601  
(724)850-5600

## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus

Pace Project No.: 30195006

QC Batch: 234855

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30195006006

METHOD BLANK: 1152654

Matrix: Water

Associated Lab Samples: 30195006006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0759 ± 0.110 (0.232) C:91% T:NA	pCi/L	10/05/16 08:16	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus

Pace Project No.: 30195006

---

QC Batch: 232408 Analysis Method: EPA 9315

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

Associated Lab Samples: 30195006001, 30195006002, 30195006003, 30195006004, 30195006005, 30195006007

---

METHOD BLANK: 1138993 Matrix: Water

Associated Lab Samples: 30195006001, 30195006002, 30195006003, 30195006004, 30195006005, 30195006007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0402 ± 0.0839 (0.189) C:94% T:NA	pCi/L	09/14/16 11:05	

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## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus

Pace Project No.: 30195006

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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**CHAIN OF CUSTODY RECORD**

Pace Analytical<sup>®</sup>  
www.pacelabs.com

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

WO#: 30195006

72



ANALYSIS REQUESTED										PRESERVATION		
CONTAINER TYPE:		P	P	P	P	P	P	P	P	L	CONTAINER TYPE	
PRESERVATION:		3	7	3						A	1 - HCl, ≤6°C	
# of										B	2 - H <sub>2</sub> SO <sub>4</sub> , ≤8°C	
REPORT TO:	Jaij Abraham	CC: Maria Padilla	Heath McCorkle	N	O	C				G	3 - HNO <sub>3</sub>	
REQUESTED COMPLETION DATE:	PO#:	Leisure@sothernco.com	A	T	S	R	E	D	I	V	4 - NaOH, ≤6°C	
PROJECT NAME/STATE:	Metals HPLC + TDS									N	S	5 - NaOH/ZnAc, ≤6°C
PROJECT #:	Metals HPLC + TDS									U	W	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C
										U		7 - ≤6°C not frozen
										*MATRIX CODES:		
										DW	DRINKING WATER	S - SOIL
										WW	WASTEWATER	SL - SLUDGE
										GW	GROUNDWATER	SD - SOLID
										SW	SURFACE WATER	A - AIR
										ST	STORM WATER	L - LIQUID
										W	WATER	P - PRODUCT
REMARKS/ADDITIONAL INFORMATION												
Collection DATE	Collection TIME	MATRIX CODE*	C	G	R	M	A	SAMPLE IDENTIFICATION	P	B		
8-31-16	1453	6W	X					MCM-6			CO1	
8-31-16	1011	6W	X					MCM-9			CO2	
8-31-16	1624	6W	X					MCM-5			CO3	
8-31-16	/	6W	X					DUP-1			CO4	
8-31-16	1217	6W	X					MCM-7			CO5	
8-31-16	1635	W	X					FBL 08.31.16			CO6	
8-31-16	1645	W	X					CQBL 08.31.16			CO7	
REINQUISITION BY:												
SAMPLED BY AND TITLE:		DATE/TIME:		REINQUISITION BY:		DATE/TIME:		LAB #:		FOR LAB USE ONLY		
Forest Health Services/ Michael P. Balkin		8-31-16 1710		REINQUISITION BY:		8-31-16 1710		DATE/TIME:		Entered into LIMS:		
RECEIVED BY:		DATE/TIME:		SAMPLE SHIPPED VIA:		DATE/TIME:		CLIENT:		Tracking #:		
Jaij Abraham		8-2-16 1020		UPS		FED-EX		COURIER		FS		
RECEIVED BY LAB:		DATE/TIME:		Custody Seal:		USPS		# of Coolers		Cooler ID:		
PACELABS		Temperature:		Intact		Broken		Not Present				
pH checked:	No	Ice:	Yes	Temperature:	Min:	Max:						

COC Revised 2016-05-17.xlsx

## Sample Condition Upon Receipt Pittsburgh

30195006

Client Name: Georgia Power Project # \_\_\_\_\_Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_Tracking #: 6812 5098 8161Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  noThermometer Used N/AType of Ice: Wet Blue NoneCooler Temperature Observed Temp   °C Correction Factor:   °C Final Temp:   °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ML 9-2-16

Comments:	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/	/		3.
Sampler Name & Signature on COC:	/	/		4. <u>no Signature</u>
Sample Labels match COC: -Includes date/time/ID/Analysis	/			5.
Samples Arrived within Hold Time:				6.
Short Hold Time Analysis (<72hr remaining):				7.
Rush Turn Around Time Requested:				8.
Sufficient Volume:				9.
Correct Containers Used: -Pace Containers Used:	/	/		10.
Containers Intact:	/			11.
Filtered volume received for Dissolved tests All containers needing preservation have been checked.	/			12.
All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, Phenolics	/	/		13. <u>all below 2 PH</u>
				Initial when completed: <u>ML</u> Date/time of preservation: <u> </u>
				Lot # of added preservative: <u> </u>
Headspace in VOA Vials (>6mm):				14.
Trip Blank Present:				15.
Trip Blank Custody Seals Present				
Rad Aqueous Samples Screened > 0.5 mrem/hr				Initial when completed: <u>ML</u> Date: <u>9-2-16</u>

## Client Notification/ Resolution:

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

Comments/ Resolution:  


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Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR

Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.





## Quality Control Sample Performance Assessment

*Analyst Must Manually Enter All Fields Highlighted in Yellow.*

Test: Ra-228		Analyst: JLW		Date: 9/12/2016		Worklist: 31293		Matrix: DW	
Sample Matrix Spike Control Assessment									
Sample I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL);		Sample I.D.: Spike I.D.;		Sample Collection Date: Sample I.D.		Sample I.D.: Spike I.D.;		Sample I.D.: Spike I.D.;	
MB/MSD Decay Corrected Spike Concentration (pCi/mL);		Spike Volume Used in MS (mL);		Spike Volume Used in MS (mL);		MS Aliquot (L, g, F);		MS Aliquot (L, g, F);	
MB Counting Uncertainty:		Spike Volume Used in MSD (mL);		MS Target Conc. (pCi/L, g, F);		MSD Aliquot (L, g, F);		MSD Target Conc. (pCi/L, g, F);	
MB MDC:		MSD Aliquot (L, g, F);		Spike uncertainty calculated;		Spike uncertainty calculated;		Spike uncertainty calculated;	
MB Numerical Performance Indicator:		MS Result Counting Uncertainty (pCi/L, 9, F);		Sample Matrix Spike Result:		Sample Matrix Spike Result:		Sample Matrix Spike Result:	
MB Status vs Numerical Indicator:		MS Spike Result Counting Uncertainty (pCi/L, 9, F);		Sample Matrix Spike Duplicate Result:		MS Duplicate Result Counting Uncertainty (pCi/L, 9, F);		MS Duplicate Result Counting Uncertainty (pCi/L, 9, F);	
MB Status vs. MDC:		N/A		MS Numerical Performance Indicator:		MS Percent Recovery:		MSD Numerical Performance Indicator:	
See Comment*				MS Status vs Numerical Indicator:		MSD Percent Recovery:		MS Status vs Numerical Indicator:	
				MS Status vs Recovery:		MS Status vs Recovery:		MSD Status vs Recovery:	
Method Blank Assessment									
MB Sample I.D.: MB concentration:		11.38994 0.716		MS Aliquot (L, g, F);		MSD Aliquot (L, g, F);		MSD Status vs Recovery:	
MB Counting Uncertainty:		0.332		MS Result Counting Uncertainty (pCi/L, 9, F);		MSD Result Counting Uncertainty (pCi/L, 9, F);		MSD Status vs Recovery:	
MB MDC:		0.698		Sample Matrix Spike Result:		Sample Matrix Spike Duplicate Result:		Sample Matrix Spike Duplicate Result:	
MB Numerical Performance Indicator:		4.22		MS Spike Result Counting Uncertainty (pCi/L, 9, F);		MS Duplicate Result Counting Uncertainty (pCi/L, 9, F);		MSD Duplicate Result Counting Uncertainty (pCi/L, 9, F);	
MB Status vs Numerical Indicator:		N/A		MS Numerical Performance Indicator:		MS Percent Recovery:		MSD Numerical Performance Indicator:	
MB Status vs. MDC:		See Comment*		MS Status vs Numerical Indicator:		MSD Status vs Numerical Indicator:		MS Status vs Recovery:	
Laboratory Control Sample Assessment									
Count Date: Spike I.D.:		9/22/2016 16-025		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Spike Concentration (pCi/ml):		25.604		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Volume Used (mL):		0.20		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Aliquot Volume (L, g, F):		0.811		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Target Conc. (pCi/L, g, F):		6.316		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Uncertainty (Calculated):		0.455		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Result (pCi/L, g, F):		6.066		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		0.768		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Numerical Performance Indicator:		-0.55		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Percent Recovery:		96.04%		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Status vs Numerical Indicator:		N/A		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Status vs Recovery:		Pass		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Duplicate Sample Assessment									
Sample I.D.: Duplicate Sample I.D.: Sample Result:		30195006001 30195006001DU <sup>1</sup> 0.460		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.		Sample I.D.: Sample MS I.D.: Sample Matrix Spike Result:		Sample I.D.: Sample MS I.D.: Sample Matrix Spike Result:	
Sample Result Counting Uncertainty (pCi/L, g, F): Sample Duplicate Result (pCi/L, g, F):		0.455 2.259		MS Status vs Recovery:		MS Status vs Recovery:		MS Status vs Recovery:	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):		0.522		MSD Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Are sample and/or duplicate results below MDC?		See Below # -2.261		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Duplicate Numerical Performance Indicator:		42.96%		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Duplicate Status vs Numerical Indicator:		N/A		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	
Duplicate Status vs RPD:		Fail**		MS Status vs Recovery:		MSD Status vs Recovery:		MSD Status vs Recovery:	

### Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

\*The method blank result is below the reporting limit for this analysis and is acceptable.

\*\*Batch must be re-prepped due to unacceptable precision.



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
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### Laboratory Report

**Prepared For:**

**Georgia Power  
2480 Maner Road  
Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AZJ0743**

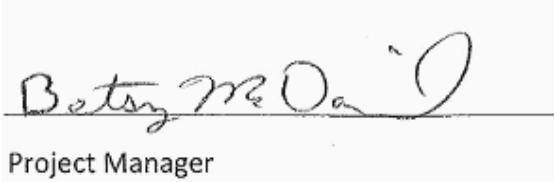
**November 07, 2016**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:



A handwritten signature in black ink, appearing to read "Betty McDaniel". Below the signature, the title "Project Manager" is printed in a small, black, sans-serif font.

This report may not be reproduced, except in full, without written approval from Pace Analytical Services, Inc.  
All test results relate only to the samples analyzed.



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
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Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
MCM-17	AZJ0743-01	Ground Water	10/25/16 16:05	10/26/16 14:20



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2480 Maner Road  
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Attention: Mr. Joju Abraham

November 07, 2016

Report No.: AZJ0743

Project: CCR Event

Client ID: MCM-17

Lab Number ID: AZJ0743-01

Date/Time Sampled: 10/25/2016 4:05:00PM

Date/Time Received: 10/26/2016 2:20:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2900	25	10	mg/L	SM 2540 C		1	10/28/16 13:30	10/28/16 13:30	6100767	JPT
<b>Inorganic Anions</b>											
Chloride	1300	12	0.70	mg/L	EPA 300.0		50	10/27/16 14:24	11/03/16 01:51	6100735	RLC
Fluoride	1.1	0.30	0.02	mg/L	EPA 300.0		1	10/27/16 14:24	10/29/16 03:56	6100735	RLC
Sulfate	84	50	2.6	mg/L	EPA 300.0		50	10/27/16 14:24	11/03/16 01:51	6100735	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Barium	0.0630	0.0100	0.0004	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Beryllium	0.0004	0.0030	0.00008	mg/L	EPA 6020B	J	1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Boron	1.73	0.100	0.0064	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Calcium	69.4	5.00	0.311	mg/L	EPA 6020B		10	10/28/16 09:30	11/02/16 16:15	6100754	CSW
Chromium	0.0160	0.0100	0.0009	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Selenium	0.0030	0.0100	0.0010	mg/L	EPA 6020B	J	1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Lithium	0.0070	0.0500	0.0021	mg/L	EPA 6020B	J	1	10/28/16 09:30	10/31/16 15:22	6100754	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/28/16 08:45	10/28/16 14:43	6100745	MTC



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November 07, 2016

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### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes					
<b>Batch 6100767 - SM 2540 C</b>																
Blank (6100767-BLK1)							Prepared & Analyzed: 10/28/16									
Total Dissolved Solids	ND	25	10	mg/L												
<b>LCS (6100767-BS1)</b>												Prepared & Analyzed: 10/28/16				
Total Dissolved Solids	382	25	10	mg/L	400.00		96	84-108								
<b>Duplicate (6100767-DUP1)</b>												Source: AZJ0743-01	Prepared & Analyzed: 10/28/16			
Total Dissolved Solids	2920	25	10	mg/L		2900			0.8	10						
<b>Duplicate (6100767-DUP2)</b>												Source: AZJ0754-01	Prepared & Analyzed: 10/28/16			
Total Dissolved Solids	3600	25	10	mg/L		3560			1	10						



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### Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
<b>Batch 6100735 - EPA 300.0</b>											
<b>Blank (6100735-BLK1)</b>											
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	ND	1.0	0.05	mg/L							
<b>LCS (6100735-BS1)</b>											
Chloride	10.1	0.25	0.01	mg/L	10.010		101	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		101	90-110			
Sulfate	10.1	1.0	0.05	mg/L	10.020		101	90-110			
<b>Matrix Spike (6100735-MS1)</b>											
Chloride	10.8	0.25	0.01	mg/L	10.010	1.17	96	90-110			
Fluoride	9.73	0.30	0.02	mg/L	10.020	0.04	97	90-110			
Sulfate	10.4	1.0	0.05	mg/L	10.020	0.74	97	90-110			
<b>Matrix Spike (6100735-MS2)</b>											
Chloride	14.1	0.25	0.01	mg/L	10.010	4.81	93	90-110			
Fluoride	9.53	0.30	0.02	mg/L	10.020	0.17	93	90-110			
Sulfate	40.1	1.0	0.05	mg/L	10.020	40.7	NR	90-110			QM-02
<b>Matrix Spike Dup (6100735-MSD1)</b>											
Chloride	11.5	0.25	0.01	mg/L	10.010	1.17	103	90-110	6	15	
Fluoride	10.6	0.30	0.02	mg/L	10.020	0.04	105	90-110	9	15	
Sulfate	11.2	1.0	0.05	mg/L	10.020	0.74	104	90-110	7	15	



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### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
<b>Batch 6100745 - EPA 7470A</b>											
<b>Blank (6100745-BLK1)</b>											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6100745-BS1)</b>											
Mercury	0.00244	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			
<b>Matrix Spike (6100745-MS1)</b>											
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125			
<b>Matrix Spike Dup (6100745-MSD1)</b>											
Mercury	0.00244	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125	0.5	20	
<b>Post Spike (6100745-PS1)</b>											
Mercury	1.70			ug/L	1.6667	0.00854	102	80-120			
<b>Batch 6100754 - EPA 3005A</b>											
<b>Blank (6100754-BLK1)</b>											
Antimony	ND	0.0030	0.0008	mg/L							
Arsenic	ND	0.0050	0.0016	mg/L							
Barium	ND	0.0100	0.0004	mg/L							
Beryllium	ND	0.0030	0.00008	mg/L							
Boron	ND	0.100	0.0064	mg/L							
Cadmium	ND	0.0010	0.00007	mg/L							
Calcium	ND	0.500	0.0311	mg/L							
Chromium	ND	0.0100	0.0009	mg/L							
Cobalt	ND	0.0100	0.0005	mg/L							
Copper	ND	0.0050	0.0005	mg/L							
Lead	ND	0.0050	0.0001	mg/L							
Molybdenum	ND	0.0100	0.0017	mg/L							
Nickel	ND	0.0050	0.0006	mg/L							
Selenium	ND	0.0100	0.0010	mg/L							
Silver	ND	0.0050	0.0005	mg/L							
Thallium	ND	0.0010	0.0002	mg/L							
Vanadium	ND	0.0100	0.0071	mg/L							
Zinc	ND	0.0100	0.0021	mg/L							
Lithium	ND	0.0500	0.0021	mg/L							



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November 07, 2016

**Report No.: AZJ0743**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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#### Batch 6100754 - EPA 3005A

LCS (6100754-BS1)	Prepared: 10/28/16 Analyzed: 10/31/16									
Antimony	0.104	0.0030	0.0008	mg/L	0.10000	104	80-120			
Arsenic	0.0981	0.0050	0.0016	mg/L	0.10000	98	80-120			
Barium	0.0998	0.0100	0.0004	mg/L	0.10000	100	80-120			
Beryllium	0.0990	0.0030	0.00008	mg/L	0.10000	99	80-120			
Boron	1.02	0.100	0.0064	mg/L	1.0000	102	80-120			
Cadmium	0.0997	0.0010	0.00007	mg/L	0.10000	100	80-120			
Calcium	1.00	0.500	0.0311	mg/L	1.0000	100	80-120			
Chromium	0.0995	0.0100	0.0009	mg/L	0.10000	99	80-120			
Cobalt	0.0981	0.0100	0.0005	mg/L	0.10000	98	80-120			
Copper	0.0960	0.0050	0.0005	mg/L	0.10000	96	80-120			
Lead	0.0998	0.0050	0.0001	mg/L	0.10000	100	80-120			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000	103	80-120			
Nickel	0.0975	0.0050	0.0006	mg/L	0.10000	98	80-120			
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	103	80-120			
Silver	0.103	0.0050	0.0005	mg/L	0.10000	103	80-120			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	102	80-120			
Vanadium	0.0975	0.0100	0.0071	mg/L	0.10000	98	80-120			
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	106	80-120			
Lithium	0.101	0.0500	0.0021	mg/L	0.10000	101	80-120			

Matrix Spike (6100754-MS1)	Source: AZJ0710-07						Prepared: 10/28/16 Analyzed: 10/31/16			
Antimony	0.107	0.0030	0.0008	mg/L	0.10000	ND	107	75-125		
Arsenic	0.0981	0.0050	0.0016	mg/L	0.10000	ND	98	75-125		
Barium	0.128	0.0100	0.0004	mg/L	0.10000	0.0271	101	75-125		
Beryllium	0.0975	0.0030	0.00008	mg/L	0.10000	0.00009	97	75-125		
Boron	1.04	0.100	0.0064	mg/L	1.0000	ND	104	75-125		
Cadmium	0.0988	0.0010	0.00007	mg/L	0.10000	0.0001	99	75-125		
Calcium	32.3	2.50	0.155	mg/L	1.0000	30.2	208	75-125	QM-02	
Chromium	0.107	0.0100	0.0009	mg/L	0.10000	ND	107	75-125		
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125		
Copper	0.0968	0.0050	0.0005	mg/L	0.10000	ND	97	75-125		
Lead	0.100	0.0050	0.0001	mg/L	0.10000	0.0001	100	75-125		
Molybdenum	0.107	0.0100	0.0017	mg/L	0.10000	ND	107	75-125		
Nickel	0.100	0.0050	0.0006	mg/L	0.10000	0.0006	100	75-125		
Selenium	0.102	0.0100	0.0010	mg/L	0.10000	ND	102	75-125		
Silver	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125		
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	ND	104	75-125		
Vanadium	0.107	0.0100	0.0071	mg/L	0.10000	ND	107	75-125		
Zinc	0.146	0.0100	0.0021	mg/L	0.10000	0.0402	105	75-125		
Lithium	0.102	0.0500	0.0021	mg/L	0.10000	ND	102	75-125		



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 2016

**Report No.: AZJ0743**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
---------	--------	----	-----	-------	-------------	---------------	------	-------------	---------	-----------	-------

#### Batch 6100754 - EPA 3005A

Matrix Spike Dup (6100754-MSD1)		Source: AZJ0710-07			Prepared: 10/28/16 Analyzed: 10/31/16						
Antimony	0.104	0.0030	0.0008	mg/L	0.10000	ND	104	75-125	2	20	
Arsenic	0.0989	0.0050	0.0016	mg/L	0.10000	ND	99	75-125	0.9	20	
Barium	0.129	0.0100	0.0004	mg/L	0.10000	0.0271	101	75-125	0.4	20	
Beryllium	0.0954	0.0030	0.00008	mg/L	0.10000	0.00009	95	75-125	2	20	
Boron	0.985	0.100	0.0064	mg/L	1.0000	ND	99	75-125	5	20	
Cadmium	0.0995	0.0010	0.00007	mg/L	0.10000	0.0001	99	75-125	0.7	20	
Calcium	32.2	2.50	0.155	mg/L	1.0000	30.2	197	75-125	0.4	20	QM-02
Chromium	0.106	0.0100	0.0009	mg/L	0.10000	ND	106	75-125	1	20	
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	1	20	
Copper	0.0990	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	2	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	0.0001	100	75-125	0.3	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	0.8	20	
Nickel	0.102	0.0050	0.0006	mg/L	0.10000	0.0006	101	75-125	1	20	
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	0.9	20	
Silver	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125	0.1	20	
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	ND	104	75-125	0.005	20	
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125	1	20	
Zinc	0.149	0.0100	0.0021	mg/L	0.10000	0.0402	109	75-125	3	20	
Lithium	0.0977	0.0500	0.0021	mg/L	0.10000	ND	98	75-125	5	20	

Post Spike (6100754-PS1)		Source: AZJ0710-07			Prepared: 10/28/16 Analyzed: 10/31/16		
Antimony	97.4		ug/L	100.00	0.314	97	80-120
Arsenic	102		ug/L	100.00	0.144	102	80-120
Barium	125		ug/L	100.00	27.1	97	80-120
Beryllium	101		ug/L	100.00	0.0908	101	80-120
Boron	1020		ug/L	1000.0	6.19	101	80-120
Cadmium	101		ug/L	100.00	0.113	101	80-120
Calcium	32400		ug/L	1000.0	30200	220	80-120
Chromium	103		ug/L	100.00	0.860	102	80-120
Cobalt	100		ug/L	100.00	0.0677	100	80-120
Copper	95.2		ug/L	100.00	0.178	95	80-120
Lead	98.2		ug/L	100.00	0.145	98	80-120
Molybdenum	105		ug/L	100.00	0.161	105	80-120
Nickel	95.9		ug/L	100.00	0.590	95	80-120
Selenium	105		ug/L	100.00	0.123	105	80-120
Silver	103		ug/L	100.00	0.0110	103	80-120
Thallium	102		ug/L	100.00	0.0377	102	80-120
Vanadium	103		ug/L	100.00	0.451	102	80-120
Zinc	143		ug/L	100.00	40.2	103	80-120
Lithium	103		ug/L	100.00	0.622	103	80-120



## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 07, 2016

## Legend

### Definition of Laboratory Terms

<b>ND</b>	- Not Detected at levels equal to or greater than the MDL
<b>BRL</b>	- Not Detected at levels equal to or greater than the RL
<b>RL</b>	- Reporting Limit <b>MDL</b> - Method Detection Limit
<b>SOP</b>	- Method run per Pace Standard Operating Procedure
<b>CFU</b>	- Colony Forming Units
<b>DF</b>	- Dilution Factor <b>TIC</b> - Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

- QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.
- J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

**Note: Unless otherwise noted, all results are reported on an as received basis.**





## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### LOG-IN CHECKLIST

Printed: 11/7/2016 3:50:31PM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 10/26/16 14:20

**Work Order:** AZJ0743  
**Logged In By:** Mohammad M. Rahman

### OBSERVATIONS

<b>#Samples:</b> 1	<b>#Containers:</b> 3	
<b>Minimum Temp(C):</b> 1.0	<b>Maximum Temp(C):</b> 1.0	<b>Custody Seal(s) Used:</b> N/A

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	NO
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

**Comments:**

November 30, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant McManus  
Pace Project No.: 30200748

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on October 27, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
Project Manager

Enclosures



#### **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## CERTIFICATIONS

Project: Plant McManus  
 Pace Project No.: 30200748

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
 L-A-B DOD-ELAP Accreditation #: L2417  
 Alabama Certification #: 41590  
 Arizona Certification #: AZ0734  
 Arkansas Certification  
 California Certification #: 04222CA  
 Colorado Certification  
 Connecticut Certification #: PH-0694  
 Delaware Certification  
 Florida/TNI Certification #: E87683  
 Georgia Certification #: C040  
 Guam Certification  
 Hawaii Certification  
 Idaho Certification  
 Illinois Certification  
 Indiana Certification  
 Iowa Certification #: 391  
 Kansas/TNI Certification #: E-10358  
 Kentucky Certification #: 90133  
 Louisiana DHH/TNI Certification #: LA140008  
 Louisiana DEQ/TNI Certification #: 4086  
 Maine Certification #: PA00091  
 Maryland Certification #: 308  
 Massachusetts Certification #: M-PA1457  
 Michigan/PADEP Certification  
 Missouri Certification #: 235

Montana Certification #: Cert 0082  
 Nebraska Certification #: NE-05-29-14  
 Nevada Certification #: PA014572015-1  
 New Hampshire/TNI Certification #: 2976  
 New Jersey/TNI Certification #: PA 051  
 New Mexico Certification #: PA01457  
 New York/TNI Certification #: 10888  
 North Carolina Certification #: 42706  
 North Dakota Certification #: R-190  
 Oregon/TNI Certification #: PA200002  
 Pennsylvania/TNI Certification #: 65-00282  
 Puerto Rico Certification #: PA01457  
 Rhode Island Certification #: 65-00282  
 South Dakota Certification  
 Tennessee Certification #: TN2867  
 Texas/TNI Certification #: T104704188-14-8  
 Utah/TNI Certification #: PA014572015-5  
 USDA Soil Permit #: P330-14-00213  
 Vermont Dept. of Health: ID# VT-0282  
 Virgin Island/PADEP Certification  
 Virginia/VELAP Certification #: 460198  
 Washington Certification #: C868  
 West Virginia DEP Certification #: 143  
 West Virginia DHHR Certification #: 9964C  
 Wisconsin Certification  
 Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus  
Pace Project No.: 30200748

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30200748001	MCM-17	Water	10/25/16 16:05	10/27/16 09:30

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus  
Pace Project No.: 30200748

Lab ID	Sample ID	Method	Analysts	Analytics Reported
30200748001	MCM-17	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30200748

**Sample: MCM-17**      Lab ID: **30200748001**      Collected: 10/25/16 16:05      Received: 10/27/16 09:30      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.865 ± 0.464 (0.691)</b> C:88% T:NA	pCi/L	11/09/16 07:10	13982-63-3	
Radium-228	EPA 9320	<b>1.35 ± 0.553 (0.860)</b> C:59% T:87%	pCi/L	11/28/16 15:24	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.22 ± 1.02 (1.55)</b>	pCi/L	11/29/16 16:28	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30200748

---

QC Batch: 239219 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 30200748001

---

METHOD BLANK: 1175537 Matrix: Water

Associated Lab Samples: 30200748001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0202 ± 0.0834 (0.245) C:99% T:NA	pCi/L	11/09/16 07:10	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30200748

---

QC Batch: 239882 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 30200748001

---

METHOD BLANK: 1178558 Matrix: Water

Associated Lab Samples: 30200748001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.610 ± 0.398 (0.756) C:82% T:76%	pCi/L	11/28/16 15:21	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus  
Pace Project No.: 30200748

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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WO# : 30200748

## Chain of Custody



Workorder: AZJ0743

Workorder Name: Plant McManus

Results Requested By: 11/28/2016

Report To:

Subcontract To:

Requested Analysis

Betsy McDaniel  
 Pace Analytical Atlanta  
 110 Technology Parkway  
 Peachtree Corners, GA 30092  
 Phone (770)-734-4200

Pace - Pittsburgh  
 1638 Roseytown Road  
 Stes. 2,3,4  
 Greensburg, PA 15601  
 Phone (724) 850-5600

Preserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	ON	OFF	LAB USE ONLY
1	MCM-17	G	10/25/2016 16:05	AZJ0743-01	GW	1	X	OC1
2								
3								
4								
5								
6								
7								
8								
9								
10								
Transfers	Released By	Date/Time	Received By		Date/Time	Comments		
1								
2								
3								

Cooler Temperature on Receipt °C

Received on Ice Y or N

Sample Intact Y or N

Results Requested By: 11/28/2016

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

*Pace Analytical®*  
www.pacelets.com

**CHAIN OF CUSTODY RECORD**

Pace Analytical Services, Inc.  
110 TECHNOLOGY PARK  
(770) 734-4200 : FAX (770) 7

30200748

PEACHTREE CORNERS, GA 30092  
1110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
FAX (770) 734-4201  
(770) 734-4200

PAGE 1

# Sample Condition Upon Receipt Pittsburgh



Client Name: Pace Georgia Project # 30200748

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: 1081251000599

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

Thermometer Used N/A

Type of Ice: Wet Blue None

Cooler Temperature Observed Temp N/A °C Correction Factor: N/A °C Final Temp: N/A °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KCH 10-27-16

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:	✓			4.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:				5. <u>N/A</u>
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used: -Pace Containers Used:	✓			10.
Containers Intact:	✓			11.
Filtered volume received for Dissolved tests			✓	12.
All containers needing preservation have been checked.	✓			13. <u>PH&lt;2</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	✓			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>KCH</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	14.
Trip Blank Present:			✓	15.
Trip Blank Custody Seals Present			✓	
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed: <u>KCH</u> Date: <u>10-27-16</u>

## Client Notification/ Resolution:

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

Comments/ Resolution:

---



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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.



## Quality Control Sample Performance Assessment

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

*Analyst Must Manually Enter All Fields Highlighted in Yellow.*

Test: Ra-226  
Analyst: JC22  
Date: 11/8/2016  
Worklist: 32294  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1175537
MB concentration:	-0.020
M/B Counting Uncertainty:	0.083
MB MC:	0.245
MB Numerical Performance Indicator:	-0.47
MB Status vs Numerical Indicator:	N/A
MB Status vs. MC:	Pass

Laboratory Control Sample Assessment	
LCSD (Y or N)?	N
Count Date:	LCS32284
Spike I.D.:	11/9/2016
Spike Concentration (pCi/l/ml):	16.026
Volume Used (ml):	44.675
Aliquot Volume (L, g, F):	0.10
Target Conc. (pCi/L, g, F):	0.506
Uncertainty (Calculated):	8.836
Uncertainty (Calculated):	0.416
Result (pCi/L, g, F):	7.443
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.860
Numerical Performance Indicator:	-2.86
Percent Recovery:	84.23%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass

### Duplicate Sample Assessment

Duplicate Sample Assessment	
Sample I.D.:	30200745001
Duplicate Sample I.D.:	30200745001DUP
Sample Result (pCi/L, g, F):	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample Result Counting Uncertainty (pCi/L, g, F):	0.927
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.287
Are sample and/or duplicate results below MDC?	1.134
See Below #:	0.354
Duplicate Numerical Performance Indicator:	-0.917
Duplicate RPD:	20.13%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Sample Matrix Spike Control Assessment	
Sample Collection Date:	
Sample I.D.:	
Sample MS I.D.:	
Spike I.D.:	
MS/MSD Decay Corrected Spike Concentration (pCi/ml):	
Spike Volume Used in MS (mL):	
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	
MS Target Conc (pCi/L, g, F):	
MSD Aliquot (L, g, F):	
MSD Target Conc. (pCi/L, g, F):	
Spike uncertainty (calculated):	
Sample Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
MS Numerical Performance Indicator:	
MS Numerical Performance Indicator:	
MS Percent Recovery:	
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	
MS Status vs Numerical Indicator:	
MS Status vs Recovery:	
MSD Status vs Recovery:	



## Quality Control Sample Performance Assessment

*Analyst Must Manually Enter All Fields Highlighted in Yellow.*

Method Blank Assessment		Sample Matrix Spike Control Assessment		Sample Collection Date:	
Test:	Ra-228			Sample I.D.	Sample MS I.D.
Analyst:	JLW			Sample MSD I.D.	Sample MSD I.D.
Date:	11/22/2016			Spike I.D.:	Spike I.D.:
Worklist:	32406			MS/MSD Decay Corrected Spike Concentration (pCi/mL);	MS/MSD Decay Corrected Spike Concentration (pCi/mL);
Matrix:	DW			Spike Volume Used in MS (mL);	Spike Volume Used in MS (mL);
MB Sample ID:	1178558			Spike Volume Used in MSD (mL);	Spike Volume Used in MSD (mL);
MB Concentration:	0.610			MS Aliquot (L, g, F);	MS Aliquot (L, g, F);
M/B Counting Uncertainty:	0.383			MS Target Conc. (pCi/L, g, F);	MS Target Conc. (pCi/L, g, F);
MB MDC:	0.756			MSD Aliquot (L, g, F);	MSD Aliquot (L, g, F);
MB Numerical Performance Indicator:	3.12			MSD Target Conc. (pCi/L, g, F);	MSD Target Conc. (pCi/L, g, F);
MB Status vs Numerical Indicator:	N/A			Spike uncertainty (calculated);	Spike uncertainty (calculated);
MB Status vs. MDC:	Pass			Sample Result Counting Uncertainty (pCi/L, g, F);	Sample Result Counting Uncertainty (pCi/L, g, F);
Laboratory Control Sample Assessment		LCS/LCSD Assessment		Sample Matrix Spike Duplicate Sample Assessment	
Count Date:	11/28/2016	LCS32406	N	Sample Matrix Spike Result:	Sample Matrix Spike Result:
Spike I.D.:	16-027	LCS32406		Matrix Spike Result Counting Uncertainty (pCi/L, g, F);	Matrix Spike Result Counting Uncertainty (pCi/L, g, F);
Spike Concentration (pCi/mL):	25.962			Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F);	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F);
Volume Used (mL):	0.20			MS Numerical Performance Indicator:	MS Numerical Performance Indicator:
Aliquot Volume (L, g, F):	0.813			MSD Numerical Performance Indicator:	MSD Numerical Performance Indicator:
Target Conc. (pCi/L, g, F):	6.385			MS Percent Recovery:	MS Percent Recovery:
Uncertainty (Calculated):	0.460			MS Status vs Numerical Indicator:	MS Status vs Numerical Indicator:
Result (pCi/L, g, F):	8.119			MSD Status vs Numerical Indicator:	MSD Status vs Numerical Indicator:
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.744			MS Status vs Recovery:	MS Status vs Recovery:
Numerical Performance Indicator:	3.89			MSD Status vs Numerical Indicator:	MSD Status vs Numerical Indicator:
Percent Recovery:	127.15%				
Status vs Numerical Indicator:	N/A				
Status vs Recovery:	Pass				
Duplicate Sample Assessment		Matrix Spike Duplicate Sample Assessment		<i>[Handwritten Signature]</i>	
Sample I.D.:	30200749001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below:		Sample I.D.	Sample I.D.
Duplicate Sample I.D.:	30200749001DUP			Sample MS I.D.	Sample MS I.D.
Sample Result (pCi/L, g, F):	1.763			Sample MSD I.D.	Sample MSD I.D.
Sample Result Counting Uncertainty (pCi/L, g, F):	0.390			Sample Matrix Spike Result:	Sample Matrix Spike Result:
Sample Duplicate Result (pCi/L, g, F):	2.026			Matrix Spike Result Counting Uncertainty (pCi/L, g, F);	Matrix Spike Result Counting Uncertainty (pCi/L, g, F);
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.427	See Below ##		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F);	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F);
Are sample and/or duplicate results below MDC?				Duplicate Numerical Performance Indicator:	Duplicate Numerical Performance Indicator:
Duplicate Numerical Performance Indicator:	-0.892			(Based on the Percent Recoveries) MS/MSD Duplicate RPD:	(Based on the Percent Recoveries) MS/MSD Duplicate RPD:
Duplicate Status vs Numerical Indicator:	13.88%			MS/MSD Duplicate Status vs Numerical Indicator:	MS/MSD Duplicate Status vs Numerical Indicator:
Duplicate Status vs RPD:	N/A				

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

**Prepared For:**

**Georgia Power  
2480 Maner Road  
Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AZL0033**

**December 14, 2016**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

A handwritten signature in black ink, appearing to read "Betty McManus".

Project Manager

This report may not be reproduced, except in full, without written approval from Pace Analytical Services, LLC.  
All test results relate only to the samples analyzed.



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MCM-14	AZL0033-01	Ground Water	11/30/16 13:00	12/01/16 14:15
MCM-06	AZL0033-02	Ground Water	11/30/16 15:07	12/01/16 14:15
MCM-07	AZL0033-03	Ground Water	11/30/16 14:10	12/01/16 14:15
MCM-17	AZL0033-04	Ground Water	11/30/16 11:23	12/01/16 14:15
MCM-09	AZL0033-05	Ground Water	11/30/16 09:52	12/01/16 14:15
FBL113016	AZL0033-06	Water	11/30/16 16:10	12/01/16 14:15
EQBL113016	AZL0033-07	Water	11/30/16 16:20	12/01/16 14:15
Dup-1	AZL0033-08	Ground Water	11/30/16 00:00	12/01/16 14:15
MCM-12	AZL0033-09	Ground Water	11/30/16 10:20	12/01/16 14:15
MCM-01	AZL0033-10	Ground Water	11/30/16 13:00	12/01/16 14:15
MCM-16	AZL0033-11	Ground Water	11/30/16 14:00	12/01/16 14:15
MCM-05	AZL0033-12	Ground Water	11/30/16 15:20	12/01/16 14:15



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: MCM-14

Lab Number ID: AZL0033-01

Date/Time Sampled: 11/30/2016 1:00:00PM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1050	25	10	mg/L	SM 2540 C	B-01	1	12/02/16 12:35	12/02/16 12:35	6120057	JPT
<b>Inorganic Anions</b>											
Chloride	310	2.5	0.14	mg/L	EPA 300.0		10	12/02/16 16:34	12/12/16 13:36	6120091	RLC
Fluoride	0.49	0.30	0.02	mg/L	EPA 300.0		1	12/02/16 16:34	12/10/16 20:07	6120091	RNB
Sulfate	4.5	1.0	0.05	mg/L	EPA 300.0		1	12/02/16 16:34	12/10/16 20:07	6120091	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:01	6120022	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:01	6120022	CSW
Barium	0.0105	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:01	6120022	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	12/02/16 08:55	12/06/16 12:50	6120022	CSW
Boron	0.565	0.200	0.0321	mg/L	EPA 6020B		5	12/02/16 08:55	12/06/16 12:50	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:01	6120022	CSW
Calcium	33.2	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/02/16 08:55	12/06/16 12:50	6120022	CSW
Chromium	0.0016	0.0100	0.0009	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 16:01	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:01	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:01	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:01	6120022	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:01	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:01	6120022	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B	R-01	5	12/02/16 08:55	12/06/16 12:50	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:34	6120036	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: MCM-06

Lab Number ID: AZL0033-02

Date/Time Sampled: 11/30/2016 3:07:00PM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3950	25	10	mg/L	SM 2540 C	B-01	1	12/02/16 12:35	12/02/16 12:35	6120057	JPT
<b>Inorganic Anions</b>											
Chloride	2100	25	1.4	mg/L	EPA 300.0		100	12/02/16 16:34	12/12/16 13:57	6120091	RLC
Fluoride	0.61	0.30	0.02	mg/L	EPA 300.0		1	12/02/16 16:34	12/10/16 20:49	6120091	RNB
Sulfate	19	1.0	0.05	mg/L	EPA 300.0		1	12/02/16 16:34	12/10/16 20:49	6120091	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:30	6120022	CSW
Arsenic	0.129	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 18:37	6120022	CSW
Barium	0.0528	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:30	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 18:37	6120022	CSW
Boron	0.637	0.0400	0.0064	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:30	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 18:37	6120022	CSW
Calcium	68.7	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 12:56	6120022	CSW
Chromium	ND	0.0500	0.0047	mg/L	EPA 6020B	R-01	5	12/02/16 08:55	12/07/16 14:52	6120022	CSW
Cobalt	0.0009	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/06/16 18:37	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:30	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:30	6120022	CSW
Selenium	0.0054	0.0500	0.0050	mg/L	EPA 6020B	R-01, J	5	12/02/16 08:55	12/07/16 14:52	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:30	6120022	CSW
Lithium	0.0303	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 16:30	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:36	6120036	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: MCM-07

Lab Number ID: AZL0033-03

Date/Time Sampled: 11/30/2016 2:10:00PM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4680	25	10	mg/L	SM 2540 C	B-01	1	12/02/16 12:35	12/02/16 12:35	6120057	JPT
<b>Inorganic Anions</b>											
Chloride	2800	25	1.4	mg/L	EPA 300.0		100	12/02/16 16:34	12/12/16 14:19	6120091	RLC
Fluoride	0.99	0.30	0.02	mg/L	EPA 300.0		1	12/02/16 16:34	12/10/16 21:31	6120091	RNB
Sulfate	240	5.0	0.26	mg/L	EPA 300.0		5	12/02/16 16:34	12/10/16 21:10	6120091	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:35	6120022	CSW
Arsenic	0.0281	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 18:45	6120022	CSW
Barium	0.101	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:35	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 18:45	6120022	CSW
Boron	0.804	0.0400	0.0064	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:35	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 18:45	6120022	CSW
Calcium	103	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 13:01	6120022	CSW
Chromium	ND	0.0500	0.0047	mg/L	EPA 6020B	R-01	5	12/02/16 08:55	12/07/16 14:58	6120022	CSW
Cobalt	0.0011	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/06/16 18:45	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:35	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:35	6120022	CSW
Selenium	ND	0.0500	0.0050	mg/L	EPA 6020B	R-01	5	12/02/16 08:55	12/07/16 14:58	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:35	6120022	CSW
Lithium	0.0110	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 16:35	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:38	6120036	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: MCM-17

Lab Number ID: AZL0033-04

Date/Time Sampled: 11/30/2016 11:23:00AM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3970	25	10	mg/L	SM 2540 C	B-01	1	12/02/16 12:35	12/02/16 12:35	6120057	JPT
<b>Inorganic Anions</b>											
Chloride	400	5.0	0.28	mg/L	EPA 300.0		20	12/02/16 16:34	12/12/16 18:07	6120091	RLC
Fluoride	1.3	0.30	0.02	mg/L	EPA 300.0		1	12/02/16 16:34	12/10/16 08:06	6120091	RNB
Sulfate	52	5.0	0.26	mg/L	EPA 300.0		5	12/02/16 16:34	12/10/16 07:44	6120091	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:41	6120022	CSW
Arsenic	0.0072	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 18:52	6120022	CSW
Barium	0.0628	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:41	6120022	CSW
Beryllium	0.0003	0.0030	0.00008	mg/L	EPA 6020B	B-01, J	1	12/02/16 08:55	12/06/16 18:52	6120022	CSW
Boron	2.12	0.200	0.0321	mg/L	EPA 6020B		5	12/02/16 08:55	12/05/16 16:58	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 18:52	6120022	CSW
Calcium	83.9	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 13:07	6120022	CSW
Chromium	0.0151	0.0500	0.0047	mg/L	EPA 6020B	R-01, J	5	12/02/16 08:55	12/07/16 15:04	6120022	CSW
Cobalt	0.0007	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/06/16 18:52	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:41	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:41	6120022	CSW
Selenium	0.0087	0.0500	0.0050	mg/L	EPA 6020B	R-01, J	5	12/02/16 08:55	12/07/16 15:04	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:41	6120022	CSW
Lithium	0.0086	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 16:41	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:41	6120036	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: MCM-09

Lab Number ID: AZL0033-05

Date/Time Sampled: 11/30/2016 9:52:00AM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3590	25	10	mg/L	SM 2540 C	B-01	1	12/02/16 12:35	12/02/16 12:35	6120057	JPT
<b>Inorganic Anions</b>											
Chloride	1900	12	0.70	mg/L	EPA 300.0		50	12/02/16 16:34	12/12/16 16:24	6120091	RLC
Fluoride	0.14	0.30	0.02	mg/L	EPA 300.0	J	1	12/02/16 16:34	12/10/16 08:48	6120091	RNB
Sulfate	500	20	1.0	mg/L	EPA 300.0		20	12/02/16 16:34	12/10/16 08:27	6120091	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:47	6120022	CSW
Arsenic	0.0050	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/06/16 19:01	6120022	CSW
Barium	0.234	0.0500	0.0022	mg/L	EPA 6020B		5	12/02/16 08:55	12/06/16 18:30	6120022	CSW
Beryllium	0.0001	0.0030	0.00008	mg/L	EPA 6020B	B-01, J	1	12/02/16 08:55	12/06/16 19:01	6120022	CSW
Boron	0.0648	0.0400	0.0064	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:47	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 19:01	6120022	CSW
Calcium	292	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 13:12	6120022	CSW
Chromium	ND	0.0500	0.0047	mg/L	EPA 6020B	R-01	5	12/02/16 08:55	12/07/16 15:10	6120022	CSW
Cobalt	0.0009	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/06/16 19:01	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:47	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:47	6120022	CSW
Selenium	0.0051	0.0500	0.0050	mg/L	EPA 6020B	R-01, J	5	12/02/16 08:55	12/07/16 15:10	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:47	6120022	CSW
Lithium	0.0385	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 16:47	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 14:19	6120161	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: FBL113016

Lab Number ID: AZL0033-06

Date/Time Sampled: 11/30/2016 4:10:00PM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	12/06/16 12:00	12/06/16 12:00	6120123	DJS
<b>Inorganic Anions</b>											
Chloride	0.10	0.25	0.01	mg/L	EPA 300.0	J	1	12/02/16 16:34	12/12/16 17:46	6120091	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	12/02/16 16:34	12/12/16 17:46	6120091	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	12/02/16 16:34	12/12/16 17:46	6120091	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:53	6120022	CSW
Arsenic	0.0022	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/06/16 19:09	6120022	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:53	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 19:09	6120022	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:53	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 19:09	6120022	CSW
Calcium	0.0338	0.500	0.0311	mg/L	EPA 6020B	B-01, J	1	12/02/16 08:55	12/05/16 16:53	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/07/16 15:15	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 19:09	6120022	CSW
Lead	0.0009	0.0050	0.0001	mg/L	EPA 6020B	B-01, J	1	12/02/16 08:55	12/05/16 16:53	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:53	6120022	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/02/16 08:55	12/06/16 19:09	6120022	CSW
Thallium	0.0007	0.0010	0.0002	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 16:53	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 16:53	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 14:21	6120161	MTC



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: EQBL113016

Lab Number ID: AZL0033-07

Date/Time Sampled: 11/30/2016 4:20:00PM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	23	25	10	mg/L	SM 2540 C	B-01, J	1	12/02/16 12:35	12/02/16 12:35	6120057	JPT
<b>Inorganic Anions</b>											
Chloride	0.08	0.25	0.01	mg/L	EPA 300.0	J	1	12/02/16 16:34	12/03/16 02:34	6120091	RNB
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	12/02/16 16:34	12/10/16 09:30	6120091	RNB
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	12/02/16 16:34	12/03/16 02:34	6120091	RNB
<b>Metals, Total</b>											
Antimony	0.0011	0.0030	0.0008	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Boron	0.0085	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Cadmium	0.0005	0.0010	0.00007	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:52	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 14:24	6120161	MTC



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Environmental Monitoring & Laboratory Analysis  
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(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AZL0033-08

Date/Time Sampled: 11/30/2016 12:00:00AM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1910	25	10	mg/L	SM 2540 C	B-01	1	12/02/16 12:35	12/02/16 12:35	6120057	JPT
<b>Inorganic Anions</b>											
Chloride	770	6.2	0.35	mg/L	EPA 300.0		25	12/02/16 16:34	12/12/16 17:26	6120091	RLC
Fluoride	1.3	0.30	0.02	mg/L	EPA 300.0		1	12/02/16 16:34	12/10/16 10:13	6120091	RNB
Sulfate	5.7	1.0	0.05	mg/L	EPA 300.0		1	12/02/16 16:34	12/03/16 02:56	6120091	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Barium	0.114	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Beryllium	0.0004	0.0030	0.00008	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Boron	1.34	0.200	0.0321	mg/L	EPA 6020B		5	12/06/16 09:50	12/08/16 14:55	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Calcium	8.52	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 14:55	6120087	CSW
Chromium	0.0104	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Selenium	0.0016	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Lithium	0.0112	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 00:58	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 14:26	6120161	MTC



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: MCM-12

Lab Number ID: AZL0033-09

Date/Time Sampled: 11/30/2016 10:20:00AM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1910	25	10	mg/L	SM 2540 C	B-01	1	12/02/16 12:35	12/02/16 12:35	6120057	JPT
<b>Inorganic Anions</b>											
Chloride	760	5.0	0.28	mg/L	EPA 300.0		20	12/02/16 16:34	12/12/16 16:44	6120091	RLC
Fluoride	1.4	0.30	0.02	mg/L	EPA 300.0		1	12/02/16 16:34	12/10/16 10:55	6120091	RNB
Sulfate	7.6	1.0	0.05	mg/L	EPA 300.0		1	12/02/16 16:34	12/03/16 03:18	6120091	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Barium	0.121	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Beryllium	0.0004	0.0030	0.00008	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Boron	1.30	0.200	0.0321	mg/L	EPA 6020B		5	12/06/16 09:50	12/08/16 02:47	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Calcium	8.69	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 02:47	6120087	CSW
Chromium	0.0073	0.0100	0.0009	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Selenium	0.0023	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Lithium	0.0106	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:04	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 14:33	6120161	MTC



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: MCM-01

Lab Number ID: AZL0033-10

Date/Time Sampled: 11/30/2016 1:00:00PM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	131	25	10	mg/L	SM 2540 C	B-01	1	12/02/16 12:35	12/02/16 12:35	6120057	JPT
<b>Inorganic Anions</b>											
Chloride	19	0.25	0.01	mg/L	EPA 300.0		1	12/02/16 16:34	12/03/16 03:40	6120091	RNB
Fluoride	0.04	0.30	0.02	mg/L	EPA 300.0	J	1	12/02/16 16:34	12/10/16 13:24	6120091	RNB
Sulfate	33	1.0	0.05	mg/L	EPA 300.0		1	12/02/16 16:34	12/03/16 03:40	6120091	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Arsenic	0.0018	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Barium	0.0524	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Boron	0.0334	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Calcium	10.8	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 15:01	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Selenium	0.0011	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:10	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 14:35	6120161	MTC



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: MCM-16

Lab Number ID: AZL0033-11

Date/Time Sampled: 11/30/2016 2:00:00PM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	111	25	10	mg/L	SM 2540 C	B-01	1	12/02/16 12:35	12/02/16 12:35	6120057	JPT
<b>Inorganic Anions</b>											
Chloride	27	0.25	0.01	mg/L	EPA 300.0		1	12/02/16 16:34	12/03/16 04:02	6120091	RNB
Fluoride	0.18	0.30	0.02	mg/L	EPA 300.0	J	1	12/02/16 16:34	12/10/16 13:45	6120091	RNB
Sulfate	26	1.0	0.05	mg/L	EPA 300.0		1	12/02/16 16:34	12/03/16 04:02	6120091	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Barium	0.110	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Beryllium	0.0002	0.0030	0.00008	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Boron	0.0964	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Calcium	4.87	0.500	0.0311	mg/L	EPA 6020B	B-01	1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Chromium	0.0010	0.0100	0.0009	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Selenium	0.0011	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:15	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 14:38	6120161	MTC



# PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

Report No.: AZL0033

Project: CCR Event

Client ID: MCM-05

Lab Number ID: AZL0033-12

Date/Time Sampled: 11/30/2016 3:20:00PM

Date/Time Received: 12/1/2016 2:15:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4030	25	10	mg/L	SM 2540 C	B-01	1	12/02/16 12:35	12/02/16 12:35	6120057	JPT
<b>Inorganic Anions</b>											
Chloride	1100	6.2	0.35	mg/L	EPA 300.0		25	12/02/16 16:34	12/10/16 14:06	6120091	RNB
Fluoride	0.93	0.30	0.02	mg/L	EPA 300.0		1	12/02/16 16:34	12/10/16 14:27	6120091	RNB
Sulfate	63	25	1.3	mg/L	EPA 300.0		25	12/02/16 16:34	12/10/16 14:06	6120091	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Arsenic	0.0132	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Barium	0.0168	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Boron	0.529	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Calcium	71.7	5.00	0.311	mg/L	EPA 6020B	B-01	10	12/06/16 09:50	12/08/16 15:07	6120087	CSW
Chromium	0.0012	0.0100	0.0009	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Selenium	0.0023	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Lithium	0.0333	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 01:32	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 14:40	6120161	MTC



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0033**

### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 6120057 - SM 2540 C

Blank (6120057-BLK1)							Prepared & Analyzed: 12/02/16			
Total Dissolved Solids	16	25	10	mg/L						B-01, J
LCS (6120057-BS1)							Prepared & Analyzed: 12/02/16			
Total Dissolved Solids	419	25	10	mg/L	400.00		105	84-108		
Duplicate (6120057-DUP1)							Prepared & Analyzed: 12/02/16			
Total Dissolved Solids	4020	25	10	mg/L		3970			1	10
Duplicate (6120057-DUP2)							Prepared & Analyzed: 12/02/16			
Total Dissolved Solids	37	25	10	mg/L		66			56	10
										B-01, QR-03

#### Batch 6120123 - SM 2540 C

Blank (6120123-BLK1)							Prepared & Analyzed: 12/06/16			
Total Dissolved Solids	ND	25	10	mg/L						
LCS (6120123-BS1)							Prepared & Analyzed: 12/06/16			
Total Dissolved Solids	395	25	10	mg/L	400.00		99	84-108		
Duplicate (6120123-DUP1)							Prepared & Analyzed: 12/06/16			
Total Dissolved Solids	231	25	10	mg/L		269			15	10
Duplicate (6120123-DUP2)							Prepared & Analyzed: 12/06/16			
Total Dissolved Solids	217	25	10	mg/L		214			1	10
Duplicate (6120123-DUP3)							Prepared & Analyzed: 12/06/16			
Total Dissolved Solids	ND	25	10	mg/L		ND				10



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### Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120091 - EPA 300.0</b>											
<b>Blank (6120091-BLK1)</b>											
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	ND	1.0	0.05	mg/L							
<b>LCS (6120091-BS1)</b>											
Chloride	9.94	0.25	0.01	mg/L	10.010		99	90-110			
Fluoride	10.3	0.30	0.02	mg/L	10.020		102	90-110			
Sulfate	9.90	1.0	0.05	mg/L	10.020		99	90-110			
<b>Matrix Spike (6120091-MS1)</b>											
					<b>Source: AZL0002-02</b>						
Chloride	171	0.25	0.01	mg/L	10.010	178	NR	90-110			QM-02
Fluoride	10.3	0.30	0.02	mg/L	10.020	0.04	103	90-110			
Sulfate	136	1.0	0.05	mg/L	10.020	140	NR	90-110			QM-02
<b>Matrix Spike (6120091-MS2)</b>											
					<b>Source: AZL0037-01</b>						
Chloride	51.6	0.25	0.01	mg/L	10.010	47.8	39	90-110			QM-02
Fluoride	9.95	0.30	0.02	mg/L	10.020	0.04	99	90-110			
Sulfate	57.9	1.0	0.05	mg/L	10.020	53.6	43	90-110			QM-02
<b>Matrix Spike Dup (6120091-MSD1)</b>											
					<b>Source: AZL0002-02</b>						
Chloride	170	0.25	0.01	mg/L	10.010	178	NR	90-110	0.2	15	QM-02
Fluoride	11.0	0.30	0.02	mg/L	10.020	0.04	110	90-110	6	15	
Sulfate	136	1.0	0.05	mg/L	10.020	140	NR	90-110	0.3	15	QM-02



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## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### **Batch 6120022 - EPA 3005A**

Blank (6120022-BLK1)						Prepared: 12/02/16 Analyzed: 12/05/16				
Antimony	ND	0.0030	0.0008	mg/L						
Arsenic	ND	0.0050	0.0016	mg/L						
Barium	ND	0.0100	0.0004	mg/L						
Beryllium	0.0002	0.0030	0.00008	mg/L						J
Boron	ND	0.0400	0.0064	mg/L						
Cadmium	ND	0.0010	0.00007	mg/L						
Calcium	0.0350	0.500	0.0311	mg/L						J
Chromium	ND	0.0100	0.0009	mg/L						
Cobalt	ND	0.0100	0.0005	mg/L						
Copper	ND	0.0250	0.0005	mg/L						
Lead	0.0008	0.0050	0.0001	mg/L						J
Molybdenum	ND	0.0100	0.0017	mg/L						
Nickel	ND	0.0100	0.0006	mg/L						
Selenium	ND	0.0100	0.0010	mg/L						
Silver	ND	0.0100	0.0005	mg/L						
Thallium	ND	0.0010	0.0002	mg/L						
Vanadium	ND	0.0100	0.0071	mg/L						
Zinc	0.0023	0.0100	0.0021	mg/L						J
Lithium	ND	0.0500	0.0021	mg/L						

LCS (6120022-BS1)						Prepared: 12/02/16 Analyzed: 12/05/16				
Antimony	0.103	0.0030	0.0008	mg/L	0.10000		103	80-120		
Arsenic	0.0985	0.0050	0.0016	mg/L	0.10000		98	80-120		
Barium	0.0983	0.0100	0.0004	mg/L	0.10000		98	80-120		
Beryllium	0.100	0.0030	0.00008	mg/L	0.10000		100	80-120		
Boron	1.00	0.0400	0.0064	mg/L	1.0000		100	80-120		
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000		101	80-120		
Calcium	1.00	0.500	0.0311	mg/L	1.0000		100	80-120		
Chromium	0.0977	0.0100	0.0009	mg/L	0.10000		98	80-120		
Cobalt	0.0950	0.0100	0.0005	mg/L	0.10000		95	80-120		
Copper	0.0985	0.0250	0.0005	mg/L	0.10000		99	80-120		
Lead	0.0978	0.0050	0.0001	mg/L	0.10000		98	80-120		
Molybdenum	0.0996	0.0100	0.0017	mg/L	0.10000		100	80-120		
Nickel	0.0995	0.0100	0.0006	mg/L	0.10000		99	80-120		
Selenium	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120		
Silver	0.0999	0.0100	0.0005	mg/L	0.10000		100	80-120		
Thallium	0.0979	0.0010	0.0002	mg/L	0.10000		98	80-120		
Vanadium	0.0977	0.0100	0.0071	mg/L	0.10000		98	80-120		
Zinc	0.103	0.0100	0.0021	mg/L	0.10000		103	80-120		
Lithium	0.101	0.0500	0.0021	mg/L	0.10000		101	80-120		



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December 14, 2016

**Report No.: AZL0033**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 6120022 - EPA 3005A

Matrix Spike (6120022-MS1)		Source: AZK0850-01			Prepared: 12/02/16 Analyzed: 12/05/16			
Antimony	0.106	0.0030	0.0008	mg/L	0.10000	0.0014	105	75-125
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125
Barium	0.150	0.0500	0.0022	mg/L	0.10000	0.0529	98	75-125
Beryllium	0.0942	0.0030	0.00008	mg/L	0.10000	ND	94	75-125
Boron	0.948	0.0400	0.0064	mg/L	1.0000	0.0095	94	75-125
Cadmium	0.100	0.0010	0.00007	mg/L	0.10000	ND	100	75-125
Calcium	10.8	2.50	0.155	mg/L	1.0000	9.47	134	75-125
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	0.0036	99	75-125
Copper	0.100	0.0250	0.0005	mg/L	0.10000	0.0010	99	75-125
Lead	0.0987	0.0050	0.0001	mg/L	0.10000	ND	99	75-125
Molybdenum	0.104	0.0100	0.0017	mg/L	0.10000	ND	104	75-125
Nickel	0.106	0.0100	0.0006	mg/L	0.10000	0.0039	102	75-125
Selenium	0.105	0.0100	0.0010	mg/L	0.10000	ND	105	75-125
Silver	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125
Thallium	0.0997	0.0010	0.0002	mg/L	0.10000	ND	100	75-125
Vanadium	0.106	0.0100	0.0071	mg/L	0.10000	ND	106	75-125
Zinc	0.103	0.0100	0.0021	mg/L	0.10000	0.0028	100	75-125
Lithium	0.0962	0.0500	0.0021	mg/L	0.10000	ND	96	75-125

Matrix Spike Dup (6120022-MSD1)		Source: AZK0850-01			Prepared: 12/02/16 Analyzed: 12/05/16			
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	0.0014	102	75-125
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125
Barium	0.148	0.0500	0.0022	mg/L	0.10000	0.0529	95	75-125
Beryllium	0.0888	0.0030	0.00008	mg/L	0.10000	ND	89	75-125
Boron	0.915	0.0400	0.0064	mg/L	1.0000	0.0095	91	75-125
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125
Calcium	10.7	2.50	0.155	mg/L	1.0000	9.47	121	75-125
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	0.0036	98	75-125
Copper	0.103	0.0250	0.0005	mg/L	0.10000	0.0010	102	75-125
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125
Molybdenum	0.102	0.0100	0.0017	mg/L	0.10000	ND	102	75-125
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	0.0039	101	75-125
Selenium	0.102	0.0100	0.0010	mg/L	0.10000	ND	102	75-125
Silver	0.0995	0.0100	0.0005	mg/L	0.10000	ND	100	75-125
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125
Zinc	0.104	0.0100	0.0021	mg/L	0.10000	0.0028	101	75-125
Lithium	0.0897	0.0500	0.0021	mg/L	0.10000	ND	90	75-125



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December 14, 2016

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### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 6120022 - EPA 3005A

Post Spike (6120022-PS1)		Source: AZK0850-01			Prepared: 12/02/16 Analyzed: 12/05/16			
Antimony	97.8		ug/L	100.00	1.41	96	80-120	
Arsenic	99.3		ug/L	100.00	0.0639	99	80-120	
Barium	150		ug/L	100.00	52.9	97	80-120	
Beryllium	84.9		ug/L	100.00	-1.84	85	80-120	
Boron	927		ug/L	1000.0	9.46	92	80-120	
Cadmium	99.8		ug/L	100.00	0.0137	100	80-120	
Calcium	10700		ug/L	1000.0	9470	121	80-120	QM-02
Chromium	101		ug/L	100.00	0.145	101	80-120	
Cobalt	99.6		ug/L	100.00	3.64	96	80-120	
Copper	99.3		ug/L	100.00	1.03	98	80-120	
Lead	100		ug/L	100.00	-0.502	100	80-120	
Molybdenum	101		ug/L	100.00	0.757	101	80-120	
Nickel	101		ug/L	100.00	3.92	97	80-120	
Selenium	105		ug/L	100.00	-0.0591	105	80-120	
Silver	96.9		ug/L	100.00	0.0123	97	80-120	
Thallium	99.0		ug/L	100.00	-0.295	99	80-120	
Vanadium	102		ug/L	100.00	0.167	102	80-120	
Zinc	104		ug/L	100.00	2.81	101	80-120	
Lithium	88.3		ug/L	100.00	-0.426	88	80-120	

#### Batch 6120036 - EPA 7470A

Blank (6120036-BLK1)					Prepared & Analyzed: 12/02/16			
Mercury	ND	0.00050	0.000041	mg/L				
LCS (6120036-BS1)					Prepared & Analyzed: 12/02/16			
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3	98	80-120	



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## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 6120036 - EPA 7470A

Matrix Spike (6120036-MS1)		Source: AZK0782-01				Prepared & Analyzed: 12/02/16				
Mercury	0.00249	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125		
Matrix Spike Dup (6120036-MSD1)		Source: AZK0782-01				Prepared & Analyzed: 12/02/16				
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125	0.4	20
Post Spike (6120036-PS1)		Source: AZK0782-01				Prepared & Analyzed: 12/02/16				
Mercury	1.73			ug/L	1.6667	0.0118	103	80-120		

### Batch 6120087 - EPA 3005A

Blank (6120087-BLK1)					Prepared: 12/06/16 Analyzed: 12/08/16				
Antimony	ND	0.0030	0.0008	mg/L					
Arsenic	ND	0.0050	0.0016	mg/L					
Barium	ND	0.0100	0.0004	mg/L					
Beryllium	ND	0.0030	0.00008	mg/L					
Boron	ND	0.0400	0.0064	mg/L					
Cadmium	ND	0.0010	0.00007	mg/L					
Calcium	0.0311	0.500	0.0311	mg/L					J
Chromium	ND	0.0100	0.0009	mg/L					
Cobalt	ND	0.0100	0.0005	mg/L					
Copper	ND	0.0250	0.0005	mg/L					
Lead	ND	0.0050	0.0001	mg/L					
Molybdenum	ND	0.0100	0.0017	mg/L					
Nickel	ND	0.0100	0.0006	mg/L					
Selenium	ND	0.0100	0.0010	mg/L					
Silver	ND	0.0100	0.0005	mg/L					
Thallium	ND	0.0010	0.0002	mg/L					
Vanadium	ND	0.0100	0.0071	mg/L					
Zinc	ND	0.0100	0.0021	mg/L					
Lithium	ND	0.0500	0.0021	mg/L					



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## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 6120087 - EPA 3005A

LCS (6120087-BS1)						Prepared: 12/06/16 Analyzed: 12/08/16		
Antimony	0.109	0.0030	0.0008	mg/L	0.10000	109	80-120	
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	101	80-120	
Barium	0.106	0.0100	0.0004	mg/L	0.10000	106	80-120	
Beryllium	0.101	0.0030	0.00008	mg/L	0.10000	101	80-120	
Boron	1.04	0.0400	0.0064	mg/L	1.0000	104	80-120	
Cadmium	0.107	0.0010	0.00007	mg/L	0.10000	107	80-120	
Calcium	1.04	0.500	0.0311	mg/L	1.0000	104	80-120	
Chromium	0.110	0.0100	0.0009	mg/L	0.10000	110	80-120	
Cobalt	0.108	0.0100	0.0005	mg/L	0.10000	108	80-120	
Copper	0.108	0.0250	0.0005	mg/L	0.10000	108	80-120	
Lead	0.104	0.0050	0.0001	mg/L	0.10000	104	80-120	
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000	109	80-120	
Nickel	0.109	0.0100	0.0006	mg/L	0.10000	109	80-120	
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	103	80-120	
Silver	0.106	0.0100	0.0005	mg/L	0.10000	106	80-120	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	103	80-120	
Vanadium	0.112	0.0100	0.0071	mg/L	0.10000	112	80-120	
Zinc	0.111	0.0100	0.0021	mg/L	0.10000	111	80-120	
Lithium	0.102	0.0500	0.0021	mg/L	0.10000	102	80-120	

Matrix Spike (6120087-MS1)						Source: AZL0037-01 Prepared: 12/06/16 Analyzed: 12/08/16		
Antimony	0.107	0.0030	0.0008	mg/L	0.10000	ND	107	75-125
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125
Barium	0.116	0.0100	0.0004	mg/L	0.10000	0.0148	101	75-125
Beryllium	0.102	0.0030	0.00008	mg/L	0.10000	ND	102	75-125
Boron	1.84	0.200	0.0321	mg/L	1.0000	0.813	102	75-125
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000	ND	105	75-125
Calcium	14.4	2.50	0.155	mg/L	1.0000	13.4	102	75-125
Chromium	0.111	0.0100	0.0009	mg/L	0.10000	0.0013	110	75-125
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	0.0008	103	75-125
Copper	0.103	0.0250	0.0005	mg/L	0.10000	ND	103	75-125
Lead	0.103	0.0050	0.0001	mg/L	0.10000	ND	103	75-125
Molybdenum	0.107	0.0100	0.0017	mg/L	0.10000	ND	107	75-125
Nickel	0.106	0.0100	0.0006	mg/L	0.10000	0.0022	104	75-125
Selenium	0.106	0.0100	0.0010	mg/L	0.10000	0.0046	101	75-125
Silver	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125
Vanadium	0.111	0.0100	0.0071	mg/L	0.10000	ND	111	75-125
Zinc	0.101	0.0100	0.0021	mg/L	0.10000	ND	101	75-125
Lithium	0.101	0.0500	0.0021	mg/L	0.10000	ND	101	75-125



# PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0033**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 6120087 - EPA 3005A

Matrix Spike Dup (6120087-MSD1)		Source: AZL0037-01			Prepared: 12/06/16 Analyzed: 12/08/16					
Antimony	0.113	0.0030	0.0008	mg/L	0.10000	ND	113	75-125	5	20
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	ND	101	75-125	1	20
Barium	0.121	0.0100	0.0004	mg/L	0.10000	0.0148	106	75-125	4	20
Beryllium	0.105	0.0030	0.00008	mg/L	0.10000	ND	105	75-125	2	20
Boron	1.85	0.200	0.0321	mg/L	1.0000	0.813	104	75-125	0.8	20
Cadmium	0.109	0.0010	0.00007	mg/L	0.10000	ND	109	75-125	3	20
Calcium	14.4	2.50	0.155	mg/L	1.0000	13.4	103	75-125	0.02	20
Chromium	0.110	0.0100	0.0009	mg/L	0.10000	0.0013	109	75-125	0.4	20
Cobalt	0.107	0.0100	0.0005	mg/L	0.10000	0.0008	106	75-125	2	20
Copper	0.104	0.0250	0.0005	mg/L	0.10000	ND	104	75-125	1	20
Lead	0.105	0.0050	0.0001	mg/L	0.10000	ND	105	75-125	2	20
Molybdenum	0.112	0.0100	0.0017	mg/L	0.10000	ND	112	75-125	5	20
Nickel	0.106	0.0100	0.0006	mg/L	0.10000	0.0022	103	75-125	0.3	20
Selenium	0.107	0.0100	0.0010	mg/L	0.10000	0.0046	102	75-125	0.9	20
Silver	0.108	0.0100	0.0005	mg/L	0.10000	ND	108	75-125	6	20
Thallium	0.106	0.0010	0.0002	mg/L	0.10000	ND	106	75-125	3	20
Vanadium	0.112	0.0100	0.0071	mg/L	0.10000	ND	112	75-125	1	20
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	ND	105	75-125	3	20
Lithium	0.106	0.0500	0.0021	mg/L	0.10000	ND	106	75-125	4	20

Post Spike (6120087-PS1)		Source: AZL0037-01			Prepared: 12/06/16 Analyzed: 12/08/16		
Antimony	104		ug/L	100.00	0.0777	104	80-120
Arsenic	103		ug/L	100.00	0.883	102	80-120
Barium	120		ug/L	100.00	14.8	105	80-120
Beryllium	101		ug/L	100.00	0.0120	101	80-120
Boron	1880		ug/L	1000.0	813	106	80-120
Cadmium	107		ug/L	100.00	0.0456	107	80-120
Calcium	14200		ug/L	1000.0	13400	77	80-120
Chromium	113		ug/L	100.00	1.25	112	80-120
Cobalt	108		ug/L	100.00	0.832	107	80-120
Copper	108		ug/L	100.00	0.250	107	80-120
Lead	103		ug/L	100.00	0.0154	103	80-120
Molybdenum	109		ug/L	100.00	0.0644	109	80-120
Nickel	111		ug/L	100.00	2.16	109	80-120
Selenium	109		ug/L	100.00	4.63	105	80-120
Silver	105		ug/L	100.00	0.0030	105	80-120
Thallium	104		ug/L	100.00	0.0519	104	80-120
Vanadium	113		ug/L	100.00	1.73	112	80-120
Zinc	105		ug/L	100.00	1.76	103	80-120
Lithium	102		ug/L	100.00	0.977	101	80-120



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0033**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120161 - EPA 7470A</b>											
<b>Blank (6120161-BLK1)</b>											Prepared & Analyzed: 12/07/16
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120161-BS1)</b>											Prepared & Analyzed: 12/07/16
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3		95	80-120			
<b>Matrix Spike (6120161-MS1)</b>											Source: AZL0033-05 Prepared & Analyzed: 12/07/16
Mercury	0.00226	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (6120161-MSD1)</b>											Source: AZL0033-05 Prepared & Analyzed: 12/07/16
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	3	20	
<b>Post Spike (6120161-PS1)</b>											Source: AZL0033-05 Prepared & Analyzed: 12/07/16
Mercury	1.61			ug/L	1.6667	0.00663	96	80-120			



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

## Legend

### Definition of Laboratory Terms

<b>ND</b>	- Not Detected at levels equal to or greater than the MDL
<b>BRL</b>	- Not Detected at levels equal to or greater than the RL
<b>RL</b>	- Reporting Limit
	<b>MDL</b> - Method Detection Limit
<b>SOP</b>	- Method run per Pace Standard Operating Procedure
<b>CFU</b>	- Colony Forming Units
<b>DF</b>	- Dilution Factor
	<b>TIC</b> - Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

**R-01** Elevated reporting limit due to matrix interference.

**QR-03** The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to suspected matrix interference and/or non-homogeneous sample matrix.

**QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.

**J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

**B-01** Analyte was detected in the associated method blank at an estimated level equal to or greater than the MDL. Sample values reported as greater than the MDL and less than 10x the method blank value are reported as estimated values.

**Note: Unless otherwise noted, all results are reported on an as received basis.**



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

### Report Notes

Per client request 12/2/2016, sample IDs have been revised to follow the pattern MCM-## instead of MCM-single digit. BMcD





## PACE ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### LOG-IN CHECKLIST

Printed: 12/7/2016 1:29:10PM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 12/01/16 14:15

**Work Order:** AZL0033  
**Logged In By:** Mohammad M. Rahman

### OBSERVATIONS

<b>#Samples:</b>	12	<b>#Containers:</b>	37
<b>Minimum Temp(C):</b>	1.0	<b>Maximum Temp(C):</b>	1.0
		<b>Custody Seal(s) Used:</b>	N/A

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	NO
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

### **Comments:**

Per client request 12/2/2016, sample IDs have been revised to follow the pattern MCM-## instead of MCM-single digit.  
BMcD

January 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant McManus  
Pace Project No.: 30204292

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 05, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus  
 Pace Project No.: 30204292

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
 L-A-B DOD-ELAP Accreditation #: L2417  
 Alabama Certification #: 41590  
 Arizona Certification #: AZ0734  
 Arkansas Certification  
 California Certification #: 04222CA  
 Colorado Certification  
 Connecticut Certification #: PH-0694  
 Delaware Certification  
 Florida/TNI Certification #: E87683  
 Georgia Certification #: C040  
 Guam Certification  
 Hawaii Certification  
 Idaho Certification  
 Illinois Certification  
 Indiana Certification  
 Iowa Certification #: 391  
 Kansas/TNI Certification #: E-10358  
 Kentucky Certification #: 90133  
 Louisiana DHH/TNI Certification #: LA140008  
 Louisiana DEQ/TNI Certification #: 4086  
 Maine Certification #: PA00091  
 Maryland Certification #: 308  
 Massachusetts Certification #: M-PA1457  
 Michigan/PADEP Certification  
 Missouri Certification #: 235

Montana Certification #: Cert 0082  
 Nebraska Certification #: NE-05-29-14  
 Nevada Certification #: PA014572015-1  
 New Hampshire/TNI Certification #: 2976  
 New Jersey/TNI Certification #: PA 051  
 New Mexico Certification #: PA01457  
 New York/TNI Certification #: 10888  
 North Carolina Certification #: 42706  
 North Dakota Certification #: R-190  
 Oregon/TNI Certification #: PA200002  
 Pennsylvania/TNI Certification #: 65-00282  
 Puerto Rico Certification #: PA01457  
 Rhode Island Certification #: 65-00282  
 South Dakota Certification  
 Tennessee Certification #: TN2867  
 Texas/TNI Certification #: T104704188-14-8  
 Utah/TNI Certification #: PA014572015-5  
 USDA Soil Permit #: P330-14-00213  
 Vermont Dept. of Health: ID# VT-0282  
 Virgin Island/PADEP Certification  
 Virginia/VELAP Certification #: 460198  
 Washington Certification #: C868  
 West Virginia DEP Certification #: 143  
 West Virginia DHHR Certification #: 9964C  
 Wisconsin Certification  
 Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus  
Pace Project No.: 30204292

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204292001	MCM-14	Water	11/30/16 13:00	12/05/16 09:45
30204292002	MCM-06	Water	11/30/16 15:07	12/05/16 09:45
30204292003	MCM-07	Water	11/30/16 14:10	12/05/16 09:45
30204292004	MCM-17	Water	11/30/16 11:23	12/05/16 09:45
30204292005	MCM-09	Water	11/30/16 09:52	12/05/16 09:45
30204292006	FBL 113016	Water	11/30/16 16:10	12/05/16 09:45
30204292007	EQBL 113016	Water	11/30/16 16:20	12/05/16 09:45
30204292008	Dup-1	Water	11/30/16 00:00	12/05/16 09:45
30204292009	MCM-12	Water	11/30/16 10:20	12/05/16 09:45
30204292010	MCM-01	Water	11/30/16 13:00	12/05/16 09:45
30204292011	MCM-16	Water	11/30/16 14:00	12/05/16 09:45
30204292012	MCM-05	Water	11/30/16 15:20	12/05/16 09:45

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus  
Pace Project No.: 30204292

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204292001	MCM-14	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204292002	MCM-06	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204292003	MCM-07	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204292004	MCM-17	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204292005	MCM-09	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204292006	FBL 113016	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204292007	EQBL 113016	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204292008	Dup-1	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204292009	MCM-12	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204292010	MCM-01	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204292011	MCM-16	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204292012	MCM-05	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30204292

<b>Sample: MCM-14</b>		<b>Lab ID: 30204292001</b>	Collected: 11/30/16 13:00	Received: 12/05/16 09:45	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>0.271 ± 0.177 (0.268)</b> C:99% T:NA	pCi/L	12/12/16 11:39	13982-63-3
Radium-228	EPA 9320	<b>0.167 ± 0.486 (1.09)</b> C:62% T:84%	pCi/L	12/30/16 11:20	15262-20-1
Total Radium	Total Radium Calculation	<b>0.438 ± 0.663 (1.36)</b>	pCi/L	01/04/17 15:23	7440-14-4
<b>Sample: MCM-06</b>		<b>Lab ID: 30204292002</b>	Collected: 11/30/16 15:07	Received: 12/05/16 09:45	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>1.18 ± 0.367 (0.342)</b> C:94% T:NA	pCi/L	12/12/16 11:39	13982-63-3
Radium-228	EPA 9320	<b>0.418 ± 0.472 (0.987)</b> C:62% T:88%	pCi/L	12/30/16 11:20	15262-20-1
Total Radium	Total Radium Calculation	<b>1.60 ± 0.839 (1.33)</b>	pCi/L	01/04/17 15:23	7440-14-4
<b>Sample: MCM-07</b>		<b>Lab ID: 30204292003</b>	Collected: 11/30/16 14:10	Received: 12/05/16 09:45	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>1.87 ± 0.558 (0.449)</b> C:96% T:NA	pCi/L	12/12/16 09:45	13982-63-3
Radium-228	EPA 9320	<b>1.26 ± 0.645 (1.13)</b> C:61% T:83%	pCi/L	12/30/16 11:20	15262-20-1
Total Radium	Total Radium Calculation	<b>3.13 ± 1.20 (1.58)</b>	pCi/L	01/04/17 15:23	7440-14-4
<b>Sample: MCM-17</b>		<b>Lab ID: 30204292004</b>	Collected: 11/30/16 11:23	Received: 12/05/16 09:45	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>1.38 ± 0.459 (0.421)</b> C:109% T:NA	pCi/L	12/12/16 09:45	13982-63-3
Radium-228	EPA 9320	<b>0.626 ± 0.552 (1.11)</b> C:60% T:84%	pCi/L	12/30/16 11:20	15262-20-1
Total Radium	Total Radium Calculation	<b>2.01 ± 1.01 (1.53)</b>	pCi/L	01/04/17 15:23	7440-14-4
<b>Sample: MCM-09</b>		<b>Lab ID: 30204292005</b>	Collected: 11/30/16 09:52	Received: 12/05/16 09:45	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>3.02 ± 0.615 (0.281)</b> C:105% T:NA	pCi/L	12/12/16 09:38	13982-63-3
Radium-228	EPA 9320	<b>2.39 ± 0.719 (0.855)</b> C:59% T:81%	pCi/L	12/30/16 11:20	15262-20-1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30204292

<b>Sample: MCM-09</b>	<b>Lab ID: 30204292005</b>	Collected: 11/30/16 09:52	Received: 12/05/16 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Total Radium	Total Radium Calculation	<b>5.41 ± 1.33 (1.14)</b>	pCi/L	01/04/17 15:23
				CAS No. 7440-14-4
				Qual
<b>Sample: FBL 113016</b>	<b>Lab ID: 30204292006</b>	Collected: 11/30/16 16:10	Received: 12/05/16 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.0254 ± 0.0962 (0.244)</b> C:93% T:NA	pCi/L	12/12/16 09:38
Radium-228	EPA 9320	<b>0.119 ± 0.313 (0.701)</b> C:64% T:91%	pCi/L	12/30/16 11:20
Total Radium	Total Radium Calculation	<b>0.144 ± 0.409 (0.945)</b>	pCi/L	01/04/17 15:23
				CAS No. 13982-63-3
				Qual 15262-20-1
<b>Sample: EQBL 113016</b>	<b>Lab ID: 30204292007</b>	Collected: 11/30/16 16:20	Received: 12/05/16 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.0158 ± 0.0877 (0.230)</b> C:100% T:NA	pCi/L	12/12/16 09:39
Radium-228	EPA 9320	<b>0.137 ± 0.369 (0.825)</b> C:61% T:88%	pCi/L	12/30/16 11:20
Total Radium	Total Radium Calculation	<b>0.153 ± 0.457 (1.06)</b>	pCi/L	01/04/17 15:23
				CAS No. 13982-63-3
				Qual 15262-20-1
<b>Sample: Dup-1</b>	<b>Lab ID: 30204292008</b>	Collected: 11/30/16 00:00	Received: 12/05/16 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.813 ± 0.300 (0.323)</b> C:97% T:NA	pCi/L	12/12/16 11:39
Radium-228	EPA 9320	<b>0.455 ± 0.505 (1.06)</b> C:71% T:81%	pCi/L	12/30/16 11:20
Total Radium	Total Radium Calculation	<b>1.27 ± 0.805 (1.38)</b>	pCi/L	01/04/17 15:23
				CAS No. 7440-14-4
				Qual
<b>Sample: MCM-12</b>	<b>Lab ID: 30204292009</b>	Collected: 11/30/16 10:20	Received: 12/05/16 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.19 ± 0.373 (0.315)</b> C:91% T:NA	pCi/L	12/12/16 11:39
Radium-228	EPA 9320	<b>3.18 ± 0.940 (1.24)</b> C:71% T:71%	pCi/L	01/08/17 13:26
Total Radium	Total Radium Calculation	<b>4.37 ± 1.31 (1.56)</b>	pCi/L	01/11/17 15:36
				CAS No. 13982-63-3
				Qual 15262-20-1
				7440-14-4

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30204292

<b>Sample: MCM-01</b>	<b>Lab ID:</b> 30204292010	Collected: 11/30/16 13:00	Received: 12/05/16 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.471 ± 0.207 (0.223)</b> C:91% T:NA	pCi/L	12/12/16 09:39
Radium-228	EPA 9320	<b>5.17 ± 1.24 (1.02)</b> C:76% T:64%	pCi/L	01/08/17 13:26
Total Radium	Total Radium Calculation	<b>5.64 ± 1.45 (1.24)</b>	pCi/L	01/11/17 15:36
<hr/>				
<b>Sample: MCM-16</b>	<b>Lab ID:</b> 30204292011	Collected: 11/30/16 14:00	Received: 12/05/16 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.578 ± 0.246 (0.282)</b> C:86% T:NA	pCi/L	12/12/16 09:39
Radium-228	EPA 9320	<b>0.416 ± 0.421 (0.868)</b> C:68% T:80%	pCi/L	01/08/17 13:26
Total Radium	Total Radium Calculation	<b>0.994 ± 0.667 (1.15)</b>	pCi/L	01/11/17 15:36
<hr/>				
<b>Sample: MCM-05</b>	<b>Lab ID:</b> 30204292012	Collected: 11/30/16 15:20	Received: 12/05/16 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.07 ± 0.334 (0.250)</b> C:86% T:NA	pCi/L	12/12/16 09:39
Radium-228	EPA 9320	<b>0.585 ± 0.474 (0.948)</b> C:66% T:80%	pCi/L	01/08/17 13:26
Total Radium	Total Radium Calculation	<b>1.66 ± 0.808 (1.20)</b>	pCi/L	01/11/17 15:36

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30204292

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QC Batch: 242578 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 30204292001, 30204292002, 30204292003, 30204292004, 30204292005, 30204292006, 30204292007,  
30204292008, 30204292009, 30204292010, 30204292011, 30204292012

---

METHOD BLANK: 1192329 Matrix: Water

Associated Lab Samples: 30204292001, 30204292002, 30204292003, 30204292004, 30204292005, 30204292006, 30204292007,  
30204292008, 30204292009, 30204292010, 30204292011, 30204292012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.00382 ± 0.0709 (0.204) C:90% T:NA	pCi/L	12/12/16 09:38	

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

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus

Pace Project No.: 30204292

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QC Batch: 242766 Analysis Method: EPA 9320

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

Associated Lab Samples: 30204292001, 30204292002, 30204292003, 30204292004, 30204292005, 30204292006, 30204292007,  
30204292008

---

METHOD BLANK: 1193275 Matrix: Water

Associated Lab Samples: 30204292001, 30204292002, 30204292003, 30204292004, 30204292005, 30204292006, 30204292007,  
30204292008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.289 ± 0.348 (0.734) C:64% T:88%	pCi/L	12/30/16 11:18	

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

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30204292

---

QC Batch: 243002 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 30204292009, 30204292010, 30204292011, 30204292012

---

METHOD BLANK: 1195278 Matrix: Water

Associated Lab Samples: 30204292009, 30204292010, 30204292011, 30204292012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.184 ± 0.381 (0.841) C:71% T:77%	pCi/L	01/08/17 13:26	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus  
Pace Project No.: 30204292

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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## Chain of Custody

30204292



Workorder: AZL0033 Results Requested By: 1/3/2017

Report To: Workorder Name: Plant McManus Owner Received Date:

Report To:	Subcontract To:	Requested Analysis				Comments	
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Comments	LAB USE ONLY
11	MCM-16	G	11/30/2016 14:00	AZL0033-11	GW	1	X
12	MCM-5	G	11/30/2016 15:20	AZL0033-12	GW	1	X
13							
14							
15							
16							
17							
18							
19							
20							
Transfers	Released By		Date/Time	Received By	Date/Time	Comments	
1				Karen Hill	12-5-16 0945		
2							
3							

Cooler Temperature on Receipt	°C	Custody Seal Y or N	Received on Ice Y or N	Sample Intact Y or N

\*\*\* In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002rev.00 24March2009

Page 2 of 2

Page 13 of 18

30204292

0816

**CHAIN OF CUSTODY RECORD**

**Pace Analytical Services, Inc.**  
110 TECHNOLOGY PARKWAY  
SUITE 724 • 400-547-7700 • FAX 400-547-7701  
[www.pacesite.com](http://www.pacesite.com)

Pace Analytical Services, Inc  
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 3009  
(770) 734-4200; FAX (770) 734-4201

# Sample Condition Upon Receipt Pittsburgh



Client Name: Pace Georgia Project # 30204292

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
 Tracking #: 6812 5100 7663

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

Thermometer Used N/A

Type of Ice: Wet Blue (None)

Cooler Temperature Observed Temp N/A °C Correction Factor: N/A °C Final Temp: N/A °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KH 12-5-16

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:	✓			4.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:	✓			5. <u>WT</u>
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used: -Pace Containers Used:	✓			10.
Containers Intact:	✓			11.
Filtered volume received for Dissolved tests All containers needing preservation have been checked.			✓	12.
All containers needing preservation are found to be in compliance with EPA recommendation.	✓			13. <u>pH &lt; 2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>KH</u> Date/time of preservation: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):			✓	14.
Trip Blank Present:		✓		15.
Trip Blank Custody Seals Present			✓	
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed: <u>KH</u> Date: <u>12-5-16</u>

## Client Notification/ Resolution:

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

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

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.



## Quality Control Sample Performance Assessment

**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

Test:	Ra-226	Sample Matrix Control Assessment	Sample Collection Date:
Analyst:	LAL	Sample I.D.	Sample MS I.D.
Date:	12/9/2016	Sample MSD I.D.	Spike I.D.:
Worklist:	328:8	MS/MSD Decay Corrected Spike Concentration (pCi/ml):	
Matrix:	DW	Spike Volume Used in MS (mL):	
		Spike Volume Used in MSD (mL):	
		MS Aliquot (L, g, F):	
		MS Target Conc. (pCi/L, g, F):	
		MSD Aliquot (L, g, F):	
		MSD Target Conc. (pCi/L, g, F):	
		Spike Uncertainty (Calculated):	
		Sample Result:	
		Sample Result Counting Uncertainty (pCi/L, g, F):	
		Sample Matrix Spike Result:	
		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
		Sample Matrix Spike Duplicate Result:	
		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
		MS Numerical Performance Indicator:	
		MSD Numerical Performance Indicator:	
		MS Percent Recovery:	
		MSD Percent Recovery:	
		MS Status vs Numerical Indicator:	
		MSD Status vs Numerical Indicator:	
		MS Status vs Recovery:	
		MSD Status vs Recovery:	

Method Blank Assessment	MB Sample ID:	1192329	Y
	MB Concentration:	0.004	
	M/B Counting Uncertainty:	0.071	
	MB MDC:	0.204	
	MB Numerical Performance Indicator:	0.11	
	MB Status vs Numerical Indicator:	N/A	
	MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	LCS32848	
	Count Date:	12/12/2016	
	Spike I.D.:	16-026	
	Spike Concentration (pCi/ml):	44.673	
	Volume Used (mL):	0.10	
	Aliquot Volume (L, g, F):	0.506	
	Target Conc. (pCi/L, g, F):	8.825	
	Uncertainty (Calculated):	0.415	
	Result (pCi/L, g, F):	8.177	
	LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.718	
	Numerical Performance Indicator:	-1.53	
	Percent Recovery:	92.66%	
	Status vs Numerical Indicator:	N/A	
	Status vs Recovery:	Pass	

Duplicate Sample Assessment	Sample I.D.:	LCS32848	Enter Duplicate Sample IDs if other than LCS/LCSD in the space below.
	Duplicate Sample I.D.:	LCS32848	
	Sample Result (pCi/L, g, F):	8.177	
	Sample Result Counting Uncertainty (pCi/L, g, F):	0.718	
	Sample Duplicate Result (pCi/L, g, F):	7.617	
	Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.688	
	Are Sample and/or duplicate results below MDC?	NO	
	Duplicate Numerical Performance Indicator:	1.105	
	Duplicate Status vs Numerical Indicator:	Duplicate RPD: 7.10% N/A	
	Duplicate Status vs RPD:	Pass	

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDG.

Comments:



## Quality Control Sample Performance Assessment

**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

Test: Ra-228		Analyst: JLW		Sample Matrix Spike Control Assessment		Sample Collection Date:	
Date: 12/3/2016		Worklist: 32881		Spike I.D.: Sample I.D.		Sample MS I.D.	
Matrix: DW				Spike I.D.: Sample MSD I.D.		Sample MSD I.D.	
<b>Method Blank Assessment</b>		MB Sample ID: 1193275		MS/MSD Decay Corrected Spike Concentration (pCi/mL):		Spike I.D.: Sample I.D.	
MB concentration: 0.289		Spike Volume Used in MS (mL):		Spike Volume Used in MSD (mL):		Sample MS I.D.	
M/B Counting Uncertainty: 0.344		Spike Volume Used in MSD (mL):		MS Aliquot (L, g, F):		Sample MSD I.D.	
MB MDC: 0.734		MS Target Conc. (pCi/L, g, F):		MSD Aliquot (L, g, F):		Spike I.D.: Sample I.D.	
MB Numerical Performance Indicator: 1.64		MS Target Conc. (pCi/L, g, F):		MSD Target Conc. (pCi/L, g, F):		Spike I.D.: Sample I.D.	
MB Status vs Numerical Indicator: N/A		MSD Target Conc. (pCi/L, g, F):		Spike uncertainty (calculated):		Spike I.D.: Sample I.D.	
MB Status vs. MDC: Pass				Spike uncertainty (calculated):		Spike I.D.: Sample I.D.	
<b>Laboratory Control Sample Assessment</b>		LCS(L or N)? LCS32881		N LCS32881		Sample Result Counting Uncertainty (pCi/L, g, F):	
Count Date: 12/30/2016		Spike I.D.: Sample Matrix Spike Result:		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		Sample Matrix Spike Result:	
Spike Concentration (pCi/mL): 25.690		Volume Used (mL): 0.20		Aliquot Volume (L, g, F): 0.802		Matrix Spike Duplicate Result:	
M/B Counting Uncertainty: 0.20		Target Conc. (pCi/L, g, F): 6.403		Target Conc. (pCi/L, g, F):		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
MB MDC: 0.802		Uncertainty (Calculated): 0.461		MSD Numerical Performance Indicator:		MSD Numerical Performance Indicator:	
MB Numerical Performance Indicator: 0.891		Result (pCi/L, g, F): 5.764		MS Percent Recovery:		MS Percent Recovery:	
MB Status vs Numerical Indicator: -1.51		Percent Recovery: 90.02%		MS Status vs Numerical Indicator:		MS Status vs Numerical Indicator:	
Status vs Numerical Indicator: N/A		Status vs Recovery: Pass		MS Status vs Recovery:		MS Status vs Recovery:	
<b>Matrix Spike/Matrix Spike Duplicate Sample Assessment</b>							
Sample I.D.: 30204007002		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.		Sample I.D.: Sample MS I.D.		Sample MSD I.D.	
Duplicate Sample I.D.: 30204007002DUP		See Below #:		Sample Matrix Spike Result:		Sample Matrix Spike Result:	
Sample Result (pCi/L, g, F): 0.198		See Below #: 30204007002		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		Matrix Spike Duplicate Result:	
Sample Result Counting Uncertainty (pCi/L, g, F): 0.278		30204007002DUP		Duplicate Sample I.D.: 30204007002		Matrix Spike Duplicate Result:	
Sample Duplicate Result (pCi/L, g, F): 0.830		122.84%		Duplicate Numerical Performance Indicator:		Duplicate Numerical Performance Indicator:	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.472		N/A		Duplicate Status vs Numerical Indicator:		(Based on the Percent Recoveries) MS / MSD Duplicate RPD:	
Are sample and/or duplicate results below MDC?		Fail***		Duplicate Status vs RPD:		MS / MSD Duplicate Status vs Numerical Indicator:	
Duplicate Numerical Performance Indicator:						MS / MSD Duplicate Status vs RPD:	
Duplicate Status vs Numerical Indicator:							
Duplicate Status vs RPD:							

Comments:

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

\*\*\*Batch must be re-prepped due to unacceptable precision.



## Quality Control Sample Performance Assessment

**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

<b>Method Blank Assessment</b> MB Sample ID: LCS32911 MB Concentration: 1195278 MB Counting Uncertainty: 0.184 MB MDC: 0.379 MB Numerical Performance Indicator: 0.841 MB Status vs Numerical Indicator: N/A MB Status vs. MDC: Pass	<b>Sample Matrix Spike Control Assessment</b> Sample Collection Date: 11/8/2017 Sample I.D.: LCS32911 Sample MS I.D.: N Sample MSD I.D.: N Spike I.D.: N MS/MSD Decay Corrected Spike Concentration (pCi/mL): 0.184 Spike Volume Used in MS (mL): 0.379 Spike Volume Used in MSD (mL): 0.841 MS Aliquot (L, g, F): 0.95 MS Target Conc.(pCi/L, g, F): 0.95 MSD Aliquot (L, g, F): 0.95 MSD Target Conc. (pCi/L, g, F): 0.95 Spike uncertainty (calculated): 0.95
<b>Laboratory Control Sample Assessment</b> LCS/LCSD (Y or N)? N LCS Sample ID: LCS32911 Count Date: 11/8/2017 Spike I.D.: 16-0277 Spike Concentration (pCi/mL): 25.614 Volume Used (mL): 0.20 Aliquot Volume (L, g, F): 0.820 Target Conc. (pCi/L, g, F): 6.247 Uncertainty (Calculated): 0.450 Result (pCi/L, g, F): 5.528 LCS/LCSD Counting Uncertainty (pCi/L, g, F): 0.698 Numerical Performance Indicator: -1.70 Percent Recovery: 88.48% Status vs Numerical Indicator: N/A Status vs Recovery: Pass	Sample Result Counting Uncertainty (pCi/L, g, F): 0.450 Sample Matrix Spike Result: 0.698 Matrix Spike Result Counting Uncertainty (pCi/L, g, F): 0.450 Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.450 MS Numerical Performance Indicator: -1.70 MSD Numerical Performance Indicator: 0.698 MS Percent Recovery: 88.48% MSD Percent Recovery: 0.698 MS Status vs Numerical Indicator: N/A MSD Status vs Numerical Indicator: 0.698 MS Status vs Recovery: Pass MSD Status vs Recovery: Pass
<b>Duplicate Sample Assessment</b> Sample I.D.: 30204292009 Duplicate Sample I.D.: 30204292009DUP Sample Result (pCi/L, g, F): 3.181 Sample Result Counting Uncertainty (pCi/L, g, F): 0.749 Sample Duplicate Result (pCi/L, g, F): 1.084 Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.394 Are sample and/or duplicate results below MDC? See Below # Duplicate Numerical Performance Indicator: 4.855 Duplicate Status vs Numerical Indicator: 98.30% Duplicate Status vs RPD: N/A Duplicate Status vs Recovery: Fail**	Sample I.D.: 30204292009 Sample MS I.D.: N Sample MSD I.D.: N Spike I.D.: N Sample Matrix Spike Result: N Matrix Spike Result Counting Uncertainty (pCi/L, g, F): N Sample Matrix Spike Duplicate Result: N Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): N Duplicate Numerical Performance Indicator: N Duplicate Status vs Numerical Indicator: N Duplicate Status vs Recovery: N (Based on the Percent Recoveries) MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: N MS/MSD Duplicate Status vs Recovery: N

Comments:  
  
*[Handwritten signature]*

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

**Prepared For:**

**Georgia Power  
2480 Maner Road  
Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AAB0596**

**February 23, 2017**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

A handwritten signature in black ink, appearing to read "Betty McManus".

Project Manager

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All test results relate only to the samples analyzed.



## PACE ANALYTICAL SERVICES, LLC.

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Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 23, 2017

### ANALYTICAL REPORT FOR SAMPLES

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
MCM-16	AAB0596-01	Ground Water	02/15/17 10:14	02/16/17 09:25
MCM-01	AAB0596-02	Ground Water	02/15/17 11:54	02/16/17 09:25
MCM-14	AAB0596-03	Ground Water	02/15/17 13:58	02/16/17 09:25
MCM-12	AAB0596-04	Ground Water	02/15/17 17:10	02/16/17 09:25
MCM-17	AAB0596-05	Ground Water	02/15/17 17:10	02/16/17 09:25



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 23, 2017

Report No.: AAB0596

Project: CCR Event

Client ID: MCM-16

Lab Number ID: AAB0596-01

Date/Time Sampled: 2/15/2017 10:14:00AM

Date/Time Received: 2/16/2017 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	170	25	10	mg/L	SM 2540 C		1	02/20/17 14:58	02/20/17 14:58	7020559	JPT
<b>Inorganic Anions</b>											
Chloride	30	1.2	0.06	mg/L	EPA 300.0	B-01	5	02/19/17 10:21	02/22/17 01:27	7020547	RLC
Fluoride	0.02	0.30	0.004	mg/L	EPA 300.0	J	1	02/19/17 10:21	02/20/17 00:48	7020547	RLC
Sulfate	30	1.0	0.09	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/20/17 00:48	7020547	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:18	7020517	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:18	7020517	CSW
Barium	0.0945	0.0500	0.0022	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:22	7020517	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:22	7020517	CSW
Boron	0.398	0.200	0.0321	mg/L	EPA 6020B	R-01	5	02/17/17 13:40	02/20/17 20:18	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:18	7020517	CSW
Calcium	6.61	0.500	0.0311	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:18	7020517	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:18	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:18	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:18	7020517	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:18	7020517	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:18	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:18	7020517	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:22	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 15:17	7020584	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 23, 2017

Report No.: AAB0596

Project: CCR Event

Client ID: MCM-01

Lab Number ID: AAB0596-02

Date/Time Sampled: 2/15/2017 11:54:00AM

Date/Time Received: 2/16/2017 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	212	25	10	mg/L	SM 2540 C		1	02/20/17 14:58	02/20/17 14:58	7020559	JPT
<b>Inorganic Anions</b>											
Chloride	21	1.2	0.06	mg/L	EPA 300.0	B-01	5	02/19/17 10:21	02/22/17 01:48	7020547	RLC
Fluoride	0.007	0.30	0.004	mg/L	EPA 300.0	J	1	02/19/17 10:21	02/20/17 01:08	7020547	RLC
Sulfate	83	5.0	0.46	mg/L	EPA 300.0	B-01	5	02/19/17 10:21	02/22/17 01:48	7020547	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:29	7020517	CSW
Arsenic	0.0022	0.0050	0.0016	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 20:29	7020517	CSW
Barium	0.124	0.0500	0.0022	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:28	7020517	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:28	7020517	CSW
Boron	0.254	0.200	0.0321	mg/L	EPA 6020B	R-01	5	02/17/17 13:40	02/21/17 19:28	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:29	7020517	CSW
Calcium	14.3	2.50	0.155	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:28	7020517	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:29	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:29	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:29	7020517	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:29	7020517	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:29	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:29	7020517	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:28	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 15:20	7020584	MTC



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 23, 2017

Report No.: AAB0596

Project: CCR Event

Client ID: MCM-14

Lab Number ID: AAB0596-03

Date/Time Sampled: 2/15/2017 1:58:00PM

Date/Time Received: 2/16/2017 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1440	25	10	mg/L	SM 2540 C		1	02/20/17 14:58	02/20/17 14:58	7020559	JPT
<b>Inorganic Anions</b>											
Chloride	490	25	1.3	mg/L	EPA 300.0	B-01	100	02/19/17 10:21	02/22/17 02:09	7020547	RLC
Fluoride	0.58	0.30	0.004	mg/L	EPA 300.0		1	02/19/17 10:21	02/20/17 01:29	7020547	RLC
Sulfate	37	1.0	0.09	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/20/17 01:29	7020547	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:41	7020517	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:41	7020517	CSW
Barium	0.0786	0.0500	0.0022	mg/L	EPA 6020B		5	02/17/17 13:40	02/20/17 20:41	7020517	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:34	7020517	CSW
Boron	0.647	0.200	0.0321	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:34	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:41	7020517	CSW
Calcium	56.1	25.0	1.55	mg/L	EPA 6020B		50	02/17/17 13:40	02/20/17 20:47	7020517	CSW
Chromium	0.0018	0.0100	0.0009	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 20:41	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:41	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:41	7020517	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:41	7020517	CSW
Selenium	0.0014	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 20:41	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:41	7020517	CSW
Lithium	0.0105	0.0500	0.0103	mg/L	EPA 6020B	J	5	02/17/17 13:40	02/21/17 19:34	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 15:22	7020584	MTC



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 23, 2017

Report No.: AAB0596

Project: CCR Event

Client ID: MCM-12

Lab Number ID: AAB0596-04

Date/Time Sampled: 2/15/2017 5:10:00PM

Date/Time Received: 2/16/2017 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1870	25	10	mg/L	SM 2540 C		1	02/20/17 14:58	02/20/17 14:58	7020559	JPT
<b>Inorganic Anions</b>											
Chloride	740	25	1.3	mg/L	EPA 300.0	B-01	100	02/19/17 10:21	02/22/17 02:29	7020547	RLC
Fluoride	1.3	0.30	0.004	mg/L	EPA 300.0		1	02/19/17 10:21	02/20/17 03:12	7020547	RLC
Sulfate	3.0	1.0	0.09	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/20/17 03:12	7020547	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:52	7020517	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:52	7020517	CSW
Barium	0.111	0.0500	0.0022	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:39	7020517	CSW
Beryllium	0.0004	0.0030	0.0004	mg/L	EPA 6020B	J	5	02/17/17 13:40	02/21/17 19:39	7020517	CSW
Boron	1.33	0.200	0.0321	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:39	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:52	7020517	CSW
Calcium	8.34	0.500	0.0311	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:52	7020517	CSW
Chromium	0.0045	0.0100	0.0009	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 20:52	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:52	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:52	7020517	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:52	7020517	CSW
Selenium	0.0021	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 20:52	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:52	7020517	CSW
Lithium	0.0115	0.0500	0.0103	mg/L	EPA 6020B	J	5	02/17/17 13:40	02/21/17 19:39	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 15:50	7020585	MTC



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 23, 2017

Report No.: AAB0596

Project: CCR Event

Client ID: MCM-17

Lab Number ID: AAB0596-05

Date/Time Sampled: 2/15/2017 5:10:00PM

Date/Time Received: 2/16/2017 9:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3820	25	10	mg/L	SM 2540 C		1	02/20/17 14:58	02/20/17 14:58	7020559	JPT
<b>Inorganic Anions</b>											
Chloride	2000	25	1.3	mg/L	EPA 300.0	B-01	100	02/19/17 10:21	02/22/17 02:50	7020547	RLC
Fluoride	1.3	0.30	0.004	mg/L	EPA 300.0		1	02/19/17 10:21	02/20/17 03:33	7020547	RLC
Sulfate	190	100	9.2	mg/L	EPA 300.0	B-01	100	02/19/17 10:21	02/22/17 02:50	7020547	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 21:04	7020517	CSW
Arsenic	0.0017	0.0050	0.0016	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 21:04	7020517	CSW
Barium	0.0102	0.0100	0.0004	mg/L	EPA 6020B		1	02/17/17 13:40	02/21/17 19:45	7020517	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:45	7020517	CSW
Boron	2.14	0.200	0.0321	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 19:45	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 21:04	7020517	CSW
Calcium	96.3	25.0	1.55	mg/L	EPA 6020B		50	02/17/17 13:40	02/20/17 21:10	7020517	CSW
Chromium	0.0137	0.0100	0.0009	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 21:04	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 21:04	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 21:04	7020517	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 21:04	7020517	CSW
Selenium	0.0067	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 21:04	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 21:04	7020517	CSW
Lithium	0.0149	0.0500	0.0103	mg/L	EPA 6020B	J	5	02/17/17 13:40	02/21/17 19:45	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 15:53	7020585	MTC



## PACE ANALYTICAL SERVICES, LLC.

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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 23, 2017

**Report No.: AAB0596**

### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### **Batch 7020559 - SM 2540 C**

Blank (7020559-BLK1)							Prepared & Analyzed: 02/20/17			
Total Dissolved Solids	ND	25	10	mg/L						
LCS (7020559-BS1)							Prepared & Analyzed: 02/20/17			
Total Dissolved Solids	405	25	10	mg/L	400.00		101	84-108		
Duplicate (7020559-DUP1)							Prepared & Analyzed: 02/20/17			
Total Dissolved Solids	ND	25	10	mg/L		ND			10	
Duplicate (7020559-DUP2)							Prepared & Analyzed: 02/20/17			
Total Dissolved Solids	3810	25	10	mg/L		3820		0.2	10	



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Attention: Mr. Joju Abraham

February 23, 2017

**Report No.: AAB0596**

### Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020547 - EPA 300.0</b>											
<b>Blank (7020547-BLK1)</b>											
Chloride	0.02	0.25	0.01	mg/L							J
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	0.35	1.0	0.09	mg/L							J
<b>LCS (7020547-BS1)</b>											
Chloride	10.4	0.25	0.01	mg/L	10.010		104	90-110			
Fluoride	10.4	0.30	0.004	mg/L	10.020		104	90-110			
Sulfate	10.8	1.0	0.09	mg/L	10.020		108	90-110			
<b>Matrix Spike (7020547-MS1)</b>											
	<b>Source: AAB0527-02</b>					Prepared & Analyzed: 02/19/17					
Chloride	26.0	0.25	0.01	mg/L	10.010	15.2	108	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	ND	108	90-110			
Sulfate	20.0	1.0	0.09	mg/L	10.020	10.1	99	90-110			
<b>Matrix Spike Dup (7020547-MSD1)</b>											
	<b>Source: AAB0527-02</b>					Prepared & Analyzed: 02/19/17					
Chloride	26.0	0.25	0.01	mg/L	10.010	15.2	108	90-110	0.08	15	
Fluoride	10.8	0.30	0.004	mg/L	10.020	ND	108	90-110	0.06	15	
Sulfate	20.0	1.0	0.09	mg/L	10.020	10.1	100	90-110	0.1	15	



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Attention: Mr. Joju Abraham

February 23, 2017

**Report No.: AAB0596**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### **Batch 7020517 - EPA 3005A**

Blank (7020517-BLK1)						Prepared: 02/17/17 Analyzed: 02/20/17				
Antimony	ND	0.0030	0.0008	mg/L						
Arsenic	ND	0.0050	0.0016	mg/L						
Barium	ND	0.0100	0.0004	mg/L						
Beryllium	ND	0.0030	0.00008	mg/L						
Boron	ND	0.0400	0.0064	mg/L						
Cadmium	ND	0.0010	0.00007	mg/L						
Calcium	ND	0.500	0.0311	mg/L						
Chromium	ND	0.0100	0.0009	mg/L						
Cobalt	ND	0.0100	0.0005	mg/L						
Copper	ND	0.0250	0.0005	mg/L						
Lead	ND	0.0050	0.0001	mg/L						
Molybdenum	ND	0.0100	0.0017	mg/L						
Nickel	ND	0.0100	0.0006	mg/L						
Selenium	ND	0.0100	0.0010	mg/L						
Silver	ND	0.0100	0.0005	mg/L						
Thallium	ND	0.0010	0.0002	mg/L						
Vanadium	ND	0.0100	0.0071	mg/L						
Zinc	ND	0.0100	0.0021	mg/L						
Lithium	ND	0.0500	0.0021	mg/L						

LCS (7020517-BS1)						Prepared: 02/17/17 Analyzed: 02/20/17				
Antimony	0.114	0.0030	0.0008	mg/L	0.10000		114	80-120		
Arsenic	0.103	0.0050	0.0016	mg/L	0.10000		103	80-120		
Barium	0.104	0.0100	0.0004	mg/L	0.10000		104	80-120		
Beryllium	0.102	0.0030	0.00008	mg/L	0.10000		102	80-120		
Boron	1.03	0.0400	0.0064	mg/L	1.0000		103	80-120		
Cadmium	0.108	0.0010	0.00007	mg/L	0.10000		108	80-120		
Calcium	1.05	0.500	0.0311	mg/L	1.0000		105	80-120		
Chromium	0.107	0.0100	0.0009	mg/L	0.10000		107	80-120		
Cobalt	0.108	0.0100	0.0005	mg/L	0.10000		108	80-120		
Copper	0.106	0.0250	0.0005	mg/L	0.10000		106	80-120		
Lead	0.100	0.0050	0.0001	mg/L	0.10000		100	80-120		
Molybdenum	0.105	0.0100	0.0017	mg/L	0.10000		105	80-120		
Nickel	0.108	0.0100	0.0006	mg/L	0.10000		108	80-120		
Selenium	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120		
Silver	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120		
Thallium	0.102	0.0010	0.0002	mg/L	0.10000		102	80-120		
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000		108	80-120		
Zinc	0.106	0.0100	0.0021	mg/L	0.10000		106	80-120		
Lithium	0.0999	0.0500	0.0021	mg/L	0.10000		100	80-120		



# PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 23, 2017

**Report No.: AAB0596**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 7020517 - EPA 3005A

Matrix Spike (7020517-MS1)		Source: AAB0586-01			Prepared: 02/17/17 Analyzed: 02/21/17					
Antimony	0.108	0.0150	0.0042	mg/L	0.10000	ND	108	75-125		
Arsenic	0.110	0.0050	0.0016	mg/L	0.10000	ND	110	75-125		
Barium	0.127	0.0500	0.0022	mg/L	0.10000	0.0277	99	75-125		
Beryllium	0.0981	0.0150	0.0004	mg/L	0.10000	ND	98	75-125		
Boron	1.78	0.0400	0.0064	mg/L	1.0000	0.825	95	75-125		
Cadmium	0.106	0.0010	0.00007	mg/L	0.10000	ND	106	75-125		
Calcium	86.7	25.0	1.55	mg/L	1.0000	85.7	99	75-125		
Chromium	0.107	0.0100	0.0009	mg/L	0.10000	ND	107	75-125		
Cobalt	0.108	0.0100	0.0005	mg/L	0.10000	ND	108	75-125		
Copper	0.101	0.0250	0.0005	mg/L	0.10000	ND	101	75-125		
Lead	0.0985	0.0050	0.0001	mg/L	0.10000	ND	98	75-125		
Molybdenum	0.111	0.0100	0.0017	mg/L	0.10000	ND	111	75-125		
Nickel	0.107	0.0100	0.0006	mg/L	0.10000	ND	107	75-125		
Selenium	0.106	0.0100	0.0010	mg/L	0.10000	ND	106	75-125		
Silver	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125		
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125		
Vanadium	0.111	0.0100	0.0071	mg/L	0.10000	ND	111	75-125		
Zinc	0.104	0.0100	0.0021	mg/L	0.10000	ND	104	75-125		
Lithium	0.102	0.0500	0.0021	mg/L	0.10000	ND	102	75-125		

Matrix Spike Dup (7020517-MSD1)		Source: AAB0586-01			Prepared: 02/17/17 Analyzed: 02/21/17					
Antimony	0.107	0.0150	0.0042	mg/L	0.10000	ND	107	75-125	1	20
Arsenic	0.108	0.0050	0.0016	mg/L	0.10000	ND	108	75-125	2	20
Barium	0.125	0.0500	0.0022	mg/L	0.10000	0.0277	98	75-125	1	20
Beryllium	0.0988	0.0150	0.0004	mg/L	0.10000	ND	99	75-125	0.8	20
Boron	1.79	0.0400	0.0064	mg/L	1.0000	0.825	97	75-125	0.9	20
Cadmium	0.106	0.0010	0.00007	mg/L	0.10000	ND	106	75-125	0.2	20
Calcium	87.6	25.0	1.55	mg/L	1.0000	85.7	195	75-125	1	20
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	ND	108	75-125	1	20
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000	ND	105	75-125	2	20
Copper	0.103	0.0250	0.0005	mg/L	0.10000	ND	103	75-125	2	20
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125	3	20
Molybdenum	0.110	0.0100	0.0017	mg/L	0.10000	ND	110	75-125	0.7	20
Nickel	0.104	0.0100	0.0006	mg/L	0.10000	ND	104	75-125	2	20
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	4	20
Silver	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	0.3	20
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	ND	104	75-125	4	20
Vanadium	0.111	0.0100	0.0071	mg/L	0.10000	ND	111	75-125	0.6	20
Zinc	0.104	0.0100	0.0021	mg/L	0.10000	ND	104	75-125	0.001	20
Lithium	0.0978	0.0500	0.0021	mg/L	0.10000	ND	98	75-125	4	20



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 23, 2017

**Report No.: AAB0596**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 7020517 - EPA 3005A

Post Spike (7020517-PS1)		Source: AAB0586-01			Prepared: 02/17/17 Analyzed: 02/21/17			
Antimony	105		ug/L	100.00	-0.0312	105	80-120	
Arsenic	111		ug/L	100.00	0.640	110	80-120	
Barium	127		ug/L	100.00	27.7	99	80-120	
Beryllium	98.4		ug/L	100.00	0.0451	98	80-120	
Boron	1760		ug/L	1000.0	825	94	80-120	
Cadmium	105		ug/L	100.00	0.0357	105	80-120	
Calcium	87400		ug/L	1000.0	85700	171	80-120	QM-02
Chromium	110		ug/L	100.00	0.314	110	80-120	
Cobalt	108		ug/L	100.00	0.161	108	80-120	
Copper	106		ug/L	100.00	-0.0041	106	80-120	
Lead	98.1		ug/L	100.00	0.0447	98	80-120	
Molybdenum	109		ug/L	100.00	0.245	109	80-120	
Nickel	108		ug/L	100.00	0.221	107	80-120	
Selenium	103		ug/L	100.00	0.293	103	80-120	
Silver	101		ug/L	100.00	0.0103	101	80-120	
Thallium	100		ug/L	100.00	0.0781	100	80-120	
Vanadium	114		ug/L	100.00	0.275	114	80-120	
Zinc	104		ug/L	100.00	1.70	102	80-120	
Lithium	98.6		ug/L	100.00	0.746	98	80-120	

#### Batch 7020584 - EPA 7470A

Blank (7020584-BLK1)					Prepared & Analyzed: 02/21/17			
Mercury	ND	0.00050	0.000041	mg/L				
LCS (7020584-BS1)					Prepared & Analyzed: 02/21/17			
Mercury	0.00246	0.00050	0.000041	mg/L	2.5000E-3	98	80-120	



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 23, 2017

**Report No.: AAB0596**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 7020584 - EPA 7470A

Matrix Spike (7020584-MS1)		Source: AAB0586-02				Prepared & Analyzed: 02/21/17				
Mercury	0.00241	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125		
Matrix Spike Dup (7020584-MSD1)		Source: AAB0586-02				Prepared & Analyzed: 02/21/17				
Mercury	0.00238	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125	1	20
Post Spike (7020584-PS1)		Source: AAB0586-02				Prepared & Analyzed: 02/21/17				
Mercury	1.70			ug/L	1.6667	-0.00501	102	80-120		

#### Batch 7020585 - EPA 7470A

Blank (7020585-BLK1)							Prepared & Analyzed: 02/21/17			
Mercury	ND	0.00050	0.000041	mg/L						
LCS (7020585-BS1)							Prepared & Analyzed: 02/21/17			
Mercury	0.00240	0.00050	0.000041	mg/L	2.5000E-3		96	80-120		
Matrix Spike (7020585-MS1)		Source: AAB0668-01				Prepared & Analyzed: 02/21/17				
Mercury	0.00237	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125		
Matrix Spike Dup (7020585-MSD1)		Source: AAB0668-01				Prepared & Analyzed: 02/21/17				
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	1	20
Post Spike (7020585-PS1)		Source: AAB0668-01				Prepared & Analyzed: 02/21/17				
Mercury	1.74			ug/L	1.6667	-0.00249	104	80-120		



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 23, 2017

## Legend

### Definition of Laboratory Terms

<b>ND</b>	- Not Detected at levels equal to or greater than the MDL
<b>BRL</b>	- Not Detected at levels equal to or greater than the RL
<b>RL</b>	- Reporting Limit
	<b>MDL</b> - Method Detection Limit
<b>SOP</b>	- Method run per Pace Standard Operating Procedure
<b>CFU</b>	- Colony Forming Units
<b>DF</b>	- Dilution Factor
	<b>TIC</b> - Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

**R-01** Elevated reporting limit due to matrix interference.

**QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.

J Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

**B-01** Analyte was detected in the associated method blank at an estimated level equal to or greater than the MDL. Sample values reported as greater than the MDL and less than 10x the method blank value are reported as estimated values.

**Note: Unless otherwise noted, all results are reported on an as received basis.**

6880

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 www.pacearts.com

**CHAIN OF CUSTODY RECORD**

*Pace Analytical*

Pace Analytical Services, Inc.  
110 TECHNOLOGY PARKWAY

(770) 734-4200; FAX (770) 734-4201

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SAMPLED BY AND TITLE:  
KAREN SAWYER

REUNQUISHED BY:  
*S. S. S.*

DATE/TIME:  
2/15/17 00:00

FOR LAB USE ONLY

LAB #:

DATE/TIME:  
2015.7.20(木)

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PUBLISHED BY:

REUNIQ  
رئانق

DATE/TIME:  
۱۳۹۷. ۰۲. ۱۴

SAMPLED BY AND TESTED BY

**LAB #:** 15

DATE/TIME:  
2/15/17 00:16

PUBLISHED BY:  
G. E. COOK

REINQ  
رئنقا

DATE/TIME:  
۱۳۹۷. ۰۲. ۱۴

TITLE: Portrait Sketch

SAMPLED BY AND TESTED BY



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### LOG-IN CHECKLIST

Printed: 2/17/2017 1:26:27PM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 02/16/17 09:25

**Work Order:** AAB0596  
**Logged In By:** Mohammad M. Rahman

### OBSERVATIONS

<b>#Samples:</b> 5	<b>#Containers:</b> 20
<b>Minimum Temp(C):</b> 1.0	<b>Maximum Temp(C):</b> 1.0
<b>Custody Seal(s) Used:</b> Yes	

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

**Comments:**

March 13, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant McManus  
Pace Project No.: 30211140

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on February 17, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
(724)850-5612  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus  
 Pace Project No.: 30211140

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
 L-A-B DOD-ELAP Accreditation #: L2417  
 Alabama Certification #: 41590  
 Arizona Certification #: AZ0734  
 Arkansas Certification  
 California Certification #: 04222CA  
 Colorado Certification  
 Connecticut Certification #: PH-0694  
 Delaware Certification  
 Florida/TNI Certification #: E87683  
 Georgia Certification #: C040  
 Guam Certification  
 Hawaii Certification  
 Idaho Certification  
 Illinois Certification  
 Indiana Certification  
 Iowa Certification #: 391  
 Kansas/TNI Certification #: E-10358  
 Kentucky Certification #: 90133  
 Louisiana DHH/TNI Certification #: LA140008  
 Louisiana DEQ/TNI Certification #: 4086  
 Maine Certification #: PA00091  
 Maryland Certification #: 308  
 Massachusetts Certification #: M-PA1457  
 Michigan/PADEP Certification  
 Missouri Certification #: 235

Montana Certification #: Cert 0082  
 Nebraska Certification #: NE-05-29-14  
 Nevada Certification #: PA014572015-1  
 New Hampshire/TNI Certification #: 2976  
 New Jersey/TNI Certification #: PA 051  
 New Mexico Certification #: PA01457  
 New York/TNI Certification #: 10888  
 North Carolina Certification #: 42706  
 North Dakota Certification #: R-190  
 Oregon/TNI Certification #: PA200002  
 Pennsylvania/TNI Certification #: 65-00282  
 Puerto Rico Certification #: PA01457  
 Rhode Island Certification #: 65-00282  
 South Dakota Certification  
 Tennessee Certification #: TN2867  
 Texas/TNI Certification #: T104704188-14-8  
 Utah/TNI Certification #: PA014572015-5  
 USDA Soil Permit #: P330-14-00213  
 Vermont Dept. of Health: ID# VT-0282  
 Virgin Island/PADEP Certification  
 Virginia/VELAP Certification #: 460198  
 Washington Certification #: C868  
 West Virginia DEP Certification #: 143  
 West Virginia DHHR Certification #: 9964C  
 Wisconsin Certification  
 Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus  
Pace Project No.: 30211140

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30211140001	MCM-16	Water	02/15/17 10:14	02/17/17 11:00
30211140002	MCM-01	Water	02/15/17 11:54	02/17/17 11:00
30211140003	MCM-14	Water	02/15/17 13:58	02/17/17 11:00
30211140004	MCM-12	Water	02/15/17 17:10	02/17/17 11:00
30211140005	MCM-17	Water	02/15/17 17:10	02/17/17 11:00

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus  
Pace Project No.: 30211140

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30211140001	MCM-16	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30211140002	MCM-01	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30211140003	MCM-14	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30211140004	MCM-12	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30211140005	MCM-17	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30211140

<b>Sample: MCM-16</b>		<b>Lab ID: 30211140001</b>	Collected: 02/15/17 10:14	Received: 02/17/17 11:00	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>0.493 ± 0.299 (0.481)</b> C:81% T:NA	pCi/L	03/07/17 10:53	13982-63-3
Radium-228	EPA 9320	<b>1.16 ± 0.600 (1.06)</b> C:60% T:74%	pCi/L	03/13/17 12:35	15262-20-1
Total Radium	Total Radium Calculation	<b>1.65 ± 0.899 (1.54)</b>	pCi/L	03/13/17 16:52	7440-14-4
<b>Sample: MCM-01</b>		<b>Lab ID: 30211140002</b>	Collected: 02/15/17 11:54	Received: 02/17/17 11:00	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>1.23 ± 0.404 (0.303)</b> C:91% T:NA	pCi/L	03/07/17 10:53	13982-63-3
Radium-228	EPA 9320	<b>0.184 ± 0.472 (1.05)</b> C:53% T:79%	pCi/L	03/13/17 12:35	15262-20-1
Total Radium	Total Radium Calculation	<b>1.41 ± 0.876 (1.35)</b>	pCi/L	03/13/17 16:52	7440-14-4
<b>Sample: MCM-14</b>		<b>Lab ID: 30211140003</b>	Collected: 02/15/17 13:58	Received: 02/17/17 11:00	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>0.300 ± 0.196 (0.267)</b> C:94% T:NA	pCi/L	03/07/17 10:53	13982-63-3
Radium-228	EPA 9320	<b>-0.129 ± 0.273 (0.682)</b> C:67% T:86%	pCi/L	03/13/17 12:35	15262-20-1
Total Radium	Total Radium Calculation	<b>0.300 ± 0.469 (0.949)</b>	pCi/L	03/13/17 16:52	7440-14-4
<b>Sample: MCM-12</b>		<b>Lab ID: 30211140004</b>	Collected: 02/15/17 17:10	Received: 02/17/17 11:00	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>1.20 ± 0.399 (0.303)</b> C:91% T:NA	pCi/L	03/07/17 10:53	13982-63-3
Radium-228	EPA 9320	<b>1.01 ± 0.528 (0.955)</b> C:66% T:85%	pCi/L	03/13/17 12:35	15262-20-1
Total Radium	Total Radium Calculation	<b>2.21 ± 0.927 (1.26)</b>	pCi/L	03/13/17 16:52	7440-14-4
<b>Sample: MCM-17</b>		<b>Lab ID: 30211140005</b>	Collected: 02/15/17 17:10	Received: 02/17/17 11:00	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>0.949 ± 0.334 (0.295)</b> C:98% T:NA	pCi/L	03/07/17 12:34	13982-63-3
Radium-228	EPA 9320	<b>0.611 ± 0.355 (0.644)</b> C:75% T:88%	pCi/L	03/13/17 12:35	15262-20-1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus  
 Pace Project No.: 30211140

**Sample: MCM-17** Lab ID: **30211140005** Collected: 02/15/17 17:10 Received: 02/17/17 11:00 Matrix: Water

PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	<b>1.56 ± 0.689 (0.939)</b>	pCi/L	03/13/17 16:52	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus

Pace Project No.: 30211140

---

QC Batch: 250847 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 30211140001, 30211140002, 30211140003, 30211140004, 30211140005

---

METHOD BLANK: 1234239 Matrix: Water

Associated Lab Samples: 30211140001, 30211140002, 30211140003, 30211140004, 30211140005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.00396 ± 0.0920 (0.284) C:90% T:NA	pCi/L	03/07/17 09:19	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus

Pace Project No.: 30211140

QC Batch:	250848	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples: 30211140001, 30211140002, 30211140003, 30211140004, 30211140005			

METHOD BLANK: 1234244	Matrix: Water
-----------------------	---------------

Associated Lab Samples: 30211140001, 30211140002, 30211140003, 30211140004, 30211140005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.160 ± 0.356 (0.860) C:71% T:84%	pCi/L	03/09/17 12:27	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus  
Pace Project No.: 30211140

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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WO# : 30211140



## Chain of Custody

Workorder: AAB0596  
 Report To:  
 Betsy McDaniel  
 Pace Analytical Atlanta  
 110 Technology Parkway  
 Peachtree Corners, GA 30092  
 Phone (770)-734-4200

Workorder Name: Plant McManus  
 Subcontract To: Pace - Pittsburgh  
 1638 Roseytown Road  
 Stes. 2,3,4  
 Greensburg, PA 15601  
 Phone (724) 850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HNO3	Preserved Containers		LAB USE ONLY
							Radiium 226, 228, Total		
1	MCM-16	G	2/15/2017 10:14	AAB0596-01	GW	2		X	001
2	MCM-01	G	2/15/2017 11:54	AAB0596-02	GW	2		X	002
3	MCM-14	G	2/15/2017 13:58	AAB0596-03	GW	2		X	003
4	MCM-12	G	2/15/2017 17:10	AAB0596-04	GW	2		X	004
5	MCM-17	G	2/15/2017 17:10	AAB0596-05	GW	2		X	005
6									
7									
8									
9									
10									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments	
					Comments	Comments
1						
2						
3						

Cooler Temperature on Receipt 74.1°C Custody Seal Y or N Y Received on Ice Y or N Y Sample Intact Y or N Y

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

## Sample Condition Upon Receipt Pittsburgh

RTB

Client Name: Pace, GA Project # 30211140Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_Tracking #: 6812 5102 4060Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  noThermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: DM 2-17-17

Comments:	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:	X			4.
Sample Labels match COC:	X			5.
-Includes date/time/ID		Matrix:	X	
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):		X		7.
Rush Turn Around Time Requested:		X		8.
Sufficient Volume:	X			9.
Correct Containers Used:	X			10.
-Pace Containers Used:	X			
Containers Intact:	X			11.
Orthophosphate field filtered			X	12.
Organic Samples checked for dechlorination:			X	13.
Filtered volume received for Dissolved tests			X	14.
All containers have been checked for preservation.	X			15. PHL2
All containers needing preservation are found to be in compliance with EPA recommendation.	X			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>A9R</u> Date/time of preservation: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):			X	16.
Trip Blank Present:		X		17.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr	X			Initial when completed: <u>A9R</u> Date: <u>2-17-17</u>

## Client Notification/ Resolution:

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

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ A check in this box indicates that additional information has been stored in ereports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

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Face Analytics

CHAIN OF CUSTODY RECORD

Pace Analytical Services, Inc  
110 TECHNOLOGY PARK  
(770) 734-4200 • FAX (770) 7



## Quality Control Sample Performance Assessment

www.paceanalytical.com

**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

Test: Ra-228		Analyst: JJY		Sample Matrix Spike Control Assessment		Sample Collection Date:	
Date: 3/6/2017		Worklist: 34332 DW		Sample I.D.: Sample MS I.D.		Sample MSD I.D.	
Matrix: MB				MS/MSD Decay Corrected Spike Concentration (pCi/mL):		Spike I.D.:	
Method Blank Assessment				Spike Volume Used in MS (mL):		Sample Matrix Spike Result:	
				Spike Volume Used in MSD (mL):		Sample Matrix Spike Duplicate Result:	
				MS Aliquot (L, g, F):		Sample Matrix Spike Duplicate Result:	
				MS Target Conc. (pCi/L, g, F):		Sample Matrix Spike Duplicate Result:	
				MSD Aliquot (L, g, F):		MSD Target Conc. (pCi/L, g, F):	
				MSD Target Uncertainty (calculated):		MSD Target Uncertainty (calculated):	
				Sample Result Counting Uncertainty (pCi/L, g, F):		Sample Result Counting Uncertainty (pCi/L, g, F):	
				Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
				Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
				MSD Numerical Performance Indicator:		MSD Numerical Performance Indicator:	
				MSD Percent Recovery:		MSD Percent Recovery:	
				MS Status vs Numerical Indicator:		MS Status vs Numerical Indicator:	
				MS Status vs Recovery:		MS Status vs Recovery:	
				MSD Status vs Numerical Indicator:		MSD Status vs Recovery:	
Laboratory Control Sample Assessment		LCSD (Y or N)?		N		LCSD34332	
		Count Date: 1/01/1900		Spike I.D.: 17-005		Sample Matrix Spike Result:	
		Spike Concentration (pCi/mL): 342468595.882		Volume Used (mL): 0.000		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
				Aliquot Volume (L, g, F): 0.800		Sample Matrix Spike Duplicate Result:	
				Target Conc. (pCi/L, g, F): 0.000		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
				Uncertainty (Calculated): #VALUE!		MSD Numerical Performance Indicator:	
				Result (pCi/L, g, F): #VALUE!		MSD Percent Recovery:	
				Numerical Performance Indicator: #VALUE!		MS Status vs Numerical Indicator:	
				Percent Recovery: #VALUE!		MS Status vs Recovery:	
				Status vs Numerical Indicator: #VALUE!		MSD Status vs Recovery:	
Duplicate Sample Assessment		Sample I.D.: 30210856001		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.		Sample I.D.:	
		Duplicate Sample I.D.: 30210856001 DUP		Sample MS I.D.:			
		Sample Result (pCi/L, g, F): -0.147		Sample MSD I.D.:			
		Sample Result Counting Uncertainty (pCi/L, g, F): 0.331		Sample Matrix Spike Result:			
		Sample Duplicate Result (pCi/L, g, F): 0.362		Sample Matrix Spike Duplicate Result:			
		Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.366		Sample Matrix Spike Result Counting Uncertainty (pCi/L, g, F):			
		Are sample and/or duplicate results below MDC? See Below###		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):			
		Duplicate Numerical Performance Indicator: 2.022		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):			
		Duplicate Status vs Numerical Indicator: 475.54%		Duplicate Numerical Performance Indicator: MS/MSD Duplicate Status vs Numerical Indicator:			
		Duplicate Status vs RPD: N/A		MS/MSD Duplicate Status vs RPD:			

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

#VALUE!

\*\*Batch must be re-prepared due to unacceptable precision. *3/13/17*

*3/13/17* numerical indicator <3 acceptable



## Quality Control Sample Performance Assessment

*Analyst Must Manually Enter All Fields Highlighted in Yellow.*

Method Blank Assessment		Sample Matrix Spike Control Assessment	
Test:	Ra-228	Sample I.D.:	Sample Collection Date:
Analyst:	JY	Spike I.D.:	Sample I.D.
Date:	3/10/2017	MSD I.D.:	Sample MS I.D.
Worklist:	34332	MS/MSD Decay Corrected Spike Concentration (pCi/mL):	
Matrix:	DW	Spike Volume Used in MS (mL):	
		Spike Volume Used in MSD (mL):	
		MS Aliquot (L, g, F):	
		MS Target Conc. (pCi/L, g, F):	
		MSD Aliquot (L, g, F):	
		MSD Target Conc. (pCi/L, g, F):	
		Spike uncertainty (calculated):	
		Sample Result:	
		Sample Result Counting Uncertainty (pCi/L, g, F):	
		Sample Matrix Spike Result:	
		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
		Sample Matrix Spike Duplicate Result:	
		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
		MS Numerical Performance Indicator:	
		MS Percent Recovery:	
		MSD Numerical Performance Indicator:	
		MS Status vs Numerical Indicator:	
		MS Status vs Recovery:	
		MSD Status vs Recovery:	
Laboratory Control Sample Assessment		Matrix Spike/Matrix Spike Duplicate Sample Assessment	
LCSD (Y or N)?	N	Sample I.D.:	Sample I.D.
LCSD34332		Sample MS I.D.:	Sample MS I.D.
Count Date:	3/13/2017	Sample Matrix Spike Result:	Sample Matrix Spike Result
Spike I.D.:	17-005	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
Spike Concentration (pCi/mL):	25.050	Sample Matrix Spike Duplicate Result:	Sample Matrix Spike Duplicate Result
Volume Used (mL):	0.20	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
Aliquot Volume (L, g, F):	0.800	MS Numerical Performance Indicator:	MS Numerical Performance Indicator:
Target Conc. (pCi/L, g, F):	6.264	MS Percent Recovery:	MS Percent Recovery:
Uncertainty (Calculated):	0.451	MSD Numerical Performance Indicator:	MSD Numerical Performance Indicator:
Result (pCi/L, g, F):	5.039	MS Status vs Numerical Indicator:	MS Status vs Numerical Indicator:
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.769	MS Status vs Recovery:	MS Status vs Recovery:
Numerical Performance Indicator:	-2.69	MSD Status vs Numerical Indicator:	MSD Status vs Numerical Indicator:
Percent Recovery:	80.45%	MS Status vs Recovery:	MSD Status vs Recovery:
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		
Duplicate Sample Assessment			
Sample I.D.:	Enter Duplicate sample I.D.s if other than LCSD/LCSD in the space below.	Sample I.D.:	Sample I.D.
Duplicate Sample I.D.:		Sample MS I.D.:	Sample MS I.D.
Sample Result (pCi/L, g, F):		Sample Matrix Spike Result:	Sample Matrix Spike Result
Sample Result Counting Uncertainty (pCi/L, g, F):		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):
Sample Duplicate Result (pCi/L, g, F):		Sample Matrix Spike Duplicate Result:	Sample Matrix Spike Duplicate Result
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):
Are sample and/or duplicate results below MDC?	See Below ##	Duplicate Numerical Performance Indicator:	Duplicate Numerical Performance Indicator:
Duplicate RPD:		Duplicate Status vs Numerical Indicator:	Duplicate Status vs Numerical Indicator:
Duplicate Status vs Numerical Indicator:		Duplicate Status vs RPD:	Duplicate Status vs RPD:
Duplicate Status vs Recovery:		MS/MSD Duplicate Status vs Numerical Indicator:	MS/MSD Duplicate Status vs RPD:

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

Re-ingest of LC was due to low yttrium yield <5%.

3/13/17



## Quality Control Sample Performance Assessment

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*Analyst Must Manually Enter All Fields Highlighted in Yellow.*

Test: Analyst: Date: Worklist: Matrix:	Ra-226 JC2 3/6/2017 34331 DW
<b>Method Blank Assessment</b>	
MB Sample ID MB Concentration: MB Counting Uncertainty: MB MDC: MB Numerical Performance Indicator: MB Status vs Numerical Indicator:	1234239 -0.004 0.092 0.284 -0.08 N/A Pass
<b>Laboratory Control Sample Assessment</b>	
LCSD (Y or N)? LCSD Sample ID: Count Date:	N LCSD34331 3/7/2017
Spike I.D.: Spike Concentration (pCi/mL): Volume Used (mL): Aliquot Volume (L, g, F): Target Conc. (pCi/L, g, F): Uncertainty (Calculated): Result (pCi/L, g, F): LCSD Counting Uncertainty (pCi/L, g, F): Numerical Performance Indicator: Percent Recovery: Status vs Numerical Indicator:	17-003 38.231 0.25 0.509 18.783 0.884 15.590 1.200 -4.20 83.00% N/A Pass
<b>Duplicate Sample Assessment</b>	
Sample I.D.: Duplicate Sample I.D. Sample Result Counting Uncertainty (pCi/L, g, F): Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): Are sample and/or duplicate results below MDC?: Duplicate Numerical Performance Indicator: Duplicate Status vs Numerical Indicator: Duplicate Status vs RPD:	30211139001DUP 30211139001DUP 0.106 0.145 0.089 0.132 See Below ## 0.168 17.22% N/A Pass
<p>Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.</p> <p>## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.</p> <p>Comments:</p> <p style="text-align: right;"><i>3/13/17</i></p>	
<p>Sample I.D.: Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Sample Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MS Percent Recovery: MS Status vs Numerical Indicator: MS Status vs Numerical Indicator: MS Status vs Recovery: MS Status vs Recovery:</p>	
<p>Sample I.D.: Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result: Sample Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Sample Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: MS/ MSD Duplicate RPD: MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs RPD:</p>	



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

**Prepared For:**

**Georgia Power**  
**2480 Maner Road**  
**Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AAB0672**

**February 27, 2017**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

A handwritten signature in black ink, appearing to read "Betty McManus".

Project Manager

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All test results relate only to the samples analyzed.



## PACE ANALYTICAL SERVICES, LLC.

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Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

### ANALYTICAL REPORT FOR SAMPLES

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
MCM-09	AAB0672-01	Ground Water	02/16/17 10:16	02/18/17 08:45
MCM-07	AAB0672-02	Ground Water	02/16/17 12:52	02/18/17 08:45
MCM-06	AAB0672-03	Ground Water	02/16/17 15:32	02/18/17 08:45
MCM-05	AAB0672-04	Ground Water	02/16/17 17:12	02/18/17 08:45
Dup-1	AAB0672-05	Ground Water	02/16/17 00:00	02/18/17 08:45
FBL021617	AAB0672-06	Water	02/16/17 17:45	02/18/17 08:45
EQBL021617	AAB0672-07	Water	02/16/17 17:50	02/18/17 08:45



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

Report No.: AAB0672

Project: CCR Event

Client ID: MCM-09

Lab Number ID: AAB0672-01

Date/Time Sampled: 2/16/2017 10:16:00AM

Date/Time Received: 2/18/2017 8:45:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3910	25	10	mg/L	SM 2540 C		1	02/21/17 13:55	02/21/17 13:55	7020598	JPT
<b>Inorganic Anions</b>											
Chloride	1800	25	1.3	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 03:55	7020696	RLC
Fluoride	0.08	0.30	0.004	mg/L	EPA 300.0	J	1	02/23/17 11:24	02/23/17 13:07	7020696	RLC
Sulfate	630	100	9.2	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 03:55	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Barium	0.184	0.0500	0.0022	mg/L	EPA 6020B		5	02/21/17 10:45	02/23/17 17:51	7020579	CSW
Beryllium	0.0005	0.0030	0.00008	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Boron	0.0816	0.0400	0.0064	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Calcium	296	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 23:20	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Selenium	0.0016	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Lithium	0.0537	0.0500	0.0021	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:14	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:19	7020585	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

Report No.: AAB0672

Project: CCR Event

Client ID: MCM-07

Lab Number ID: AAB0672-02

Date/Time Sampled: 2/16/2017 12:52:00PM

Date/Time Received: 2/18/2017 8:45:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	5080	25	10	mg/L	SM 2540 C		1	02/21/17 13:55	02/21/17 13:55	7020598	JPT
<b>Inorganic Anions</b>											
Chloride	3100	25	1.3	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 04:16	7020696	RLC
Fluoride	0.54	0.30	0.004	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 13:28	7020696	RLC
Sulfate	220	100	9.2	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 04:16	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Arsenic	0.0295	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Barium	0.0865	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Boron	0.815	0.0400	0.0064	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Calcium	114	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 23:31	7020579	CSW
Chromium	0.0028	0.0100	0.0009	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Selenium	0.0025	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Lithium	0.0142	0.0500	0.0021	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 23:25	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:21	7020585	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

Report No.: AAB0672

Project: CCR Event

Client ID: MCM-06

Lab Number ID: AAB0672-03

Date/Time Sampled: 2/16/2017 3:32:00PM

Date/Time Received: 2/18/2017 8:45:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4600	25	10	mg/L	SM 2540 C		1	02/21/17 13:55	02/21/17 13:55	7020598	JPT
<b>Inorganic Anions</b>											
Chloride	2500	25	1.3	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 04:36	7020696	RLC
Fluoride	0.30	0.30	0.004	mg/L	EPA 300.0	J	1	02/23/17 11:24	02/23/17 14:09	7020696	RLC
Sulfate	22	1.0	0.09	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 14:09	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Arsenic	0.257	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Barium	0.0555	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Boron	0.698	0.0400	0.0064	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Calcium	94.8	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 23:42	7020579	CSW
Chromium	0.0011	0.0100	0.0009	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Selenium	0.0022	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:37	7020579	CSW
Lithium	0.0500	0.0500	0.0021	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/24/17 13:06	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:28	7020585	MTC



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

Report No.: AAB0672

Project: CCR Event

Client ID: MCM-05

Lab Number ID: AAB0672-04

Date/Time Sampled: 2/16/2017 5:12:00PM

Date/Time Received: 2/18/2017 8:45:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4080	25	10	mg/L	SM 2540 C		1	02/21/17 13:55	02/21/17 13:55	7020598	JPT
<b>Inorganic Anions</b>											
Chloride	2100	25	1.3	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 04:58	7020696	RLC
Fluoride	0.60	0.30	0.004	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 14:30	7020696	RLC
Sulfate	90	2.0	0.18	mg/L	EPA 300.0		2	02/23/17 11:24	02/24/17 05:19	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Arsenic	0.0372	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Barium	0.0160	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Boron	0.539	0.0400	0.0064	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Calcium	74.0	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/23/17 00:05	7020579	CSW
Chromium	0.0012	0.0100	0.0009	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Selenium	0.0020	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Lithium	0.0376	0.0500	0.0021	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/23/17 00:00	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:31	7020585	MTC



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

Report No.: AAB0672

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AAB0672-05

Date/Time Sampled: 2/16/2017 12:00:00AM

Date/Time Received: 2/18/2017 8:45:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3960	25	10	mg/L	SM 2540 C		1	02/21/17 13:55	02/21/17 13:55	7020598	JPT
<b>Inorganic Anions</b>											
Chloride	1900	25	1.3	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 05:40	7020696	RLC
Fluoride	0.08	0.30	0.004	mg/L	EPA 300.0	J	1	02/23/17 11:24	02/23/17 15:32	7020696	RLC
Sulfate	640	100	9.2	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 05:40	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:11	7020579	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:11	7020579	CSW
Barium	0.192	0.0500	0.0022	mg/L	EPA 6020B		5	02/21/17 10:45	02/23/17 00:34	7020579	CSW
Beryllium	0.0005	0.0030	0.00008	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/23/17 00:11	7020579	CSW
Boron	0.0791	0.0400	0.0064	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:11	7020579	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:11	7020579	CSW
Calcium	287	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/23/17 00:17	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:11	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:11	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:11	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:11	7020579	CSW
Selenium	0.0014	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/23/17 00:11	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:11	7020579	CSW
Lithium	0.0521	0.0500	0.0103	mg/L	EPA 6020B		5	02/21/17 10:45	02/23/17 18:02	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:33	7020585	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

Report No.: AAB0672

Project: CCR Event

Client ID: FBL021617

Lab Number ID: AAB0672-06

Date/Time Sampled: 2/16/2017 5:45:00PM

Date/Time Received: 2/18/2017 8:45:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	02/21/17 13:55	02/21/17 13:55	7020598	JPT
<b>Inorganic Anions</b>											
Chloride	0.24	0.25	0.01	mg/L	EPA 300.0	J	1	02/23/17 11:24	02/23/17 15:52	7020696	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 15:52	7020696	RLC
Sulfate	0.14	1.0	0.09	mg/L	EPA 300.0	J	1	02/23/17 11:24	02/23/17 15:52	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:23	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:35	7020585	MTC



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

Report No.: AAB0672

Project: CCR Event

Client ID: EQBL021617

Lab Number ID: AAB0672-07

Date/Time Sampled: 2/16/2017 5:50:00PM

Date/Time Received: 2/18/2017 8:45:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	02/21/17 13:55	02/21/17 13:55	7020598	JPT
<b>Inorganic Anions</b>											
Chloride	0.16	0.25	0.01	mg/L	EPA 300.0	J	1	02/23/17 11:24	02/23/17 16:13	7020696	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 16:13	7020696	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 16:13	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/21/17 10:45	02/23/17 00:28	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:38	7020585	MTC



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

**Report No.: AAB0672**

### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### **Batch 7020598 - SM 2540 C**

Blank (7020598-BLK1)						Prepared & Analyzed: 02/21/17				
Total Dissolved Solids	ND	25	10	mg/L						
LCS (7020598-BS1)						Prepared & Analyzed: 02/21/17				
Total Dissolved Solids	391	25	10	mg/L	400.00	98	84-108			
Duplicate (7020598-DUP1)						Source: AAB0672-03 Prepared & Analyzed: 02/21/17				
Total Dissolved Solids	4660	25	10	mg/L		4600		1	10	



## PACE ANALYTICAL SERVICES, LLC.

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Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

**Report No.: AAB0672**

### Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020696 - EPA 300.0</b>											
<b>Blank (7020696-BLK1)</b>											
Prepared & Analyzed: 02/23/17											
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	ND	1.0	0.09	mg/L							
<b>LCS (7020696-BS1)</b>											
Prepared & Analyzed: 02/23/17											
Chloride	10.3	0.25	0.01	mg/L	10.010		103	90-110			
Fluoride	10.5	0.30	0.004	mg/L	10.020		105	90-110			
Sulfate	10.5	1.0	0.09	mg/L	10.020		104	90-110			
<b>Matrix Spike (7020696-MS1)</b>											
Source: AAB0709-04											
Prepared & Analyzed: 02/23/17											
Chloride	144	0.25	0.01	mg/L	10.010	235	NR	90-110			QM-02
Fluoride	10.3	0.30	0.004	mg/L	10.020	0.09	102	90-110			
Sulfate	266	1.0	0.09	mg/L	10.020	280	NR	90-110			QM-02
<b>Matrix Spike (7020696-MS2)</b>											
Source: AAB0709-05											
Prepared & Analyzed: 02/23/17											
Chloride	479	0.25	0.01	mg/L	10.010	510	NR	90-110			QM-02
Fluoride	9.08	0.30	0.004	mg/L	10.020	0.65	84	90-110			
Sulfate	285	1.0	0.09	mg/L	10.020	299	NR	90-110			QM-02
<b>Matrix Spike Dup (7020696-MSD1)</b>											
Source: AAB0709-04											
Prepared & Analyzed: 02/23/17											
Chloride	151	0.25	0.01	mg/L	10.010	235	NR	90-110	5	15	QM-02
Fluoride	10.5	0.30	0.004	mg/L	10.020	0.09	104	90-110	1	15	
Sulfate	266	1.0	0.09	mg/L	10.020	280	NR	90-110	0.02	15	QM-02



# PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

**Report No.: AAB0672**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### **Batch 7020579 - EPA 3005A**

Blank (7020579-BLK1)						Prepared: 02/21/17 Analyzed: 02/22/17				
Antimony	ND	0.0030	0.0008	mg/L						
Arsenic	ND	0.0050	0.0016	mg/L						
Barium	ND	0.0100	0.0004	mg/L						
Beryllium	ND	0.0030	0.00008	mg/L						
Boron	ND	0.0400	0.0064	mg/L						
Cadmium	ND	0.0010	0.00007	mg/L						
Calcium	ND	0.500	0.0311	mg/L						
Chromium	ND	0.0100	0.0009	mg/L						
Cobalt	ND	0.0100	0.0005	mg/L						
Copper	ND	0.0250	0.0005	mg/L						
Lead	ND	0.0050	0.0001	mg/L						
Molybdenum	ND	0.0100	0.0017	mg/L						
Nickel	ND	0.0100	0.0006	mg/L						
Selenium	ND	0.0100	0.0010	mg/L						
Silver	ND	0.0100	0.0005	mg/L						
Thallium	ND	0.0010	0.0002	mg/L						
Vanadium	ND	0.0100	0.0071	mg/L						
Zinc	ND	0.0100	0.0021	mg/L						
Lithium	ND	0.0500	0.0021	mg/L						

LCS (7020579-BS1)						Prepared: 02/21/17 Analyzed: 02/22/17				
Antimony	0.112	0.0030	0.0008	mg/L	0.10000		112	80-120		
Arsenic	0.0982	0.0050	0.0016	mg/L	0.10000		98	80-120		
Barium	0.104	0.0100	0.0004	mg/L	0.10000		104	80-120		
Beryllium	0.109	0.0030	0.00008	mg/L	0.10000		109	80-120		
Boron	1.05	0.0400	0.0064	mg/L	1.0000		105	80-120		
Cadmium	0.0999	0.0010	0.00007	mg/L	0.10000		100	80-120		
Calcium	1.03	0.500	0.0311	mg/L	1.0000		103	80-120		
Chromium	0.108	0.0100	0.0009	mg/L	0.10000		108	80-120		
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120		
Copper	0.105	0.0250	0.0005	mg/L	0.10000		105	80-120		
Lead	0.103	0.0050	0.0001	mg/L	0.10000		103	80-120		
Molybdenum	0.107	0.0100	0.0017	mg/L	0.10000		107	80-120		
Nickel	0.105	0.0100	0.0006	mg/L	0.10000		105	80-120		
Selenium	0.103	0.0100	0.0010	mg/L	0.10000		103	80-120		
Silver	0.104	0.0100	0.0005	mg/L	0.10000		104	80-120		
Thallium	0.106	0.0010	0.0002	mg/L	0.10000		106	80-120		
Vanadium	0.106	0.0100	0.0071	mg/L	0.10000		106	80-120		
Zinc	0.105	0.0100	0.0021	mg/L	0.10000		105	80-120		
Lithium	0.108	0.0500	0.0021	mg/L	0.10000		108	80-120		



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

**Report No.: AAB0672**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 7020579 - EPA 3005A

Matrix Spike (7020579-MS1)		Source: AAB0667-01			Prepared: 02/21/17 Analyzed: 02/22/17					
Antimony	0.110	0.0030	0.0008	mg/L	0.10000	ND	110	75-125		
Arsenic	0.105	0.0050	0.0016	mg/L	0.10000	ND	105	75-125		
Barium	0.132	0.0100	0.0004	mg/L	0.10000	0.0315	100	75-125		
Beryllium	0.0966	0.0030	0.00008	mg/L	0.10000	ND	97	75-125		
Boron	2.80	2.00	0.321	mg/L	1.0000	1.73	107	75-125		
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	0.0015	102	75-125		
Calcium	126	25.0	1.55	mg/L	1.0000	124	189	75-125		QM-02
Chromium	0.107	0.0100	0.0009	mg/L	0.10000	ND	107	75-125		
Cobalt	0.107	0.0100	0.0005	mg/L	0.10000	0.0054	102	75-125		
Copper	0.101	0.0250	0.0005	mg/L	0.10000	ND	101	75-125		
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125		
Molybdenum	0.107	0.0100	0.0017	mg/L	0.10000	ND	107	75-125		
Nickel	0.108	0.0100	0.0006	mg/L	0.10000	0.0036	104	75-125		
Selenium	0.105	0.0100	0.0010	mg/L	0.10000	0.0012	104	75-125		
Silver	0.0976	0.0100	0.0005	mg/L	0.10000	ND	98	75-125		
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	0.0003	103	75-125		
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125		
Zinc	0.130	0.0100	0.0021	mg/L	0.10000	0.0281	102	75-125		
Lithium	0.0976	0.0500	0.0021	mg/L	0.10000	ND	98	75-125		

Matrix Spike Dup (7020579-MSD1)		Source: AAB0667-01			Prepared: 02/21/17 Analyzed: 02/23/17					
Antimony	0.107	0.0030	0.0008	mg/L	0.10000	ND	107	75-125	3	20
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	ND	106	75-125	0.6	20
Barium	0.132	0.0100	0.0004	mg/L	0.10000	0.0315	100	75-125	0.2	20
Beryllium	0.0949	0.0030	0.00008	mg/L	0.10000	ND	95	75-125	2	20
Boron	2.46	2.00	0.321	mg/L	1.0000	1.73	73	75-125	13	20
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	0.0015	101	75-125	0.8	20
Calcium	115	25.0	1.55	mg/L	1.0000	124	NR	75-125	9	20
Chromium	0.106	0.0100	0.0009	mg/L	0.10000	ND	106	75-125	1	20
Cobalt	0.108	0.0100	0.0005	mg/L	0.10000	0.0054	103	75-125	0.4	20
Copper	0.0211	0.0250	0.0005	mg/L	0.10000	ND	21	75-125	131	20
Lead	0.0975	0.0050	0.0001	mg/L	0.10000	ND	97	75-125	4	20
Molybdenum	0.105	0.0100	0.0017	mg/L	0.10000	ND	105	75-125	1	20
Nickel	0.0226	0.0100	0.0006	mg/L	0.10000	0.0036	19	75-125	131	20
Selenium	0.104	0.0100	0.0010	mg/L	0.10000	0.0012	103	75-125	1	20
Silver	0.0185	0.0100	0.0005	mg/L	0.10000	ND	18	75-125	136	20
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	0.0003	101	75-125	3	20
Vanadium	0.0214	0.0100	0.0071	mg/L	0.10000	ND	21	75-125	134	20
Zinc	0.0258	0.0100	0.0021	mg/L	0.10000	0.0281	NR	75-125	133	20
Lithium	0.0963	0.0500	0.0021	mg/L	0.10000	ND	96	75-125	1	20



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

**Report No.: AAB0672**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 7020579 - EPA 3005A

Post Spike (7020579-PS1)		Source: AAB0667-01			Prepared: 02/21/17 Analyzed: 02/22/17			
Antimony	103		ug/L	100.00	0.671	102	80-120	
Arsenic	103		ug/L	100.00	0.614	102	80-120	
Barium	134		ug/L	100.00	31.5	102	80-120	
Beryllium	94.1		ug/L	100.00	0.0339	94	80-120	
Boron	2900		ug/L	1000.0	1730	118	80-120	
Cadmium	102		ug/L	100.00	1.48	100	80-120	
Calcium	124000		ug/L	1000.0	124000	NR	80-120	QM-02
Chromium	105		ug/L	100.00	0.0859	105	80-120	
Cobalt	106		ug/L	100.00	5.42	100	80-120	
Copper	95.8		ug/L	100.00	0.0853	96	80-120	
Lead	97.9		ug/L	100.00	0.0468	98	80-120	
Molybdenum	110		ug/L	100.00	0.143	110	80-120	
Nickel	103		ug/L	100.00	3.62	100	80-120	
Selenium	106		ug/L	100.00	1.17	104	80-120	
Silver	98.3		ug/L	100.00	0.0059	98	80-120	
Thallium	103		ug/L	100.00	0.254	102	80-120	
Vanadium	104		ug/L	100.00	0.0861	104	80-120	
Zinc	124		ug/L	100.00	28.1	96	80-120	
Lithium	98.4		ug/L	100.00	0.412	98	80-120	

#### Batch 7020585 - EPA 7470A

Blank (7020585-BLK1)					Prepared & Analyzed: 02/21/17			
Mercury	ND	0.00050	0.000041	mg/L				
LCS (7020585-BS1)					Prepared & Analyzed: 02/21/17			
Mercury	0.00240	0.00050	0.000041	mg/L	2.5000E-3	96	80-120	



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

**Report No.: AAB0672**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020585 - EPA 7470A</b>											
<b>Matrix Spike (7020585-MS1)</b> <b>Source: AAB0668-01</b> Prepared & Analyzed: 02/21/17											
Mercury      0.00237      0.00050      0.000041      mg/L      2.5000E-3      ND      95      75-125											
<b>Matrix Spike Dup (7020585-MSD1)</b> <b>Source: AAB0668-01</b> Prepared & Analyzed: 02/21/17											
Mercury      0.00233      0.00050      0.000041      mg/L      2.5000E-3      ND      93      75-125      1      20											
<b>Post Spike (7020585-PS1)</b> <b>Source: AAB0668-01</b> Prepared & Analyzed: 02/21/17											
Mercury      1.74      ug/L      1.6667      -0.00249      104      80-120											



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

## Legend

### Definition of Laboratory Terms

<b>ND</b>	- Not Detected at levels equal to or greater than the MDL
<b>BRL</b>	- Not Detected at levels equal to or greater than the RL
<b>RL</b>	- Reporting Limit
	<b>MDL</b> - Method Detection Limit
<b>SOP</b>	- Method run per Pace Standard Operating Procedure
<b>CFU</b>	- Colony Forming Units
<b>DF</b>	- Dilution Factor
	<b>TIC</b> - Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

**QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.

**J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

**Note: Unless otherwise noted, all results are reported on an as received basis.**



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

PAGE: 1 OF 1

CLIENT NAME:		ANALYSIS REQUESTED										PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:		# of		L		CONTAINER TYPE:		PRESERVATION			
ZAA Tammie	3008	C	3	7	3	A	P - PLASTIC	1 - HCl, ≤6°C					
REPORT TO:	CC: <u>Shawn Wilson</u>	O				B	A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C					
REQUESTED COMPLETION DATE:	PO #:	N				G	G - CLEAR GLASS	3 - HNO <sub>3</sub>					
PROJECT NAME/STATE:		T				V	V - VOA VIAL	4 - NaOH, ≤6°C					
PROJECT #:		A				S	S - STERILE	5 - NaOH/ZnAc, ≤6°C					
		I				O	O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C					
		D				N	7 - ≤6°C not frozen						
*MATRIX CODES:													
DW - DRINKING WATER    S - SOIL													
WW - WASTEWATER    SL - SLUDGE													
GW - GROUNDWATER    SD - SOLID													
SW - SURFACE WATER    A - AIR													
ST - STORM WATER    L - LIQUID													
W - WATER    P - PRODUCT													
REMARKS/ADDITIONAL INFORMATION													
4/6/17	1016	GWD	4	MCNA-09	6	1	1	1	1	1	1	1	1
4/6/17	1252	GWD	4	MCNA-07	7	1	1	1	1	1	1	1	1
4/6/17	1532	GWD	4	MCNA-06	7	1	1	1	1	1	1	1	1
4/6/17	1712	GWD	4	MCNA-05	7	1	1	1	1	1	1	1	1
4/6/17	-	GWD	4	DWD-1	7	1	1	1	1	1	1	1	1
4/6/17	1745	W	4	FBI-CRIMIT	7	1	1	1	1	1	1	1	1
4/6/17	1750	W	4	EDB-DW-17	7	1	1	1	1	1	1	1	1
SAMPLED BY AND TITLE:		DATE/TIME:		RELINQUISHED BY:		SAMPLE SHIPPED VIA:		DATE/TIME:		FOR LAB USE ONLY			
RECEIVED BY:		DATE/TIME:		RELINQUISHED BY:		COURIER:		DATE/TIME:		LAB #:			
RE		ED BY LAB:		DATE/TIME:		CLIENT		OTHER		Entered into LIMS:			
RE	PH	ed:		2017-04-17 0800		# of Coolers		FS		Tracking #:			
RE	PH	ed:	No	Ice:	Temperature: 20°	Custody Seal: Max.	Broken	Not Present					

Page 17 of 18



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### LOG-IN CHECKLIST

Printed: 2/20/2017 9:40:41AM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 02/18/17 08:45

**Work Order:** AAB0672  
**Logged In By:** Charles Hawks

### OBSERVATIONS

<b>#Samples:</b>	7	<b>#Containers:</b>	30
<b>Minimum Temp(C):</b>	2.0	<b>Maximum Temp(C):</b>	2.0
		<b>Custody Seal(s) Used:</b>	Yes

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

**Comments:**

March 14, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant McManus  
Pace Project No.: 30211403

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on February 21, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
(724)850-5612  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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## CERTIFICATIONS

Project: Plant McManus  
 Pace Project No.: 30211403

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
 L-A-B DOD-ELAP Accreditation #: L2417  
 Alabama Certification #: 41590  
 Arizona Certification #: AZ0734  
 Arkansas Certification  
 California Certification #: 04222CA  
 Colorado Certification  
 Connecticut Certification #: PH-0694  
 Delaware Certification  
 Florida/TNI Certification #: E87683  
 Georgia Certification #: C040  
 Guam Certification  
 Hawaii Certification  
 Idaho Certification  
 Illinois Certification  
 Indiana Certification  
 Iowa Certification #: 391  
 Kansas/TNI Certification #: E-10358  
 Kentucky Certification #: 90133  
 Louisiana DHH/TNI Certification #: LA140008  
 Louisiana DEQ/TNI Certification #: 4086  
 Maine Certification #: PA00091  
 Maryland Certification #: 308  
 Massachusetts Certification #: M-PA1457  
 Michigan/PADEP Certification  
 Missouri Certification #: 235

Montana Certification #: Cert 0082  
 Nebraska Certification #: NE-05-29-14  
 Nevada Certification #: PA014572015-1  
 New Hampshire/TNI Certification #: 2976  
 New Jersey/TNI Certification #: PA 051  
 New Mexico Certification #: PA01457  
 New York/TNI Certification #: 10888  
 North Carolina Certification #: 42706  
 North Dakota Certification #: R-190  
 Oregon/TNI Certification #: PA200002  
 Pennsylvania/TNI Certification #: 65-00282  
 Puerto Rico Certification #: PA01457  
 Rhode Island Certification #: 65-00282  
 South Dakota Certification  
 Tennessee Certification #: TN2867  
 Texas/TNI Certification #: T104704188-14-8  
 Utah/TNI Certification #: PA014572015-5  
 USDA Soil Permit #: P330-14-00213  
 Vermont Dept. of Health: ID# VT-0282  
 Virgin Island/PADEP Certification  
 Virginia/VELAP Certification #: 460198  
 Washington Certification #: C868  
 West Virginia DEP Certification #: 143  
 West Virginia DHHR Certification #: 9964C  
 Wisconsin Certification  
 Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus  
 Pace Project No.: 30211403

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30211403001	MCM-09	Water	02/16/17 10:16	02/21/17 09:35
30211403002	MCM-07	Water	02/16/17 12:52	02/21/17 09:35
30211403003	MCM-06	Water	02/16/17 15:32	02/21/17 09:35
30211403004	MCM-05	Water	02/16/17 17:12	02/21/17 09:35
30211403005	Dup-1	Water	02/16/17 00:00	02/21/17 09:35
30211403006	FBL021617	Water	02/16/17 17:45	02/21/17 09:35
30211403007	EQBL021617	Water	02/16/17 17:50	02/21/17 09:35

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus  
Pace Project No.: 30211403

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30211403001	MCM-09	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211403002	MCM-07	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211403003	MCM-06	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211403004	MCM-05	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211403005	Dup-1	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211403006	FBL021617	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211403007	EQBL021617	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30211403

<b>Sample: MCM-09</b>		<b>Lab ID: 30211403001</b>	Collected: 02/16/17 10:16	Received: 02/21/17 09:35	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>2.19 ± 0.555 (0.268)</b> C:92% T:NA	pCi/L	03/07/17 14:50	13982-63-3
Radium-228	EPA 9320	<b>3.46 ± 1.08 (1.38)</b> C:46% T:75%	pCi/L	03/11/17 13:46	15262-20-1
Total Radium	Total Radium Calculation	<b>5.65 ± 1.64 (1.65)</b>	pCi/L	03/13/17 13:18	7440-14-4
<b>Sample: MCM-07</b>		<b>Lab ID: 30211403002</b>	Collected: 02/16/17 12:52	Received: 02/21/17 09:35	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>1.62 ± 0.476 (0.287)</b> C:82% T:NA	pCi/L	03/07/17 14:50	13982-63-3
Radium-228	EPA 9320	<b>1.47 ± 0.899 (1.69)</b> C:68% T:45%	pCi/L	03/11/17 13:46	15262-20-1
Total Radium	Total Radium Calculation	<b>3.09 ± 1.38 (1.98)</b>	pCi/L	03/13/17 13:18	7440-14-4
<b>Sample: MCM-06</b>		<b>Lab ID: 30211403003</b>	Collected: 02/16/17 15:32	Received: 02/21/17 09:35	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>0.821 ± 0.313 (0.297)</b> C:95% T:NA	pCi/L	03/07/17 14:50	13982-63-3
Radium-228	EPA 9320	<b>1.01 ± 0.538 (0.957)</b> C:66% T:76%	pCi/L	03/11/17 13:46	15262-20-1
Total Radium	Total Radium Calculation	<b>1.83 ± 0.851 (1.25)</b>	pCi/L	03/13/17 13:18	7440-14-4
<b>Sample: MCM-05</b>		<b>Lab ID: 30211403004</b>	Collected: 02/16/17 17:12	Received: 02/21/17 09:35	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>1.07 ± 0.366 (0.263)</b> C:90% T:NA	pCi/L	03/07/17 14:50	13982-63-3
Radium-228	EPA 9320	<b>1.64 ± 0.753 (1.25)</b> C:52% T:70%	pCi/L	03/11/17 13:46	15262-20-1
Total Radium	Total Radium Calculation	<b>2.71 ± 1.12 (1.51)</b>	pCi/L	03/13/17 13:18	7440-14-4
<b>Sample: Dup-1</b>		<b>Lab ID: 30211403005</b>	Collected: 02/16/17 00:00	Received: 02/21/17 09:35	Matrix: Water
PWS:		Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.
Radium-226	EPA 9315	<b>2.13 ± 0.545 (0.263)</b> C:90% T:NA	pCi/L	03/07/17 14:50	13982-63-3
Radium-228	EPA 9320	<b>1.93 ± 0.688 (0.973)</b> C:60% T:79%	pCi/L	03/11/17 13:46	15262-20-1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30211403

<b>Sample: Dup-1</b>	<b>Lab ID: 30211403005</b>	Collected: 02/16/17 00:00	Received: 02/21/17 09:35	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Total Radium	Total Radium Calculation	<b>4.06 ± 1.23 (1.24)</b>	pCi/L	03/13/17 13:18
				7440-14-4
<b>Sample: FBL021617</b>	<b>Lab ID: 30211403006</b>	Collected: 02/16/17 17:45	Received: 02/21/17 09:35	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>-0.0261 ± 0.149 (0.423)</b> C:91% T:NA	pCi/L	03/07/17 14:50
Radium-228	EPA 9320	<b>0.214 ± 0.510 (1.14)</b> C:46% T:85%	pCi/L	03/11/17 13:47
Total Radium	Total Radium Calculation	<b>0.214 ± 0.659 (1.56)</b>	pCi/L	03/13/17 13:18
				7440-14-4
<b>Sample: EQBL021617</b>	<b>Lab ID: 30211403007</b>	Collected: 02/16/17 17:50	Received: 02/21/17 09:35	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.121 ± 0.142 (0.279)</b> C:96% T:NA	pCi/L	03/07/17 14:50
Radium-228	EPA 9320	<b>0.192 ± 0.412 (0.914)</b> C:59% T:77%	pCi/L	03/11/17 13:47
Total Radium	Total Radium Calculation	<b>0.313 ± 0.554 (1.19)</b>	pCi/L	03/13/17 13:18
				7440-14-4

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus  
Pace Project No.: 30211403

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QC Batch: 250850 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 30211403001, 30211403002, 30211403003, 30211403004, 30211403005, 30211403006, 30211403007

---

METHOD BLANK: 1234248 Matrix: Water

Associated Lab Samples: 30211403001, 30211403002, 30211403003, 30211403004, 30211403005, 30211403006, 30211403007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0495 ± 0.0516 (0.252) C:99% T:NA	pCi/L	03/07/17 12:47	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus  
 Pace Project No.: 30211403

---

QC Batch:	250851	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples: 30211403001, 30211403002, 30211403003, 30211403004, 30211403005, 30211403006, 30211403007			

---

METHOD BLANK: 1234252	Matrix: Water
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Associated Lab Samples: 30211403001, 30211403002, 30211403003, 30211403004, 30211403005, 30211403006, 30211403007	
---	--

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.430 ± 0.433 (0.892) C:65% T:79%	pCi/L	03/11/17 13:45	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus  
Pace Project No.: 30211403

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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WO# : 30211403

Chain of Custody



30211403



Workorder: AAB0672      Workorder Name: Plant McManus      Owner Received Date:

Report To:	Subcontract To:	Request Analysis	Results Requested By: 3/15/2017
Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)-734-4200	Pace - Pittsburgh 1638 Roseytown Road Stes. 2,3,4 Greensburg, PA 15601 Phone (724) 850-5600		

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers			LAB USE ONLY
						SO <sub>2</sub>	NO <sub>x</sub>	NO <sub>2</sub>	
1	MCM-09	G	2/16/2017 10:16	AAB0672-01	GW	4		X	001
2	MCM-07	G	2/16/2017 12:52	AAB0672-02	GW	2		X	002
3	MCM-06	G	2/16/2017 15:32	AAB0672-03	GW	2		X	003
4	MCM-05	G	2/16/2017 17:12	AAB0672-04	GW	2		X	004
5	Dup-1	G	2/16/2017 0:00	AAB0672-05	GW	2		X	005
6	FBL021617	G	2/16/2017 17:45	AAB0672-06	W	2		X	006
7	EQBL021617	G	2/16/2017 17:50	AAB0672-07	W	2		X	007
8									
9									
10									
Transfers	Released By		Date/Time	Received By					Comments
1				Doherty, Barbara					2/21/17 0935
2									
3									

Cooler Temperature on Receipt	Received on Ice Y or N	Received by	Comments
1			
2			
3			

\*\* In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
This chain of custody is considered complete as is since this information is available in the owner laboratory.



## Sample Condition Upon Receipt Pittsburgh

30211403

ML

Client Name: Pace GA Project # \_\_\_\_\_Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_Tracking #: 6812 562 4780Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  noThermometer Used N/AType of Ice: Wet Blue None

Cooler Temperature Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: DAKA 2-21-17

Comments:	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:	X			4.
Sample Labels match COC:	X			5.
-Includes date/time/ID		Matrix: <u>WT</u>		
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):	X			7.
Rush Turn Around Time Requested:	X			8.
Sufficient Volume:	X			9.
Correct Containers Used:	X			10.
-Pace Containers Used:	X			
Containers Intact:	X			11.
Orthophosphate field filtered		X		12.
Organic Samples checked for dechlorination:		X		13.
Filtered volume received for Dissolved tests		X		14.
All containers have been checked for preservation.	X			15. <u>pH 7.2</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	X			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>DAKA</u> Date/time of preservation: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):			X	16.
Trip Blank Present:		X		17.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>DAKA</u> Date: <u>2-21-17</u>

## Client Notification/ Resolution:

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

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ A check in this box indicates that additional information has been stored in eReports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.





## Quality Control Sample Performance Assessment

**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

<b>Method Blank Assessment</b>	Test: Ra-226 Analyst: JC2 Date: 3/6/2017 Worklist: 34333 Matrix: DW	Sample Collection Date: Sample I.D.: Sample MS I.D.: Sample MSD I.D.:  Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL):  MB Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F):  Spike uncertainty (calculated): Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result:  Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result:  Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery:	
<b>Laboratory Control Sample Assessment</b>	MB Sample I.D.: 1234248 MB concentration: -0.050 MB Counting Uncertainty: 0.252 MB MDC: 0.252  MB Numerical Performance Indicator: MB Status vs Numerical Indicator: N/A MB Status vs MDC: Pass	LCS34333 LCS34333 Count Date: 3/8/2017 Spike I.D.: 17-003  Spike Concentration (pCi/mL): 38.231 Volume Used (mL): 0.25  Aliquot Volume (L, g, F): 0.501 Target Conc. (pCi/L, g, F): 19.094  Uncertainty (Calculated): 0.898 Result (pCi/L, g, F): 15.589  LCS/LCSD Counting Uncertainty (pCi/L, g, F): 1.075 Numerical Performance Indicator: -4.90  Percent Recovery: 81.65%  Status vs Numerical Indicator: N/A Status vs Recovery: Pass	Sample I.D.: 30211403001 Duplicate Sample I.D.: 30211403001DU  Sample Result (pCi/L, g, F): 2.190 Sample Result Counting Uncertainty (pCi/L, g, F): 0.455  Sample Duplicate Result (pCi/L, g, F): 2.116 Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.453  Are sample and/or duplicate results below MDC? See Below ##  Duplicate Numerical Performance Indicator: 0.227 Duplicate RPD: 3.45%  Duplicate Status vs Numerical Indicator: N/A Duplicate Status vs RPD: Pass
<b>Duplicate Sample Assessment</b>	Sample I.D.: 30211403001  Enter Duplicate sample IDs if other than LCS/LCSD in the space below.  Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result:  Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result:  Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): Duplicate Numerical Performance Indicator: MSD Duplicate RPD:  MS/ MSD Duplicate Status vs Numerical Indicator: MS/ MSD Duplicate Status vs RPD:  Comments:  ## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.		



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

**Prepared For:**

**Georgia Power  
2480 Maner Road  
Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AAF0003**

**June 08, 2017**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

A handwritten signature in black ink, appearing to read "Betty McManus".

Project Manager

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All test results relate only to the samples analyzed.



## PACE ANALYTICAL SERVICES, LLC.

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(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MCM-02	AAF0003-01	Ground Water	05/31/17 16:09	06/01/17 09:10
MCM-10	AAF0003-02	Ground Water	05/31/17 11:40	06/01/17 09:10
MCM-11	AAF0003-03	Ground Water	05/31/17 10:08	06/01/17 09:10
MCM-17	AAF0003-04	Ground Water	05/31/17 14:40	06/01/17 09:10
MCM-12	AAF0003-05	Ground Water	05/31/17 10:02	06/01/17 09:10
MCM-14	AAF0003-06	Ground Water	05/31/17 16:08	06/01/17 09:10
Dup-1	AAF0003-07	Ground Water	05/31/17 00:00	06/01/17 09:10



## PACE ANALYTICAL SERVICES, LLC.

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Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

### Case Narrative

The Radium analysis by methods EPA 9315/9320 was performed by Pace-Pittsburgh, 1638 Roseytown Road - Suites 2, 3, 4, Greensburg PA 15601. The Pace-Pittsburgh lab contact is Jacquelyn Collins at 724-850-5612.



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

Report No.: AAF0003

Project: CCR Event

Client ID: MCM-02

Lab Number ID: AAF0003-01

Date/Time Sampled: 5/31/2017 4:09:00PM

Date/Time Received: 6/1/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	123	25	10	mg/L	SM 2540 C		1	06/06/17 13:25	06/06/17 13:25	7060136	JPT
<b>Inorganic Anions</b>											
Chloride	39	0.25	0.01	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 21:40	7060071	SLH
Fluoride	0.01	0.30	0.004	mg/L	EPA 300.0	J	1	06/02/17 10:00	06/02/17 21:40	7060071	SLH
Sulfate	46	1.0	0.09	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 21:40	7060071	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Barium	0.127	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Beryllium	0.0002	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Boron	0.161	0.0400	0.0060	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Calcium	5.90	0.500	0.0104	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Cobalt	0.0005	0.0100	0.0005	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:00	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 11:50	06/01/17 19:39	7050961	MTC



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

Report No.: AAF0003

Project: CCR Event

Client ID: MCM-10

Lab Number ID: AAF0003-02

Date/Time Sampled: 5/31/2017 11:40:00AM

Date/Time Received: 6/1/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3360	25	10	mg/L	SM 2540 C		1	06/06/17 13:25	06/06/17 13:25	7060136	JPT
<b>Inorganic Anions</b>											
Chloride	790	25	1.3	mg/L	EPA 300.0		100	06/02/17 10:00	06/07/17 00:09	7060071	RLC
Fluoride	1.9	0.30	0.004	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 22:01	7060071	SLH
Sulfate	1400	100	9.2	mg/L	EPA 300.0		100	06/02/17 10:00	06/07/17 00:09	7060071	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:23	7060050	CSW
Arsenic	0.0534	0.0050	0.0004	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:23	7060050	CSW
Barium	0.0210	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:23	7060050	CSW
Beryllium	0.0122	0.0030	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:23	7060050	CSW
Boron	0.226	0.0400	0.0060	mg/L	EPA 6020B		1	06/02/17 10:30	06/08/17 14:32	7060050	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:23	7060050	CSW
Calcium	50.8	25.0	0.522	mg/L	EPA 6020B		50	06/02/17 10:30	06/02/17 22:29	7060050	CSW
Chromium	0.0027	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:23	7060050	CSW
Cobalt	0.0202	0.0100	0.0005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:23	7060050	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:23	7060050	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:23	7060050	CSW
Selenium	0.0165	0.0100	0.0014	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:23	7060050	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:23	7060050	CSW
Lithium	0.0916	0.0500	0.0011	mg/L	EPA 6020B		1	06/02/17 10:30	06/08/17 14:32	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 11:50	06/01/17 19:41	7050961	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

Report No.: AAF0003

Project: CCR Event

Client ID: MCM-11

Lab Number ID: AAF0003-03

Date/Time Sampled: 5/31/2017 10:08:00AM

Date/Time Received: 6/1/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	257	25	10	mg/L	SM 2540 C		1	06/06/17 13:25	06/06/17 13:25	7060136	JPT
<b>Inorganic Anions</b>											
Chloride	98	1.2	0.06	mg/L	EPA 300.0		5	06/02/17 10:00	06/07/17 00:30	7060071	RLC
Fluoride	0.85	0.30	0.004	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 22:22	7060071	SLH
Sulfate	40	1.0	0.09	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 22:22	7060071	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Arsenic	0.0259	0.0050	0.0004	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Barium	0.0646	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Beryllium	0.00007	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Boron	0.0521	0.0400	0.0060	mg/L	EPA 6020B		1	06/02/17 10:30	06/08/17 14:38	7060050	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Calcium	18.6	5.00	0.522	mg/L	EPA 6020B		50	06/02/17 10:30	06/02/17 22:40	7060050	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Lithium	0.0047	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:35	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 11:50	06/01/17 19:43	7050961	MTC



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

Report No.: AAF0003

Project: CCR Event

Client ID: MCM-17

Lab Number ID: AAF0003-04

Date/Time Sampled: 5/31/2017 2:40:00PM

Date/Time Received: 6/1/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	5050	25	10	mg/L	SM 2540 C		1	06/06/17 13:25	06/06/17 13:25	7060136	JPT
<b>Inorganic Anions</b>											
Chloride	2500	25	1.3	mg/L	EPA 300.0		100	06/02/17 10:00	06/07/17 02:13	7060071	RLC
Fluoride	1.3	0.30	0.004	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 22:44	7060071	SLH
Sulfate	260	100	9.2	mg/L	EPA 300.0		100	06/02/17 10:00	06/07/17 02:13	7060071	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Arsenic	0.0018	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Barium	0.0610	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Beryllium	0.0002	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Boron	2.24	2.00	0.302	mg/L	EPA 6020B		50	06/02/17 10:30	06/08/17 14:44	7060050	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Calcium	122	25.0	0.522	mg/L	EPA 6020B		50	06/02/17 10:30	06/02/17 22:52	7060050	CSW
Chromium	0.0109	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Selenium	0.0018	0.0100	0.0014	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Lithium	0.0190	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:46	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 11:50	06/01/17 19:46	7050961	MTC



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

Report No.: AAF0003

Project: CCR Event

Client ID: MCM-12

Lab Number ID: AAF0003-05

Date/Time Sampled: 5/31/2017 10:02:00AM

Date/Time Received: 6/1/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1920	25	10	mg/L	SM 2540 C		1	06/06/17 13:25	06/06/17 13:25	7060136	JPT
<b>Inorganic Anions</b>											
Chloride	740	5.0	0.26	mg/L	EPA 300.0		20	06/02/17 10:00	06/08/17 11:26	7060071	RLC
Fluoride	1.2	0.30	0.004	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 23:26	7060071	SLH
Sulfate	2.5	1.0	0.09	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 23:26	7060071	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Arsenic	0.0007	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Barium	0.131	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Beryllium	0.0005	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Boron	1.38	0.400	0.0604	mg/L	EPA 6020B		10	06/02/17 10:30	06/08/17 14:50	7060050	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Calcium	8.85	0.500	0.0104	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Chromium	0.0052	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Cobalt	0.0005	0.0100	0.0005	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Lead	0.00009	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Lithium	0.0110	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 22:57	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 11:50	06/01/17 19:48	7050961	MTC



# PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

Report No.: AAF0003

Project: CCR Event

Client ID: MCM-14

Lab Number ID: AAF0003-06

Date/Time Sampled: 5/31/2017 4:08:00PM

Date/Time Received: 6/1/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1740	25	10	mg/L	SM 2540 C		1	06/06/17 13:25	06/06/17 13:25	7060136	JPT
<b>Inorganic Anions</b>											
Chloride	820	5.0	0.26	mg/L	EPA 300.0		20	06/02/17 10:00	06/08/17 11:47	7060071	RLC
Fluoride	0.56	0.30	0.004	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 23:47	7060071	SLH
Sulfate	61	10	0.92	mg/L	EPA 300.0		10	06/02/17 10:00	06/07/17 02:55	7060071	FDS
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Arsenic	0.0008	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Barium	0.0199	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Beryllium	0.0001	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Boron	0.503	0.200	0.0302	mg/L	EPA 6020B		5	06/02/17 10:30	06/08/17 14:55	7060050	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Calcium	73.6	25.0	0.522	mg/L	EPA 6020B		50	06/02/17 10:30	06/02/17 23:15	7060050	CSW
Chromium	0.0019	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Lithium	0.0106	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:09	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 11:50	06/01/17 19:55	7050961	MTC



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

Report No.: AAF0003

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AAF0003-07

Date/Time Sampled: 5/31/2017 12:00:00AM

Date/Time Received: 6/1/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1790	25	10	mg/L	SM 2540 C		1	06/06/17 13:25	06/06/17 13:25	7060136	JPT
<b>Inorganic Anions</b>											
Chloride	810	5.0	0.26	mg/L	EPA 300.0		20	06/02/17 10:00	06/08/17 12:07	7060071	RLC
Fluoride	0.53	0.30	0.004	mg/L	EPA 300.0		1	06/02/17 10:00	06/03/17 00:09	7060071	SLH
Sulfate	69	10	0.92	mg/L	EPA 300.0		10	06/02/17 10:00	06/07/17 03:15	7060071	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Arsenic	0.0008	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Barium	0.0197	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Beryllium	0.0001	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Boron	0.514	0.200	0.0302	mg/L	EPA 6020B		5	06/02/17 10:30	06/08/17 15:01	7060050	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Calcium	72.2	25.0	0.522	mg/L	EPA 6020B		50	06/02/17 10:30	06/02/17 23:37	7060050	CSW
Chromium	0.0018	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Lithium	0.0106	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:32	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 11:50	06/01/17 19:58	7050961	MTC



## PACE ANALYTICAL SERVICES, LLC.

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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

**Report No.: AAF0003**

### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060136 - SM 2540 C</b>											
<b>Blank (7060136-BLK1)</b>										Prepared & Analyzed: 06/06/17	
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7060136-BS1)</b>										Prepared & Analyzed: 06/06/17	
Total Dissolved Solids	377	25	10	mg/L	400.00		94	84-108			
<b>Duplicate (7060136-DUP1)</b>										Prepared & Analyzed: 06/06/17	
Total Dissolved Solids	5080	25	10	mg/L		5050			0.5	10	



# PACE ANALYTICAL SERVICES, LLC.

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Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

**Report No.: AAF0003**

## Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060071 - EPA 300.0</b>											
<b>Blank (7060071-BLK1)</b>											
Prepared & Analyzed: 06/02/17											
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	ND	1.0	0.09	mg/L							
<b>LCS (7060071-BS1)</b>											
Prepared & Analyzed: 06/02/17											
Chloride	10.3	0.25	0.01	mg/L	10.020		102	90-110			
Fluoride	10.4	0.30	0.004	mg/L	10.020		104	90-110			
Sulfate	10.4	1.0	0.09	mg/L	10.050		104	90-110			
<b>Matrix Spike (7060071-MS1)</b>											
Source: AAE0946-05											
Prepared & Analyzed: 06/02/17											
Chloride	46.3	0.25	0.01	mg/L	10.020	40.5	57	90-110			QM-02
Fluoride	10.6	0.30	0.004	mg/L	10.020	0.15	105	90-110			
Sulfate	107	1.0	0.09	mg/L	10.050	108	NR	90-110			QM-02
<b>Matrix Spike (7060071-MS2)</b>											
Source: AAF0003-04											
Prepared & Analyzed: 06/02/17											
Chloride	662	0.25	0.01	mg/L	10.020	707	NR	90-110			QM-02
Fluoride	10.5	0.30	0.004	mg/L	10.020	1.29	92	90-110			
Sulfate	198	1.0	0.09	mg/L	10.050	207	NR	90-110			QM-02
<b>Matrix Spike Dup (7060071-MSD1)</b>											
Source: AAE0946-05											
Prepared & Analyzed: 06/02/17											
Chloride	46.3	0.25	0.01	mg/L	10.020	40.5	57	90-110	0.01	15	QM-02
Fluoride	10.6	0.30	0.004	mg/L	10.020	0.15	104	90-110	0.07	15	
Sulfate	107	1.0	0.09	mg/L	10.050	108	NR	90-110	0.07	15	QM-02



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

**Report No.: AAF0003**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050961 - EPA 7470A</b>											
<b>Blank (7050961-BLK1)</b>											Prepared & Analyzed: 06/01/17
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7050961-BS1)</b>											Prepared & Analyzed: 06/01/17
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3		96	80-120			
<b>Duplicate (7050961-DUP1)</b>											Source: AAE0833-44RE1 Prepared & Analyzed: 06/01/17
Mercury	0.00079	0.00050	0.000041	mg/L		0.00082			3	20	
<b>Duplicate (7050961-DUP2)</b>											Source: AAE0833-45RE1 Prepared & Analyzed: 06/01/17
Mercury	0.00068	0.00050	0.000041	mg/L		0.00067			1	20	
<b>Matrix Spike (7050961-MS1)</b>											Source: AAE0946-03 Prepared & Analyzed: 06/01/17
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125			
<b>Matrix Spike Dup (7050961-MSD1)</b>											Source: AAE0946-03 Prepared & Analyzed: 06/01/17
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125	2	20	
<b>Post Spike (7050961-PS1)</b>											Source: AAE0946-03 Prepared & Analyzed: 06/01/17
Mercury	1.74			ug/L	1.6667	0.00413	104	80-120			
<b>Batch 7060050 - EPA 3005A</b>											
<b>Blank (7060050-BLK1)</b>											Prepared & Analyzed: 06/02/17
Antimony	ND	0.0030	0.0003	mg/L							
Arsenic	ND	0.0050	0.0004	mg/L							
Barium	ND	0.0100	0.0003	mg/L							
Beryllium	ND	0.0030	0.00007	mg/L							
Boron	ND	0.0400	0.0060	mg/L							
Cadmium	ND	0.0010	0.00006	mg/L							
Calcium	ND	0.500	0.0104	mg/L							
Chromium	ND	0.0100	0.0003	mg/L							
Cobalt	ND	0.0100	0.0005	mg/L							
Copper	ND	0.0250	0.0003	mg/L							
Lead	ND	0.0050	0.00007	mg/L							
Molybdenum	ND	0.0100	0.0006	mg/L							
Nickel	ND	0.0100	0.0003	mg/L							
Selenium	ND	0.0100	0.0014	mg/L							
Silver	ND	0.0100	0.0003	mg/L							
Thallium	ND	0.0010	0.00005	mg/L							
Vanadium	ND	0.0100	0.0014	mg/L							
Zinc	ND	0.0100	0.0013	mg/L							
Lithium	ND	0.0500	0.0011	mg/L							



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Attention: Mr. Joju Abraham

June 08, 2017

**Report No.: AAF0003**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060050 - EPA 3005A</b>											
<b>LCS (7060050-BS1)</b>											
Prepared & Analyzed: 06/02/17											
Antimony	0.107	0.0030	0.0003	mg/L	0.10000		107	80-120			
Arsenic	0.103	0.0050	0.0004	mg/L	0.10000		103	80-120			
Barium	0.105	0.0100	0.0003	mg/L	0.10000		105	80-120			
Beryllium	0.102	0.0030	0.00007	mg/L	0.10000		102	80-120			
Boron	1.05	0.0400	0.0060	mg/L	1.0000		105	80-120			
Cadmium	0.103	0.0010	0.00006	mg/L	0.10000		103	80-120			
Calcium	1.06	0.500	0.0104	mg/L	1.0000		106	80-120			
Chromium	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000		104	80-120			
Copper	0.104	0.0250	0.0003	mg/L	0.10000		104	80-120			
Lead	0.100	0.0050	0.00007	mg/L	0.10000		100	80-120			
Molybdenum	0.104	0.0100	0.0006	mg/L	0.10000		104	80-120			
Nickel	0.104	0.0100	0.0003	mg/L	0.10000		104	80-120			
Selenium	0.104	0.0100	0.0014	mg/L	0.10000		104	80-120			
Silver	0.104	0.0100	0.0003	mg/L	0.10000		104	80-120			
Thallium	0.102	0.0010	0.00005	mg/L	0.10000		102	80-120			
Vanadium	0.105	0.0100	0.0014	mg/L	0.10000		105	80-120			
Zinc	0.105	0.0100	0.0013	mg/L	0.10000		105	80-120			
Lithium	0.108	0.0500	0.0011	mg/L	0.10000		108	80-120			
<b>Matrix Spike (7060050-MS1)</b>											
Source: AAF0003-01											
Prepared & Analyzed: 06/02/17											
Antimony	0.109	0.0030	0.0003	mg/L	0.10000	ND	109	75-125			
Arsenic	0.104	0.0050	0.0004	mg/L	0.10000	ND	104	75-125			
Barium	0.368	0.0100	0.0003	mg/L	0.10000	0.127	240	75-125			QM-02
Beryllium	0.0976	0.0030	0.00007	mg/L	0.10000	0.0002	97	75-125			
Boron	1.21	0.0400	0.0060	mg/L	1.0000	0.161	104	75-125			
Cadmium	0.105	0.0010	0.00006	mg/L	0.10000	ND	105	75-125			
Calcium	7.25	0.500	0.0104	mg/L	1.0000	5.90	135	75-125			QM-02
Chromium	0.104	0.0100	0.0003	mg/L	0.10000	ND	104	75-125			
Cobalt	0.106	0.0100	0.0005	mg/L	0.10000	0.0005	105	75-125			
Copper	0.104	0.0250	0.0003	mg/L	0.10000	ND	104	75-125			
Lead	0.0997	0.0050	0.00007	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.108	0.0100	0.0006	mg/L	0.10000	ND	108	75-125			
Nickel	0.104	0.0100	0.0003	mg/L	0.10000	ND	104	75-125			
Selenium	0.103	0.0100	0.0014	mg/L	0.10000	ND	103	75-125			
Silver	0.104	0.0100	0.0003	mg/L	0.10000	ND	104	75-125			
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	ND	101	75-125			
Vanadium	0.108	0.0100	0.0014	mg/L	0.10000	0.0020	106	75-125			
Zinc	0.106	0.0100	0.0013	mg/L	0.10000	0.0017	105	75-125			
Lithium	0.105	0.0500	0.0011	mg/L	0.10000	ND	105	75-125			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

**Report No.: AAF0003**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 7060050 - EPA 3005A

Matrix Spike Dup (7060050-MSD1)		Source: AAF0003-01			Prepared & Analyzed: 06/02/17					
Antimony	0.109	0.0030	0.0003	mg/L	0.10000	ND	109	75-125	0.07	20
Arsenic	0.106	0.0050	0.0004	mg/L	0.10000	ND	106	75-125	1	20
Barium	0.369	0.0100	0.0003	mg/L	0.10000	0.127	242	75-125	0.4	20
Beryllium	0.101	0.0030	0.00007	mg/L	0.10000	0.0002	101	75-125	3	20
Boron	1.20	0.0400	0.0060	mg/L	1.0000	0.161	104	75-125	0.3	20
Cadmium	0.106	0.0010	0.00006	mg/L	0.10000	ND	106	75-125	1	20
Calcium	7.06	0.500	0.0104	mg/L	1.0000	5.90	115	75-125	3	20
Chromium	0.106	0.0100	0.0003	mg/L	0.10000	ND	106	75-125	2	20
Cobalt	0.106	0.0100	0.0005	mg/L	0.10000	0.0005	105	75-125	0.2	20
Copper	0.103	0.0250	0.0003	mg/L	0.10000	ND	103	75-125	0.6	20
Lead	0.102	0.0050	0.00007	mg/L	0.10000	ND	102	75-125	2	20
Molybdenum	0.108	0.0100	0.0006	mg/L	0.10000	ND	108	75-125	0.7	20
Nickel	0.102	0.0100	0.0003	mg/L	0.10000	ND	102	75-125	1	20
Selenium	0.106	0.0100	0.0014	mg/L	0.10000	ND	106	75-125	3	20
Silver	0.104	0.0100	0.0003	mg/L	0.10000	ND	104	75-125	0.5	20
Thallium	0.102	0.0010	0.00005	mg/L	0.10000	ND	102	75-125	1	20
Vanadium	0.110	0.0100	0.0014	mg/L	0.10000	0.0020	108	75-125	1	20
Zinc	0.106	0.0100	0.0013	mg/L	0.10000	0.0017	104	75-125	0.6	20
Lithium	0.105	0.0500	0.0011	mg/L	0.10000	ND	105	75-125	0.5	20

Post Spike (7060050-PS1)		Source: AAF0003-01			Prepared & Analyzed: 06/02/17					
Antimony	107		ug/L	100.00	0.201	107	80-120			
Arsenic	106		ug/L	100.00	0.335	106	80-120			
Barium	364		ug/L	100.00	127	236	80-120			QM-02
Beryllium	98.7		ug/L	100.00	0.154	99	80-120			
Boron	1180		ug/L	1000.0	161	102	80-120			
Cadmium	104		ug/L	100.00	-0.0253	104	80-120			
Calcium	7050		ug/L	1000.0	5900	115	80-120			
Chromium	105		ug/L	100.00	0.294	105	80-120			
Cobalt	106		ug/L	100.00	0.469	105	80-120			
Copper	105		ug/L	100.00	-0.0871	105	80-120			
Lead	98.9		ug/L	100.00	0.0116	99	80-120			
Molybdenum	108		ug/L	100.00	0.0245	108	80-120			
Nickel	106		ug/L	100.00	0.122	106	80-120			
Selenium	106		ug/L	100.00	0.311	105	80-120			
Silver	104		ug/L	100.00	-0.0010	104	80-120			
Thallium	100		ug/L	100.00	0.0252	100	80-120			
Vanadium	109		ug/L	100.00	1.97	107	80-120			
Zinc	108		ug/L	100.00	1.66	106	80-120			
Lithium	104		ug/L	100.00	0.331	103	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

## Legend

### Definition of Laboratory Terms

<b>ND</b>	- Not Detected at levels equal to or greater than the MDL
<b>BRL</b>	- Not Detected at levels equal to or greater than the RL
<b>RL</b>	- Reporting Limit
	<b>MDL</b> - Method Detection Limit
<b>SOP</b>	- Method run per Pace Standard Operating Procedure
<b>CFU</b>	- Colony Forming Units
<b>DF</b>	- Dilution Factor
	<b>TIC</b> - Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

**QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.

**J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

**Note: Unless otherwise noted, all results are reported on an as received basis.**



## PACE ANALYTICAL SERVICES, LLC.

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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 08, 2017

### Report Notes

The sample type was not listed on the COC. MMR



**CHAIN OF CUSTODY RECORD**

Pace Analytical  
www.pace-analytical.com

**Pace Analytical Services, LLC - Atlanta GA**  
110 TECHNOLOGY PARKWAY, PEACHTREE C  
(770) 734-4200 : FAX (770) 734-4201

CLIENT NAME: 241 Ralph Nelson Blaine Busst		CLIENT ADDRESS/PHONE NUMBER/FAK NUMBER: Atlanta, GA 30308		PROJECT #: PO#:		ANALYSIS REQUESTED	
REPORT TO: <i>John P. Doherty</i>		REQUESTED COMPLETION DATE: 10/20/00		PROJECT NAME/STATE: <i>Project CCR</i>		CONTAINER TYPE: PRESERVATION: # of	
						D	P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VAL S - STERILE O - OTHER
						N	GCL, <6°C H <sub>2</sub> SO <sub>4</sub> , <6°C HNO <sub>3</sub> NaOH, <6°C NaOH/ZnAc, <6°C Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , <6°C not frozen
						U	"MATRIX CODES:
						M	B - DW - DRINKING WATER E - WW - WASTEWATER R - GW - GROUNDWATER S - SW - SURFACE WATER ST - STORM WATER W - W - WATER
						H	S - SOIL SL - SLUDGE SD - SOLID A - AIR L - LIQUID P - PRODUCT
REMARKS/ADDITIONAL INFORMATION							
Collection DATE	Collection TIME	MATRIX CODE*	Sample Identification	C	G	O	R
5/31/01	1609	GND	MECH-102	1	1	1	1
5/31/01	1145	GND	MECH-103	1	1	1	1
5/31/01	1008	GND	MECH-111	1	1	1	1
5/31/01	1440	GND	MECH-114	1	1	1	1
5/31/01	1002	GND	MECH-122	1	1	1	1
5/31/01	1608	GND	MECH-115	1	1	1	1
5/31/01	-	GND	DOZ-1	1	1	1	1
SAMPLED BY AND TITLE: <i>John Doherty</i>							
RECEIVED BY: <i>John Doherty</i>		DATE/TIME: 5/31/01 1400		RELINQUISHED BY: <i>John Doherty</i>		DATE/TIME: 5/31/01 1400	
RECEIVED BY LAB: <i>John Doherty</i>		DATE/TIME: 5/31/01 170910		SAMPLE SHIPPED VIA: UPS FEDEX		DATE/TIME: 5/31/01 170910	
		Temperature: 21 Min.		Custody Seal: Broken		Courier: Air Freight	
		locked: No		# of Coolers: NA		Client ID: FS	
		locked: Yes		# of Coolers: NA		Cooler ID: NA	
FOR LAB USE ONLY <i>AFC 0003</i>							
Edited in LIMS: <i>John Doherty</i>							
Tracking #: <i>AF 0003</i>							



## PACE ANALYTICAL SERVICES, LLC.

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### LOG-IN CHECKLIST

Printed: 6/2/2017 3:23:55PM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 06/01/17 09:10

**Work Order:** AAF0003  
**Logged In By:** Mohammad M. Rahman

### OBSERVATIONS

<b>#Samples:</b>	7	<b>#Containers:</b>	30
<b>Minimum Temp(C):</b>	2.3	<b>Maximum Temp(C):</b>	2.3
		<b>Custody Seal(s) Used:</b>	No

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	NO
Sample Container(s) Match COC	YES
Custody seal Intact	N/A
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

### **Comments:**

The sample type was not listed on the COC. MMR

June 22, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAF0003 Plant McManus  
Pace Project No.: 30220542

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on June 02, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
(724)850-5612  
Project Manager

Enclosures



#### **REPORT OF LABORATORY ANALYSIS**

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## CERTIFICATIONS

Project: AAF0003 Plant McManus  
 Pace Project No.: 30220542

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
 L-A-B DOD-ELAP Accreditation #: L2417  
 Alabama Certification #: 41590  
 Arizona Certification #: AZ0734  
 Arkansas Certification  
 California Certification #: 04222CA  
 Colorado Certification  
 Connecticut Certification #: PH-0694  
 Delaware Certification  
 Florida/TNI Certification #: E87683  
 Georgia Certification #: C040  
 Guam Certification  
 Hawaii Certification  
 Idaho Certification  
 Illinois Certification  
 Indiana Certification  
 Iowa Certification #: 391  
 Kansas/TNI Certification #: E-10358  
 Kentucky Certification #: 90133  
 Louisiana DHH/TNI Certification #: LA140008  
 Louisiana DEQ/TNI Certification #: 4086  
 Maine Certification #: PA00091  
 Maryland Certification #: 308  
 Massachusetts Certification #: M-PA1457  
 Michigan/PADEP Certification  
 Missouri Certification #: 235

Montana Certification #: Cert 0082  
 Nebraska Certification #: NE-05-29-14  
 Nevada Certification #: PA014572015-1  
 New Hampshire/TNI Certification #: 2976  
 New Jersey/TNI Certification #: PA 051  
 New Mexico Certification #: PA01457  
 New York/TNI Certification #: 10888  
 North Carolina Certification #: 42706  
 North Dakota Certification #: R-190  
 Oregon/TNI Certification #: PA200002  
 Pennsylvania/TNI Certification #: 65-00282  
 Puerto Rico Certification #: PA01457  
 Rhode Island Certification #: 65-00282  
 South Dakota Certification  
 Tennessee Certification #: TN2867  
 Texas/TNI Certification #: T104704188-14-8  
 Utah/TNI Certification #: PA014572015-5  
 USDA Soil Permit #: P330-14-00213  
 Vermont Dept. of Health: ID# VT-0282  
 Virgin Island/PADEP Certification  
 Virginia/VELAP Certification #: 460198  
 Washington Certification #: C868  
 West Virginia DEP Certification #: 143  
 West Virginia DHHR Certification #: 9964C  
 Wisconsin Certification  
 Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAF0003 Plant McManus  
 Pace Project No.: 30220542

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30220542001	MCM-02	Water	05/31/17 16:09	06/02/17 09:45
30220542002	MCM-10	Water	05/31/17 11:40	06/02/17 09:45
30220542003	MCM-11	Water	05/31/17 10:08	06/02/17 09:45
30220542004	MCM-17	Water	05/31/17 14:40	06/02/17 09:45
30220542005	MCM-12	Water	05/31/17 10:02	06/02/17 09:45
30220542006	MCM-14	Water	05/31/17 16:08	06/02/17 09:45
30220542007	Dup-1	Water	05/31/17 00:00	06/02/17 09:45

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: AAF0003 Plant McManus  
Pace Project No.: 30220542

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30220542001	MCM-02	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220542002	MCM-10	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220542003	MCM-11	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220542004	MCM-17	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220542005	MCM-12	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220542006	MCM-14	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220542007	Dup-1	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAF0003 Plant McManus

Pace Project No.: 30220542

<b>Sample: MCM-02</b>	<b>Lab ID: 30220542001</b>	Collected: 05/31/17 16:09	Received: 06/02/17 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.644 ± 0.303 (0.372)</b> C:82% T:NA	pCi/L	06/08/17 12:14
Radium-228	EPA 9320	<b>0.523 ± 0.462 (0.933)</b> C:81% T:87%	pCi/L	06/14/17 18:22
Total Radium	Total Radium Calculation	<b>1.17 ± 0.765 (1.31)</b>	pCi/L	06/22/17 14:52
<hr/>				
<b>Sample: MCM-10</b>	<b>Lab ID: 30220542002</b>	Collected: 05/31/17 11:40	Received: 06/02/17 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.97 ± 0.549 (0.452)</b> C:88% T:NA	pCi/L	06/08/17 12:14
Radium-228	EPA 9320	<b>1.48 ± 0.587 (0.884)</b> C:79% T:84%	pCi/L	06/14/17 18:22
Total Radium	Total Radium Calculation	<b>3.45 ± 1.14 (1.34)</b>	pCi/L	06/20/17 08:32
<hr/>				
<b>Sample: MCM-11</b>	<b>Lab ID: 30220542003</b>	Collected: 05/31/17 10:08	Received: 06/02/17 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.649 ± 0.285 (0.327)</b> C:97% T:NA	pCi/L	06/08/17 12:14
Radium-228	EPA 9320	<b>0.553 ± 0.438 (0.857)</b> C:77% T:85%	pCi/L	06/14/17 18:22
Total Radium	Total Radium Calculation	<b>1.20 ± 0.723 (1.18)</b>	pCi/L	06/20/17 08:32
<hr/>				
<b>Sample: MCM-17</b>	<b>Lab ID: 30220542004</b>	Collected: 05/31/17 14:40	Received: 06/02/17 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.22 ± 0.643 (0.808)</b> C:88% T:NA	pCi/L	06/08/17 12:14
Radium-228	EPA 9320	<b>0.695 ± 0.542 (1.06)</b> C:69% T:76%	pCi/L	06/14/17 18:22
Total Radium	Total Radium Calculation	<b>1.92 ± 1.19 (1.87)</b>	pCi/L	06/20/17 08:32
<hr/>				
<b>Sample: MCM-12</b>	<b>Lab ID: 30220542005</b>	Collected: 05/31/17 10:02	Received: 06/02/17 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.10 ± 0.602 (0.825)</b> C:96% T:NA	pCi/L	06/08/17 12:14
Radium-228	EPA 9320	<b>1.52 ± 0.591 (0.892)</b> C:77% T:90%	pCi/L	06/14/17 18:22

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAF0003 Plant McManus  
Pace Project No.: 30220542

<b>Sample: MCM-12</b>	<b>Lab ID: 30220542005</b>	Collected: 05/31/17 10:02	Received: 06/02/17 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Total Radium	Total Radium Calculation	<b>2.62 ± 1.19 (1.72)</b>	pCi/L	06/20/17 08:32
				CAS No.
				Qual

<b>Sample: MCM-14</b>	<b>Lab ID: 30220542006</b>	Collected: 05/31/17 16:08	Received: 06/02/17 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.356 ± 0.193 (0.252)</b> C:78% T:NA	pCi/L	06/12/17 08:27
Radium-228	EPA 9320	<b>1.41 ± 0.656 (1.13)</b> C:75% T:58%	pCi/L	06/20/17 11:39
Total Radium	Total Radium Calculation	<b>1.77 ± 0.849 (1.38)</b>	pCi/L	06/21/17 14:09
				CAS No.
				Qual

<b>Sample: Dup-1</b>	<b>Lab ID: 30220542007</b>	Collected: 05/31/17 00:00	Received: 06/02/17 09:45	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.541 ± 0.262 (0.370)</b> C:78% T:NA	pCi/L	06/12/17 08:27
Radium-228	EPA 9320	<b>0.945 ± 0.591 (1.11)</b> C:73% T:55%	pCi/L	06/20/17 11:39
Total Radium	Total Radium Calculation	<b>1.49 ± 0.853 (1.48)</b>	pCi/L	06/21/17 14:09
				CAS No.
				Qual

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0003 Plant McManus  
Pace Project No.: 30220542

---

QC Batch: 260846 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 30220542001, 30220542002, 30220542003, 30220542004, 30220542005

---

METHOD BLANK: 1284545 Matrix: Water

Associated Lab Samples: 30220542001, 30220542002, 30220542003, 30220542004, 30220542005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0515 ± 0.131 (0.318) C:85% T:NA	pCi/L	06/08/17 10:00	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0003 Plant McManus

Pace Project No.: 30220542

---

QC Batch: 261089 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 30220542006, 30220542007

---

METHOD BLANK: 1285496 Matrix: Water

Associated Lab Samples: 30220542006, 30220542007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.769 ± 0.411 (0.745) C:79% T:83%	pCi/L	06/20/17 11:39	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0003 Plant McManus

Pace Project No.: 30220542

---

QC Batch: 261179 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 30220542006, 30220542007

---

METHOD BLANK: 1285893 Matrix: Water

Associated Lab Samples: 30220542006, 30220542007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.103 ± 0.109 (0.204) C:89% T:NA	pCi/L	06/12/17 08:27	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0003 Plant McManus  
Pace Project No.: 30220542

---

QC Batch: 260865 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 30220542001, 30220542002, 30220542003, 30220542004, 30220542005

---

METHOD BLANK: 1284599 Matrix: Water

Associated Lab Samples: 30220542001, 30220542002, 30220542003, 30220542004, 30220542005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.187 ± 0.335 (0.733) C:75% T:86%	pCi/L	06/14/17 11:31	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: AAF0003 Plant McManus  
Pace Project No.: 30220542

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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## Chain of Custody



Report To:		Workorder Name:		Plant McManus	Owner Received Date:	Results Requested By: 6/26/2017	
Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)-734-4200		Pace - Pittsburgh 1638 Roseytown Road Stes. 2,3,4 Greensburg, PA 15601 Phone (724) 850-5600			Radium 226, 228, Total		
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Sample ID	Comments
1	MCM-02	G	5/31/2017 16:09	AAF0003-01	GW	2	LAB USE ONLY 001
2	MCM-10	G	5/31/2017 11:40	AAF0003-02	GW	2	002
3	MCM-11	G	5/31/2017 10:08	AAF0003-03	GW	2	003
4	MCM-17	G	5/31/2017 14:40	AAF0003-04	GW	2	004
5	MCM-12	G	5/31/2017 10:02	AAF0003-05	GW	2	005
6	MCM-14	G	5/31/2017 16:08	AAF0003-06	GW	4	006
7	Dup-1	G	5/31/2017 0:00	AAF0003-07	GW	2	007
8							
9							
10							
Transfers	Released By	Date/Time	Received By	Date/Time	Comments		
1	N. McMANUS	6/1/17	Pace	6/2/17	0945		
2							
3							

Cooler Temperature on Receipt N/A °C      Custody Seal Y or N      Received on Ice Y or N      Sample Intact Y or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this CCC  
This chain of custody is considered complete as is since this information is available in the owner laboratory.

## Sample Condition Upon Receipt Pittsburgh

RTB

30220542

Client Name: Pace GA Project # \_\_\_\_\_Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
Tracking #: 6812 5104 7185Custody Seal on Cooler/Box Present:  yes  no Seals Intact:  yes  noThermometer Used N/AType of Ice: Wet Blue (None)Cooler Temperature N/A °C Correction Factor: N/A °C Final Temp: N/A °C

Temp should be above freezing to 6°C

Date and Initials of person examining  
contents: RTB 6/2/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:	X			4.
Sample Labels match COC: -Includes date/time/ID	X			5.
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):	X			7.
Rush Turn Around Time Requested:	X			8.
Sufficient Volume:	X			9.
Correct Containers Used: -Pace Containers Used:	X			10.
Containers Intact:	X			11.
Orthophosphate field filtered		X		12.
Organic Samples checked for dechlorination:		X		13.
Filtered volume received for Dissolved tests		X		14.
All containers have been checked for preservation, All containers needing preservation are found to be in compliance with EPA recommendation.	X			15. pH<2
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed <u>6/2/17</u> Date/time of preservation <u>RTB</u>
Headspace in VOA Vials (>6mm):		X		16.
Trip Blank Present:		X		17.
Trip Blank Custody Seals Present		X		
Rad Aqueous Samples Screened > 0.5 mrem/hr	X			Initial when completed: <u>RTB</u> Date: <u>6/2/17</u>

## Client Notification/ Resolution:

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

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ A check in this box indicates that additional information has been stored in ereports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS, the review is in the Status section of the Workorder Edit Screen.

Page \_\_\_\_\_

**CHAIN OF CUSTODY RECORD**

Face Analytical™ [www.faceanalytical.com](http://www.faceanalytical.com)

Pace Analytical Services, LLC - Atlanta GA  
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245023

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Rev. 12/15/2016



## Quality Control Sample Performance Assessment

**Analyst Must Manually Enter All Fields. Highlighted in Yellow.**

Test: Ra-228		Analyst: JLW		Date: 6/9/2017		Worklist: 36018		Matrix: DW	
<b>Method Blank Assessment</b>									
MB Sample ID: 1284599		MB Concentration: 0.187		MS/MSD Decay Corrected Spike Concentration (pCi/ml):		Sample Collection Date:			
MB Counting Uncertainty: 0.333		Spike I.D.: Sample I.D.		Spike Volume Used in MS (mL):		Sample MS I.D.			
MB MDC: 0.733		Spike Volume Used in MSD (mL):		Spike I.D.: Sample MSD I.D.		Sample Matrix Spike Result:			
MB Numerical Performance Indicator: 1.10		MS Aliquot (L, g, F):		MS Target Conc. (pCi/L, g, F):		MS/MSD Duplicate Status vs Numerical Indicator:			
MB Status vs Numerical Indicator: N/A		MSD Aliquot (L, g, F):		MSD Target Conc. (pCi/L, g, F):		MS Status vs Numerical Indicator:			
Pass		MSD Target Conc. (pCi/L, g, F):		Spike uncertainty (calculated):		MSD Status vs Recovery:			
<b>Laboratory Control Sample Assessment</b>									
LCSD (Y or N)? N		LCSD (Y or N)? N		Sample Result Counting Uncertainty (pCi/L, g, F):		Sample Result:			
Count Date: 6/14/2017		Count Date: 6/14/2017		Matrix Spike Result:		Sample Matrix Spike Result:			
Spike I.D.: 17-005		Spike Concentration (pCi/ml): 24.293		Sample Matrix Spike Uncertainty (pCi/L, g, F):		MS Numerical Performance Indicator:			
Volume Used (mL): 0.20		Volume Used (mL): 0.805		Sample Matrix Spike Duplicate Result:		MS Percent Recovery:			
Aliquot Volume (L, g, F): 0.805		Target Conc. (pCi/L, g, F): 6.036		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		MSD Percent Recovery:			
Uncertainty (Calculated): 0.435		Uncertainty (Calculated): 0.435		MSD Numerical Performance Indicator:		MS Status vs Numerical Indicator:			
Result (pCi/L, g, F): 5.976		Result (pCi/L, g, F): 5.976		MSD Numerical Performance Indicator:		MS Status vs Recovery:			
LCSD Counting Uncertainty (pCi/L, g, F): 0.656		Numerical Performance Indicator: -0.15		MSD Status vs Numerical Indicator:		MSD Status vs Recovery:			
Numerical Performance Indicator: -0.15		Percent Recovery: 99.02%		MS Status vs Recovery:					
Status vs Numerical Indicator: N/A		Status vs Recovery: Pass							
<b>Duplicate Sample Assessment</b>									
Sample I.D.: 30220163002		Enter Duplicate sample IDs if other than LCSD in the space below:		Sample I.D.: Sample MS I.D.		Sample I.D.: Sample MSD I.D.			
Duplicate Sample I.D.: 30220163002DUP		Are sample and/or duplicate results below MDC? See Below ##		Sample Matrix Spike Result:		Sample Matrix Spike Result:			
Sample Result (pCi/L, g, F): 0.835		See Below ##		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):			
Sample Result Counting Uncertainty (pCi/L, g, F): 0.389		48.94%		Matrix Spike Duplicate Result:		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):			
Sample Duplicate Result (pCi/L, g, F): 1.347		N/A		Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries), MS/ MSD Duplicate Status vs Numerical Indicator:		Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries), MS/ MSD Duplicate Status vs Numerical Indicator:			
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.390		Fail***		Duplicate RPD: MS/ MSD Duplicate Status vs Numerical Indicator:		MS/ MSD Duplicate Status vs Numerical Indicator:			
Are sample and/or duplicate results below MDC? See Below ##		48.94%		Duplicate Status vs Numerical Indicator: Duplicate Status vs RPD:					
Duplicate Numerical Performance Indicator: N/A		N/A		Duplicate Status vs Numerical Indicator: Duplicate Status vs RPD:					

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

\*\*\*Batch must be re-prepped due to unacceptable precision.

*numerical indicator is acceptable*  
JLW/22/17



## Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

		Test:	Ra-228
		Analyst:	JLW
		Date:	6/15/2017
		Worklist:	36062
		Matrix:	DW
Sample Matrix Spike Control Assessment			
Sample Collection Date: Sample I.D.: Sample MSD I.D.: Sample MSD Decay Corrected Spike Concentration (pCi/ml); Spike I.D.: Spike Volume Used in MS (ml); Spike Volume Used in MSD (ml); MS Aliquot (L, g, F); MS Target Conc.(pCi/L, g, F); MSD Aliquot (L, g, F); MSD Target Conc. (pCi/L, g, F); Spike uncertainty (calculated);			
MB Sample ID: 1285496 MB Concentration: 0.769 MB Counting Uncertainty: 0.387 MB MDC: 0.745 MB Numerical Indicator: 3.89 MB Status vs Numerical Indicator: N/A <u>See Comment*</u>			
<b>Method Blank Assessment</b>			
MB Sample ID: LCS36062 MB Concentration: 0.769 MB Counting Uncertainty: 0.387 MB MDC: 0.745 MB Numerical Indicator: 3.89 MB Status vs MDC: N/A			
<b>Laboratory Control Sample Assessment</b>			
LCS/LCSD (Y or N)? N LCS/LCSD ID: LCS36062 LCS/LCSD Date: 6/20/2017 Count Date: 6/20/2017 Spike I.D.: 17-005 Spike Concentration (pCi/ml): 24.245 Volume Used (ml): 0.20 Aliquot Volume (L, g, F): 0.813 Target Conc. (pCi/L, g, F): 5.964 Uncertainty (Calculated): 0.429 Result (pCi/L, g, F): 7.368 LCS/LCSD Counting Uncertainty (pCi/L, g, F): 0.774 Numerical Performance Indicator: 3.11 Percent Recovery: 123.55% Status vs Numerical Indicator: N/A Status vs Recovery: Pass			
<b>Duplicate Sample Assessment</b>			
Sample I.D.: 30220542006 Duplicate Sample I.D.: 30220542006DUP Sample Result (pCi/L, g, F): 1.409 Sample Result Counting Uncertainty (pCi/L, g, F): 0.605 Sample Duplicate Result (pCi/L, g, F): 0.603 Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.587 Are sample and/or duplicate results below MDC? See Below ## Duplicate Numerical Performance Indicator: <del>1.874</del> 1.876% Duplicate RPD: N/A Duplicate Status vs Numerical Indicator: Fail*** Duplicate Status vs RPD: N/A			

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

\*The method blank result is below the reporting limit for this analysis and is acceptable.

\*\*Batch must be re-prepped due to unacceptable precision.

Numerical Indicator is acceptable.



## Quality Control Sample Performance Assessment

***Analyst Must Manually Enter All Fields Highlighted in Yellow.***

Test:	Ra-226	Sample Matrix Spike Control Assessment	Sample Collection Date:
Analyst:	JC2	Sample I.D.	Sample MS I.D.
Date:	6/7/2017	Spike I.D.	Sample MSD I.D.
Worklist:	36008	MS/MSD Decay Corrected Spike Concentration (pCi/mL)	
Matrix:	Dw	Spike Volume Used in MS (mL)	
Method Blank Assessment		Spike Volume Used in MSD (mL)	
MB Sample ID	1284545	MS Aliquot (L, g, F)	
MB concentration:	0.052	MS Target Conc. (pCi/L, g, F)	
MB Counting Uncertainty:	0.131	MSD Aliquot (L, g, F)	
MB MDC:	0.318	MSD Target Conc. (pCi/L, g, F)	
MB Numerical Performance Indicator:	0.77	Spike uncertainty (calculated):	
MB Status vs Numerical Indicator:	N/A	Sample Result:	
MB Status vs. MDC:	Pass	Sample Result Counting Uncertainty (pCi/L, g, F)	
Laboratory Control Sample Assessment		Sample Matrix Spike Result:	
LCSD (Y or N)?	N	Matrix Spike Result Counting Uncertainty (pCi/L, g, F)	
LCSD36008	LCS36008	Sample Matrix Spike Duplicate Result:	
Count Date:	6/8/2017	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F)	
Spike I.D.:	13-033	MS Numerical Performance Indicator:	
Spike Concentration (pCi/mL):	19.848	MSD Numerical Performance Indicator:	
Volume Used (mL):	0.40	MS Percent Recovery:	
Aliquot Volume (L, g, F):	0.501	MSD Percent Recovery:	
Target Conc. (pCi/L, g, F):	15.852	MS Status vs Numerical Indicator:	
Uncertainty (Calculated):	0.746	MSD Status vs Numerical Indicator:	
Result (pCi/L, g, F):	12.493	MS Status vs Recovery:	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.060	MSD Status vs Recovery:	
Numerical Performance Indicator:	-5.08		
Percent Recovery:	78.81%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		
Duplicate Sample Assessment			
Sample I.D.:	30220161002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	Sample I.D.
Duplicate Sample I.D.:	30220161002DUP		Sample MS I.D.
Sample Result (pCi/L, g, F):	0.088		Sample MSD I.D.
Sample Result Counting Uncertainty (pCi/L, g, F):	0.147		Sample Matrix Spike Result:
Sample Duplicate Result (pCi/L, g, F):	0.331	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Duplicate Uncertainty (pCi/L, g, F):	0.214	Sample Matrix Spike Duplicate Result:	
Are sample and/or duplicate results below MDC?	See Below #	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	30220161002	Duplicate Numerical Performance Indicator:	
Duplicate RPD:	30220161002DUP	MS/MSD Duplicate RPD:	
Duplicate Status vs Numerical Indicator:	N/A	MS/MSD Duplicate Status vs Numerical Indicator:	
Duplicate Status vs RPD:	Fail***	MS/MSD Duplicate Status vs RPD:	

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

\* Numerical indicator is not applicable due to unacceptable precision.

*Zeljko*



## Quality Control Sample Performance Assessment

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Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test:	Ra-226	Sample Collection Date:	
Analyst:	LAL	Sample I.D.	
Date:	6/9/2017	Sample MS I.D.	
Worklist:	36070	Sample MSD I.D.	
Matrix:	DW	Spike I.D.:	
<b>Method Blank Assessment</b>			
MB Sample ID	1285893	MS/MSD Decay Corrected Spike Concentration (pCi/mL):	
MB Counting Uncertainty:	0.103	Spike Volume Used in MS (mL):	
MB MDC:	0.198	Spike Volume Used in MSD (mL):	
MB Numerical Performance Indicator:	0.204	MS Aliquot (L, g, F):	
MB Status vs. Numerical Indicator:	1.88	MS Target Conc. (pCi/L, g, F):	
MB Status vs. MDC:	N/A	MSD Aliquot (L, g, F):	
MB Status vs. Recovery:	(Pass)	MSD Target Conc. (pCi/L, g, F):	
<b>Laboratory Control Sample Assessment</b>			
LCSID (Y or N)?	N	Spike uncertainty (calculated):	
LCS36070	LCS36070	Sample Result:	
Count Date:	6/12/2017	Sample Result Counting Uncertainty (pCi/L, g, F):	
Spike I.D.:	13-033	Sample Matrix Spike Result:	
Spike Concentration (pCi/mL):	19.848	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Volume Used (mL):	0.40	Sample Matrix Spike Duplicate Result:	
Aliquot Volume (L, g, F):	0.509	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Target Conc. (pCi/L, g, F):	15.597	MS Numerical Performance Indicator:	
Uncertainty (Calculated):	0.734	MSD Numerical Performance Indicator:	
Result (pCi/L, g, F):	13.891	MS Percent Recovery:	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.959	MSD Percent Recovery:	
Numerical Performance Indicator:	-2.77	MS Status vs. Numerical Indicator:	
Percent Recovery:	89.08%	MSD Status vs. Numerical Indicator:	
Status vs. Numerical Indicator:	N/A	MS Status vs. Recovery:	
Status vs. Recovery:	(Pass)	MSD Status vs. Recovery:	
<b>Duplicate Sample Assessment</b>			
Sample I.D.:	30220649001	Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Duplicate Sample I.D.	30220649001DUP	Sample I.D.	
Sample Result (pCi/L, g, F):	0.854	Sample MS I.D.	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.302	Sample Matrix Spike Result:	
Sample Duplicate Result (pCi/L, g, F):	0.572	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.228	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Are sample and/or duplicate results below MDC?	See Below # <u>1.458</u>	Duplicate Numerical Performance Indicator:	
Duplicate Numerical Performance Indicator:	39.54%	Duplicate Status vs. Numerical Indicator:	
Duplicate Status vs. Recovery:	N/A	Duplicate Status vs. Numerical Indicator:	
Duplicate Status vs. MDC:	Fail***	MS/MSD Duplicate Status vs. Numerical Indicator:	
# Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.			
Comments:			
* Numerical / indicator is acceptable .			
** Batch must be re-prepped due to unacceptable precision.			



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

**Prepared For:**

**Georgia Power  
2480 Maner Road  
Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AAF0065**

**June 13, 2017**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

A handwritten signature in black ink, appearing to read "Betty McManus".

Project Manager

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All test results relate only to the samples analyzed.



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

### ANALYTICAL REPORT FOR SAMPLES

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
MCM-04	AAF0065-01	Ground Water	06/01/17 15:17	06/02/17 09:05
MCM-08	AAF0065-02	Ground Water	06/01/17 09:05	06/02/17 09:05
MCM-01	AAF0065-03	Ground Water	06/01/17 09:38	06/02/17 09:05
MCM-16	AAF0065-04	Ground Water	06/01/17 11:36	06/02/17 09:05
EQBL060117	AAF0065-05	Water	06/01/17 15:50	06/02/17 09:05
FBL060117	AAF0065-06	Water	06/01/17 16:46	06/02/17 09:05



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

### Case Narrative

The Radium analysis by methods EPA 9315/9320 was performed by Pace-Pittsburgh, 1638 Roseytown Road - Suites 2, 3, 4, Greensburg PA 15601. The Pace-Pittsburgh lab contact is Jacquelyn Collins at 724-850-5612.



# PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

Report No.: AAF0065

Project: CCR Event

Client ID: MCM-04

Lab Number ID: AAF0065-01

Date/Time Sampled: 6/1/2017 3:17:00PM

Date/Time Received: 6/2/2017 9:05:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	97	25	10	mg/L	SM 2540 C		1	06/07/17 17:40	06/07/17 17:40	7060176	JPT
<b>Inorganic Anions</b>											
Chloride	22	0.25	0.01	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 12:30	7060161	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 12:30	7060161	SLH
Sulfate	42	1.0	0.09	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 12:30	7060161	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Arsenic	0.0040	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Barium	0.0195	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Beryllium	0.0001	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Boron	0.0608	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Calcium	3.65	0.500	0.0104	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Chromium	0.0008	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 21:46	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 17:16	7060092	MTC



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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

Report No.: AAF0065

Project: CCR Event

Client ID: MCM-08

Lab Number ID: AAF0065-02

Date/Time Sampled: 6/1/2017 9:05:00AM

Date/Time Received: 6/2/2017 9:05:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2970	25	10	mg/L	SM 2540 C		1	06/07/17 17:40	06/07/17 17:40	7060176	JPT
<b>Inorganic Anions</b>											
Chloride	1400	25	1.3	mg/L	EPA 300.0		100	06/06/17 18:53	06/08/17 12:28	7060161	rlc
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 12:51	7060161	SLH
Sulfate	250	100	9.2	mg/L	EPA 300.0		100	06/06/17 18:53	06/08/17 12:28	7060161	rlc
<b>Metals, Total</b>											
Antimony	ND	0.0060	0.0016	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 21:18	7060152	CSW
Arsenic	0.0204	0.0100	0.0021	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 21:18	7060152	CSW
Barium	0.447	0.0500	0.0013	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 21:18	7060152	CSW
Beryllium	0.0003	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 22:09	7060152	CSW
Boron	0.336	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:09	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:09	7060152	CSW
Calcium	27.3	25.0	0.522	mg/L	EPA 6020B		50	06/06/17 09:30	06/07/17 22:15	7060152	CSW
Chromium	0.0076	0.0500	0.0017	mg/L	EPA 6020B	R-01, J	5	06/06/17 09:30	06/12/17 21:18	7060152	CSW
Cobalt	ND	0.0500	0.0023	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 21:18	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:09	7060152	CSW
Molybdenum	ND	0.0100	0.0030	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 21:18	7060152	CSW
Selenium	ND	0.0500	0.0070	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 21:18	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:09	7060152	CSW
Lithium	0.0017	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 22:09	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 17:18	7060092	MTC



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

Report No.: AAF0065

Project: CCR Event

Client ID: MCM-01

Lab Number ID: AAF0065-03

Date/Time Sampled: 6/1/2017 9:38:00AM

Date/Time Received: 6/2/2017 9:05:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	103	25	10	mg/L	SM 2540 C		1	06/07/17 17:40	06/07/17 17:40	7060176	JPT
<b>Inorganic Anions</b>											
Chloride	12	0.25	0.01	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 13:12	7060161	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 13:12	7060161	SLH
Sulfate	51	2.0	0.18	mg/L	EPA 300.0		2	06/06/17 18:53	06/08/17 12:49	7060161	rlc
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Arsenic	0.0036	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Barium	0.0757	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Beryllium	0.00009	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Boron	0.0564	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Calcium	12.7	25.0	0.522	mg/L	EPA 6020B	J	50	06/06/17 09:30	06/07/17 22:26	7060152	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:21	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 17:20	7060092	MTC



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Environmental Monitoring & Laboratory Analysis  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

Report No.: AAF0065

Project: CCR Event

Client ID: MCM-16

Lab Number ID: AAF0065-04

Date/Time Sampled: 6/1/2017 11:36:00AM

Date/Time Received: 6/2/2017 9:05:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	98	25	10	mg/L	SM 2540 C		1	06/07/17 17:40	06/07/17 17:40	7060176	JPT
<b>Inorganic Anions</b>											
Chloride	27	0.25	0.01	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 13:32	7060161	SLH
Fluoride	0.005	0.30	0.004	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 13:32	7060161	SLH
Sulfate	24	1.0	0.09	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 13:32	7060161	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Barium	0.121	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Beryllium	0.0002	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Boron	0.0776	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Calcium	6.42	0.500	0.0104	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Chromium	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Thallium	0.00006	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:32	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 17:23	7060092	MTC



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

Report No.: AAF0065

Project: CCR Event

Client ID: EQBL060117

Lab Number ID: AAF0065-05

Date/Time Sampled: 6/1/2017 3:50:00PM

Date/Time Received: 6/2/2017 9:05:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	10	25	10	mg/L	SM 2540 C	J	1	06/07/17 17:40	06/07/17 17:40	7060176	JPT
<b>Inorganic Anions</b>											
Chloride	0.12	0.25	0.01	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 13:53	7060161	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 13:53	7060161	SLH
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 13:53	7060161	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Calcium	ND	0.500	0.0104	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:43	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 17:25	7060092	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

Report No.: AAF0065

Project: CCR Event

Client ID: FBL060117

Lab Number ID: AAF0065-06

Date/Time Sampled: 6/1/2017 4:46:00PM

Date/Time Received: 6/2/2017 9:05:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	06/07/17 17:40	06/07/17 17:40	7060176	JPT
<b>Inorganic Anions</b>											
Chloride	0.08	0.25	0.01	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 14:14	7060161	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 14:14	7060161	SLH
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 14:14	7060161	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Calcium	ND	0.500	0.0104	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:49	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 17:27	7060092	MTC



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June 13, 2017

**Report No.: AAF0065**

### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### **Batch 7060176 - SM 2540 C**

Blank (7060176-BLK1)							Prepared & Analyzed: 06/07/17			
Total Dissolved Solids	ND	25	10	mg/L						
LCS (7060176-BS1)							Prepared & Analyzed: 06/07/17			
Total Dissolved Solids	383	25	10	mg/L	400.00		96	84-108		
Duplicate (7060176-DUP1)							Prepared & Analyzed: 06/07/17			
Total Dissolved Solids	2980	25	10	mg/L		2970		0.6	10	
Duplicate (7060176-DUP2)							Prepared & Analyzed: 06/07/17			
Total Dissolved Solids	ND	25	10	mg/L		ND				10



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June 13, 2017

**Report No.: AAF0065**

### Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060161 - EPA 300.0</b>											
<b>Blank (7060161-BLK1)</b>											
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	ND	1.0	0.09	mg/L							
<b>LCS (7060161-BS1)</b>											
Chloride	9.86	0.25	0.01	mg/L	10.020		98	90-110			
Fluoride	9.95	0.30	0.004	mg/L	10.020		99	90-110			
Sulfate	9.86	1.0	0.09	mg/L	10.050		98	90-110			
<b>Matrix Spike (7060161-MS1)</b>											
					<b>Source: AAF0126-01</b>						
Chloride	20.6	0.25	0.01	mg/L	10.020	11.3	93	90-110			
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.07	103	90-110			
Sulfate	259	1.0	0.09	mg/L	10.050	272	NR	90-110			QM-02
<b>Matrix Spike (7060161-MS2)</b>											
					<b>Source: AAF0132-05</b>						
Chloride	19.8	0.25	0.01	mg/L	10.020	10.9	89	90-110			QM-05
Fluoride	10.4	0.30	0.004	mg/L	10.020	ND	103	90-110			
Sulfate	21.7	1.0	0.09	mg/L	10.050	13.2	85	90-110			QM-05
<b>Matrix Spike Dup (7060161-MSD1)</b>											
					<b>Source: AAF0126-01</b>						
Chloride	20.5	0.25	0.01	mg/L	10.020	11.3	92	90-110	0.1	15	
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.07	103	90-110	0.1	15	
Sulfate	258	1.0	0.09	mg/L	10.050	272	NR	90-110	0.1	15	QM-02



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June 13, 2017

**Report No.: AAF0065**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060092 - EPA 7470A</b>											
<b>Blank (7060092-BLK1)</b>											Prepared & Analyzed: 06/05/17
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7060092-BS1)</b>											Prepared & Analyzed: 06/05/17
Mercury	0.00229	0.00050	0.000041	mg/L	2.5000E-3		92	80-120			
<b>Matrix Spike (7060092-MS1)</b>											Source: AAF0060-01 Prepared & Analyzed: 06/05/17
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (7060092-MSD1)</b>											Source: AAF0060-01 Prepared & Analyzed: 06/05/17
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	2	20	
<b>Post Spike (7060092-PS1)</b>											Source: AAF0060-01 Prepared & Analyzed: 06/05/17
Mercury	1.68			ug/L	1.6667	0.00925	100	80-120			
<b>Batch 7060152 - EPA 3005A</b>											
<b>Blank (7060152-BLK1)</b>											Prepared: 06/06/17 Analyzed: 06/07/17
Antimony	ND	0.0030	0.0003	mg/L							
Arsenic	ND	0.0050	0.0004	mg/L							
Barium	ND	0.0100	0.0003	mg/L							
Beryllium	ND	0.0030	0.00007	mg/L							
Boron	ND	0.0400	0.0060	mg/L							
Cadmium	ND	0.0010	0.00006	mg/L							
Calcium	ND	0.500	0.0104	mg/L							
Chromium	ND	0.0100	0.0003	mg/L							
Cobalt	ND	0.0100	0.0005	mg/L							
Copper	ND	0.0250	0.0003	mg/L							
Lead	ND	0.0050	0.00007	mg/L							
Molybdenum	ND	0.0100	0.0006	mg/L							
Nickel	ND	0.0100	0.0003	mg/L							
Selenium	ND	0.0100	0.0014	mg/L							
Silver	ND	0.0100	0.0003	mg/L							
Thallium	ND	0.0010	0.00005	mg/L							
Vanadium	ND	0.0100	0.0014	mg/L							
Zinc	0.0013	0.0100	0.0013	mg/L							
Lithium	ND	0.0500	0.0011	mg/L							



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

**Report No.: AAF0065**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060152 - EPA 3005A</b>											
<b>LCS (7060152-BS1)</b>											
Antimony	0.108	0.0030	0.0003	mg/L	0.10000		108	80-120			
Arsenic	0.105	0.0050	0.0004	mg/L	0.10000		105	80-120			
Barium	0.104	0.0100	0.0003	mg/L	0.10000		104	80-120			
Beryllium	0.104	0.0030	0.00007	mg/L	0.10000		104	80-120			
Boron	1.00	0.0400	0.0060	mg/L	1.0000		100	80-120			
Cadmium	0.106	0.0010	0.00006	mg/L	0.10000		106	80-120			
Calcium	1.20	0.500	0.0104	mg/L	1.0000		120	80-120			
Chromium	0.104	0.0100	0.0003	mg/L	0.10000		104	80-120			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000		102	80-120			
Copper	0.100	0.0250	0.0003	mg/L	0.10000		100	80-120			
Lead	0.0997	0.0050	0.00007	mg/L	0.10000		100	80-120			
Molybdenum	0.106	0.0100	0.0006	mg/L	0.10000		106	80-120			
Nickel	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			
Selenium	0.111	0.0100	0.0014	mg/L	0.10000		111	80-120			
Silver	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			
Thallium	0.101	0.0010	0.00005	mg/L	0.10000		101	80-120			
Vanadium	0.104	0.0100	0.0014	mg/L	0.10000		104	80-120			
Zinc	0.109	0.0100	0.0013	mg/L	0.10000		109	80-120			
Lithium	0.107	0.0500	0.0011	mg/L	0.10000		107	80-120			
<b>Matrix Spike (7060152-MS1)</b>											
<b>Source: AAF0065-01</b>											
Antimony	0.112	0.0030	0.0003	mg/L	0.10000	ND	112	75-125			
Arsenic	0.108	0.0050	0.0004	mg/L	0.10000	0.0040	104	75-125			
Barium	0.126	0.0100	0.0003	mg/L	0.10000	0.0195	107	75-125			
Beryllium	0.0971	0.0030	0.00007	mg/L	0.10000	0.0001	97	75-125			
Boron	1.00	0.0400	0.0060	mg/L	1.0000	0.0608	94	75-125			
Cadmium	0.105	0.0010	0.00006	mg/L	0.10000	ND	105	75-125			
Calcium	6.02	0.500	0.0104	mg/L	1.0000	3.65	237	75-125			QM-02
Chromium	0.105	0.0100	0.0003	mg/L	0.10000	0.0008	105	75-125			
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Copper	0.100	0.0250	0.0003	mg/L	0.10000	ND	100	75-125			
Lead	0.0977	0.0050	0.00007	mg/L	0.10000	ND	98	75-125			
Molybdenum	0.111	0.0100	0.0006	mg/L	0.10000	ND	111	75-125			
Nickel	0.103	0.0100	0.0003	mg/L	0.10000	ND	103	75-125			
Selenium	0.106	0.0100	0.0014	mg/L	0.10000	ND	106	75-125			
Silver	0.106	0.0100	0.0003	mg/L	0.10000	ND	106	75-125			
Thallium	0.0994	0.0010	0.00005	mg/L	0.10000	ND	99	75-125			
Vanadium	0.114	0.0100	0.0014	mg/L	0.10000	0.0044	109	75-125			
Zinc	0.110	0.0100	0.0013	mg/L	0.10000	0.0023	108	75-125			
Lithium	0.0988	0.0500	0.0011	mg/L	0.10000	ND	99	75-125			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

**Report No.: AAF0065**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 7060152 - EPA 3005A

Matrix Spike Dup (7060152-MSD1)		Source: AAF0065-01			Prepared: 06/06/17 Analyzed: 06/07/17					
Antimony	0.107	0.0030	0.0003	mg/L	0.10000	ND	107	75-125	4	20
Arsenic	0.106	0.0050	0.0004	mg/L	0.10000	0.0040	102	75-125	2	20
Barium	0.124	0.0100	0.0003	mg/L	0.10000	0.0195	105	75-125	2	20
Beryllium	0.0967	0.0030	0.00007	mg/L	0.10000	0.0001	97	75-125	0.3	20
Boron	0.997	0.0400	0.0060	mg/L	1.0000	0.0608	94	75-125	0.6	20
Cadmium	0.102	0.0010	0.00006	mg/L	0.10000	ND	102	75-125	3	20
Calcium	5.92	0.500	0.0104	mg/L	1.0000	3.65	227	75-125	2	20
Chromium	0.106	0.0100	0.0003	mg/L	0.10000	0.0008	105	75-125	0.8	20
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125	1	20
Copper	0.0978	0.0250	0.0003	mg/L	0.10000	ND	98	75-125	2	20
Lead	0.0970	0.0050	0.00007	mg/L	0.10000	ND	97	75-125	0.7	20
Molybdenum	0.107	0.0100	0.0006	mg/L	0.10000	ND	107	75-125	4	20
Nickel	0.102	0.0100	0.0003	mg/L	0.10000	ND	102	75-125	2	20
Selenium	0.104	0.0100	0.0014	mg/L	0.10000	ND	104	75-125	2	20
Silver	0.100	0.0100	0.0003	mg/L	0.10000	ND	100	75-125	5	20
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	ND	101	75-125	1	20
Vanadium	0.112	0.0100	0.0014	mg/L	0.10000	0.0044	107	75-125	2	20
Zinc	0.105	0.0100	0.0013	mg/L	0.10000	0.0023	103	75-125	5	20
Lithium	0.0975	0.0500	0.0011	mg/L	0.10000	ND	98	75-125	1	20

Post Spike (7060152-PS1)		Source: AAF0065-01			Prepared: 06/06/17 Analyzed: 06/07/17					
Antimony	106		ug/L	100.00	0.182	106	80-120			
Arsenic	108		ug/L	100.00	4.02	104	80-120			
Barium	125		ug/L	100.00	19.5	105	80-120			
Beryllium	95.6		ug/L	100.00	0.0981	96	80-120			
Boron	1030		ug/L	1000.0	60.8	97	80-120			
Cadmium	104		ug/L	100.00	0.0025	104	80-120			
Calcium	5890		ug/L	1000.0	3650	224	80-120			QM-02
Chromium	106		ug/L	100.00	0.783	106	80-120			
Cobalt	104		ug/L	100.00	0.0104	104	80-120			
Copper	99.8		ug/L	100.00	-0.0325	100	80-120			
Lead	98.6		ug/L	100.00	0.0190	99	80-120			
Molybdenum	111		ug/L	100.00	0.0899	111	80-120			
Nickel	103		ug/L	100.00	0.0357	103	80-120			
Selenium	109		ug/L	100.00	0.209	108	80-120			
Silver	103		ug/L	100.00	-0.0020	103	80-120			
Thallium	99.9		ug/L	100.00	0.0014	100	80-120			
Vanadium	115		ug/L	100.00	4.36	110	80-120			
Zinc	107		ug/L	100.00	2.33	104	80-120			
Lithium	98.0		ug/L	100.00	0.543	97	80-120			



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

## Legend

### Definition of Laboratory Terms

- ND** - Not Detected at levels equal to or greater than the MDL  
**BRL** - Not Detected at levels equal to or greater than the RL  
**RL** - Reporting Limit                   **MDL** - Method Detection Limit  
**SOP** - Method run per Pace Standard Operating Procedure  
**CFU** - Colony Forming Units  
**DF** - Dilution Factor                   **TIC** - Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

- R-01** Elevated reporting limit due to matrix interference.
- QM-05** The spike recovery was outside acceptance limits for the MS and/or MSD and/or PDS due to suspected matrix interference. Sample results for the QC batch were accepted based on acceptable LCS recoveries.
- QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.
- J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

**Note: Unless otherwise noted, all results are reported on an as received basis.**



**CHAIN OF CUSTODY RECORD**

Pace Analytical  
[www.paceanalytical.com](http://www.paceanalytical.com)

**Pace Analytical Services, LLC - Atlanta GA**  
110 TECHNOLOGY PARKWAY, PEACHTREE  
(770) 734-4200 : FAX (770) 734-4201



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### LOG-IN CHECKLIST

Printed: 6/2/2017 3:30:00PM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 06/02/17 09:05

**Work Order:** AAF0065  
**Logged In By:** Mohammad M. Rahman

### OBSERVATIONS

<b>#Samples:</b> 6	<b>#Containers:</b> 24
<b>Minimum Temp(C):</b> 2.0	<b>Maximum Temp(C):</b> 2.0
<b>Custody Seal(s) Used:</b> No	

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	N/A
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

**Comments:**

June 26, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAF0065 Plant McManus  
Pace Project No.: 30220649

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on June 05, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
(724)850-5612  
Project Manager

Enclosures



#### **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## CERTIFICATIONS

Project: AAF0065 Plant McManus  
 Pace Project No.: 30220649

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
 L-A-B DOD-ELAP Accreditation #: L2417  
 Alabama Certification #: 41590  
 Arizona Certification #: AZ0734  
 Arkansas Certification  
 California Certification #: 04222CA  
 Colorado Certification  
 Connecticut Certification #: PH-0694  
 Delaware Certification  
 Florida/TNI Certification #: E87683  
 Georgia Certification #: C040  
 Guam Certification  
 Hawaii Certification  
 Idaho Certification  
 Illinois Certification  
 Indiana Certification  
 Iowa Certification #: 391  
 Kansas/TNI Certification #: E-10358  
 Kentucky Certification #: 90133  
 Louisiana DHH/TNI Certification #: LA140008  
 Louisiana DEQ/TNI Certification #: 4086  
 Maine Certification #: PA00091  
 Maryland Certification #: 308  
 Massachusetts Certification #: M-PA1457  
 Michigan/PADEP Certification  
 Missouri Certification #: 235

Montana Certification #: Cert 0082  
 Nebraska Certification #: NE-05-29-14  
 Nevada Certification #: PA014572015-1  
 New Hampshire/TNI Certification #: 2976  
 New Jersey/TNI Certification #: PA 051  
 New Mexico Certification #: PA01457  
 New York/TNI Certification #: 10888  
 North Carolina Certification #: 42706  
 North Dakota Certification #: R-190  
 Oregon/TNI Certification #: PA200002  
 Pennsylvania/TNI Certification #: 65-00282  
 Puerto Rico Certification #: PA01457  
 Rhode Island Certification #: 65-00282  
 South Dakota Certification  
 Tennessee Certification #: TN2867  
 Texas/TNI Certification #: T104704188-14-8  
 Utah/TNI Certification #: PA014572015-5  
 USDA Soil Permit #: P330-14-00213  
 Vermont Dept. of Health: ID# VT-0282  
 Virgin Island/PADEP Certification  
 Virginia/VELAP Certification #: 460198  
 Washington Certification #: C868  
 West Virginia DEP Certification #: 143  
 West Virginia DHHR Certification #: 9964C  
 Wisconsin Certification  
 Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAF0065 Plant McManus  
Pace Project No.: 30220649

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30220649001	MCM-04	Water	06/01/17 15:17	06/05/17 09:30
30220649002	MCM-08	Water	06/01/17 09:05	06/05/17 09:30
30220649003	MCM-01	Water	06/01/17 09:38	06/05/17 09:30
30220649004	MCM-16	Water	06/01/17 11:36	06/05/17 09:30
30220649005	EQBL060117	Water	06/01/17 15:50	06/05/17 09:30
30220649006	FBL060117	Water	06/01/17 16:46	06/05/17 09:30

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: AAF0065 Plant McManus  
Pace Project No.: 30220649

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30220649001	MCM-04	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220649002	MCM-08	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220649003	MCM-01	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220649004	MCM-16	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220649005	EQBL060117	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220649006	FBL060117	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAF0065 Plant McManus

Pace Project No.: 30220649

<b>Sample: MCM-04</b>	<b>Lab ID: 30220649001</b>	Collected: 06/01/17 15:17	Received: 06/05/17 09:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.854 ± 0.327 (0.407)</b> C:78% T:NA	pCi/L	06/12/17 08:27
Radium-228	EPA 9320	<b>1.05 ± 0.531 (0.955)</b> C:76% T:72%	pCi/L	06/20/17 11:39
Total Radium	Total Radium Calculation	<b>1.90 ± 0.858 (1.36)</b>	pCi/L	06/21/17 14:09
<hr/>				
<b>Sample: MCM-08</b>	<b>Lab ID: 30220649002</b>	Collected: 06/01/17 09:05	Received: 06/05/17 09:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>11.6 ± 1.69 (0.0477)</b> C:92% T:NA	pCi/L	06/22/17 17:24
Radium-228	EPA 9320	<b>6.12 ± 1.29 (0.689)</b> C:74% T:88%	pCi/L	06/20/17 16:02
Total Radium	Total Radium Calculation	<b>19.8 ± 3.49 (0.893)</b>	pCi/L	06/21/17 14:09
<hr/>				
<b>Sample: MCM-01</b>	<b>Lab ID: 30220649003</b>	Collected: 06/01/17 09:38	Received: 06/05/17 09:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.662 ± 0.243 (0.207)</b> C:89% T:NA	pCi/L	06/12/17 08:41
Radium-228	EPA 9320	<b>0.852 ± 0.571 (1.12)</b> C:77% T:76%	pCi/L	06/20/17 16:04
Total Radium	Total Radium Calculation	<b>1.51 ± 0.814 (1.33)</b>	pCi/L	06/21/17 14:09
<hr/>				
<b>Sample: MCM-16</b>	<b>Lab ID: 30220649004</b>	Collected: 06/01/17 11:36	Received: 06/05/17 09:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.621 ± 0.262 (0.289)</b> C:72% T:NA	pCi/L	06/12/17 08:41
Radium-228	EPA 9320	<b>0.594 ± 0.426 (0.838)</b> C:79% T:82%	pCi/L	06/20/17 16:04
Total Radium	Total Radium Calculation	<b>1.22 ± 0.688 (1.13)</b>	pCi/L	06/21/17 14:09
<hr/>				
<b>Sample: EQBL060117</b>	<b>Lab ID: 30220649005</b>	Collected: 06/01/17 15:50	Received: 06/05/17 09:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.0758 ± 0.117 (0.255)</b> C:86% T:NA	pCi/L	06/12/17 08:41
Radium-228	EPA 9320	<b>0.774 ± 0.554 (1.09)</b> C:73% T:74%	pCi/L	06/20/17 16:04

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAF0065 Plant McManus  
Pace Project No.: 30220649

<b>Sample: EQBL060117</b>	<b>Lab ID: 30220649005</b>	Collected: 06/01/17 15:50	Received: 06/05/17 09:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Total Radium	Total Radium Calculation	<b>0.850 ± 0.671 (1.35)</b>	pCi/L	06/21/17 14:09
				7440-14-4
<b>Sample: FBL060117</b>	<b>Lab ID: 30220649006</b>	Collected: 06/01/17 16:46	Received: 06/05/17 09:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.188 ± 0.153 (0.258)</b> C:77% T:NA	pCi/L	06/12/17 08:41
Radium-228	EPA 9320	<b>-0.131 ± 0.385 (0.904)</b> C:80% T:87%	pCi/L	06/20/17 16:04
Total Radium	Total Radium Calculation	<b>0.188 ± 0.538 (1.16)</b>	pCi/L	06/21/17 14:09
				7440-14-4

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0065 Plant McManus  
Pace Project No.: 30220649

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QC Batch:	261089	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples: 30220649001, 30220649002, 30220649003, 30220649004, 30220649005, 30220649006			

---

METHOD BLANK: 1285496	Matrix: Water
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Associated Lab Samples: 30220649001, 30220649002, 30220649003, 30220649004, 30220649005, 30220649006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.769 ± 0.411 (0.745) C:79% T:83%	pCi/L	06/20/17 11:39	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0065 Plant McManus  
 Pace Project No.: 30220649

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QC Batch:	261179	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples: 30220649001, 30220649002, 30220649003, 30220649004, 30220649005, 30220649006			

---

METHOD BLANK: 1285893	Matrix: Water
-----------------------	---------------

Associated Lab Samples: 30220649001, 30220649002, 30220649003, 30220649004, 30220649005, 30220649006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.103 ± 0.109 (0.204) C:89% T:NA	pCi/L	06/12/17 08:27	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: AAF0065 Plant McManus  
Pace Project No.: 30220649

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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WO# : 30220649

## Chain of Custody



Workorder: AAF0065

Report To:

Betsy McDaniel  
Pace Analytical Atlanta  
110 Technology Parkway  
Peachtree Corners, GA 30092  
Phone (770)-734-4200

Workorder Name:

PlantMcManus

Owner Received Date:

Results Requested By: 6/27/2017

Report To:		Subcontract To:		Owner Received Date:		Results Requested By:	
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	CO <sub>2</sub>	LAB USE ONLY
1	MCM-04	G	6/1/2017 15:17	AAF0065-01	GW	2	001
2	MCM-08	G	6/1/2017 9:05	AAF0065-02	GW	2	002
3	MCM-01	G	6/1/2017 9:38	AAF0065-03	GW	2	003
4	MCM-16	G	6/1/2017 11:36	AAF0065-04	GW	2	004
5	EQBL060117	G	6/1/2017 15:50	AAF0065-05	W	2	005
6	FBL060117	G	6/1/2017 16:46	AAF0065-06	W	2	006
7							
8							
9							
10							
Transfers	Released By	Date/Time	Received By	Date/Time	Comments		
1	M - R ATT MAN	6/21/17	Johng Pace	6-5-17/0930			
2							
3							

Cooler Temperature on Receipt 74 °C

Custody Seal Y or N

Received on Ice Y or N

Sample Intact Y or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
This chain of custody is considered complete as is since this information is available in the owner laboratory.

**CHAIN OF CUSTODY RECORD**

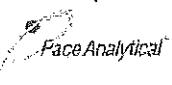
*pace Analytical*  
www.paceanalytical.com

Pace Analytical Services, LLC - Atlanta GA  
110 TECHNOLOGY PARKWAY, PEACHTREE CITY, GA 30021  
(770) 734-4200 : FAX (770) 734-4201

30220649 OF 1  
PAGE:

CLIENT NAME:	Sawyer Construction	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:	244 Dawson Road Suite 300 Anderson, CA 95303	
REPORT TO:	CC: Sawyer Construction Sawyer Construction	
REQUESTED COMPLETION DATE:	PO#:	
PROJECT NAME/STATE:	Project Mechanics CC&R PROJECT #:	

## Sample Condition Upon Receipt Pittsburgh

Client Name: Pdce, GA Project # 30220649*AM*Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
Tracking #: 6812 5104 7336Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  noThermometer Used: N/A Type of Ice: Wet Blue NoneCooler Temperature Observed Temp: - °C Correction Factor: - °C Final Temp: - °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 04/17/6-5-17

Comments:	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:	X			4.
Sample Labels match COC: -Includes date/time/ID	X			5.
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):	X			7.
Rush Turn Around Time Requested:	X			8.
Sufficient Volume:	X			9.
Correct Containers Used: -Pace Containers Used:	X			10.
Containers Intact:	X			11.
Orthophosphate field filtered		X		12.
Organic Samples checked for dechlorination:		X		13.
Filtered volume received for Dissolved tests		X		14.
All containers have been checked for preservation.	X			15.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>04/17/</u> Date/time of preservation: <u>6-5-17</u>
Headspace in VOA Vials (>6mm):		X		16.
Trip Blank Present:		X		17.
Trip Blank Custody Seals Present		X		
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>04/17/</u> Date: <u>6-5-17</u>

## Client Notification/ Resolution:

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

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ A check in this box indicates that additional information has been stored in eReports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS, the review is in the Status section of the Workorder Edit Screen.



## Quality Control Sample Performance Assessment

FaceAnalytical™  
www.paceqas.com

**Analyst Must Manually Enter All Fields Highlighted in Yellow.**

Test:	Ra-226	Sample Matrix Spike Control Assessment	Sample Collection Date:
Analyst:	LAL	Sample I.D.	Sample I.D.
Date:	6/9/2017	Sample M.S. I.D.	Sample MSD I.D.
Worklist:	36070	Spike I.D.:	
Matrix:	DW	MS/MSD Decay Corrected Spike Concentration (pCi/mL)	
Method Blank Assessment		Spike Volume Used in MS (mL)	
		Spike Volume Used in MSD (mL)	
		MS Aliquot (L, g, F):	
		MS Target Conc.(pCi/L, g, F):	
		MSD Aliquot (L, g, F):	
		MSD Target Conc. (pCi/L, g, F):	
		Spike uncertainty (calculated):	
Laboratory Control Sample Assessment		Sample Result Counting Uncertainty (pCi/L, g, F):	
		Sample Matrix Spike Result:	
		Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
		Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
		MS Numerical Performance Indicator:	
		MSD Numerical Performance Indicator:	
		MS Percent Recovery:	
		MSD Percent Recovery:	
		MS Status vs Numerical Indicator:	
		M/SD Status vs Numerical Indicator:	
		MS Status vs Recovery:	
		MSD Status vs Recovery:	
Duplicate Sample Assessment		Matrix Spike/Matrix Spike Duplicate Sample Assessment	
		Sample I.D.:	
		Enter Duplicate sample IDs if other than LCS/LCD in the space below.	
		Sample I.D.:	
		Sample MSD I.D.	
		Sample Matrix Spike Result:	
		Sample Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
		Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
		Sample Matrix Spike Duplicate Result:	
		Duplicate Numerical Performance Indicator:	
		MS/MSD Duplicate Status vs Numerical Indicator:	
		MS/MSD Duplicate Status vs RPD:	
		MS/MSD Duplicate Status vs Recovery:	

Count Date:	N
Spike I.D.:	LCS36070
Spike Concentration (pCi/mL):	13.033
Volume used (mL):	19.848
Aliquot volume (L, g, F):	0.40
Target Conc. (pCi/L, g, F):	0.509
Uncertainty (Calculated):	15.59%
Result (pCi/L, g, F):	0.734
LCS/LCD Counting Uncertainty (pCi/L, g, F):	13.89%
Numerical Performance Indicator:	0.959
Percent Recovery:	-2.77
Status vs Numerical Indicator:	89.06%
Status vs Recovery:	N/A
	Pass
Duplicate Status vs RPD:	
Fail**	

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

\*\*\*Batch must be re-prepped due to unacceptable precision.



## Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

<b>Method Blank Assessment</b> <table border="1"> <tr> <td>MB Sample ID:</td> <td>1285496</td> </tr> <tr> <td>MB Concentration:</td> <td>0.769</td> </tr> <tr> <td>M/B Counting Uncertainty:</td> <td>0.387</td> </tr> <tr> <td>MB MDC:</td> <td>0.745</td> </tr> <tr> <td>MB Numerical Performance Indicator:</td> <td>3.89</td> </tr> <tr> <td>MB Status vs Numerical Indicator:</td> <td>N/A</td> </tr> <tr> <td>MB Status vs. MDC:</td> <td>See Comment*</td> </tr> </table>	MB Sample ID:	1285496	MB Concentration:	0.769	M/B Counting Uncertainty:	0.387	MB MDC:	0.745	MB Numerical Performance Indicator:	3.89	MB Status vs Numerical Indicator:	N/A	MB Status vs. MDC:	See Comment*	<b>Laboratory Control Sample Assessment</b> <table border="1"> <tr> <td>LCSD (Y or N)?</td> <td>LCS36062</td> </tr> <tr> <td>Count Date:</td> <td>6/20/2017</td> </tr> <tr> <td>Spike I.D.:</td> <td>17-005</td> </tr> <tr> <td>Spike Concentration (pCi/mL):</td> <td>24.245</td> </tr> <tr> <td>Volume Used (mL):</td> <td>0.20</td> </tr> <tr> <td>Aliquot Volume (L, g, F):</td> <td>0.813</td> </tr> <tr> <td>Target Conc. (pCi/L, g, F):</td> <td>5.964</td> </tr> <tr> <td>Uncertainty (Calculated):</td> <td>0.429</td> </tr> <tr> <td>Result (pCi/L, g, F):</td> <td>7.368</td> </tr> <tr> <td>LCSD Counting Uncertainty (pCi/L, g, F):</td> <td>0.774</td> </tr> <tr> <td>Numerical Performance Indicator:</td> <td>3.11</td> </tr> <tr> <td>Percent Recovery:</td> <td>123.55%</td> </tr> <tr> <td>Status vs Numerical Indicator:</td> <td>N/A</td> </tr> <tr> <td>Status vs Recovery:</td> <td>Pass</td> </tr> </table>	LCSD (Y or N)?	LCS36062	Count Date:	6/20/2017	Spike I.D.:	17-005	Spike Concentration (pCi/mL):	24.245	Volume Used (mL):	0.20	Aliquot Volume (L, g, F):	0.813	Target Conc. (pCi/L, g, F):	5.964	Uncertainty (Calculated):	0.429	Result (pCi/L, g, F):	7.368	LCSD Counting Uncertainty (pCi/L, g, F):	0.774	Numerical Performance Indicator:	3.11	Percent Recovery:	123.55%	Status vs Numerical Indicator:	N/A	Status vs Recovery:	Pass	<b>Duplicate Sample Assessment</b> <table border="1"> <tr> <td>Sample I.D.:</td> <td>30220542006</td> </tr> <tr> <td>Duplicate Sample I.D.:</td> <td>30220542006DUP</td> </tr> <tr> <td>Sample Result (pCi/L, g, F):</td> <td>1.409</td> </tr> <tr> <td>Sample Result Counting Uncertainty (pCi/L, g, F):</td> <td>0.605</td> </tr> <tr> <td>Sample Duplicate Result (pCi/L, g, F):</td> <td>0.603</td> </tr> <tr> <td>Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):</td> <td>0.587</td> </tr> <tr> <td>Are sample and/or duplicate results below MDC?</td> <td>See Below ##</td> </tr> <tr> <td>Duplicate Numerical Performance Indicator:</td> <td>1.874</td> </tr> <tr> <td>Duplicate RPD:</td> <td>80.16%</td> </tr> <tr> <td>Duplicate Status vs Numerical Indicator:</td> <td>N/A</td> </tr> <tr> <td>Duplicate Status vs RPD:</td> <td>Fail**</td> </tr> </table>	Sample I.D.:	30220542006	Duplicate Sample I.D.:	30220542006DUP	Sample Result (pCi/L, g, F):	1.409	Sample Result Counting Uncertainty (pCi/L, g, F):	0.605	Sample Duplicate Result (pCi/L, g, F):	0.603	Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.587	Are sample and/or duplicate results below MDC?	See Below ##	Duplicate Numerical Performance Indicator:	1.874	Duplicate RPD:	80.16%	Duplicate Status vs Numerical Indicator:	N/A	Duplicate Status vs RPD:	Fail**
MB Sample ID:	1285496																																																																	
MB Concentration:	0.769																																																																	
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Spike I.D.:	17-005																																																																	
Spike Concentration (pCi/mL):	24.245																																																																	
Volume Used (mL):	0.20																																																																	
Aliquot Volume (L, g, F):	0.813																																																																	
Target Conc. (pCi/L, g, F):	5.964																																																																	
Uncertainty (Calculated):	0.429																																																																	
Result (pCi/L, g, F):	7.368																																																																	
LCSD Counting Uncertainty (pCi/L, g, F):	0.774																																																																	
Numerical Performance Indicator:	3.11																																																																	
Percent Recovery:	123.55%																																																																	
Status vs Numerical Indicator:	N/A																																																																	
Status vs Recovery:	Pass																																																																	
Sample I.D.:	30220542006																																																																	
Duplicate Sample I.D.:	30220542006DUP																																																																	
Sample Result (pCi/L, g, F):	1.409																																																																	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.605																																																																	
Sample Duplicate Result (pCi/L, g, F):	0.603																																																																	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.587																																																																	
Are sample and/or duplicate results below MDC?	See Below ##																																																																	
Duplicate Numerical Performance Indicator:	1.874																																																																	
Duplicate RPD:	80.16%																																																																	
Duplicate Status vs Numerical Indicator:	N/A																																																																	
Duplicate Status vs RPD:	Fail**																																																																	
		<p>## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.</p> <p>Comments: *The method blank result is below the reporting limit for this analysis and is acceptable. **Batch must be re-prepped due to unacceptable precision.</p> <p style="text-align: right;"><i>[Signature]</i></p>																																																																



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

**Prepared For:**

**Georgia Power  
2480 Maner Road  
Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AAF0132**

**June 14, 2017**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

A handwritten signature in black ink, appearing to read "Betty McManus".

Project Manager

This report may not be reproduced, except in full, without written approval from Pace Analytical Services, LLC.  
All test results relate only to the samples analyzed.



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MCM-07	AAF0132-01	Ground Water	06/02/17 16:58	06/03/17 09:00
MCM-06	AAF0132-02	Ground Water	06/02/17 17:00	06/03/17 09:00
MCM-05	AAF0132-03	Ground Water	06/02/17 14:53	06/03/17 09:00
MCM-09	AAF0132-04	Ground Water	06/02/17 11:47	06/03/17 09:00
MCM-15	AAF0132-05	Ground Water	06/02/17 10:01	06/03/17 09:00
Dup-2	AAF0132-06	Ground Water	06/02/17 00:00	06/03/17 09:00
FBL060217	AAF0132-07	Water	06/02/17 15:35	06/03/17 09:00
EQBL060217	AAF0132-08	Water	06/02/17 15:40	06/03/17 09:00



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

### Case Narrative

The Radium analysis by methods EPA 9315/9320 was performed by Pace-Pittsburgh, 1638 Roseytown Road - Suites 2, 3, 4, Greensburg PA 15601. The Pace-Pittsburgh lab contact is Jacquelyn Collins at 724-850-5612.



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

Report No.: AAF0132

Project: CCR Event

Client ID: MCM-07

Lab Number ID: AAF0132-01

Date/Time Sampled: 6/2/2017 4:58:00PM

Date/Time Received: 6/3/2017 9:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	8000	25	10	mg/L	SM 2540 C		1	06/08/17 17:40	06/08/17 17:40	7060231	JPT
<b>Inorganic Anions</b>											
Chloride	4600	25	1.3	mg/L	EPA 300.0		100	06/06/17 18:53	06/08/17 16:36	7060161	RLC
Fluoride	0.42	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 18:42	7060161	SLH
Sulfate	500	100	9.2	mg/L	EPA 300.0		100	06/06/17 18:53	06/08/17 16:36	7060161	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0060	0.0016	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Arsenic	0.0286	0.0250	0.0021	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Barium	0.123	0.0500	0.0013	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Beryllium	ND	0.0030	0.0003	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Boron	0.891	0.200	0.0302	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Cadmium	ND	0.0050	0.0003	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Calcium	179	25.0	0.522	mg/L	EPA 6020B		50	06/06/17 09:30	06/08/17 00:09	7060152	CSW
Chromium	0.0023	0.0500	0.0017	mg/L	EPA 6020B	J	5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Cobalt	ND	0.0500	0.0023	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Lead	ND	0.0050	0.0003	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Molybdenum	ND	0.0100	0.0030	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Selenium	ND	0.0500	0.0070	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Thallium	ND	0.0050	0.0002	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Lithium	0.0229	0.250	0.0053	mg/L	EPA 6020B	J	5	06/06/17 09:30	06/12/17 23:06	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 18:32	7060093	MTC



## PACE ANALYTICAL SERVICES, LLC.

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(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

Report No.: AAF0132

Project: CCR Event

Client ID: MCM-06

Lab Number ID: AAF0132-02

Date/Time Sampled: 6/2/2017 5:00:00PM

Date/Time Received: 6/3/2017 9:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4470	25	10	mg/L	SM 2540 C		1	06/08/17 17:40	06/08/17 17:40	7060231	JPT
<b>Inorganic Anions</b>											
Chloride	2500	25	1.3	mg/L	EPA 300.0		100	06/06/17 18:53	06/08/17 16:57	7060161	RLC
Fluoride	0.19	0.30	0.004	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 19:03	7060161	SLH
Sulfate	28	1.0	0.09	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 19:03	7060161	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0060	0.0016	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:15	7060152	CSW
Arsenic	0.0559	0.0050	0.0004	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 22:15	7060152	CSW
Barium	0.0508	0.0500	0.0013	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:15	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 00:26	7060152	CSW
Boron	0.674	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 00:26	7060152	CSW
Cadmium	ND	0.0050	0.0003	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:15	7060152	CSW
Calcium	92.5	25.0	0.522	mg/L	EPA 6020B		50	06/06/17 09:30	06/08/17 00:32	7060152	CSW
Chromium	ND	0.0500	0.0017	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:15	7060152	CSW
Cobalt	ND	0.0500	0.0023	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:15	7060152	CSW
Lead	ND	0.0050	0.0003	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:15	7060152	CSW
Molybdenum	ND	0.0100	0.0030	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:15	7060152	CSW
Selenium	ND	0.0500	0.0070	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:15	7060152	CSW
Thallium	ND	0.0050	0.0002	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:15	7060152	CSW
Lithium	0.0477	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/08/17 00:26	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 18:34	7060093	MTC



## PACE ANALYTICAL SERVICES, LLC.

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(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

Report No.: AAF0132

Project: CCR Event

Client ID: MCM-05

Lab Number ID: AAF0132-03

Date/Time Sampled: 6/2/2017 2:53:00PM

Date/Time Received: 6/3/2017 9:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	5560	25	10	mg/L	SM 2540 C		1	06/08/17 17:40	06/08/17 17:40	7060231	JPT
<b>Inorganic Anions</b>											
Chloride	3100	25	1.3	mg/L	EPA 300.0		100	06/06/17 18:53	06/08/17 17:17	7060161	RLC
Fluoride	0.34	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 19:23	7060161	SLH
Sulfate	210	100	9.2	mg/L	EPA 300.0		100	06/06/17 18:53	06/08/17 17:17	7060161	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0060	0.0016	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:20	7060152	CSW
Arsenic	0.0335	0.0250	0.0021	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:20	7060152	CSW
Barium	0.0393	0.0500	0.0013	mg/L	EPA 6020B	R-01, J	5	06/06/17 09:30	06/12/17 22:20	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 00:38	7060152	CSW
Boron	0.555	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 00:38	7060152	CSW
Cadmium	ND	0.0050	0.0003	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:20	7060152	CSW
Calcium	120	25.0	0.522	mg/L	EPA 6020B		50	06/06/17 09:30	06/08/17 00:43	7060152	CSW
Chromium	ND	0.0500	0.0017	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:20	7060152	CSW
Cobalt	ND	0.0500	0.0023	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:20	7060152	CSW
Lead	ND	0.0050	0.0003	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:20	7060152	CSW
Molybdenum	ND	0.0100	0.0030	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:20	7060152	CSW
Selenium	ND	0.0500	0.0070	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:20	7060152	CSW
Thallium	ND	0.0050	0.0002	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:20	7060152	CSW
Lithium	0.0346	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/08/17 00:38	7060152	CSW
Mercury	0.000042	0.00050	0.000041	mg/L	EPA 7470A	J	1	06/05/17 11:20	06/05/17 18:36	7060093	MTC



# PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

Report No.: AAF0132

Project: CCR Event

Client ID: MCM-09

Lab Number ID: AAF0132-04

Date/Time Sampled: 6/2/2017 11:47:00AM

Date/Time Received: 6/3/2017 9:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3840	25	10	mg/L	SM 2540 C		1	06/08/17 17:40	06/08/17 17:40	7060231	JPT
<b>Inorganic Anions</b>											
Chloride	1800	25	1.3	mg/L	EPA 300.0		100	06/06/17 18:53	06/08/17 17:38	7060161	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 19:44	7060161	SLH
Sulfate	560	100	9.2	mg/L	EPA 300.0		100	06/06/17 18:53	06/08/17 17:38	7060161	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0060	0.0016	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:26	7060152	CSW
Arsenic	ND	0.0100	0.0021	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:26	7060152	CSW
Barium	0.172	0.0500	0.0013	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:26	7060152	CSW
Beryllium	0.0001	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/08/17 00:49	7060152	CSW
Boron	0.0677	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 00:49	7060152	CSW
Cadmium	ND	0.0050	0.0003	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/08/17 00:49	7060152	CSW
Calcium	406	25.0	0.522	mg/L	EPA 6020B		50	06/06/17 09:30	06/08/17 00:55	7060152	CSW
Chromium	ND	0.0500	0.0017	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:26	7060152	CSW
Cobalt	ND	0.0500	0.0023	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:26	7060152	CSW
Lead	ND	0.0050	0.0003	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:26	7060152	CSW
Molybdenum	ND	0.0100	0.0030	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:26	7060152	CSW
Selenium	ND	0.0500	0.0070	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:26	7060152	CSW
Thallium	ND	0.0050	0.0002	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:26	7060152	CSW
Lithium	0.0571	0.0500	0.0053	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:26	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 18:39	7060093	MTC



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

Report No.: AAF0132

Project: CCR Event

Client ID: MCM-15

Lab Number ID: AAF0132-05

Date/Time Sampled: 6/2/2017 10:01:00AM

Date/Time Received: 6/3/2017 9:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	69	25	10	mg/L	SM 2540 C		1	06/08/17 17:40	06/08/17 17:40	7060231	JPT
<b>Inorganic Anions</b>											
Chloride	11	0.25	0.01	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 20:05	7060161	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 20:05	7060161	SLH
Sulfate	13	1.0	0.09	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 20:05	7060161	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0060	0.0016	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:32	7060152	CSW
Arsenic	0.0026	0.0100	0.0021	mg/L	EPA 6020B	R-01, J	5	06/06/17 09:30	06/12/17 22:32	7060152	CSW
Barium	0.0368	0.0500	0.0013	mg/L	EPA 6020B	R-01, J	5	06/06/17 09:30	06/12/17 22:32	7060152	CSW
Beryllium	0.0001	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/08/17 01:00	7060152	CSW
Boron	0.0495	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:00	7060152	CSW
Cadmium	ND	0.0050	0.0003	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:32	7060152	CSW
Calcium	2.77	0.500	0.0104	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:00	7060152	CSW
Chromium	0.0019	0.0500	0.0017	mg/L	EPA 6020B	R-01, J	5	06/06/17 09:30	06/12/17 22:32	7060152	CSW
Cobalt	ND	0.0500	0.0023	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:32	7060152	CSW
Lead	ND	0.0050	0.0003	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:32	7060152	CSW
Molybdenum	ND	0.0100	0.0030	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:32	7060152	CSW
Selenium	ND	0.0500	0.0070	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:32	7060152	CSW
Thallium	ND	0.0050	0.0002	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:32	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:00	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/06/17 10:35	06/06/17 15:15	7060108	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

Report No.: AAF0132

Project: CCR Event

Client ID: Dup-2

Lab Number ID: AAF0132-06

Date/Time Sampled: 6/2/2017 12:00:00AM

Date/Time Received: 6/3/2017 9:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	5720	25	10	mg/L	SM 2540 C		1	06/08/17 17:40	06/08/17 17:40	7060231	JPT
<b>Inorganic Anions</b>											
Chloride	2900	25	1.3	mg/L	EPA 300.0		100	06/06/17 18:53	06/09/17 23:47	7060161	RLC
Fluoride	0.28	0.30	0.004	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 22:09	7060161	SLH
Sulfate	200	100	9.2	mg/L	EPA 300.0		100	06/06/17 18:53	06/09/17 23:47	7060161	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0060	0.0016	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:37	7060152	CSW
Arsenic	0.0310	0.0250	0.0021	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:37	7060152	CSW
Barium	0.0389	0.0500	0.0013	mg/L	EPA 6020B	R-01, J	5	06/06/17 09:30	06/12/17 22:37	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:12	7060152	CSW
Boron	0.529	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:12	7060152	CSW
Cadmium	ND	0.0050	0.0003	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:37	7060152	CSW
Calcium	124	25.0	0.522	mg/L	EPA 6020B		50	06/06/17 09:30	06/08/17 01:18	7060152	CSW
Chromium	ND	0.0500	0.0017	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:37	7060152	CSW
Cobalt	ND	0.0500	0.0023	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:37	7060152	CSW
Lead	ND	0.0050	0.0003	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:37	7060152	CSW
Molybdenum	ND	0.0100	0.0030	mg/L	EPA 6020B		5	06/06/17 09:30	06/12/17 22:37	7060152	CSW
Selenium	ND	0.0500	0.0070	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:37	7060152	CSW
Thallium	ND	0.0050	0.0002	mg/L	EPA 6020B	R-01	5	06/06/17 09:30	06/12/17 22:37	7060152	CSW
Lithium	0.0340	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/08/17 01:12	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/06/17 10:35	06/06/17 15:18	7060108	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

Report No.: AAF0132

Project: CCR Event

Client ID: FBL060217

Lab Number ID: AAF0132-07

Date/Time Sampled: 6/2/2017 3:35:00PM

Date/Time Received: 6/3/2017 9:00:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	17	25	10	mg/L	SM 2540 C	J	1	06/08/17 17:40	06/08/17 17:40	7060231	JPT
<b>Inorganic Anions</b>											
Chloride	0.42	0.25	0.01	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 22:29	7060161	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 22:29	7060161	SLH
Sulfate	0.12	1.0	0.09	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 22:29	7060161	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:52	7060152	CSW
Arsenic	0.0005	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/12/17 21:52	7060152	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:52	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:35	7060152	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:35	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:52	7060152	CSW
Calcium	ND	0.500	0.0104	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:35	7060152	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:52	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:52	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:52	7060152	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:52	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:52	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:52	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:35	7060152	CSW
Mercury	0.00008	0.00050	0.000041	mg/L	EPA 7470A	J	1	06/05/17 11:20	06/05/17 18:41	7060093	MTC



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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

Report No.: AAF0132

Project: CCR Event

Client ID: EQBL060217

Lab Number ID: AAF0132-08

Date/Time Sampled: 6/2/2017 3:40:00PM

Date/Time Received: 6/3/2017 9:00:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	06/08/17 17:40	06/08/17 17:40	7060231	JPT
<b>Inorganic Anions</b>											
Chloride	0.17	0.25	0.01	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 22:50	7060161	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 22:50	7060161	SLH
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 22:50	7060161	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:57	7060152	CSW
Arsenic	0.0004	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/12/17 21:57	7060152	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:57	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:57	7060152	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:41	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:57	7060152	CSW
Calcium	ND	0.500	0.0104	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:41	7060152	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:57	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:57	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:57	7060152	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:57	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:57	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:57	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/08/17 01:41	7060152	CSW
Mercury	0.00006	0.00050	0.000041	mg/L	EPA 7470A	J	1	06/05/17 11:20	06/05/17 18:43	7060093	MTC



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

**Report No.: AAF0132**

### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### **Batch 7060231 - SM 2540 C**

Blank (7060231-BLK1)							Prepared & Analyzed: 06/08/17			
Total Dissolved Solids	ND	25	10	mg/L						
LCS (7060231-BS1)							Prepared & Analyzed: 06/08/17			
Total Dissolved Solids	385	25	10	mg/L	400.00		96	84-108		
Duplicate (7060231-DUP1)							Prepared & Analyzed: 06/08/17			
Total Dissolved Solids	ND	25	10	mg/L		17			10	



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June 14, 2017

**Report No.: AAF0132**

### Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060161 - EPA 300.0</b>											
<b>Blank (7060161-BLK1)</b>											
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	ND	1.0	0.09	mg/L							
<b>LCS (7060161-BS1)</b>											
Chloride	9.86	0.25	0.01	mg/L	10.020		98	90-110			
Fluoride	9.95	0.30	0.004	mg/L	10.020		99	90-110			
Sulfate	9.86	1.0	0.09	mg/L	10.050		98	90-110			
<b>Matrix Spike (7060161-MS1)</b>											
					<b>Source: AAF0126-01</b>						
Chloride	20.6	0.25	0.01	mg/L	10.020	11.3	93	90-110			
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.07	103	90-110			
Sulfate	259	1.0	0.09	mg/L	10.050	272	NR	90-110			QM-02
<b>Matrix Spike (7060161-MS2)</b>											
					<b>Source: AAF0132-05</b>						
Chloride	19.8	0.25	0.01	mg/L	10.020	10.9	89	90-110			QM-05
Fluoride	10.4	0.30	0.004	mg/L	10.020	ND	103	90-110			
Sulfate	21.7	1.0	0.09	mg/L	10.050	13.2	85	90-110			QM-05
<b>Matrix Spike Dup (7060161-MSD1)</b>											
					<b>Source: AAF0126-01</b>						
Chloride	20.5	0.25	0.01	mg/L	10.020	11.3	92	90-110	0.1	15	
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.07	103	90-110	0.1	15	
Sulfate	258	1.0	0.09	mg/L	10.050	272	NR	90-110	0.1	15	QM-02



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Attention: Mr. Joju Abraham

June 14, 2017

**Report No.: AAF0132**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### **Batch 7060093 - EPA 7470A**

Blank (7060093-BLK1)							Prepared & Analyzed: 06/05/17			
Mercury	ND	0.00050	0.000041	mg/L						
LCS (7060093-BS1)							Prepared & Analyzed: 06/05/17			
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3		98	80-120		
Matrix Spike (7060093-MS1)							Source: AAF0126-01 Prepared & Analyzed: 06/05/17			
Mercury	0.00238	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125		
Matrix Spike Dup (7060093-MSD1)							Source: AAF0126-01 Prepared & Analyzed: 06/05/17			
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125	3	20
Post Spike (7060093-PS1)							Source: AAF0126-01 Prepared & Analyzed: 06/05/17			
Mercury	1.76			ug/L	1.6667	0.0154	104	80-120		

#### **Batch 7060108 - EPA 7470A**

Blank (7060108-BLK1)							Prepared & Analyzed: 06/06/17			
Mercury	ND	0.00050	0.000041	mg/L						
LCS (7060108-BS1)							Prepared & Analyzed: 06/06/17			
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3		91	80-120		
Matrix Spike (7060108-MS1)							Source: AAF0136-01 Prepared & Analyzed: 06/06/17			
Mercury	0.00218	0.00050	0.000041	mg/L	2.5000E-3	ND	87	75-125		
Matrix Spike Dup (7060108-MSD1)							Source: AAF0136-01 Prepared & Analyzed: 06/06/17			
Mercury	0.00219	0.00050	0.000041	mg/L	2.5000E-3	ND	88	75-125	0.7	20



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

**Report No.: AAF0132**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060108 - EPA 7470A</b>											
<b>Post Spike (7060108-PS1)</b> <b>Source: AAF0136-01</b> <b>Prepared &amp; Analyzed: 06/06/17</b>											
Mercury      1.64      ug/L      1.6667      -0.0292      98      80-120											
<b>Batch 7060152 - EPA 3005A</b>											
<b>Blank (7060152-BLK1)</b> <b>Prepared: 06/06/17 Analyzed: 06/07/17</b>											
Antimony	ND	0.0030	0.0003	mg/L							
Arsenic	ND	0.0050	0.0004	mg/L							
Barium	ND	0.0100	0.0003	mg/L							
Beryllium	ND	0.0030	0.00007	mg/L							
Boron	ND	0.0400	0.0060	mg/L							
Cadmium	ND	0.0010	0.00006	mg/L							
Calcium	ND	0.500	0.0104	mg/L							
Chromium	ND	0.0100	0.0003	mg/L							
Cobalt	ND	0.0100	0.0005	mg/L							
Copper	ND	0.0250	0.0003	mg/L							
Lead	ND	0.0050	0.00007	mg/L							
Molybdenum	ND	0.0100	0.0006	mg/L							
Nickel	ND	0.0100	0.0003	mg/L							
Selenium	ND	0.0100	0.0014	mg/L							
Silver	ND	0.0100	0.0003	mg/L							
Thallium	ND	0.0010	0.00005	mg/L							
Vanadium	ND	0.0100	0.0014	mg/L							
Zinc	0.0013	0.0100	0.0013	mg/L							J
Lithium	ND	0.0500	0.0011	mg/L							
<b>LCS (7060152-BS1)</b> <b>Prepared: 06/06/17 Analyzed: 06/07/17</b>											
Antimony	0.108	0.0030	0.0003	mg/L	0.10000		108	80-120			
Arsenic	0.105	0.0050	0.0004	mg/L	0.10000		105	80-120			
Barium	0.104	0.0100	0.0003	mg/L	0.10000		104	80-120			
Beryllium	0.104	0.0030	0.00007	mg/L	0.10000		104	80-120			
Boron	1.00	0.0400	0.0060	mg/L	1.0000		100	80-120			
Cadmium	0.106	0.0010	0.00006	mg/L	0.10000		106	80-120			
Calcium	1.20	0.500	0.0104	mg/L	1.0000		120	80-120			
Chromium	0.104	0.0100	0.0003	mg/L	0.10000		104	80-120			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000		102	80-120			
Copper	0.100	0.0250	0.0003	mg/L	0.10000		100	80-120			
Lead	0.0997	0.0050	0.00007	mg/L	0.10000		100	80-120			
Molybdenum	0.106	0.0100	0.0006	mg/L	0.10000		106	80-120			
Nickel	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			
Selenium	0.111	0.0100	0.0014	mg/L	0.10000		111	80-120			
Silver	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

**Report No.: AAF0132**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 7060152 - EPA 3005A

LCS (7060152-BS1)						Prepared: 06/06/17 Analyzed: 06/07/17				
Thallium	0.101	0.0010	0.00005	mg/L	0.10000		101	80-120		
Vanadium	0.104	0.0100	0.0014	mg/L	0.10000		104	80-120		
Zinc	0.109	0.0100	0.0013	mg/L	0.10000		109	80-120		
Lithium	0.107	0.0500	0.0011	mg/L	0.10000		107	80-120		

Matrix Spike (7060152-MS1)						Source: AAF0065-01 Prepared: 06/06/17 Analyzed: 06/07/17				
Antimony	0.112	0.0030	0.0003	mg/L	0.10000	ND	112	75-125		
Arsenic	0.108	0.0050	0.0004	mg/L	0.10000	0.0040	104	75-125		
Barium	0.126	0.0100	0.0003	mg/L	0.10000	0.0195	107	75-125		
Beryllium	0.0971	0.0030	0.00007	mg/L	0.10000	0.0001	97	75-125		
Boron	1.00	0.0400	0.0060	mg/L	1.0000	0.0608	94	75-125		
Cadmium	0.105	0.0010	0.00006	mg/L	0.10000	ND	105	75-125		
Calcium	6.02	0.500	0.0104	mg/L	1.0000	3.65	237	75-125		
Chromium	0.105	0.0100	0.0003	mg/L	0.10000	0.0008	105	75-125		
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125		
Copper	0.100	0.0250	0.0003	mg/L	0.10000	ND	100	75-125		
Lead	0.0977	0.0050	0.00007	mg/L	0.10000	ND	98	75-125		
Molybdenum	0.111	0.0100	0.0006	mg/L	0.10000	ND	111	75-125		
Nickel	0.103	0.0100	0.0003	mg/L	0.10000	ND	103	75-125		
Selenium	0.106	0.0100	0.0014	mg/L	0.10000	ND	106	75-125		
Silver	0.106	0.0100	0.0003	mg/L	0.10000	ND	106	75-125		
Thallium	0.0994	0.0010	0.00005	mg/L	0.10000	ND	99	75-125		
Vanadium	0.114	0.0100	0.0014	mg/L	0.10000	0.0044	109	75-125		
Zinc	0.110	0.0100	0.0013	mg/L	0.10000	0.0023	108	75-125		
Lithium	0.0988	0.0500	0.0011	mg/L	0.10000	ND	99	75-125		

Matrix Spike Dup (7060152-MSD1)						Source: AAF0065-01 Prepared: 06/06/17 Analyzed: 06/07/17				
Antimony	0.107	0.0030	0.0003	mg/L	0.10000	ND	107	75-125	4	20
Arsenic	0.106	0.0050	0.0004	mg/L	0.10000	0.0040	102	75-125	2	20
Barium	0.124	0.0100	0.0003	mg/L	0.10000	0.0195	105	75-125	2	20
Beryllium	0.0967	0.0030	0.00007	mg/L	0.10000	0.0001	97	75-125	0.3	20
Boron	0.997	0.0400	0.0060	mg/L	1.0000	0.0608	94	75-125	0.6	20
Cadmium	0.102	0.0010	0.00006	mg/L	0.10000	ND	102	75-125	3	20
Calcium	5.92	0.500	0.0104	mg/L	1.0000	3.65	227	75-125	2	20
Chromium	0.106	0.0100	0.0003	mg/L	0.10000	0.0008	105	75-125	0.8	20
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125	1	20
Copper	0.0978	0.0250	0.0003	mg/L	0.10000	ND	98	75-125	2	20
Lead	0.0970	0.0050	0.00007	mg/L	0.10000	ND	97	75-125	0.7	20
Molybdenum	0.107	0.0100	0.0006	mg/L	0.10000	ND	107	75-125	4	20
Nickel	0.102	0.0100	0.0003	mg/L	0.10000	ND	102	75-125	2	20



# PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

**Report No.: AAF0132**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	----	-----	-------	-------------	---------------	------	-------------	-----	-----------	-------

### Batch 7060152 - EPA 3005A

Matrix Spike Dup (7060152-MSD1)		Source: AAF0065-01			Prepared: 06/06/17 Analyzed: 06/07/17					
Selenium	0.104	0.0100	0.0014	mg/L	0.10000	ND	104	75-125	2	20
Silver	0.100	0.0100	0.0003	mg/L	0.10000	ND	100	75-125	5	20
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	ND	101	75-125	1	20
Vanadium	0.112	0.0100	0.0014	mg/L	0.10000	0.0044	107	75-125	2	20
Zinc	0.105	0.0100	0.0013	mg/L	0.10000	0.0023	103	75-125	5	20
Lithium	0.0975	0.0500	0.0011	mg/L	0.10000	ND	98	75-125	1	20

Post Spike (7060152-PS1)		Source: AAF0065-01			Prepared: 06/06/17 Analyzed: 06/07/17					
Antimony	106			ug/L	100.00	0.182	106	80-120		
Arsenic	108			ug/L	100.00	4.02	104	80-120		
Barium	125			ug/L	100.00	19.5	105	80-120		
Beryllium	95.6			ug/L	100.00	0.0981	96	80-120		
Boron	1030			ug/L	1000.0	60.8	97	80-120		
Cadmium	104			ug/L	100.00	0.0025	104	80-120		
Calcium	5890			ug/L	1000.0	3650	224	80-120		QM-02
Chromium	106			ug/L	100.00	0.783	106	80-120		
Cobalt	104			ug/L	100.00	0.0104	104	80-120		
Copper	99.8			ug/L	100.00	-0.0325	100	80-120		
Lead	98.6			ug/L	100.00	0.0190	99	80-120		
Molybdenum	111			ug/L	100.00	0.0899	111	80-120		
Nickel	103			ug/L	100.00	0.0357	103	80-120		
Selenium	109			ug/L	100.00	0.209	108	80-120		
Silver	103			ug/L	100.00	-0.0020	103	80-120		
Thallium	99.9			ug/L	100.00	0.0014	100	80-120		
Vanadium	115			ug/L	100.00	4.36	110	80-120		
Zinc	107			ug/L	100.00	2.33	104	80-120		
Lithium	98.0			ug/L	100.00	0.543	97	80-120		



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 14, 2017

## Legend

### Definition of Laboratory Terms

- ND** - Not Detected at levels equal to or greater than the MDL  
**BRL** - Not Detected at levels equal to or greater than the RL  
**RL** - Reporting Limit                   **MDL** - Method Detection Limit  
**SOP** - Method run per Pace Standard Operating Procedure  
**CFU** - Colony Forming Units  
**DF** - Dilution Factor                   **TIC** - Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

- R-01** Elevated reporting limit due to matrix interference.
- QM-05** The spike recovery was outside acceptance limits for the MS and/or MSD and/or PDS due to suspected matrix interference. Sample results for the QC batch were accepted based on acceptable LCS recoveries.
- QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.
- J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

**Note: Unless otherwise noted, all results are reported on an as received basis.**



**CHAIN OF CUSTODY RECORD**

**Pace Analytical Services, LLC - Atlanta GA**  
110 TECHNOLOGY PARKWAY, PEACHTREE C  
(770) 734-4200 ; FAX (770) 734-4201

CLIENT NAME:		ANALYSIS REQUESTED		CONTAINER TYPE:		# of		PRESERVATION:		REPORT TO:		REQUESTED COMPLETION DATE:	
<del>200 State Street</del>		<del>Syracuse</del>		P		P		P		CC: To Tom & Cedars		PO#:	
				T		T		T		Syracuse			
				C		O		N					
				O		N		T					
				N		T							
				T									
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		2410 Ralph McGill Blvnd NE Bross Atlanta GA 30308		P		P		P		CC: To Tom & Cedars		PO#:	
				T		T		T		Syracuse			
				C		O		N					
				O		N		T					
				N		T							
				T									

PROJECT NAME/STATE:  
Aztec Gold

SAMPLED BY AND TITLE:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		LAB #:	
RECEIVED BY:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		Entered into LIMS:	
RECEIVED BY LAB:	John Mann	DATE/TIME:	6/21/17 @ 1745	SAMPLE SHIPPED VIA:	USPS	COURIER:	CLIENT:	OTHER:	FS
RECEIVED BY:		DATE/TIME:	6/21/17 @ 1745	REASON:	FED-EX				
Temperature:	72	Temp:	72	Refrigerator:	No	# of Coolers:	N/A		
Log:	No	Log:	No	Broken:	No	Not Present:	N/A		
Shipped:	No	Shipped:	No	Min:	2	Max:	13		
Pa-									
R	GW - GROUNDWATER	S	SD - SOLID	R	AA	AT	0132	Entered into LIMS:	7367 7605 3469
R	SW - SURFACE WATER	S	A - AIR	R	AA	AT	0132	Tracking #:	
R	ST - STORM WATER	S	L - LIQUID	R	AA	AT	0132		
R	W - WATER	S	P - PRODUCT	R	AA	AT	0132		
REMARKS/ADDITIONAL INFORMATION									
Collection DATE	Collection TIME	MATRIX CODE*	C O R M A P B	SAMPLE IDENTIFICATION					
6/21/17	1658	GWD	V	1100 M-09	1	1	2		
6/21/17	1700	GWD	V	1100 M-06	1	1	2		
6/21/17	1453	GWD	V	MCML-05	1	1	1		
6/21/17	1147	GWD	V	MCML-09	1	1	2		
6/21/17	1001	GWD	V	MCML-15	1	1	2		
6/21/17	-	GWD	DUSP-2		1	1	2		
6/21/17	1535	WD	PROB-001		1	1	2		
6/21/17	1540	WD	EDS-0001		1	1	2		

AMPLIFIED BY AND TITLE:  
~~RECEIVED BY:~~

DATE/TIME: 6/2/18 8:00 FOR LAB USE ONLY  
DATE/TIME: 6/2/18 8:00 LAB #: AAE 0132

Entered into LIM  
Tracking #:

Later



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### LOG-IN CHECKLIST

Printed: 6/5/2017 9:26:03AM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 06/03/17 09:00

**Work Order:** AAF0132  
**Logged In By:** Mohammad M. Rahman

### OBSERVATIONS

<b>#Samples:</b> 8	<b>#Containers:</b> 34
<b>Minimum Temp(C):</b> 2.3	<b>Maximum Temp(C):</b> 2.3
<b>Custody Seal(s) Used:</b> Yes	

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

**Comments:**

June 26, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAF0132 Plant McManus  
Pace Project No.: 30220778

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
(724)850-5612  
Project Manager

Enclosures



#### **REPORT OF LABORATORY ANALYSIS**

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## CERTIFICATIONS

Project: AAF0132 Plant McManus  
 Pace Project No.: 30220778

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Montana Certification #: Cert 0082
L-A-B DOD-ELAP Accreditation #: L2417	Nebraska Certification #: NE-05-29-14
Alabama Certification #: 41590	Nevada Certification #: PA014572015-1
Arizona Certification #: AZ0734	New Hampshire/TNI Certification #: 2976
Arkansas Certification	New Jersey/TNI Certification #: PA 051
California Certification #: 04222CA	New Mexico Certification #: PA01457
Colorado Certification	New York/TNI Certification #: 10888
Connecticut Certification #: PH-0694	North Carolina Certification #: 42706
Delaware Certification	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Oregon/TNI Certification #: PA200002
Georgia Certification #: C040	Pennsylvania/TNI Certification #: 65-00282
Guam Certification	Puerto Rico Certification #: PA01457
Hawaii Certification	Rhode Island Certification #: 65-00282
Idaho Certification	South Dakota Certification
Illinois Certification	Tennessee Certification #: TN2867
Indiana Certification	Texas/TNI Certification #: T104704188-14-8
Iowa Certification #: 391	Utah/TNI Certification #: PA014572015-5
Kansas/TNI Certification #: E-10358	USDA Soil Permit #: P330-14-00213
Kentucky Certification #: 90133	Vermont Dept. of Health: ID# VT-0282
Louisiana DHH/TNI Certification #: LA140008	Virgin Island/PADEP Certification
Louisiana DEQ/TNI Certification #: 4086	Virginia/VELAP Certification #: 460198
Maine Certification #: PA00091	Washington Certification #: C868
Maryland Certification #: 308	West Virginia DEP Certification #: 143
Massachusetts Certification #: M-PA1457	West Virginia DHHR Certification #: 9964C
Michigan/PADEP Certification	Wisconsin Certification
Missouri Certification #: 235	Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAF0132 Plant McManus  
Pace Project No.: 30220778

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30220778001	MCM-07	Water	06/02/17 16:58	06/06/17 10:15
30220778002	MCM-06	Water	06/02/17 17:00	06/06/17 10:15
30220778003	MCM-05	Water	06/02/17 14:53	06/06/17 10:15
30220778004	MCM-09	Water	06/02/17 11:47	06/06/17 10:15
30220778005	MCM-15	Water	06/02/17 10:01	06/06/17 10:15
30220778006	Dup-2	Water	06/02/17 00:00	06/06/17 10:15
30220778007	FBL060217	Water	06/02/17 15:35	06/06/17 10:15
30220778008	EQBL060217	Water	06/02/17 15:40	06/06/17 10:15

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: AAF0132 Plant McManus  
Pace Project No.: 30220778

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30220778001	MCM-07	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220778002	MCM-06	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220778003	MCM-05	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220778004	MCM-09	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220778005	MCM-15	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220778006	Dup-2	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220778007	FBL060217	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220778008	EQBL060217	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAF0132 Plant McManus

Pace Project No.: 30220778

<b>Sample: MCM-07</b>	<b>Lab ID: 30220778001</b>	Collected: 06/02/17 16:58	Received: 06/06/17 10:15	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>4.52 ± 0.848 (0.198)</b> C:91% T:NA	pCi/L	06/12/17 09:58
Radium-228	EPA 9320	<b>3.04 ± 0.897 (1.08)</b> C:75% T:72%	pCi/L	06/20/17 17:58
Total Radium	Total Radium Calculation	<b>7.56 ± 1.75 (1.28)</b>	pCi/L	06/21/17 14:23
<b>Sample: MCM-06</b>	<b>Lab ID: 30220778002</b>	Collected: 06/02/17 17:00	Received: 06/06/17 10:15	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.24 ± 0.351 (0.228)</b> C:86% T:NA	pCi/L	06/12/17 09:58
Radium-228	EPA 9320	<b>1.21 ± 0.571 (0.956)</b> C:78% T:71%	pCi/L	06/20/17 17:58
Total Radium	Total Radium Calculation	<b>2.45 ± 0.922 (1.18)</b>	pCi/L	06/21/17 14:23
<b>Sample: MCM-05</b>	<b>Lab ID: 30220778003</b>	Collected: 06/02/17 14:53	Received: 06/06/17 10:15	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.50 ± 0.385 (0.195)</b> C:90% T:NA	pCi/L	06/12/17 10:14
Radium-228	EPA 9320	<b>0.494 ± 0.703 (1.51)</b> C:76% T:46%	pCi/L	06/20/17 17:58
Total Radium	Total Radium Calculation	<b>1.99 ± 1.09 (1.71)</b>	pCi/L	06/21/17 14:23
<b>Sample: MCM-09</b>	<b>Lab ID: 30220778004</b>	Collected: 06/02/17 11:47	Received: 06/06/17 10:15	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>2.62 ± 0.567 (0.219)</b> C:93% T:NA	pCi/L	06/12/17 10:14
Radium-228	EPA 9320	<b>2.65 ± 0.785 (0.942)</b> C:77% T:78%	pCi/L	06/20/17 17:58
Total Radium	Total Radium Calculation	<b>5.27 ± 1.35 (1.16)</b>	pCi/L	06/21/17 14:23
<b>Sample: MCM-15</b>	<b>Lab ID: 30220778005</b>	Collected: 06/02/17 10:01	Received: 06/06/17 10:15	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.23 ± 0.350 (0.235)</b> C:85% T:NA	pCi/L	06/12/17 10:14
Radium-228	EPA 9320	<b>0.237 ± 0.403 (0.880)</b> C:75% T:79%	pCi/L	06/20/17 17:59

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAF0132 Plant McManus

Pace Project No.: 30220778

<b>Sample: MCM-15</b>	<b>Lab ID: 30220778005</b>	Collected: 06/02/17 10:01	Received: 06/06/17 10:15	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Total Radium	Total Radium Calculation	<b>1.47 ± 0.753 (1.12)</b>	pCi/L	06/21/17 14:23
				7440-14-4
<b>Sample: Dup-2</b>	<b>Lab ID: 30220778006</b>	Collected: 06/02/17 00:00	Received: 06/06/17 10:15	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.34 ± 0.377 (0.294)</b> C:86% T:NA	pCi/L	06/12/17 10:14
Radium-228	EPA 9320	<b>0.946 ± 0.715 (1.39)</b> C:82% T:46%	pCi/L	06/20/17 17:59
Total Radium	Total Radium Calculation	<b>2.29 ± 1.09 (1.68)</b>	pCi/L	06/21/17 14:23
				7440-14-4
<b>Sample: FBL060217</b>	<b>Lab ID: 30220778007</b>	Collected: 06/02/17 15:35	Received: 06/06/17 10:15	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>-0.0432 ± 0.0732 (0.253)</b> C:92% T:NA	pCi/L	06/12/17 10:14
Radium-228	EPA 9320	<b>0.393 ± 0.397 (0.814)</b> C:77% T:79%	pCi/L	06/20/17 17:59
Total Radium	Total Radium Calculation	<b>0.393 ± 0.470 (1.07)</b>	pCi/L	06/21/17 14:23
				7440-14-4
<b>Sample: EQBL060217</b>	<b>Lab ID: 30220778008</b>	Collected: 06/02/17 15:40	Received: 06/06/17 10:15	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.173 ± 0.245 (0.537)</b> C:93% T:NA	pCi/L	06/21/17 08:14
Radium-228	EPA 9320	<b>0.230 ± 0.366 (0.793)</b> C:75% T:85%	pCi/L	06/21/17 15:13
Total Radium	Total Radium Calculation	<b>0.403 ± 0.611 (1.33)</b>	pCi/L	06/23/17 12:18
				7440-14-4

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0132 Plant McManus  
 Pace Project No.: 30220778

---

QC Batch:	261089	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples: 30220778001, 30220778002, 30220778003, 30220778004, 30220778005, 30220778006, 30220778007			

---

METHOD BLANK: 1285496	Matrix: Water
-----------------------	---------------

Associated Lab Samples: 30220778001, 30220778002, 30220778003, 30220778004, 30220778005, 30220778006, 30220778007
---

---

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.769 ± 0.411 (0.745) C:79% T:83%	pCi/L	06/20/17 11:39	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0132 Plant McManus  
Pace Project No.: 30220778

---

QC Batch: 261654 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 30220778008

---

METHOD BLANK: 1288485 Matrix: Water

Associated Lab Samples: 30220778008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.228 ± 0.334 (0.719) C:77% T:81%	pCi/L	06/21/17 15:13	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0132 Plant McManus  
 Pace Project No.: 30220778

---

QC Batch:	261179	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples: 30220778001, 30220778002, 30220778003, 30220778004, 30220778005, 30220778006, 30220778007			

---

METHOD BLANK: 1285893	Matrix: Water
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Associated Lab Samples: 30220778001, 30220778002, 30220778003, 30220778004, 30220778005, 30220778006, 30220778007
---

---

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.103 ± 0.109 (0.204) C:89% T:NA	pCi/L	06/12/17 08:27	

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

## REPORT OF LABORATORY ANALYSIS

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 without the written consent of Pace Analytical Services, LLC.

## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0132 Plant McManus  
Pace Project No.: 30220778

---

QC Batch: 261827 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 30220778008

---

METHOD BLANK: 1289194 Matrix: Water

Associated Lab Samples: 30220778008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0925 ± 0.145 (0.314) C:89% T:NA	pCi/L	06/21/17 08:14	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: AAF0132 Plant McManus  
Pace Project No.: 30220778

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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## Chain of Custody

Workorder: AAF0132	Workorder Name: Pace - Pittsburgh	Plant: McManus	Owner Received Date:	Results Requested By: 6/28/2017
<b>Report To:</b>	<b>Subcontract To:</b>			<b>Requested Analysis</b>
Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)-734-4200				
				WQ# : 30220778
				
				Preserved Container's ID: 30220778
				Radium 226, 228, Total

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	CONC	LAB USE ONLY
1	MCM-07	G	6/2/2017 16:58	AAF0132-01	GW	2	X
2	MCM-06	G	6/2/2017 17:00	AAF0132-02	GW	2	X
3	MCM-05	G	6/2/2017 14:53	AAF0132-03	GW	4	X
4	MCM-09	G	6/2/2017 11:47	AAF0132-04	GW	2	X
5	MCM-15	G	6/2/2017 10:01	AAF0132-05	GW	2	X
6	Dup-2	G	6/2/2017 0:00	AAF0132-06	GW	2	X
7	FBL060217	G	6/2/2017 15:35	AAF0132-07	W	2	X
8	EQBL060217	G	6/2/2017 15:40	AAF0132-08	W	2	X
9							
10							
Transfers	Released By	Date/Time	Received By	Date/Time	Comments		
1	M. RATHMAN	6/5/17	PBjg	Pace	6/6/17	1015	
2							
3							

Cooler Temperature on Receipt	114 °C	Custody Seal Y or N	Received on Ice Y or N	Sample Intact Y or N
1				
2				
3				

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1

## Sample Condition Upon Receipt Pittsburgh

RTB

30220778



Client Name: Pace 6A Project # \_\_\_\_\_

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
Tracking #: 6812 5104 7830Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp N/A °C Correction Factor: N/A °C Final Temp: N/A °C  
Temp should be above freezing to 6°C

Date and Initials of person examining contents: RTB 6/6/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:	X			4.
Sample Labels match COC: -Includes date/time/ID	X			5.
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):	X			7.
Rush Turn Around Time Requested:	X			8.
Sufficient Volume:	X			9.
Correct Containers Used: -Pace Containers Used:	X			10.
Containers Intact:	X			11.
Orthophosphate field filtered			X	12.
Organic Samples checked for dechlorination:			X	13.
Filtered volume received for Dissolved tests			X	14.
All containers have been checked for preservation.	X			15.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: 6/6/17 Date/time of preservation: RTB Lot # of added preservative
Headspace in VOA Vials (>6mm):			X	16.
Trip Blank Present:			X	17.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: RTB Date: 6/6/17

## Client Notification/ Resolution:

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

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ A check in this box indicates that additional information has been stored in eReports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS, the review is in the Status section of the Workorder Edit Screen.

**CHAIN OF CUSTODY RECORD**

**CHAIN OF CUSTODY RECORD**

*Space Analytical*  
www.vestibule.com

**Prace Analytical Services, LLC - Atlanta GA**  
110 TECHNOLOGY PARKWAY, PEACHTREE CORRIDOR  
(770) 734-4200 : FAX (770) 734-4201

68

OF  
PAGE

TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
(770) 734-4200 : FAX (770) 734-4201



## Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

<b>Method Blank Assessment</b> <table border="1"> <tr> <td>Test:</td> <td>Ra-226</td> </tr> <tr> <td>Analyst:</td> <td>LAL</td> </tr> <tr> <td>Date:</td> <td>6/9/2017</td> </tr> <tr> <td>Worklist:</td> <td>36070</td> </tr> <tr> <td>Matrix:</td> <td>DW</td> </tr> </table>	Test:	Ra-226	Analyst:	LAL	Date:	6/9/2017	Worklist:	36070	Matrix:	DW	<b>Sample Matrix Spike Control Assessment</b> <table border="1"> <tr> <td>MB Sample ID:</td> <td>1285893</td> </tr> <tr> <td>MB concentration:</td> <td>0.103</td> </tr> <tr> <td>MB Counting Uncertainty:</td> <td>0.108</td> </tr> <tr> <td>MB MDC:</td> <td>0.204</td> </tr> <tr> <td>MB Numerical Indicator:</td> <td>1.88</td> </tr> <tr> <td>MB Status vs Numerical Indicator:</td> <td>N/A</td> </tr> <tr> <td>MB Status vs MDC:</td> <td>Pass</td> </tr> </table>	MB Sample ID:	1285893	MB concentration:	0.103	MB Counting Uncertainty:	0.108	MB MDC:	0.204	MB Numerical Indicator:	1.88	MB Status vs Numerical Indicator:	N/A	MB Status vs MDC:	Pass	<b>Sample Collection Date:</b> Sample I.D.: Sample MSD I.D.: Sample MSD D.I.: Sample Matrix I.D.: Sample Matrix D.I.: Sample Matrix Spike Concentration (pCi/mL): Spike Volume Used in MS (mL): Spike Volume Used in MSD (mL): MS Aliquot (L, g, F): MS Target Conc. (pCi/L, g, F): MSD Aliquot (L, g, F): MSD Target Conc. (pCi/L, g, F): Spike uncertainty (calculated): Sample Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Result: Matrix Spike Result Counting Uncertainty (pCi/L, g, F): Sample Matrix Spike Duplicate Result: Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F): MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery:																																				
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## Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

<p>Test: Ra-226 Analyst: JC2 Date: 6/20/2017 Worklist: 36182 DW Matrix:</p> <p><b>Method Blank Assessment</b></p> <table border="1"> <tr> <td>MB Sample ID</td> <td>1289194</td> </tr> <tr> <td>MB concentration:</td> <td>0.093</td> </tr> <tr> <td>M/B Counting Uncertainty:</td> <td>0.144</td> </tr> <tr> <td>MB MDC:</td> <td>0.314</td> </tr> <tr> <td>MB Numerical Performance Indicator:</td> <td>1.26</td> </tr> <tr> <td>MB Status vs Numerical Indicator:</td> <td>N/A</td> </tr> <tr> <td>MB Status vs MDC:</td> <td>Pass</td> </tr> </table> <p><b>Laboratory Control Sample Assessment</b></p> <table border="1"> <tr> <td>LCSD (Y or N)?</td> <td>N</td> </tr> <tr> <td>LCSD ID:</td> <td>LCSD36182</td> </tr> <tr> <td>Count Date:</td> <td>6/21/2017</td> </tr> <tr> <td>Spike ID:</td> <td>13-033</td> </tr> <tr> <td>Spike Concentration (pCi/L):</td> <td>19.847</td> </tr> <tr> <td>Volume Used (mL):</td> <td>0.40</td> </tr> <tr> <td>Aliquot Volume (L, g, F):</td> <td>0.510</td> </tr> <tr> <td>Target Conc. (pCi/L, g, F):</td> <td>15.552</td> </tr> <tr> <td>Uncertainty (Calculated):</td> <td>0.732</td> </tr> <tr> <td>Result (pCi/L, g, F):</td> <td>13.860</td> </tr> <tr> <td>LC/S/LCSD Counting Uncertainty (pCi/L, g, F):</td> <td>1.165</td> </tr> <tr> <td>Numerical Performance Indicator:</td> <td>-2.41</td> </tr> <tr> <td>Percent Recovery:</td> <td>89.12%</td> </tr> <tr> <td>Status vs Numerical Indicator:</td> <td>N/A</td> </tr> <tr> <td>Status vs Recovery:</td> <td>Pass</td> </tr> </table> <p><b>Duplicate Sample Assessment</b></p> <table border="1"> <tr> <td>Sample ID:</td> <td>3022078-1003</td> </tr> <tr> <td>Duplicate Sample ID:</td> <td>3022078-1003DUP</td> </tr> <tr> <td>Sample Result (pCi/L, g, F):</td> <td>0.265</td> </tr> <tr> <td>Sample Result Counting Uncertainty (pCi/L, g, F):</td> <td>0.216</td> </tr> <tr> <td>Sample Duplicate Result (pCi/L, g, F):</td> <td>0.064</td> </tr> <tr> <td>Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):</td> <td>0.189</td> </tr> <tr> <td>Are sample and/or duplicate results below MDC?</td> <td>See Below #</td> </tr> <tr> <td>Duplicate Numerical Performance Indicator:</td> <td>1.377</td> </tr> <tr> <td>Duplicate RPD:</td> <td>122.54%</td> </tr> <tr> <td>Duplicate Status vs Numerical Indicator:</td> <td>N/A</td> </tr> <tr> <td>Duplicate Status vs RPD:</td> <td>Fail**</td> </tr> </table>	MB Sample ID	1289194	MB concentration:	0.093	M/B Counting Uncertainty:	0.144	MB MDC:	0.314	MB Numerical Performance Indicator:	1.26	MB Status vs Numerical Indicator:	N/A	MB Status vs MDC:	Pass	LCSD (Y or N)?	N	LCSD ID:	LCSD36182	Count Date:	6/21/2017	Spike ID:	13-033	Spike Concentration (pCi/L):	19.847	Volume Used (mL):	0.40	Aliquot Volume (L, g, F):	0.510	Target Conc. (pCi/L, g, F):	15.552	Uncertainty (Calculated):	0.732	Result (pCi/L, g, F):	13.860	LC/S/LCSD Counting Uncertainty (pCi/L, g, F):	1.165	Numerical Performance Indicator:	-2.41	Percent Recovery:	89.12%	Status vs Numerical Indicator:	N/A	Status vs Recovery:	Pass	Sample ID:	3022078-1003	Duplicate Sample ID:	3022078-1003DUP	Sample Result (pCi/L, g, F):	0.265	Sample Result Counting Uncertainty (pCi/L, g, F):	0.216	Sample Duplicate Result (pCi/L, g, F):	0.064	Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.189	Are sample and/or duplicate results below MDC?	See Below #	Duplicate Numerical Performance Indicator:	1.377	Duplicate RPD:	122.54%	Duplicate Status vs Numerical Indicator:	N/A	Duplicate Status vs RPD:	Fail**	<p>Sample Matrix Spike Control Assessment</p> <p>Sample Collection Date:</p> <p>Sample I.D.: Sample MS I.D.</p> <p>Sample MSD I.D.: Sample Spike I.D.</p> <p>Sample MSD Decay Corrected Spike Concentration (pCi/ml): Sample Spike Volume Used in MS (mL)</p> <p>Spike Volume Used in MSD (mL): Sample MS Aliquot (L, g, F)</p> <p>MS Target Conc. (pCi/L, g, F): Sample MSD Aliquot (L, g, F)</p> <p>MSD Target Conc. (pCi/L, g, F): Sample Spike uncertainty (calculated): Sample Result Counting Uncertainty (pCi/L, g, F)</p> <p>Sample Result Matrix Spike Result: Sample Matrix Spike Result Counting Uncertainty (pCi/L, g, F)</p> <p>Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F)</p> <p>MS Numerical Performance Indicator: Sample MSD Numerical Performance Indicator: MS Percent Recovery: Sample MSD Percent Recovery: MS Status vs Numerical Indicator: Sample MSD Status vs Recovery: Sample MSD Status vs Recovery:</p> <p><b>Matrix Spike/Matrix Spike Duplicate Sample Assessment</b></p> <p>Enter Duplicate Sample IDs if other than LCS/LCD in the space below.</p> <table border="1"> <tr> <td>3022078-1003</td> </tr> <tr> <td>3022078-1003DUP</td> </tr> <tr> <td>3022078-1003DUP</td> </tr> </table>	3022078-1003	3022078-1003DUP	3022078-1003DUP
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Comments:

...Batch must be re-prepped due to unacceptible precision.



## Quality Control Sample Performance Assessment

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

*Analyst Must Manually Enter All Fields Highlighted in Yellow.*

<b>Method Blank Assessment</b>		<b>Sample Matrix Spike Control Assessment</b>	
<b>Test:</b> Ra-228 <b>Analyst:</b> JLW <b>Date:</b> 6/15/2017 <b>Worklist:</b> 36062 <b>Matrix:</b> DW	<b>Sample Collection Date:</b> Sample I.D. Sample MS I.D. Sample MSD I.D. Spike I.D. MS/MSD Decay Corrected Spike Concentration (pCi/mL) Spike Volume Used in MS (mL) Spike Volume Used in MSD (mL) MS Aliquot (L, g, F) MS Target Conc. (pCi/L, g, F) MSD Aliquot (L, g, F) MSD Target Conc. (pCi/L, g, F) Spike uncertainty (calculated)		
<b>MB Sample ID:</b> 1285496 <b>MB concentration:</b> 0.769 <b>M/B Counting Uncertainty:</b> 0.387 <b>MB MDC:</b> 0.745 <b>MB Numerical Performance Indicator:</b> 3.89 <b>MB Status vs Numerical Indicator:</b> N/A <b>MB Status vs. MDC:</b> See Comment*	Sample Result Counting Uncertainty (pCi/L, g, F) Sample Matrix Spike Result Matrix Spike Result Counting Uncertainty (pCi/L, g, F) Sample Matrix Spike Duplicate Result Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F) MS Numerical Performance Indicator MSD Numerical Performance Indicator MS Percent Recovery MSD Percent Recovery MS Status vs Numerical Indicator MSD Status vs Numerical Indicator MS Status vs Recovery MSD Status vs Recovery		
<b>Laboratory Control Sample Assessment</b>	<b>LCSD (Y or N)?</b> N <b>LCSD36062</b> <b>Court Date:</b> 6/20/2017 <b>Spike I.D.:</b> 17-005 <b>Spike Concentration (pCi/mL):</b> 24.245 <b>Volume Used (mL):</b> 0.20 <b>Aliquot Volume (L, g, F):</b> 0.813 <b>Target Conc. (pCi/L, g, F):</b> 5.964 <b>Uncertainty (Calculated):</b> 0.429 <b>Result (pCi/L, g, F):</b> 7.368 <b>LCSD/LCSD Counting Uncertainty (pCi/L, g, F):</b> 0.774 <b>Numerical Performance Indicator:</b> 3.11 <b>Percent Recovery:</b> 123.55% <b>Status vs Numerical Indicator:</b> N/A <b>Status vs Recovery:</b> Pass	<b>Matrix Spike/Matrix Spike Duplicate Sample Assessment</b>	<b>Sample I.D.:</b> 30220542006 <b>Duplicate Sample I.D.:</b> 30220542006DUPI <b>Sample Result (pCi/L, g, F):</b> 1.409 <b>Sample Result Counting Uncertainty (pCi/L, g, F):</b> 0.605 <b>Sample Duplicate Result (pCi/L, g, F):</b> 0.603 <b>Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):</b> 0.567 <b>Are sample and/or duplicate results below MDC?</b> See Below ## <b>Duplicate Numerical Performance Indicator:</b> 1.874 <b>Duplicate RPD:</b> 80.16% <b>Duplicate Status vs Numerical Indicator:</b> N/A <b>Duplicate Status vs RPD:</b> Fail** <b>Comments:</b> *The method blank result is below the reporting limit for this analysis and is acceptable. **Batch must be re-prepped due to unacceptable precision.

*Oliver*



## Quality Control Sample Performance Assessment

*Analyst Must Manually Enter All Fields Highlighted in Yellow.*

Test: Ra-228 JLW		Analyst: 6/16/2017 36133 DW		Sample Matrix Spike Control Assessment	
				Sample Collection Date: Sample I.D. Sample MS I.D. Sample MSD I.D.	
Method Blank Assessment		MB Sample ID: 1288485 MB concentration: 0.228 M/B Counting Uncertainty: 0.331 MB MDC: 0.719 MB Numerical Performance Indicator: 1.35 MB Status vs Numerical Indicator: N/A MB Status vs. MDC: Pass		Spike I.D.: MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); MSD Target Conc. (pCi/L, g, F); Spike uncertainty (calculated); Sample Result:	
Laboratory Control Sample Assessment		LCSID (Y or N)? N LCS36133 LCS36133 Count Date: 6/21/2017 Spike I.D.: 17-005 Spike Concentration (pCi/mL): 24.236 Volume Used (mL): 0.20 Aliquot Volume (L, g, F): 0.802 Target Conc. (pCi/L, g, F): 6.047 Uncertainty (Calculated); Result (pCi/L, g, F); 6.252 LCS/LCSD Counting Uncertainty (pCi/L, g, F); 0.744 Numerical Performance Indicator: 0.47 Percent Recovery: 103.39% Status vs Numerical Indicator: N/A Status vs Recovery: Pass		Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result; Matrix Spike Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Duplicate Result; Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F); MS Numerical Performance Indicator: MS Percent Recovery; MSD Percent Recovery; MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery; MSD Status vs Recovery;	
Duplicate Sample Assessment		Sample I.D.: 30221115001 Enter Duplicate sample IDs if other than LCS/LCSD in the space below. See Below # 1.576 112.95% N/A Fail... t## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.		Sample I.D. Sample MS I.D. Sample MSD I.D. Sample Matrix Spike Result; Matrix Spike Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Duplicate Result; Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F); Duplicate Numerical Performance Indicator: (Based on the Percent Recoveries) MS/MSD Duplicate RPD; MS/MSD Duplicate Status vs Numerical Indicator; MS/MSD Duplicate Status vs RPD;	

Comments:  
...Batch must be re-prepped due to unacceptable precision.



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

**Prepared For:**

**Georgia Power  
2480 Maner Road  
Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AAH0134**

**August 11, 2017**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

A handwritten signature in black ink that reads "Betty McManus".

Project Manager

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All test results relate only to the samples analyzed.



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MCM-02	AAH0134-01	Ground Water	08/02/17 12:22	08/03/17 09:10
MCM-04	AAH0134-02	Ground Water	08/02/17 09:57	08/03/17 09:10
MCM-08	AAH0134-03	Ground Water	08/02/17 12:34	08/03/17 09:10
MCM-10	AAH0134-04	Ground Water	08/02/17 16:50	08/03/17 09:10
MCM-11	AAH0134-05	Ground Water	08/02/17 15:14	08/03/17 09:10
MCM-15	AAH0134-06	Ground Water	08/02/17 10:30	08/03/17 09:10
Dup-1	AAH0134-07	Ground Water	08/02/17 00:00	08/03/17 09:10
EQBL080217	AAH0134-08	Water	08/02/17 14:30	08/03/17 09:10
FBL080217	AAH0134-09	Water	08/02/17 11:45	08/03/17 09:10



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

### Case Narrative

The Radium analysis by methods EPA 9315/9320 was performed by Pace-Pittsburgh, 1638 Roseytown Road - Suites 2, 3, 4, Greensburg PA 15601. The Pace-Pittsburgh lab contact is Jacquelyn Collins at 724-850-5612.



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

Report No.: AAH0134

Project: CCR Event

Client ID: MCM-02

Lab Number ID: AAH0134-01

Date/Time Sampled: 8/2/2017 12:22:00PM

Date/Time Received: 8/3/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	136	25	10	mg/L	SM 2540 C		1	08/07/17 15:55	08/07/17 15:55	7080176	JPT
<b>Inorganic Anions</b>											
Chloride	42	0.25	0.02	mg/L	EPA 300.0		1	08/03/17 10:39	08/03/17 14:13	7080089	RLC
Fluoride	0.14	0.30	0.03	mg/L	EPA 300.0	J	1	08/03/17 10:39	08/03/17 14:13	7080089	RLC
Sulfate	43	1.0	0.02	mg/L	EPA 300.0		1	08/03/17 10:39	08/03/17 14:13	7080089	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Arsenic	0.0011	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Barium	0.121	0.0100	0.0004	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Beryllium	0.0002	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Boron	0.158	0.0400	0.0060	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Calcium	4.69	0.500	0.0404	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Cobalt	0.0005	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:35	7080114	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/10/17 14:30	08/10/17 19:18	7080251	MTC



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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

Report No.: AAH0134

Project: CCR Event

Client ID: MCM-04

Lab Number ID: AAH0134-02

Date/Time Sampled: 8/2/2017 9:57:00AM

Date/Time Received: 8/3/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	538	25	10	mg/L	SM 2540 C		1	08/07/17 15:55	08/07/17 15:55	7080176	JPT
<b>Inorganic Anions</b>											
Chloride	230	2.5	0.24	mg/L	EPA 300.0		10	08/03/17 10:39	08/04/17 14:33	7080089	RLC
Fluoride	0.27	0.30	0.03	mg/L	EPA 300.0	J	1	08/03/17 10:39	08/03/17 14:34	7080089	RLC
Sulfate	120	10	0.17	mg/L	EPA 300.0		10	08/03/17 10:39	08/04/17 14:33	7080089	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Arsenic	0.0028	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Barium	0.0530	0.0100	0.0004	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Beryllium	0.0003	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Boron	0.137	0.0400	0.0060	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Calcium	12.4	5.00	2.02	mg/L	EPA 6020B		50	08/04/17 15:30	08/07/17 19:04	7080114	CSW
Chromium	0.0012	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 18:58	7080114	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/10/17 14:30	08/10/17 19:21	7080251	MTC



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

Report No.: AAH0134

Project: CCR Event

Client ID: MCM-08

Lab Number ID: AAH0134-03

Date/Time Sampled: 8/2/2017 12:34:00PM

Date/Time Received: 8/3/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3100	25	10	mg/L	SM 2540 C		1	08/07/17 15:55	08/07/17 15:55	7080176	JPT
<b>Inorganic Anions</b>											
Chloride	1600	12	1.2	mg/L	EPA 300.0		50	08/03/17 10:39	08/04/17 14:54	7080089	RLC
Fluoride	0.16	0.30	0.03	mg/L	EPA 300.0	J	1	08/03/17 10:39	08/03/17 14:55	7080089	RLC
Sulfate	290	50	0.85	mg/L	EPA 300.0		50	08/03/17 10:39	08/04/17 14:54	7080089	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Arsenic	0.0208	0.0050	0.0005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Barium	0.440	0.0100	0.0004	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Beryllium	0.0003	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Boron	0.318	0.0400	0.0060	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Calcium	32.7	25.0	2.02	mg/L	EPA 6020B		50	08/04/17 15:30	08/07/17 19:15	7080114	CSW
Chromium	0.0150	0.0100	0.0005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Cobalt	0.0018	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Molybdenum	0.0029	0.0100	0.0010	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Selenium	0.0055	0.0100	0.0018	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Lithium	0.0017	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:10	7080114	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/10/17 14:30	08/10/17 19:23	7080251	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

Report No.: AAH0134

Project: CCR Event

Client ID: MCM-10

Lab Number ID: AAH0134-04

Date/Time Sampled: 8/2/2017 4:50:00PM

Date/Time Received: 8/3/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4910	25	10	mg/L	SM 2540 C		1	08/07/17 15:55	08/07/17 15:55	7080176	JPT
<b>Inorganic Anions</b>											
Chloride	850	25	2.4	mg/L	EPA 300.0		100	08/03/17 10:39	08/04/17 15:15	7080089	RLC
Fluoride	2.9	0.30	0.03	mg/L	EPA 300.0		1	08/03/17 10:39	08/03/17 15:57	7080089	RLC
Sulfate	2500	100	1.7	mg/L	EPA 300.0		100	08/03/17 10:39	08/04/17 15:15	7080089	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:21	7080114	CSW
Arsenic	0.0369	0.0050	0.0005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:21	7080114	CSW
Barium	0.0244	0.0100	0.0004	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:21	7080114	CSW
Beryllium	0.0239	0.0030	0.00009	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:21	7080114	CSW
Boron	0.181	0.0400	0.0060	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:21	7080114	CSW
Cadmium	ND	0.0050	0.0007	mg/L	EPA 6020B	R-01	5	08/04/17 15:30	08/07/17 20:30	7080114	CSW
Calcium	103	25.0	2.02	mg/L	EPA 6020B		50	08/04/17 15:30	08/07/17 19:27	7080114	CSW
Chromium	0.0060	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:21	7080114	CSW
Cobalt	0.0255	0.0100	0.0003	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:21	7080114	CSW
Lead	ND	0.0050	0.0003	mg/L	EPA 6020B		5	08/04/17 15:30	08/07/17 20:30	7080114	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:21	7080114	CSW
Selenium	0.0396	0.0100	0.0018	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:21	7080114	CSW
Thallium	ND	0.0020	0.0003	mg/L	EPA 6020B	R-01	5	08/04/17 15:30	08/07/17 20:30	7080114	CSW
Lithium	0.159	0.0500	0.0075	mg/L	EPA 6020B		5	08/04/17 15:30	08/07/17 20:30	7080114	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/10/17 14:30	08/10/17 19:26	7080251	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

Report No.: AAH0134

Project: CCR Event

Client ID: MCM-11

Lab Number ID: AAH0134-05

Date/Time Sampled: 8/2/2017 3:14:00PM

Date/Time Received: 8/3/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	183	25	10	mg/L	SM 2540 C		1	08/07/17 15:55	08/07/17 15:55	7080176	JPT
<b>Inorganic Anions</b>											
Chloride	57	1.2	0.12	mg/L	EPA 300.0		5	08/03/17 10:39	08/04/17 15:35	7080089	RLC
Fluoride	0.69	0.30	0.03	mg/L	EPA 300.0		1	08/03/17 10:39	08/03/17 16:17	7080089	RLC
Sulfate	34	1.0	0.02	mg/L	EPA 300.0		1	08/03/17 10:39	08/03/17 16:17	7080089	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Arsenic	0.0188	0.0050	0.0005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Barium	0.0533	0.0100	0.0004	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Beryllium	0.0001	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Boron	0.0392	0.0400	0.0060	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Calcium	18.5	5.00	2.02	mg/L	EPA 6020B		50	08/04/17 15:30	08/07/17 19:38	7080114	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Cobalt	0.0006	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Lithium	0.0036	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:32	7080114	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/10/17 14:30	08/10/17 19:33	7080251	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

Report No.: AAH0134

Project: CCR Event

Client ID: MCM-15

Lab Number ID: AAH0134-06

Date/Time Sampled: 8/2/2017 10:30:00AM

Date/Time Received: 8/3/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	35	25	10	mg/L	SM 2540 C		1	08/07/17 15:55	08/07/17 15:55	7080176	JPT
<b>Inorganic Anions</b>											
Chloride	3.2	0.25	0.02	mg/L	EPA 300.0		1	08/03/17 10:39	08/03/17 16:38	7080089	RLC
Fluoride	0.05	0.30	0.03	mg/L	EPA 300.0	J	1	08/03/17 10:39	08/03/17 16:38	7080089	RLC
Sulfate	14	1.0	0.02	mg/L	EPA 300.0		1	08/03/17 10:39	08/03/17 16:38	7080089	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Arsenic	0.0047	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Barium	0.0355	0.0100	0.0004	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Boron	0.0333	0.0400	0.0060	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Calcium	1.27	0.500	0.0404	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Chromium	0.0017	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 19:44	7080114	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/10/17 14:30	08/10/17 19:35	7080251	MTC



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

Report No.: AAH0134

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AAH0134-07

Date/Time Sampled: 8/2/2017 12:00:00AM

Date/Time Received: 8/3/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	553	25	10	mg/L	SM 2540 C		1	08/07/17 15:55	08/07/17 15:55	7080176	JPT
<b>Inorganic Anions</b>											
Chloride	210	2.5	0.24	mg/L	EPA 300.0		10	08/03/17 10:39	08/04/17 15:56	7080089	RLC
Fluoride	0.27	0.30	0.03	mg/L	EPA 300.0	J	1	08/03/17 10:39	08/03/17 16:59	7080089	RLC
Sulfate	110	10	0.17	mg/L	EPA 300.0		10	08/03/17 10:39	08/04/17 15:56	7080089	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Arsenic	0.0026	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Barium	0.0498	0.0100	0.0004	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Beryllium	0.0002	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Boron	0.120	0.0400	0.0060	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Calcium	12.3	5.00	2.02	mg/L	EPA 6020B		50	08/04/17 15:30	08/07/17 20:12	7080114	CSW
Chromium	0.0012	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:07	7080114	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/10/17 14:30	08/10/17 19:37	7080251	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

Report No.: AAH0134

Project: CCR Event

Client ID: EQBL080217

Lab Number ID: AAH0134-08

Date/Time Sampled: 8/2/2017 2:30:00PM

Date/Time Received: 8/3/2017 9:10:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	08/07/17 15:55	08/07/17 15:55	7080176	JPT
<b>Inorganic Anions</b>											
Chloride	0.12	0.25	0.02	mg/L	EPA 300.0	J	1	08/03/17 10:39	08/03/17 17:19	7080089	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	08/03/17 10:39	08/03/17 17:19	7080089	RLC
Sulfate	0.16	1.0	0.02	mg/L	EPA 300.0	J	1	08/03/17 10:39	08/03/17 17:19	7080089	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:18	7080114	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/10/17 14:30	08/10/17 19:40	7080251	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

Report No.: AAH0134

Project: CCR Event

Client ID: FBL080217

Lab Number ID: AAH0134-09

Date/Time Sampled: 8/2/2017 11:45:00AM

Date/Time Received: 8/3/2017 9:10:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	08/07/17 15:55	08/07/17 15:55	7080176	JPT
<b>Inorganic Anions</b>											
Chloride	0.67	0.25	0.02	mg/L	EPA 300.0		1	08/03/17 10:39	08/03/17 19:03	7080089	RLC
Fluoride	0.04	0.30	0.03	mg/L	EPA 300.0	J	1	08/03/17 10:39	08/03/17 19:03	7080089	RLC
Sulfate	0.28	1.0	0.02	mg/L	EPA 300.0	J	1	08/03/17 10:39	08/03/17 19:03	7080089	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Chromium	0.0008	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/04/17 15:30	08/07/17 20:24	7080114	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/10/17 14:30	08/10/17 19:42	7080251	MTC



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

**Report No.: AAH0134**

### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### **Batch 7080176 - SM 2540 C**

Blank (7080176-BLK1)							Prepared & Analyzed: 08/07/17			
Total Dissolved Solids	ND	25	10	mg/L						
LCS (7080176-BS1)							Prepared & Analyzed: 08/07/17			
Total Dissolved Solids	391	25	10	mg/L	400.00		98	84-108		
Duplicate (7080176-DUP1)							Prepared & Analyzed: 08/07/17			
Total Dissolved Solids	ND	25	10	mg/L		ND			10	



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Attention: Mr. Joju Abraham

August 11, 2017

**Report No.: AAH0134**

### Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080089 - EPA 300.0</b>											
<b>Blank (7080089-BLK1)</b>											
Prepared & Analyzed: 08/03/17											
Chloride	ND	0.25	0.02	mg/L							
Fluoride	ND	0.30	0.03	mg/L							
Sulfate	ND	1.0	0.02	mg/L							
<b>LCS (7080089-BS1)</b>											
Prepared & Analyzed: 08/03/17											
Chloride	10.2	0.25	0.02	mg/L	10.020		102	90-110			
Fluoride	9.97	0.30	0.03	mg/L	10.020		100	90-110			
Sulfate	10.2	1.0	0.02	mg/L	10.050		101	90-110			
<b>Matrix Spike (7080089-MS1)</b>											
<b>Source: AAH0134-03</b>						Prepared & Analyzed: 08/03/17					
Chloride	491	0.25	0.02	mg/L	10.020	535	NR	90-110			QM-02
Fluoride	11.2	0.30	0.03	mg/L	10.020	0.16	110	90-110			
Sulfate	204	1.0	0.02	mg/L	10.050	216	NR	90-110			QM-02
<b>Matrix Spike Dup (7080089-MSD1)</b>											
<b>Source: AAH0134-03</b>						Prepared & Analyzed: 08/03/17					
Chloride	493	0.25	0.02	mg/L	10.020	535	NR	90-110	0.4	15	QM-02
Fluoride	11.4	0.30	0.03	mg/L	10.020	0.16	112	90-110	2	15	QM-05
Sulfate	204	1.0	0.02	mg/L	10.050	216	NR	90-110	0.03	15	QM-02



# PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

**Report No.: AAH0134**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### **Batch 7080114 - EPA 3005A**

Blank (7080114-BLK1)						Prepared: 08/04/17 Analyzed: 08/07/17				
Antimony	ND	0.0030	0.0006	mg/L						
Arsenic	ND	0.0050	0.0005	mg/L						
Barium	ND	0.0100	0.0004	mg/L						
Beryllium	ND	0.0030	0.00009	mg/L						
Boron	ND	0.0400	0.0060	mg/L						
Cadmium	ND	0.0010	0.0001	mg/L						
Calcium	ND	0.500	0.0404	mg/L						
Chromium	ND	0.0100	0.0005	mg/L						
Cobalt	ND	0.0100	0.0003	mg/L						
Copper	ND	0.0250	0.0003	mg/L						
Lead	ND	0.0050	0.00007	mg/L						
Molybdenum	ND	0.0100	0.0010	mg/L						
Nickel	ND	0.0100	0.0005	mg/L						
Selenium	ND	0.0100	0.0018	mg/L						
Silver	ND	0.0100	0.0002	mg/L						
Thallium	ND	0.0010	0.00005	mg/L						
Vanadium	ND	0.0100	0.0012	mg/L						
Zinc	ND	0.0100	0.0012	mg/L						
Lithium	ND	0.0500	0.0015	mg/L						

LCS (7080114-BS1)							Prepared: 08/04/17 Analyzed: 08/07/17			
Antimony	0.109	0.0030	0.0006	mg/L	0.10000		109	80-120		
Arsenic	0.102	0.0050	0.0005	mg/L	0.10000		102	80-120		
Barium	0.104	0.0100	0.0004	mg/L	0.10000		104	80-120		
Beryllium	0.108	0.0030	0.00009	mg/L	0.10000		108	80-120		
Boron	1.09	0.0400	0.0060	mg/L	1.0000		109	80-120		
Cadmium	0.109	0.0010	0.0001	mg/L	0.10000		109	80-120		
Calcium	1.04	0.500	0.0404	mg/L	1.0000		104	80-120		
Chromium	0.107	0.0100	0.0005	mg/L	0.10000		107	80-120		
Cobalt	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120		
Copper	0.105	0.0250	0.0003	mg/L	0.10000		105	80-120		
Lead	0.102	0.0050	0.00007	mg/L	0.10000		102	80-120		
Molybdenum	0.0998	0.0100	0.0010	mg/L	0.10000		100	80-120		
Nickel	0.106	0.0100	0.0005	mg/L	0.10000		106	80-120		
Selenium	0.101	0.0100	0.0018	mg/L	0.10000		101	80-120		
Silver	0.0965	0.0100	0.0002	mg/L	0.10000		97	80-120		
Thallium	0.103	0.0010	0.00005	mg/L	0.10000		103	80-120		
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000		105	80-120		
Zinc	0.110	0.0100	0.0012	mg/L	0.10000		110	80-120		
Lithium	0.113	0.0500	0.0015	mg/L	0.10000		113	80-120		



# PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

**Report No.: AAH0134**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### **Batch 7080114 - EPA 3005A**

Matrix Spike (7080114-MS1)		Source: AAH0134-01				Prepared: 08/04/17 Analyzed: 08/07/17				
Antimony	0.110	0.0030	0.0006	mg/L	0.10000	ND	110	75-125		
Arsenic	0.104	0.0050	0.0005	mg/L	0.10000	0.0011	103	75-125		
Barium	0.216	0.0100	0.0004	mg/L	0.10000	0.121	95	75-125		
Beryllium	0.106	0.0030	0.00009	mg/L	0.10000	0.0002	106	75-125		
Boron	1.18	0.0400	0.0060	mg/L	1.0000	0.158	102	75-125		
Cadmium	0.107	0.0010	0.0001	mg/L	0.10000	ND	107	75-125		
Calcium	9.06	25.0	2.02	mg/L	1.0000	4.69	437	75-125		QM-02, J
Chromium	0.110	0.0100	0.0005	mg/L	0.10000	ND	110	75-125		
Cobalt	0.105	0.0100	0.0003	mg/L	0.10000	0.0005	105	75-125		
Copper	0.107	0.0250	0.0003	mg/L	0.10000	ND	107	75-125		
Lead	0.102	0.0050	0.00007	mg/L	0.10000	0.0001	102	75-125		
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000	ND	106	75-125		
Nickel	0.107	0.0100	0.0005	mg/L	0.10000	ND	107	75-125		
Selenium	0.0987	0.0100	0.0018	mg/L	0.10000	ND	99	75-125		
Silver	0.0943	0.0100	0.0002	mg/L	0.10000	ND	94	75-125		
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	ND	101	75-125		
Vanadium	0.110	0.0100	0.0012	mg/L	0.10000	0.0031	107	75-125		
Zinc	0.109	0.0100	0.0012	mg/L	0.10000	ND	109	75-125		
Lithium	0.108	0.0500	0.0015	mg/L	0.10000	ND	108	75-125		

Matrix Spike Dup (7080114-MSD1)		Source: AAH0134-01				Prepared: 08/04/17 Analyzed: 08/07/17				
Antimony	0.111	0.0030	0.0006	mg/L	0.10000	ND	111	75-125	1	20
Arsenic	0.105	0.0050	0.0005	mg/L	0.10000	0.0011	104	75-125	0.7	20
Barium	0.219	0.0100	0.0004	mg/L	0.10000	0.121	98	75-125	1	20
Beryllium	0.116	0.0030	0.00009	mg/L	0.10000	0.0002	115	75-125	8	20
Boron	1.29	0.0400	0.0060	mg/L	1.0000	0.158	113	75-125	9	20
Cadmium	0.108	0.0010	0.0001	mg/L	0.10000	ND	108	75-125	0.6	20
Calcium	9.42	25.0	2.02	mg/L	1.0000	4.69	474	75-125	4	20
Chromium	0.111	0.0100	0.0005	mg/L	0.10000	ND	111	75-125	0.6	20
Cobalt	0.106	0.0100	0.0003	mg/L	0.10000	0.0005	105	75-125	0.5	20
Copper	0.106	0.0250	0.0003	mg/L	0.10000	ND	106	75-125	2	20
Lead	0.102	0.0050	0.00007	mg/L	0.10000	0.0001	102	75-125	0.5	20
Molybdenum	0.105	0.0100	0.0010	mg/L	0.10000	ND	105	75-125	0.7	20
Nickel	0.109	0.0100	0.0005	mg/L	0.10000	ND	109	75-125	2	20
Selenium	0.0980	0.0100	0.0018	mg/L	0.10000	ND	98	75-125	0.7	20
Silver	0.0960	0.0100	0.0002	mg/L	0.10000	ND	96	75-125	2	20
Thallium	0.105	0.0010	0.00005	mg/L	0.10000	ND	105	75-125	3	20
Vanadium	0.111	0.0100	0.0012	mg/L	0.10000	0.0031	108	75-125	0.7	20
Zinc	0.113	0.0100	0.0012	mg/L	0.10000	ND	113	75-125	3	20
Lithium	0.117	0.0500	0.0015	mg/L	0.10000	ND	117	75-125	8	20



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

**Report No.: AAH0134**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 7080114 - EPA 3005A

Post Spike (7080114-PS1)		Source: AAH0134-01			Prepared: 08/04/17 Analyzed: 08/07/17			
Antimony	105		ug/L	100.00	0.233	105	80-120	
Arsenic	101		ug/L	100.00	1.05	100	80-120	
Barium	217		ug/L	100.00	121	96	80-120	
Beryllium	109		ug/L	100.00	0.191	109	80-120	
Boron	1200		ug/L	1000.0	158	104	80-120	
Cadmium	107		ug/L	100.00	0.0077	107	80-120	
Calcium	9390		ug/L	1000.0	4690	471	80-120	QM-02
Chromium	108		ug/L	100.00	0.430	107	80-120	
Cobalt	105		ug/L	100.00	0.481	104	80-120	
Copper	104		ug/L	100.00	0.245	104	80-120	
Lead	102		ug/L	100.00	0.113	102	80-120	
Molybdenum	100		ug/L	100.00	0.0421	100	80-120	
Nickel	106		ug/L	100.00	0.135	106	80-120	
Selenium	98.4		ug/L	100.00	0.340	98	80-120	
Silver	92.0		ug/L	100.00	0.0023	92	80-120	
Thallium	102		ug/L	100.00	0.0304	102	80-120	
Vanadium	110		ug/L	100.00	3.13	107	80-120	
Zinc	108		ug/L	100.00	1.13	107	80-120	
Lithium	109		ug/L	100.00	0.340	109	80-120	

#### Batch 7080251 - EPA 7470A

Blank (7080251-BLK1)					Prepared & Analyzed: 08/10/17			
Mercury	ND	0.00050	0.000036	mg/L				
LCS (7080251-BS1)					Prepared & Analyzed: 08/10/17			
Mercury	0.00227	0.00050	0.000036	mg/L	2.5000E-3	91	80-120	



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

**Report No.: AAH0134**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080251 - EPA 7470A</b>											
<b>Matrix Spike (7080251-MS1)</b> <b>Source: AAH0134-07</b> Prepared & Analyzed: 08/10/17											
Mercury      0.00220      0.00050      0.000036      mg/L      2.5000E-3      ND      88      75-125											
<b>Matrix Spike Dup (7080251-MSD1)</b> <b>Source: AAH0134-07</b> Prepared & Analyzed: 08/10/17											
Mercury      0.00225      0.00050      0.000036      mg/L      2.5000E-3      ND      90      75-125      2      20											
<b>Post Spike (7080251-PS1)</b> <b>Source: AAH0134-07</b> Prepared & Analyzed: 08/10/17											
Mercury      1.58      ug/L      1.6667      -0.00937      95      80-120											



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 11, 2017

## Legend

### Definition of Laboratory Terms

- ND** - Not Detected at levels equal to or greater than the MDL  
**BRL** - Not Detected at levels equal to or greater than the RL  
**RL** - Reporting Limit                   **MDL** - Method Detection Limit  
**SOP** - Method run per Pace Standard Operating Procedure  
**CFU** - Colony Forming Units  
**DF** - Dilution Factor                   **TIC** - Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

- R-01** Elevated reporting limit due to matrix interference.
- QM-05** The spike recovery was outside acceptance limits for the MS and/or MSD and/or PDS due to suspected matrix interference. Sample results for the QC batch were accepted based on acceptable LCS recoveries.
- QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.
- J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

**Note: Unless otherwise noted, all results are reported on an as received basis.**

**CHAIN OF CUSTODY RECORD**

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

PAGE: 1 OF 1

**CLIENT NAME: SOUTHERN COMPANY SERVICES**

CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:

241 RALPH MCCILL BLVD NE 810185  
ATLANTA, GA 30308

REPORT TO: LAUREN PETTY CC: STEPHEN WILSON

JULIA ABRAMSON TRIDENT GODDARD

REQUESTED COMPLETION DATE: PO#:

PROJECT NAME/STATE:

PLANT MCMANUS CCR  
PROJECT #:

Collection DATE	Collection TIME	MATRIX CODE*	G	O	R	A	SAMPLE IDENTIFICATION
08/02/17	1222	GW	X	MCM-02			
08/02/17	0957	GW	X	MCM-04			
08/02/17	1234	GW	X	MCM-08			
08/02/17	1650	GW	X	MCM-10			
08/02/17	1514	GW	X	MCM-11			
08/02/17	1030	GW	X	MCM-15			
08/02/17	—	GW	X	Duf-1			
08/02/17	1430	W	X	FBL080217			
08/02/17	1145	W	X	FBL080217			

CONTAINER TYPE:  
PRESERVATION:  
# of

ANALYSIS REQUESTED

L CONTAINER TYPE

PRESERVATION

P - PLASTIC

A - AMBER GLASS

G - CLEAR GLASS

V - VOA VIAL

S - STERILE

O - OTHER

I

D

N

U

M

B

E

R

S

ST

W

DW - DRINKING WATER

WW - WASTEWATER

GW - GROUNDWATER

SW - SURFACE WATER

STORM WATER

W - WATER

DRINKING WATER

WASTEWATER

GROUNDWATER

SURFACE WATER

STORM WATER

WATER

SOIL

SLUDGE

SOLID

AIR

LIQUID

PRODUCT

\*MATRIX CODES:

REMARKS/ADDITIONAL INFORMATION

**Sample Condition Upon Receipt**

Pace Analytical

Client Name: Resolute GA Power Project # AAT0134

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace  Other \_\_\_\_\_

Tracking #: 787388172409

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

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

Thermometer Used TR-4 Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 1C Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C Comments: \_\_\_\_\_ Date and Initials of person examining contents: 8/31/05 C24

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

Client Notification/ Resolution:

Field Data Required? Y / N

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

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

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

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

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



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### LOG-IN CHECKLIST

Printed: 8/4/2017 12:30:25PM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 08/03/17 09:10

**Work Order:** AAH0134  
**Logged In By:** Charles Hawks

### OBSERVATIONS

<b>#Samples:</b> 9	<b>#Containers:</b> 38
<b>Minimum Temp(C):</b> 1.0	<b>Maximum Temp(C):</b> 1.0
<b>Custody Seal(s) Used:</b> Yes	

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

**Comments:**

August 24, 2017

Ms. Lauren Petty  
GA Power  
42 Inverness Center Parkway  
Birmingham, AL 35242

RE: Project: AAH0134 Plant McManus  
Pace Project No.: 30226434

Dear Ms. Petty:

Enclosed are the analytical results for sample(s) received by the laboratory on August 04, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
(724)850-5612  
Project Manager

Enclosures



#### **REPORT OF LABORATORY ANALYSIS**

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## CERTIFICATIONS

Project: AAH0134 Plant McManus  
 Pace Project No.: 30226434

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Montana Certification #: Cert 0082
L-A-B DOD-ELAP Accreditation #: L2417	Nebraska Certification #: NE-05-29-14
Alabama Certification #: 41590	Nevada Certification #: PA014572015-1
Arizona Certification #: AZ0734	New Hampshire/TNI Certification #: 2976
Arkansas Certification	New Jersey/TNI Certification #: PA 051
California Certification #: 04222CA	New Mexico Certification #: PA01457
Colorado Certification	New York/TNI Certification #: 10888
Connecticut Certification #: PH-0694	North Carolina Certification #: 42706
Delaware Certification	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Oregon/TNI Certification #: PA200002
Georgia Certification #: C040	Pennsylvania/TNI Certification #: 65-00282
Guam Certification	Puerto Rico Certification #: PA01457
Hawaii Certification	Rhode Island Certification #: 65-00282
Idaho Certification	South Dakota Certification
Illinois Certification	Tennessee Certification #: TN2867
Indiana Certification	Texas/TNI Certification #: T104704188-14-8
Iowa Certification #: 391	Utah/TNI Certification #: PA014572015-5
Kansas/TNI Certification #: E-10358	USDA Soil Permit #: P330-14-00213
Kentucky Certification #: 90133	Vermont Dept. of Health: ID# VT-0282
Louisiana DHH/TNI Certification #: LA140008	Virgin Island/PADEP Certification
Louisiana DEQ/TNI Certification #: 4086	Virginia/VELAP Certification #: 460198
Maine Certification #: PA00091	Washington Certification #: C868
Maryland Certification #: 308	West Virginia DEP Certification #: 143
Massachusetts Certification #: M-PA1457	West Virginia DHHR Certification #: 9964C
Michigan/PADEP Certification	Wisconsin Certification
Missouri Certification #: 235	Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAH0134 Plant McManus  
Pace Project No.: 30226434

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30226434001	MCM-02	Water	08/02/17 12:22	08/04/17 10:20
30226434002	MCM-04	Water	08/02/17 09:57	08/04/17 10:20
30226434003	MCM-08	Water	08/02/17 12:34	08/04/17 10:20
30226434004	MCM-10	Water	08/02/17 16:50	08/04/17 10:20
30226434005	MCM-11	Water	08/02/17 15:14	08/04/17 10:20
30226434006	MCM-15	Water	08/02/17 10:30	08/04/17 10:20
30226434007	Dup-1	Water	08/02/17 00:00	08/04/17 10:20
30226434008	EQBL080217	Water	08/02/17 14:30	08/04/17 10:20
30226434009	FBL080217	Water	08/02/17 11:45	08/04/17 10:20

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: AAH0134 Plant McManus  
Pace Project No.: 30226434

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30226434001	MCM-02	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30226434002	MCM-04	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30226434003	MCM-08	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30226434004	MCM-10	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30226434005	MCM-11	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30226434006	MCM-15	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30226434007	Dup-1	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30226434008	EQBL080217	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1
30226434009	FBL080217	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	CMC	1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAH0134 Plant McManus

Pace Project No.: 30226434

<b>Sample: MCM-02</b>	<b>Lab ID: 30226434001</b>	Collected: 08/02/17 12:22	Received: 08/04/17 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.549 ± 0.222 (0.217)</b> C:91% T:NA	pCi/L	08/14/17 08:17
Radium-228	EPA 9320	<b>0.155 ± 0.360 (0.799)</b> C:79% T:79%	pCi/L	08/16/17 15:11
Total Radium	Total Radium Calculation	<b>0.704 ± 0.582 (1.02)</b>	pCi/L	08/23/17 12:07
<hr/>				
<b>Sample: MCM-04</b>	<b>Lab ID: 30226434002</b>	Collected: 08/02/17 09:57	Received: 08/04/17 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>2.79 ± 0.601 (0.268)</b> C:90% T:NA	pCi/L	08/14/17 08:17
Radium-228	EPA 9320	<b>2.22 ± 0.645 (0.769)</b> C:77% T:85%	pCi/L	08/16/17 15:50
Total Radium	Total Radium Calculation	<b>5.01 ± 1.25 (1.04)</b>	pCi/L	08/23/17 12:07
<hr/>				
<b>Sample: MCM-08</b>	<b>Lab ID: 30226434003</b>	Collected: 08/02/17 12:34	Received: 08/04/17 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>11.8 ± 1.76 (0.141)</b> C:86% T:NA	pCi/L	08/18/17 20:13
Radium-228	EPA 9320	<b>6.27 ± 1.35 (0.927)</b> C:80% T:83%	pCi/L	08/16/17 15:12
Total Radium	Total Radium Calculation	<b>18.1 ± 3.11 (1.07)</b>	pCi/L	08/23/17 12:07
<hr/>				
<b>Sample: MCM-10</b>	<b>Lab ID: 30226434004</b>	Collected: 08/02/17 16:50	Received: 08/04/17 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.49 ± 0.396 (0.287)</b> C:94% T:NA	pCi/L	08/14/17 08:18
Radium-228	EPA 9320	<b>0.716 ± 0.429 (0.795)</b> C:78% T:87%	pCi/L	08/16/17 15:50
Total Radium	Total Radium Calculation	<b>2.21 ± 0.825 (1.08)</b>	pCi/L	08/23/17 12:07
<hr/>				
<b>Sample: MCM-11</b>	<b>Lab ID: 30226434005</b>	Collected: 08/02/17 15:14	Received: 08/04/17 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.733 ± 0.258 (0.241)</b> C:93% T:NA	pCi/L	08/14/17 08:18
Radium-228	EPA 9320	<b>0.530 ± 0.367 (0.704)</b> C:76% T:92%	pCi/L	08/16/17 15:50

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAH0134 Plant McManus

Pace Project No.: 30226434

<b>Sample: MCM-11</b>	<b>Lab ID: 30226434005</b>	Collected: 08/02/17 15:14	Received: 08/04/17 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Total Radium	Total Radium Calculation	<b>1.26 ± 0.625 (0.945)</b>	pCi/L	08/23/17 12:07
				7440-14-4
<b>Sample: MCM-15</b>	<b>Lab ID: 30226434006</b>	Collected: 08/02/17 10:30	Received: 08/04/17 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.05 ± 0.318 (0.292)</b> C:99% T:NA	pCi/L	08/14/17 08:18
Radium-228	EPA 9320	<b>0.940 ± 0.469 (0.823)</b> C:79% T:77%	pCi/L	08/16/17 15:12
Total Radium	Total Radium Calculation	<b>1.99 ± 0.787 (1.12)</b>	pCi/L	08/23/17 12:07
				7440-14-4
<b>Sample: Dup-1</b>	<b>Lab ID: 30226434007</b>	Collected: 08/02/17 00:00	Received: 08/04/17 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>2.70 ± 0.580 (0.252)</b> C:95% T:NA	pCi/L	08/14/17 08:18
Radium-228	EPA 9320	<b>2.75 ± 0.741 (0.790)</b> C:78% T:76%	pCi/L	08/16/17 15:12
Total Radium	Total Radium Calculation	<b>5.45 ± 1.32 (1.04)</b>	pCi/L	08/23/17 12:07
				7440-14-4
<b>Sample: EQBL080217</b>	<b>Lab ID: 30226434008</b>	Collected: 08/02/17 14:30	Received: 08/04/17 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.0732 ± 0.110 (0.239)</b> C:95% T:NA	pCi/L	08/14/17 08:18
Radium-228	EPA 9320	<b>-0.00357 ± 0.335 (0.786)</b> C:78% T:77%	pCi/L	08/16/17 15:51
Total Radium	Total Radium Calculation	<b>0.0732 ± 0.445 (1.03)</b>	pCi/L	08/23/17 12:07
				7440-14-4
<b>Sample: FBL080217</b>	<b>Lab ID: 30226434009</b>	Collected: 08/02/17 11:45	Received: 08/04/17 10:20	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.217 ± 0.150 (0.239)</b> C:97% T:NA	pCi/L	08/14/17 08:18
Radium-228	EPA 9320	<b>-0.163 ± 0.375 (0.897)</b> C:74% T:84%	pCi/L	08/16/17 15:13
Total Radium	Total Radium Calculation	<b>0.217 ± 0.525 (1.14)</b>	pCi/L	08/23/17 12:07
				7440-14-4

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAH0134 Plant McManus  
Pace Project No.: 30226434

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QC Batch: 267774 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 30226434001, 30226434002, 30226434003, 30226434004, 30226434005, 30226434006, 30226434007,  
30226434008, 30226434009

---

METHOD BLANK: 1317975 Matrix: Water

Associated Lab Samples: 30226434001, 30226434002, 30226434003, 30226434004, 30226434005, 30226434006, 30226434007,  
30226434008, 30226434009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.145 ± 0.117 (0.187) C:96% T:NA	pCi/L	08/14/17 08:16	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAH0134 Plant McManus  
Pace Project No.: 30226434

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QC Batch: 267775 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 30226434001, 30226434002, 30226434003, 30226434004, 30226434005, 30226434006, 30226434007,  
30226434008, 30226434009

---

METHOD BLANK: 1317976 Matrix: Water

Associated Lab Samples: 30226434001, 30226434002, 30226434003, 30226434004, 30226434005, 30226434006, 30226434007,  
30226434008, 30226434009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.108 ± 0.323 (0.774) C:77% T:81%	pCi/L	08/16/17 15:11	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: AAH0134 Plant McManus  
Pace Project No.: 30226434

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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WO# : 30226434

## Chain of Custody



PaceAnalytical<sup>®</sup>  
www.paceanalytical.com

Workorder: AAH0134	Workorder Name: Plant McManus	Owner Received Date:
Report To:	Subcontract To:	
Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)-734-4200	Pace - Pittsburgh 1638 Roseytown Road Stes. 2,3,4 Greensburg, PA 15601 Phone (724) 850-5600	

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Results Requested By: 8/28/2017	LAB USE ONLY
						S	NH <sub>4</sub>		
1	MCM-02	G	8/2/2017 12:22	AAH0134-01	GW	2			Q01
2	MCM-04	G	8/2/2017 9:57	AAH0134-02	GW	4			Q02
3	MCM-08	G	8/2/2017 12:34	AAH0134-03	GW	2			Q03
4	MCM-10	G	8/2/2017 16:50	AAH0134-04	GW	2			Q04
5	MCM-11	G	8/2/2017 15:14	AAH0134-05	GW	2			Q05
6	MCM-15	G	8/2/2017 10:30	AAH0134-06	GW	2			Q06
7	Dup-1	G	8/2/2017 0:00	AAH0134-07	GW	2			Q07
8	EQBL080217	G	8/2/2017 14:30	AAH0134-08	W	2			Q08
9	FBL080217	G	8/2/2017 11:45	AAH0134-09	W	2			Q09
10									
Transfers	Released By		Date/Time	Received By	Date/Time	Comments			
1						8-4-17/1000			
2									
3									

Cooler Temperature on Receipt 74 °C

Custody Seal Y or N

Received on Ice Y or N

Sample Intact Y or N

\*\*\* In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1

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www.paceats.com

**CHAIN OF CUSTODY RECORD**

Pace Analytical Services, LLC - Atlanta, GA  
110 TECHNOLOGY PARKWAY, PEACHTREE CORRIDOR  
(770) 734-4200 : FAX (770) 734-4201

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PAGE: 1 OF 1

Page 11 of 15

Rev. 12/15/2016

30226434

**Sample Condition Upon Receipt**

Pace Analytical

Client Name: Resolute G Power Project # AAT0134Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: 787388172409

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  noPacking Material:  Bubble Wrap  Bubble Bags  None  OtherThermometer Used +12.4 Type of Ice Wet Blue None  Samples on ice, cooling process has begunCooler Temperature 1C Biological Tissue Is Frozen: Yes No  
Comments: Date and initials of person examining contents: 8/31/06 C214

Temp should be above freezing to 6°C

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

Client Notification/ Resolution:

Field Data Required? Y / N

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

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_Project Manager Review: AA Date: \_\_\_\_\_

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

## Sample Condition Upon Receipt Pittsburgh

Pace Analytical

Client Name: Southern Co Sew, Project #

30226434

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_Tracking #: 741360570606Custody Seal on Cooler/Box Present:  Yes  No Seals Intact:  Yes  No

Label	<u>NRM</u>
LIMS Login	<u>NRM</u>

Thermometer Used NA

Type of Ice: Wet Blue None

Cooler Temperature Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 2184117

Comments:	Yes	No	N/A
Chain of Custody Present:	/		1.
Chain of Custody Filled Out:	/		2.
Chain of Custody Relinquished:	/		3.
Sampler Name & Signature on COC:	/		4.
Sample Labels match COC:	/		6.
-Includes date/time/ID	Matrix: <u>WT</u>		
Samples Arrived within Hold Time:	/		6.
Short Hold Time Analysis (<72hr remaining):	/		7.
Rush Turn Around Time Requested:	/		8.
Sufficient Volume:	/		9.
Correct Containers Used:	/		10.
-Pace Containers Used:	/		
Containers Intact:	/		11.
Orthophosphate field filtered		/	12.
Organic Samples checked for dechlorination:		/	13.
Filtered volume received for Dissolved tests		/	14.
All containers have been checked for preservation.	/		15. <u>P1422</u>
All containers needing preservation are found to be in compliance with EPA recommendation,			
exceptions: VOA, coliform, TOC, O&G, Phenolics			Initial when completed: <u>21+</u> Date/time of preservation: <u>8/4/17</u> Lot # of added preservative
Headspace in VOA Vials (>6mm):		/	16.
Trip Blank Present:		/	17.
Trip Blank Custody Seals Present		/	
Rad Aqueous Samples Screened > 0.5 mrem/hr	/		Initial when completed: <u>21+</u> Date: <u>8/4/17</u>

## Client Notification/ Resolution:

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

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ A check in this box indicates that additional information has been stored in ereports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS, the review is in the Status section of the Workorder Edit Screen.



## Quality Control Sample Performance Assessment

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

*Analyst Must Manually Enter All Fields Highlighted in Yellow.*

Test:	Ra-228	Analyst:	VAL
Date:	8/11/2017	Worklist:	37124
Matrix:	DW		
<b>Method Blank Assessment</b>			
MB Sample ID:	1317976	MB Concentration:	-0.108
M/B Counting Uncertainty:	0.322	MB MDC:	0.774
MB Numerical Performance Indicator:	-0.66	MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass		
<b>Laboratory Control Sample Assessment</b>			
Count Date:	8/16/2017	LCSID:	N
Spike I.D.:	17-005	LCSID:	LCS37124
Spike Concentration (pCi/mL):	23.792	Volume Used (mL):	0.20
Volume Used (mL):	0.20	Aliquot Volume (L, g, F):	0.803
Aliquot Volume (L, g, F):	0.803	Target Conc. (nCi/L, g, F):	5.929
Target Conc. (nCi/L, g, F):	5.929	Uncertainty (Calculated):	0.427
Uncertainty (Calculated):	0.427	Result (nCi/L, g, F):	6.626
Result (nCi/L, g, F):	6.626	LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.754
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.754	Numerical Performance Indicator:	1.58
Numerical Performance Indicator:	1.58	Percent Recovery:	111.76%
Percent Recovery:	111.76%	Status vs Numerical Indicator:	N/A
Status vs Numerical Indicator:	N/A	Status vs Recovery:	Pass
<b>Duplicate Sample Assessment</b>			
Sample I.D.:	30226434002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	
Duplicate Sample I.D.:	30226434002DUP		
Sample Result Counting Uncertainty (pCi/L, g, F):	2.219		
Sample Duplicate Result (pCi/L, g, F):	0.509		
Sample Duplicate Result (pCi/L, g, F):	2.137		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.493		
Are sample and/or duplicate results below MDC?	See Below #		
Duplicate Numerical Performance Indicator:	0.228		
Duplicate RPD:	3.79%		
Duplicate Status vs Numerical Indicator:	N/A		
Duplicate Status vs RPD:	Pass		
<b>Matrix Spike/Matrix Spike Duplicate Sample Assessment</b>			
Sample I.D.:	30226434002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	
Sample MS I.D.:	30226434002DUP		
Sample MSD I.D.:	30226434002		
Sample Matrix Spike Result:	30226434002DUP		
Sample Matrix Spike Duplicate Result:	30226434002		
Sample Matrix Spike Duplicate Uncertainty (pCi/L, g, F):	0.493		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.228		
Matrix Spike Duplicate Numerical Performance Indicator:	3.79%		
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	N/A		
MS/ MSD Duplicate Status vs Numerical Indicator:	Pass		
MS/ MSD Duplicate Status vs RPD:	Pass		

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

*Initial 1A*



## Quality Control Sample Performance Assessment

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*Analyst Must Manually Enter All Fields Highlighted in Yellow.*

Test: Ra-226		Analyst: JC2		Sample Collection Date:	
Date: 8/11/2017		Worklist: 37123 DW		Sample I.D.	
Matrix: MB		Sample Matrix Control Assessment		Sample MS I.D.	
Method Blank Assessment		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); MSD Target Conc. (pCi/L, g, F); Spike uncertainty (calculated); Sample Result:		Sample MSD I.D.	
MB Sample ID		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Spike I.D.:	
MB Concentration:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample I.D.	
MB Counting Uncertainty:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample MS I.D.	
MB MDC:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample MSD I.D.	
MB Numerical Performance Indicator:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Spike I.D.:	
MB Status vs Numerical Indicator:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample I.D.	
MB Status vs. MDC:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample MS I.D.	
MB Status vs. MDC:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample MSD I.D.	
Laboratory Control Sample Assessment		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Spike I.D.:	
Count Date:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample I.D.	
Spike I.D.:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample MS I.D.	
Spike Concentration (pCi/mL):		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample MSD I.D.	
Volume Used (mL):		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Spike I.D.:	
Aliquot Volume (L, g, F):		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample I.D.	
Target Conc. (pCi/L, g, F):		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample MS I.D.	
Uncertainty (Calculated):		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample MSD I.D.	
Result (pCi/L, g, F):		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Spike I.D.:	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample I.D.	
Numerical Performance Indicator:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample MS I.D.	
Percent Recovery:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample MSD I.D.	
Status vs Numerical Indicator:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Spike I.D.:	
Status vs Recovery:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample I.D.	
Status vs Recovery:		MS/MSD Decay Corrected Spike Concentration (pCi/mL); Spike Volume Used in MS (mL); Spike Volume Used in MSD (mL); MS Aliquot (L, g, F); MS Target Conc. (pCi/L, g, F); MSD Aliquot (L, g, F); Spike uncertainty (calculated); Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result:		Sample MS I.D.	
Pass					
Duplicate Sample Assessment					
<p>Sample I.D.: 30225850001 DUP Duplicate Sample I.D.: 30225850001 DUP Sample Result (pCi/L, g, F): 0.289 Sample Result Counting Uncertainty (pCi/L, g, F): 0.185 Sample Duplicate Result (pCi/L, g, F): 0.493 Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.219 See Below ## 30225850001 DUP Are sample and/or duplicate results below MDC? 1.391 Duplicate Numerical Performance Indicator: 51.95% Duplicate RPD: N/A Duplicate Status vs Numerical Indicator: Fail***</p>					
<p>Comments: ## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC. Comments: ***Batch must be re-prepped due to unacceptable precision.</p>					



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

**Prepared For:**

**Georgia Power  
2480 Maner Road  
Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AAH0564**

**August 25, 2017**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

A handwritten signature in black ink, appearing to read "Betty McManus".

Project Manager

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All test results relate only to the samples analyzed.



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MCM-11	AAH0564-01	Ground Water	08/15/17 10:11	08/17/17 09:10
MCM-09	AAH0564-02	Ground Water	08/15/17 10:42	08/17/17 09:10
MCM-10	AAH0564-03	Ground Water	08/15/17 13:40	08/17/17 09:10
MCM-12	AAH0564-04	Ground Water	08/15/17 13:38	08/17/17 09:10
MCM-08	AAH0564-05	Ground Water	08/15/17 15:15	08/17/17 09:10
MCM-17	AAH0564-06	Ground Water	08/15/17 17:10	08/17/17 09:10
Dup-1	AAH0564-07	Ground Water	08/15/17 00:00	08/17/17 09:10
FBL081517	AAH0564-08	Water	08/15/17 16:17	08/17/17 09:10
EQBL081517	AAH0564-09	Water	08/15/17 16:22	08/17/17 09:10
MCM-02	AAH0564-10	Ground Water	08/16/17 10:10	08/17/17 09:10
MCM-14	AAH0564-11	Ground Water	08/16/17 11:52	08/17/17 09:10
MCM-01	AAH0564-12	Ground Water	08/16/17 15:56	08/17/17 09:10
Dup-2	AAH0564-13	Ground Water	08/16/17 00:00	08/17/17 09:10
FBL081617	AAH0564-14	Water	08/16/17 13:12	08/17/17 09:10
EQBL081617	AAH0564-15	Water	08/16/17 13:16	08/17/17 09:10



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

### Case Narrative

The Radium analysis by methods EPA 9315/9320 was performed by Pace-Pittsburgh, 1638 Roseytown Road - Suites 2, 3, 4, Greensburg PA 15601. The Pace-Pittsburgh lab contact is Jacquelyn Collins at 724-850-5612.



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: MCM-11

Lab Number ID: AAH0564-01

Date/Time Sampled: 8/15/2017 10:11:00AM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	90	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	15	0.25	0.02	mg/L	EPA 300.0	B-01	1	08/18/17 10:33	08/18/17 20:50	7080493	RLC
Fluoride	0.29	0.30	0.03	mg/L	EPA 300.0	J	1	08/18/17 10:33	08/18/17 20:50	7080493	RLC
Sulfate	24	1.0	0.02	mg/L	EPA 300.0		1	08/18/17 10:33	08/18/17 20:50	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Arsenic	0.0117	0.0050	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Barium	0.0247	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Beryllium	0.00009	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Boron	0.0448	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Calcium	4.09	0.500	0.0404	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Chromium	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Cobalt	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 17:59	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 14:54	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: MCM-09

Lab Number ID: AAH0564-02

Date/Time Sampled: 8/15/2017 10:42:00AM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3940	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	1600	25	2.4	mg/L	EPA 300.0	B-01	100	08/18/17 10:33	08/22/17 23:42	7080493	RLC
Fluoride	0.06	0.30	0.03	mg/L	EPA 300.0	J	1	08/18/17 10:33	08/18/17 21:10	7080493	RLC
Sulfate	610	100	1.7	mg/L	EPA 300.0		100	08/18/17 10:33	08/22/17 23:42	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Barium	0.143	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Beryllium	0.0005	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/23/17 13:37	7080442	CSW
Boron	0.0829	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Calcium	304	25.0	2.02	mg/L	EPA 6020B		50	08/20/17 13:30	08/21/17 18:29	7080442	CSW
Chromium	0.0008	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Lithium	0.0500	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:23	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 14:57	7080538	MTC



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: MCM-10

Lab Number ID: AAH0564-03

Date/Time Sampled: 8/15/2017 1:40:00PM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3830	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	760	25	2.4	mg/L	EPA 300.0	B-01	100	08/18/17 10:33	08/23/17 00:03	7080493	RLC
Fluoride	1.9	0.30	0.03	mg/L	EPA 300.0		1	08/18/17 10:33	08/18/17 21:31	7080493	RLC
Sulfate	1600	100	1.7	mg/L	EPA 300.0		100	08/18/17 10:33	08/23/17 00:03	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Arsenic	0.0418	0.0050	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Barium	0.0203	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Beryllium	0.0151	0.0030	0.00009	mg/L	EPA 6020B		1	08/20/17 13:30	08/23/17 13:43	7080442	CSW
Boron	0.242	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Calcium	58.8	25.0	2.02	mg/L	EPA 6020B		50	08/20/17 13:30	08/21/17 18:40	7080442	CSW
Chromium	0.0044	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Cobalt	0.0328	0.0100	0.0003	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Selenium	0.0402	0.0100	0.0018	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Lithium	0.106	0.0500	0.0015	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:34	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 14:59	7080538	MTC



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(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: MCM-12

Lab Number ID: AAH0564-04

Date/Time Sampled: 8/15/2017 1:38:00PM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1840	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	750	5.0	0.48	mg/L	EPA 300.0	B-01	20	08/18/17 10:33	08/23/17 00:24	7080493	RLC
Fluoride	1.2	0.30	0.03	mg/L	EPA 300.0		1	08/18/17 10:33	08/18/17 21:52	7080493	RLC
Sulfate	3.2	1.0	0.02	mg/L	EPA 300.0		1	08/18/17 10:33	08/18/17 21:52	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Arsenic	0.0006	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Barium	0.126	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Beryllium	0.0005	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/23/17 13:55	7080442	CSW
Boron	1.14	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/23/17 13:55	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Calcium	8.05	0.500	0.0404	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Chromium	0.0050	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Cobalt	0.0005	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Selenium	0.0021	0.0100	0.0018	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Lithium	0.0123	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:46	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:02	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: MCM-08

Lab Number ID: AAH0564-05

Date/Time Sampled: 8/15/2017 3:15:00PM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3160	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	1700	25	2.4	mg/L	EPA 300.0		100	08/18/17 10:33	08/24/17 11:35	7080493	RLC
Fluoride	0.21	0.30	0.03	mg/L	EPA 300.0	J	1	08/18/17 10:33	08/19/17 00:16	7080493	RLC
Sulfate	360	20	0.34	mg/L	EPA 300.0		20	08/18/17 10:33	08/23/17 00:44	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Arsenic	0.0207	0.0050	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Barium	0.451	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Beryllium	0.0003	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/23/17 14:00	7080442	CSW
Boron	0.338	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Calcium	27.7	25.0	2.02	mg/L	EPA 6020B		50	08/20/17 13:30	08/21/17 19:03	7080442	CSW
Chromium	0.0078	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Cobalt	0.0018	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Molybdenum	0.0030	0.0100	0.0010	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Selenium	0.0081	0.0100	0.0018	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Lithium	0.0016	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 18:57	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:04	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: MCM-17

Lab Number ID: AAH0564-06

Date/Time Sampled: 8/15/2017 5:10:00PM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4820	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	2500	25	2.4	mg/L	EPA 300.0		100	08/18/17 10:33	08/24/17 11:55	7080493	RLC
Fluoride	1.2	0.30	0.03	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 00:37	7080493	RLC
Sulfate	210	20	0.34	mg/L	EPA 300.0		20	08/18/17 10:33	08/23/17 01:05	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Arsenic	0.0015	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Barium	0.0579	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Beryllium	0.0002	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Boron	2.10	2.00	0.298	mg/L	EPA 6020B		50	08/20/17 13:30	08/21/17 21:15	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Calcium	117	25.0	2.02	mg/L	EPA 6020B		50	08/20/17 13:30	08/21/17 21:15	7080442	CSW
Chromium	0.0117	0.0100	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Cobalt	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Lead	0.0002	0.0050	0.00007	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Selenium	0.0025	0.0100	0.0018	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Lithium	0.0160	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 21:09	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:11	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AAH0564-07

Date/Time Sampled: 8/15/2017 12:00:00AM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	68	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	15	0.25	0.02	mg/L	EPA 300.0	B-01	1	08/18/17 10:33	08/19/17 00:58	7080493	RLC
Fluoride	0.23	0.30	0.03	mg/L	EPA 300.0	J	1	08/18/17 10:33	08/19/17 00:58	7080493	RLC
Sulfate	22	1.0	0.02	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 00:58	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Arsenic	0.0120	0.0050	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Barium	0.0245	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/20/17 13:30	08/23/17 14:06	7080442	CSW
Boron	0.0595	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Calcium	4.65	0.500	0.0404	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Chromium	0.0012	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Cobalt	0.0005	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Lead	0.0040	0.0050	0.00007	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:09	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:13	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: FBL081517

Lab Number ID: AAH0564-08

Date/Time Sampled: 8/15/2017 4:17:00PM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	0.24	0.25	0.02	mg/L	EPA 300.0	B-01, J	1	08/18/17 10:33	08/19/17 01:18	7080493	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 01:18	7080493	RLC
Sulfate	0.08	1.0	0.02	mg/L	EPA 300.0	J	1	08/18/17 10:33	08/19/17 01:18	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/20/17 13:30	08/23/17 14:12	7080442	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:32	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:16	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: EQBL081517

Lab Number ID: AAH0564-09

Date/Time Sampled: 8/15/2017 4:22:00PM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	0.11	0.25	0.02	mg/L	EPA 300.0	B-01, J	1	08/18/17 10:33	08/19/17 01:39	7080493	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 01:39	7080493	RLC
Sulfate	0.05	1.0	0.02	mg/L	EPA 300.0	J	1	08/18/17 10:33	08/19/17 01:39	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/20/17 13:30	08/23/17 14:17	7080442	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:37	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:20	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: MCM-02

Lab Number ID: AAH0564-10

Date/Time Sampled: 8/16/2017 10:10:00AM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	124	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	41	0.25	0.02	mg/L	EPA 300.0	B-01	1	08/18/17 10:33	08/19/17 02:00	7080493	RLC
Fluoride	0.13	0.30	0.03	mg/L	EPA 300.0	J	1	08/18/17 10:33	08/19/17 02:00	7080493	RLC
Sulfate	41	1.0	0.02	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 02:00	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Barium	0.116	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Beryllium	0.0002	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/23/17 14:23	7080442	CSW
Boron	0.148	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Calcium	5.25	0.500	0.0404	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Cobalt	0.0005	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:43	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:22	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: MCM-14

Lab Number ID: AAH0564-11

Date/Time Sampled: 8/16/2017 11:52:00AM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3010	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	1500	12	1.2	mg/L	EPA 300.0	B-01	50	08/18/17 10:33	08/23/17 01:26	7080493	RLC
Fluoride	0.45	0.30	0.03	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 02:20	7080493	RLC
Sulfate	130	50	0.85	mg/L	EPA 300.0		50	08/18/17 10:33	08/23/17 01:26	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Arsenic	0.0007	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Barium	0.0330	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Beryllium	0.0002	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/23/17 14:29	7080442	CSW
Boron	0.539	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Calcium	99.6	25.0	2.02	mg/L	EPA 6020B		50	08/20/17 13:30	08/21/17 20:00	7080442	CSW
Chromium	0.0019	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Lead	0.00008	0.0050	0.00007	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Selenium	0.0018	0.0100	0.0018	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Lithium	0.0145	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 19:55	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:25	7080538	MTC



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: MCM-01

Lab Number ID: AAH0564-12

Date/Time Sampled: 8/16/2017 3:56:00PM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	65	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	14	0.25	0.02	mg/L	EPA 300.0	B-01	1	08/18/17 10:33	08/19/17 03:02	7080493	RLC
Fluoride	0.03	0.30	0.03	mg/L	EPA 300.0	J	1	08/18/17 10:33	08/19/17 03:02	7080493	RLC
Sulfate	36	1.0	0.02	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 03:02	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Arsenic	0.0038	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Barium	0.0522	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/20/17 13:30	08/23/17 14:52	7080442	CSW
Boron	0.0435	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Calcium	8.70	0.500	0.0404	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:06	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:27	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: Dup-2

Lab Number ID: AAH0564-13

Date/Time Sampled: 8/16/2017 12:00:00AM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	138	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	10	0.25	0.02	mg/L	EPA 300.0	B-01	1	08/18/17 10:33	08/19/17 03:22	7080493	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 03:22	7080493	RLC
Sulfate	36	1.0	0.02	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 03:22	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Arsenic	0.0039	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Barium	0.0567	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/20/17 13:30	08/23/17 14:58	7080442	CSW
Boron	0.0433	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Calcium	8.49	0.500	0.0404	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:17	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:29	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

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110 Technology Parkway, Peachtree Corners, GA 30092  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: FBL081617

Lab Number ID: AAH0564-14

Date/Time Sampled: 8/16/2017 1:12:00PM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	0.14	0.25	0.02	mg/L	EPA 300.0	B-01, J	1	08/18/17 10:33	08/19/17 05:08	7080493	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 05:08	7080493	RLC
Sulfate	0.04	1.0	0.02	mg/L	EPA 300.0	J	1	08/18/17 10:33	08/19/17 05:08	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/20/17 13:30	08/23/17 15:03	7080442	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:40	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:32	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

Report No.: AAH0564

Project: CCR Event

Client ID: EQBL081617

Lab Number ID: AAH0564-15

Date/Time Sampled: 8/16/2017 1:16:00PM

Date/Time Received: 8/17/2017 9:10:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	ND	25	10	mg/L	SM 2540 C		1	08/22/17 13:00	08/22/17 13:00	7080578	JPT
<b>Inorganic Anions</b>											
Chloride	0.07	0.25	0.02	mg/L	EPA 300.0	B-01, J	1	08/18/17 10:33	08/19/17 05:29	7080493	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 05:29	7080493	RLC
Sulfate	ND	1.0	0.02	mg/L	EPA 300.0		1	08/18/17 10:33	08/19/17 05:29	7080493	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/20/17 13:30	08/23/17 15:09	7080442	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/20/17 13:30	08/21/17 20:46	7080442	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 15:34	7080538	MTC



## PACE ANALYTICAL SERVICES, LLC.

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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

**Report No.: AAH0564**

### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### **Batch 7080578 - SM 2540 C**

Blank (7080578-BLK1)							Prepared & Analyzed: 08/22/17			
Total Dissolved Solids	ND	25	10	mg/L						
LCS (7080578-BS1)							Prepared & Analyzed: 08/22/17			
Total Dissolved Solids	390	25	10	mg/L	400.00		98	84-108		
Duplicate (7080578-DUP1)							Source: AAH0564-06 Prepared & Analyzed: 08/22/17			
Total Dissolved Solids	4740	25	10	mg/L		4820		2	10	
Duplicate (7080578-DUP2)							Source: AAH0564-15 Prepared & Analyzed: 08/22/17			
Total Dissolved Solids	ND	25	10	mg/L		ND				10



## PACE ANALYTICAL SERVICES, LLC.

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Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

**Report No.: AAH0564**

### Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080493 - EPA 300.0</b>											
<b>Blank (7080493-BLK1)</b>											
Chloride	0.05	0.25	0.02	mg/L							J
Fluoride	ND	0.30	0.03	mg/L							
Sulfate	ND	1.0	0.02	mg/L							
<b>LCS (7080493-BS1)</b>											
Chloride	10.2	0.25	0.02	mg/L	10.020		102	90-110			
Fluoride	10.2	0.30	0.03	mg/L	10.020		102	90-110			
Sulfate	10.4	1.0	0.02	mg/L	10.050		103	90-110			
<b>Matrix Spike (7080493-MS1)</b>											
<b>Source: AAH0564-04</b>						Prepared & Analyzed: 08/18/17					
Chloride	330	0.25	0.02	mg/L	10.020	349	NR	90-110			QM-02
Fluoride	11.5	0.30	0.03	mg/L	10.020	1.23	102	90-110			
Sulfate	12.7	1.0	0.02	mg/L	10.050	3.18	94	90-110			
<b>Matrix Spike (7080493-MS2)</b>											
<b>Source: AAH0564-11</b>						Prepared: 08/18/17 Analyzed: 08/19/17					
Chloride	377	0.25	0.02	mg/L	10.020	415	NR	90-110			QM-02
Fluoride	10.5	0.30	0.03	mg/L	10.020	0.45	100	90-110			
Sulfate	121	1.0	0.02	mg/L	10.050	124	NR	90-110			QM-02
<b>Matrix Spike Dup (7080493-MSD1)</b>											
<b>Source: AAH0564-04</b>						Prepared & Analyzed: 08/18/17					
Chloride	330	0.25	0.02	mg/L	10.020	349	NR	90-110	0.009	15	QM-02
Fluoride	11.5	0.30	0.03	mg/L	10.020	1.23	102	90-110	0.1	15	
Sulfate	12.6	1.0	0.02	mg/L	10.050	3.18	93	90-110	0.8	15	



# PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

**Report No.: AAH0564**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### **Batch 7080442 - EPA 3005A**

Blank (7080442-BLK1)						Prepared: 08/20/17 Analyzed: 08/21/17				
Antimony	ND	0.0030	0.0006	mg/L						
Arsenic	ND	0.0050	0.0005	mg/L						
Barium	ND	0.0100	0.0004	mg/L						
Beryllium	ND	0.0030	0.00009	mg/L						
Boron	ND	0.0400	0.0060	mg/L						
Cadmium	ND	0.0010	0.0001	mg/L						
Calcium	ND	0.500	0.0404	mg/L						
Chromium	ND	0.0100	0.0005	mg/L						
Cobalt	ND	0.0100	0.0003	mg/L						
Copper	ND	0.0250	0.0003	mg/L						
Lead	ND	0.0050	0.00007	mg/L						
Molybdenum	ND	0.0100	0.0010	mg/L						
Nickel	ND	0.0100	0.0005	mg/L						
Selenium	ND	0.0100	0.0018	mg/L						
Silver	ND	0.0100	0.0002	mg/L						
Thallium	ND	0.0010	0.00005	mg/L						
Vanadium	ND	0.0100	0.0012	mg/L						
Zinc	ND	0.0100	0.0012	mg/L						
Lithium	ND	0.0500	0.0015	mg/L						

LCS (7080442-BS1)						Prepared: 08/20/17 Analyzed: 08/21/17				
Antimony	0.107	0.0030	0.0006	mg/L	0.10000		107	80-120		
Arsenic	0.0966	0.0050	0.0005	mg/L	0.10000		97	80-120		
Barium	0.0981	0.0100	0.0004	mg/L	0.10000		98	80-120		
Beryllium	0.0928	0.0030	0.00009	mg/L	0.10000		93	80-120		
Boron	1.02	0.0400	0.0060	mg/L	1.0000		102	80-120		
Cadmium	0.104	0.0010	0.0001	mg/L	0.10000		104	80-120		
Calcium	1.01	0.500	0.0404	mg/L	1.0000		101	80-120		
Chromium	0.109	0.0100	0.0005	mg/L	0.10000		109	80-120		
Cobalt	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120		
Copper	0.100	0.0250	0.0003	mg/L	0.10000		100	80-120		
Lead	0.0943	0.0050	0.00007	mg/L	0.10000		94	80-120		
Molybdenum	0.107	0.0100	0.0010	mg/L	0.10000		107	80-120		
Nickel	0.0985	0.0100	0.0005	mg/L	0.10000		99	80-120		
Selenium	0.0941	0.0100	0.0018	mg/L	0.10000		94	80-120		
Silver	0.105	0.0100	0.0002	mg/L	0.10000		105	80-120		
Thallium	0.0954	0.0010	0.00005	mg/L	0.10000		95	80-120		
Vanadium	0.109	0.0100	0.0012	mg/L	0.10000		109	80-120		
Zinc	0.0973	0.0100	0.0012	mg/L	0.10000		97	80-120		
Lithium	0.101	0.0500	0.0015	mg/L	0.10000		101	80-120		



# PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

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August 25, 2017

**Report No.: AAH0564**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### **Batch 7080442 - EPA 3005A**

Matrix Spike (7080442-MS1)		Source: AAH0564-01			Prepared: 08/20/17 Analyzed: 08/21/17						
Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	0.107	0.0030	0.0006	mg/L	0.10000	ND	107	75-125			
Arsenic	0.106	0.0050	0.0005	mg/L	0.10000	0.0117	95	75-125			
Barium	0.125	0.0100	0.0004	mg/L	0.10000	0.0247	100	75-125			
Beryllium	0.0934	0.0030	0.00009	mg/L	0.10000	0.00009	93	75-125			
Boron	1.05	0.0400	0.0060	mg/L	1.0000	0.0448	101	75-125			
Cadmium	0.102	0.0010	0.0001	mg/L	0.10000	ND	102	75-125			
Calcium	5.08	0.500	0.0404	mg/L	1.0000	4.09	99	75-125			
Chromium	0.106	0.0100	0.0005	mg/L	0.10000	0.0006	105	75-125			
Cobalt	0.103	0.0100	0.0003	mg/L	0.10000	0.0004	103	75-125			
Copper	0.0986	0.0250	0.0003	mg/L	0.10000	ND	99	75-125			
Lead	0.0924	0.0050	0.00007	mg/L	0.10000	ND	92	75-125			
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000	ND	106	75-125			
Nickel	0.0972	0.0100	0.0005	mg/L	0.10000	0.0005	97	75-125			
Selenium	0.0914	0.0100	0.0018	mg/L	0.10000	ND	91	75-125			
Silver	0.102	0.0100	0.0002	mg/L	0.10000	ND	102	75-125			
Thallium	0.0949	0.0010	0.00005	mg/L	0.10000	ND	95	75-125			
Vanadium	0.108	0.0100	0.0012	mg/L	0.10000	ND	108	75-125			
Zinc	0.102	0.0100	0.0012	mg/L	0.10000	0.0063	96	75-125			
Lithium	0.105	0.0500	0.0015	mg/L	0.10000	ND	105	75-125			

Matrix Spike Dup (7080442-MSD1)		Source: AAH0564-01			Prepared: 08/20/17 Analyzed: 08/21/17						
Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	0.110	0.0030	0.0006	mg/L	0.10000	ND	110	75-125	2	20	
Arsenic	0.109	0.0050	0.0005	mg/L	0.10000	0.0117	98	75-125	3	20	
Barium	0.127	0.0100	0.0004	mg/L	0.10000	0.0247	102	75-125	2	20	
Beryllium	0.0940	0.0030	0.00009	mg/L	0.10000	0.00009	94	75-125	0.7	20	
Boron	1.08	0.0400	0.0060	mg/L	1.0000	0.0448	103	75-125	2	20	
Cadmium	0.102	0.0010	0.0001	mg/L	0.10000	ND	102	75-125	0.5	20	
Calcium	5.13	0.500	0.0404	mg/L	1.0000	4.09	104	75-125	1	20	
Chromium	0.111	0.0100	0.0005	mg/L	0.10000	0.0006	111	75-125	5	20	
Cobalt	0.106	0.0100	0.0003	mg/L	0.10000	0.0004	105	75-125	2	20	
Copper	0.102	0.0250	0.0003	mg/L	0.10000	ND	102	75-125	3	20	
Lead	0.0948	0.0050	0.00007	mg/L	0.10000	ND	95	75-125	3	20	
Molybdenum	0.109	0.0100	0.0010	mg/L	0.10000	ND	109	75-125	3	20	
Nickel	0.101	0.0100	0.0005	mg/L	0.10000	0.0005	101	75-125	4	20	
Selenium	0.0961	0.0100	0.0018	mg/L	0.10000	ND	96	75-125	5	20	
Silver	0.105	0.0100	0.0002	mg/L	0.10000	ND	105	75-125	3	20	
Thallium	0.0962	0.0010	0.00005	mg/L	0.10000	ND	96	75-125	1	20	
Vanadium	0.113	0.0100	0.0012	mg/L	0.10000	ND	113	75-125	5	20	
Zinc	0.108	0.0100	0.0012	mg/L	0.10000	0.0063	101	75-125	5	20	
Lithium	0.106	0.0500	0.0015	mg/L	0.10000	ND	106	75-125	2	20	



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### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### **Batch 7080442 - EPA 3005A**

Post Spike (7080442-PS1)		Source: AAH0564-01			Prepared: 08/20/17 Analyzed: 08/21/17			
Antimony	102		ug/L	100.00	0.551	102	80-120	
Arsenic	107		ug/L	100.00	11.7	95	80-120	
Barium	123		ug/L	100.00	24.7	98	80-120	
Beryllium	92.0		ug/L	100.00	0.0924	92	80-120	
Boron	1070		ug/L	1000.0	44.8	103	80-120	
Cadmium	99.4		ug/L	100.00	0.0574	99	80-120	
Calcium	5110		ug/L	1000.0	4090	102	80-120	
Chromium	113		ug/L	100.00	0.560	113	80-120	
Cobalt	108		ug/L	100.00	0.364	108	80-120	
Copper	102		ug/L	100.00	0.0797	102	80-120	
Lead	93.5		ug/L	100.00	0.0342	93	80-120	
Molybdenum	108		ug/L	100.00	0.392	107	80-120	
Nickel	101		ug/L	100.00	0.545	100	80-120	
Selenium	95.7		ug/L	100.00	0.286	95	80-120	
Silver	101		ug/L	100.00	0.0037	101	80-120	
Thallium	94.5		ug/L	100.00	0.0518	94	80-120	
Vanadium	113		ug/L	100.00	-0.784	113	80-120	
Zinc	105		ug/L	100.00	6.26	99	80-120	
Lithium	104		ug/L	100.00	1.37	103	80-120	

#### **Batch 7080538 - EPA 7470A**

Blank (7080538-BLK1)					Prepared & Analyzed: 08/22/17			
Mercury	ND	0.00050	0.000036	mg/L				
LCS (7080538-BS1)					Prepared & Analyzed: 08/22/17			
Mercury	0.00239	0.00050	0.000036	mg/L	2.5000E-3	96	80-120	



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2017

**Report No.: AAH0564**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080538 - EPA 7470A</b>											
<b>Matrix Spike (7080538-MS1)</b> <b>Source: AAH0564-02</b> Prepared & Analyzed: 08/22/17											
Mercury      0.00209      0.00050      0.000036      mg/L      2.5000E-3      ND      84      75-125											
<b>Matrix Spike Dup (7080538-MSD1)</b> <b>Source: AAH0564-02</b> Prepared & Analyzed: 08/22/17											
Mercury      0.00214      0.00050      0.000036      mg/L      2.5000E-3      ND      86      75-125      2      20											
<b>Post Spike (7080538-PS1)</b> <b>Source: AAH0564-02</b> Prepared & Analyzed: 08/22/17											
Mercury      1.64      ug/L      1.6667      -0.00375      98      80-120											



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August 25, 2017

## Legend

### Definition of Laboratory Terms

<b>ND</b>	- Not Detected at levels equal to or greater than the MDL
<b>BRL</b>	- Not Detected at levels equal to or greater than the RL
<b>RL</b>	- Reporting Limit
	<b>MDL</b> - Method Detection Limit
<b>SOP</b>	- Method run per Pace Standard Operating Procedure
<b>CFU</b>	- Colony Forming Units
<b>DF</b>	- Dilution Factor
	<b>TIC</b> - Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

**QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.

**J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

**B-01** Analyte was detected in the associated method blank at an estimated level equal to or greater than the MDL. Sample values reported as greater than the MDL and less than 10x the method blank value are reported as estimated values.

**Note: Unless otherwise noted, all results are reported on an as received basis.**

**CHAIN OF CUSTODY RECORD**



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**Pace Analytical Services, LLC - Atlanta GA**  
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1110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
(770) 734-4200 : FAX (770) 734-4201

PAGE: L OF

ANALYSIS REQUESTED									
CLIENT NAME: Southern Company Services		CONTAINER TYPE							
CLIENT ADDRESS/FAX NUMBER: 241 Ralph McGill Bluffee Bldg #5		PRESERVATION	A	P - PLASTIC	L	PRESERVATION	P - PLASTIC		
REPORT TO: Laura Petty		# of	B	A - AMBER GLASS	A	1 - HCl, ≤6°C			
John Abernethy		C	G	G - CLEAR GLASS	B	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C			
REQUESTED COMPLETION DATE:		O	V	V - VOA VIAL	C	3 - HNO <sub>3</sub>			
PROJECT NAME/STATE: Plant Mc Manus CCR		N	S	S - STERILE	D	4 - NaOH, ≤6°C			
PROJECT #: 100-111-000		T	R	O - OTHER	E	5 - NaOH/ZnAc, ≤6°C			
PROJECT NAME/STATE: Plant Mc Manus CCR		A	S	*MATRIX CODES:			F	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
		I		DW - DRINKING WATER	G	7 - ≤35°C not frozen	H		
		J		WW - WASTEWATER	H		I		
		K		GW - GROUNDWATER	I		J		
		L		SW - SURFACE WATER	J		K		
		M		ST - STORM WATER	K		L		
		N		W - WATER	L		M		
		O		P - PRODUCT	M		N		
REMARKS/ADDITIONAL INFORMATION									
Collection DATE	Collection TIME	MATRIX CODE	SAMPLE IDENTIFICATION	→					→
9/15/17	1011	GW	X MCM-11	1					1
8/15/17	1042	GW	X MCM-09	2					2
8/15/17	1340	GW	X MCM-10	3					3
8/15/17	1338	GW	X MCM-12	4					4
8/15/17	1515	GW	X MCM-08	5					5
8/15/17	1540	GW	X MCM-17	6					6
8/15/17	—	GW	X Dwp-1	7					7
8/15/17	1617	W	X FBL081017	8					8
8/15/17	1622	W	X EQBL081517	9					9
RELINQUISHED BY: <u>Robert M. Wilson</u> DATE/TIME: <u>8/15/17 1730</u>									
RELINQUISHED BY: <u>Robert M. Wilson</u> DATE/TIME: <u>8/15/17 1730</u>									
SAMPLE SHIPPED VIA: UPS COURIER CLIENT OTHER FS Custody Seal: Broken # of Coolers Not Present NA									
RECEIVED BY LAB: <u>Robert M. Wilson</u> DATE/TIME: <u>8/15/17 1730</u> Temperature: <u>20.8 Max.</u> Min: <u>20.8 Max.</u>									
LAB USE ONLY LAB #: <u>A-10564</u> Entered into LIMS: Tracking #: <u>770027849001</u>									

**CHAIN OF CUSTODY RECORD**

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(770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:		ANALYSIS REQUESTED										PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:	# of	C	D	E	F	G	H	I	J	L	CONTAINER TYPE
241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308		PRESERVATION:		3	7	3	7	3	7	3	7	A	P - PLASTIC
REPORT TO: Lauren Porti 396 Abrahams		# of		C	O	N	T	A	N	M	U	B	A - AMBER GLASS
REQUESTED COMPLETION DATE:		PO #:		O	N	T	A	N	M	U		C	G - CLEAR GLASS
PROJECT NAME/STATE:				N	E	R	S	N	M	U		D	V - VOA VIAL
PROJECT #: Plant McPherson CCR				E	R	S		E	W			F	S - STERILE
				R	S			R	W			G	O - OTHER
				S				S				H	7 - ≤6°C not frozen
												I	1 - HCl, ≤6°C
												J	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C
												K	3 - HNO <sub>3</sub>
												L	4 - NaOH, ≤6°C
												M	5 - NaOH/ZnAc, ≤6°C
												N	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C
												O	7 - ≤6°C not frozen
												P	"MATRIX CODES:
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## Sample Condition Upon Receipt

Client Name: GIA PowerProject # AAH 0564Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace OtherTracking #: 7700 2784 9601Custody Seal on Cooler/Box Present:  Yes  no Seals intact:  Yes  no

Optional:
Proj. Due Date:
Proj. Name:

Packing Material:  Bubble Wrap  Bubble Bags  None  OtherThermometer Used IR-4 Type of Ice:  Wet  Blue  NoneCooler Temperature 0' 8 Biological Tissue is Frozen: Yes  No

Temp should be above freezing to 6°C Comments:

 Samples on ice, cooling process has begunDate and Initials of person examining contents: 8/17/17 MR

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

Client Notification/ Resolution:

Field Data Required? Y / N

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

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

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



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### LOG-IN CHECKLIST

Printed: 8/17/2017 4:11:17PM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 08/17/17 09:10

**Work Order:** AAH0564  
**Logged In By:** Mohammad M. Rahman

### OBSERVATIONS

<b>#Samples:</b> 15	<b>#Containers:</b> 64
<b>Minimum Temp(C):</b> 0.8	<b>Maximum Temp(C):</b> 0.8
<b>Custody Seal(s) Used:</b> Yes	

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

**Comments:**

September 08, 2017

Mr. Joju Abraham  
Georgia Power  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: AAH0564 PLANT McManus  
Pace Project No.: 30227596

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 18, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
(724)850-5612  
Project Manager

Enclosures



#### **REPORT OF LABORATORY ANALYSIS**

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## CERTIFICATIONS

Project: AAH0564 PLANT McManus  
 Pace Project No.: 30227596

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Montana Certification #: Cert 0082
L-A-B DOD-ELAP Accreditation #: L2417	Nebraska Certification #: NE-05-29-14
Alabama Certification #: 41590	Nevada Certification #: PA014572015-1
Arizona Certification #: AZ0734	New Hampshire/TNI Certification #: 2976
Arkansas Certification	New Jersey/TNI Certification #: PA 051
California Certification #: 04222CA	New Mexico Certification #: PA01457
Colorado Certification	New York/TNI Certification #: 10888
Connecticut Certification #: PH-0694	North Carolina Certification #: 42706
Delaware Certification	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Oregon/TNI Certification #: PA200002
Georgia Certification #: C040	Pennsylvania/TNI Certification #: 65-00282
Guam Certification	Puerto Rico Certification #: PA01457
Hawaii Certification	Rhode Island Certification #: 65-00282
Idaho Certification	South Dakota Certification
Illinois Certification	Tennessee Certification #: TN2867
Indiana Certification	Texas/TNI Certification #: T104704188-14-8
Iowa Certification #: 391	Utah/TNI Certification #: PA014572015-5
Kansas/TNI Certification #: E-10358	USDA Soil Permit #: P330-14-00213
Kentucky Certification #: 90133	Vermont Dept. of Health: ID# VT-0282
Louisiana DHH/TNI Certification #: LA140008	Virgin Island/PADEP Certification
Louisiana DEQ/TNI Certification #: 4086	Virginia/VELAP Certification #: 460198
Maine Certification #: PA00091	Washington Certification #: C868
Maryland Certification #: 308	West Virginia DEP Certification #: 143
Massachusetts Certification #: M-PA1457	West Virginia DHHR Certification #: 9964C
Michigan/PADEP Certification	Wisconsin Certification
Missouri Certification #: 235	Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAH0564 PLANT McManus  
Pace Project No.: 30227596

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30227596001	MCM-11	Water	08/15/17 10:11	08/18/17 10:00
30227596002	MCM-09	Water	08/15/17 10:42	08/18/17 10:00
30227596003	MCM-10	Water	08/15/17 13:40	08/18/17 10:00
30227596004	MCM-12	Water	08/15/17 13:38	08/18/17 10:00
30227596005	MCM-08	Water	08/15/17 15:15	08/18/17 10:00
30227596006	MCM-17	Water	08/15/17 17:10	08/18/17 10:00
30227596007	Dup-1	Water	08/15/17 00:00	08/18/17 10:00
30227596008	FBL081517	Water	08/15/17 16:17	08/18/17 10:00
30227596009	EQBL081517	Water	08/15/17 16:22	08/18/17 10:00
30227596010	MCM-02	Water	08/16/17 10:10	08/18/17 10:00
30227596011	MCM-14	Water	08/16/17 11:52	08/18/17 10:00
30227596012	MCM-01	Water	08/16/17 15:56	08/18/17 10:00
30227596013	Dup-2	Water	08/16/17 00:00	08/18/17 10:00
30227596014	FBL081617	Water	08/16/17 13:12	08/18/17 10:00
30227596015	EQBL081617	Water	08/16/17 13:16	08/18/17 10:00

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## SAMPLE ANALYTE COUNT

Project: AAH0564 PLANT McManus  
Pace Project No.: 30227596

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30227596001	MCM-11	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596002	MCM-09	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596003	MCM-10	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596004	MCM-12	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596005	MCM-08	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596006	MCM-17	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596007	Dup-1	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596008	FBL081517	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596009	EQBL081517	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596010	MCM-02	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596011	MCM-14	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596012	MCM-01	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227596013	Dup-2	EPA 9315	JC2	1

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## SAMPLE ANALYTE COUNT

Project: AAH0564 PLANT McManus  
Pace Project No.: 30227596

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30227596014	FBL081617	EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
		EPA 9315	JC2	1
		EPA 9320	JLW	1
30227596015	EQBL081617	Total Radium Calculation	JAL	1
		EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAH0564 PLANT McManus

Pace Project No.: 30227596

<b>Sample: MCM-11</b>	<b>Lab ID: 30227596001</b>	Collected: 08/15/17 10:11	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.350 ± 0.235 (0.384)</b> C:90% T:NA	pCi/L	08/25/17 09:55
Radium-228	EPA 9320	<b>0.161 ± 0.264 (0.573)</b> C:74% T:92%	pCi/L	08/29/17 15:56
Total Radium	Total Radium Calculation	<b>0.511 ± 0.499 (0.957)</b>	pCi/L	09/01/17 09:18
				7440-14-4
<b>Sample: MCM-09</b>	<b>Lab ID: 30227596002</b>	Collected: 08/15/17 10:42	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>3.26 ± 0.764 (0.493)</b> C:93% T:NA	pCi/L	08/25/17 09:56
Radium-228	EPA 9320	<b>1.62 ± 0.491 (0.571)</b> C:77% T:87%	pCi/L	08/29/17 15:56
Total Radium	Total Radium Calculation	<b>4.88 ± 1.26 (1.06)</b>	pCi/L	09/01/17 09:18
				7440-14-4
<b>Sample: MCM-10</b>	<b>Lab ID: 30227596003</b>	Collected: 08/15/17 13:40	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>2.07 ± 0.557 (0.345)</b> C:92% T:NA	pCi/L	08/25/17 09:55
Radium-228	EPA 9320	<b>1.48 ± 0.637 (1.10)</b> C:70% T:84%	pCi/L	08/29/17 16:00
Total Radium	Total Radium Calculation	<b>3.55 ± 1.19 (1.45)</b>	pCi/L	09/01/17 09:18
				7440-14-4
<b>Sample: MCM-12</b>	<b>Lab ID: 30227596004</b>	Collected: 08/15/17 13:38	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.91 ± 0.515 (0.300)</b> C:91% T:NA	pCi/L	08/25/17 09:56
Radium-228	EPA 9320	<b>0.778 ± 0.472 (0.898)</b> C:80% T:78%	pCi/L	08/29/17 16:00
Total Radium	Total Radium Calculation	<b>2.69 ± 0.987 (1.20)</b>	pCi/L	09/01/17 09:18
				7440-14-4
<b>Sample: MCM-08</b>	<b>Lab ID: 30227596005</b>	Collected: 08/15/17 15:15	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>14.3 ± 2.16 (0.130)</b> C:87% T:NA	pCi/L	08/28/17 12:20
Radium-228	EPA 9320	<b>6.33 ± 1.36 (0.957)</b> C:79% T:85%	pCi/L	08/29/17 16:00
				15262-20-1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAH0564 PLANT McManus

Pace Project No.: 30227596

<b>Sample: MCM-08</b>	<b>Lab ID: 30227596005</b>	Collected: 08/15/17 15:15	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Total Radium	Total Radium Calculation	<b>20.6 ± 3.52 (1.09)</b>	pCi/L	09/01/17 09:18
				7440-14-4
<b>Sample: MCM-17</b>	<b>Lab ID: 30227596006</b>	Collected: 08/15/17 17:10	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.47 ± 0.469 (0.451)</b> C:86% T:NA	pCi/L	08/25/17 09:56
Radium-228	EPA 9320	<b>0.999 ± 0.578 (1.09)</b> C:75% T:74%	pCi/L	08/29/17 16:00
Total Radium	Total Radium Calculation	<b>2.47 ± 1.05 (1.54)</b>	pCi/L	09/01/17 09:18
				7440-14-4
<b>Sample: Dup-1</b>	<b>Lab ID: 30227596007</b>	Collected: 08/15/17 00:00	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.666 ± 0.294 (0.299)</b> C:92% T:NA	pCi/L	08/25/17 09:20
Radium-228	EPA 9320	<b>0.359 ± 0.390 (0.820)</b> C:78% T:92%	pCi/L	08/29/17 16:00
Total Radium	Total Radium Calculation	<b>1.03 ± 0.684 (1.12)</b>	pCi/L	09/01/17 09:18
				7440-14-4
<b>Sample: FBL081517</b>	<b>Lab ID: 30227596008</b>	Collected: 08/15/17 16:17	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.284 ± 0.199 (0.306)</b> C:93% T:NA	pCi/L	08/25/17 09:20
Radium-228	EPA 9320	<b>0.105 ± 0.399 (0.907)</b> C:80% T:74%	pCi/L	08/29/17 18:06
Total Radium	Total Radium Calculation	<b>0.389 ± 0.598 (1.21)</b>	pCi/L	09/01/17 09:18
				7440-14-4
<b>Sample: EQBL081517</b>	<b>Lab ID: 30227596009</b>	Collected: 08/15/17 16:22	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.171 ± 0.176 (0.336)</b> C:91% T:NA	pCi/L	08/25/17 09:20
Radium-228	EPA 9320	<b>-0.0602 ± 0.301 (0.736)</b> C:82% T:76%	pCi/L	08/29/17 18:06
Total Radium	Total Radium Calculation	<b>0.171 ± 0.477 (1.07)</b>	pCi/L	09/01/17 09:18
				7440-14-4

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAH0564 PLANT McManus

Pace Project No.: 30227596

**Sample: MCM-02**      Lab ID: **30227596010**      Collected: 08/16/17 10:10      Received: 08/18/17 10:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.622 ± 0.291 (0.342)</b> C:89% T:NA	pCi/L	08/25/17 09:20	13982-63-3	
Radium-228	EPA 9320	<b>0.489 ± 0.431 (0.863)</b> C:75% T:77%	pCi/L	08/29/17 18:06	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.11 ± 0.722 (1.21)</b>	pCi/L	09/01/17 09:18	7440-14-4	

**Sample: MCM-14**      Lab ID: **30227596011**      Collected: 08/16/17 11:52      Received: 08/18/17 10:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.747 ± 0.312 (0.335)</b> C:95% T:NA	pCi/L	08/25/17 09:20	13982-63-3	
Radium-228	EPA 9320	<b>1.51 ± 0.663 (1.07)</b> C:71% T:69%	pCi/L	08/29/17 18:06	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.26 ± 0.975 (1.41)</b>	pCi/L	09/01/17 09:18	7440-14-4	

**Sample: MCM-01**      Lab ID: **30227596012**      Collected: 08/16/17 15:56      Received: 08/18/17 10:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.880 ± 0.339 (0.340)</b> C:92% T:NA	pCi/L	08/25/17 09:20	13982-63-3	
Radium-228	EPA 9320	<b>0.129 ± 0.412 (0.928)</b> C:84% T:79%	pCi/L	08/29/17 18:31	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.01 ± 0.751 (1.27)</b>	pCi/L	09/01/17 09:18	7440-14-4	

**Sample: Dup-2**      Lab ID: **30227596013**      Collected: 08/16/17 00:00      Received: 08/18/17 10:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.437 ± 0.267 (0.424)</b> C:91% T:NA	pCi/L	08/25/17 09:20	13982-63-3	
Radium-228	EPA 9320	<b>0.794 ± 0.466 (0.839)</b> C:78% T:80%	pCi/L	08/29/17 18:31	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.23 ± 0.733 (1.26)</b>	pCi/L	09/01/17 09:18	7440-14-4	

**Sample: FBL081617**      Lab ID: **30227596014**      Collected: 08/16/17 13:12      Received: 08/18/17 10:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.211 ± 0.188 (0.338)</b> C:93% T:NA	pCi/L	08/25/17 09:20	13982-63-3	
Radium-228	EPA 9320	<b>-0.154 ± 0.430 (1.05)</b> C:78% T:70%	pCi/L	08/29/17 18:31	15262-20-1	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAH0564 PLANT McManus

Pace Project No.: 30227596

<b>Sample: FBL081617</b>	<b>Lab ID: 30227596014</b>	Collected: 08/16/17 13:12	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed      CAS No.      Qual

Total Radium	Total Radium Calculation	<b>0.211 ± 0.618 (1.39)</b>	pCi/L	09/01/17 09:18	7440-14-4
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<b>Sample: EQBL081617</b>	<b>Lab ID: 30227596015</b>	Collected: 08/16/17 13:16	Received: 08/18/17 10:00	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed      CAS No.      Qual
Radium-226	EPA 9315	<b>0.253 ± 0.194 (0.312)</b> C:92% T:NA	pCi/L	08/25/17 09:20 13982-63-3
Radium-228	EPA 9320	<b>0.0758 ± 0.432 (0.990)</b> C:79% T:76%	pCi/L	08/29/17 18:31 15262-20-1
Total Radium	Total Radium Calculation	<b>0.329 ± 0.626 (1.30)</b>	pCi/L	09/01/17 09:18 7440-14-4

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**Pace Analytical Services, LLC**  
1638 Roseytown Road - Suites 2,3,4  
Greensburg, PA 15601  
(724)850-5600

## **QUALITY CONTROL - RADIOCHEMISTRY**

Project: AAH0564 PLANT McManus  
Pace Project No.: 30227596

QC Batch: 269152 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 30227596001, 30227596002, 30227596003, 30227596004, 30227596005, 30227596006,  
30227596008, 30227596009, 30227596010, 30227596011, 30227596012, 30227596013  
30227596015

METHOD BLANK: 1324795 Matrix: Water

Associated Lab Samples: 30227596001, 30227596002, 30227596003, 30227596004, 30227596005, 30227596006, 30227596007, 30227596008, 30227596009, 30227596010, 30227596011, 30227596012, 30227596013, 30227596014, 30227596015

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.351 ± 0.322 (0.654) C:78% T:88%	pCi/L	08/29/17 15:55	

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

## **REPORT OF LABORATORY ANALYSIS**

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**Pace Analytical Services, LLC**  
1638 Roseytown Road - Suites 2,3,4  
Greensburg, PA 15601  
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: AAH0564 PLANT McManus  
Pace Project No.: 30227596

QC Batch: 269151 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 30227596001, 30227596002, 30227596003, 30227596004, 30227596005, 30227596006, 30227596007,  
30227596008, 30227596009, 30227596010, 30227596011, 30227596012, 30227596013, 30227596014,  
30227596015

METHOD BLANK: 1324793 Matrix: Water

Associated Lab Samples: 30227596001, 30227596002, 30227596003, 30227596004, 30227596005, 30227596006, 30227596007, 30227596008, 30227596009, 30227596010, 30227596011, 30227596012, 30227596013, 30227596014, 30227596015

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0987 ± 0.166 (0.373) C:92% T:NA	pCi/L	08/25/17 09:59	

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

## **REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: AAH0564 PLANT McManus

Pace Project No.: 30227596

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

Chain of Custody



Workorder: AAH0564  
 Workorder Name: Plant Kraft  
 Report To:  
 Betsy McDaniel  
 Pace Analytical Atlanta  
 110 Technology Parkway  
 Peachtree Corners, GA 30092  
 Phone (770)-734-4200

Owner Received Date: 8/17/2017

Results Requested By: Standard

Subcontract To:  
 Pace Analytical Pittsburgh  
 1637 Roseytown Road  
 Suite 2, 3, 4  
 Greensburg, PA 15601  
 Phone (724) 850-5600

WO# : 30227596



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers			LAB USE ONLY
						None	Seal	Total	
1	MCM-11	GRAB	8/15/2017 1011	AAH0564-01	GW	4	X	0	001
2	MCM-09	GRAB	8/15/2017 1042	AAH0564-02	GW	2	X	0	002
3	MCM-10	GRAB	8/15/2017 1340	AAH0564-03	GW	2	X	0	003
4	MCM-12	GRAB	8/15/2017 1338	AAH0564-04	GW	2	X	0	004
5	MCM-08	GRAB	8/15/2017 1515	AAH0564-05	GW	2	X	0	005
6	MCM-17	GRAB	8/15/2017 1710	AAH0564-06	GW	2	X	0	006
7	Duo-1	GRAB	8/15/2017 000	AAH0564-07	GW	2	X	0	007
8	FBL081517	GRAB	8/15/2017 1617	AAH0564-08	W	2	X	0	008
9	EWBL081517	GRAB	8/15/2017 1622	AAH0564-09	W	2	X	0	009
10	MCM-02	GRAB	8/16/2017 1010	AAH0564-10	GW	2	X	0	010
Transfers	Released By		Date/Time	Received By		Date/Time	Comments		
1	M. Raffman		3/17/17	S. J.		8/17/17 10:00			
2									
3									

Cooler Temperature on Receipt	°C	Custody Seal Y or N	Received on Ice Y or N	Sample Intact Y or N
1				
2				
3				

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-001 rev.00 24March2009

## Chain of Custody



Report To:		Workorder Name:		Owner Received Date:		Results Requested By: Standard	
Workorder: AAH0564		Subcontract To:		8/17/2017		Requested Analysis	
Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)-734-4200		Pace Analytical Pittsburgh 1637 Roseytown Road Suite 2, 3, 4 Greensburg, PA 15601 Phone (724) 850-5600		8/17/2017		Radium 226, 228, Total	
						Preserved Containers	
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Element	Element
1	MCM-11	GRAB	8/15/2017 1011	AAH0564-01	GW	4	X
2	MCM-09	GRAB	8/15/2017 1042	AAH0564-02	GW	2	X
3	MCM-10	GRAB	8/15/2017 1340	AAH0564-03	GW	2	X
4	MCM-12	GRAB	8/15/2017 1338	AAH0564-04	GW	2	X
5	MCM-08	GRAB	8/15/2017 1515	AAH0564-05	GW	2	X
6	MCM-17	GRAB	8/15/2017 1710	AAH0564-06	GW	2	X
7	Dup-1	GRAB	8/15/2017 000	AAH0564-07	GW	2	X
8	FBL081517	GRAB	8/15/2017 1617	AAH0564-08	W	2	X
9	EWBL081517	GRAB	8/15/2017 1622	AAH0564-09	W	2	X
10	MCM-02	GRAB	8/16/2017 1010	AAH0564-10	GW	2	X
Transfers Released By			Date/Time	Received By	Date/Time	Comments	
1						8/18/2017 11:00 AM	
2							
3							

Cooler Temperature on Receipt

°C

Custody Seal Y or N

Received on Ice Y or N

Sample Intact Y or N

\*\*\* In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

## Chain of Custody



Report To:		Workorder Name: Plant Kraft		Owner Received Date: 8/17/2017		Results Requested By: Standard	
		Subcontract To:				Requested Analysis	
Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)-734-4200		Pace Analytical Pittsburgh 1637 Roseytown Road Suite 2, 3, 4 Greensburg, PA 15601 Phone (724) 850-5600				30227596 -	
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	
						None	None
11	MCM-14	GRAB	8/16/2017 1152	AAH0564-11	GW	2	X
12	MCM-01	GRAB	8/16/2017 1556	AAH0564-12	GW	4	X
13	Dup-2	GRAB	8/16/2017 000	AAH0564-13	GW	2	X
14	FBI081617	GRAB	8/16/2017 1312	AAH0564-14	GW	2	X
15	EWBL081617	GRAB	8/16/2017 1316	AAH0564-15	GW	2	X
16							
17							
18							
19							
20							
Transfers	Released By		Date/Time	Received By		Date/Time	Comments
1	<i>A. RATHMAN</i>		8/17/17	<i>SJ</i>		8/17/17 10:00	
2							
3							

Cooler Temperature on Receipt    °C      Custody Seal Y or N      Received on Ice Y or N      Sample Intact Y or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this CC/C  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-001 rev.00 24March2009

Page 2 of 2

## Chain of Custody



www.pace-analytical.com

Workorder: AAH0564

Workorder Name: Plant Kraft

Owner Received Date: 8/17/2017

## Report To: Subcontract To:

Betsy McDaniel  
 Pace Analytical Atlanta  
 110 Technology Parkway  
 Peachtree Corners, GA 30092  
 Phone (770)-734-4200

Pace Analytical Pittsburgh  
 1637 Roseytown Road  
 Suite 2, 3, 4  
 Greensburg, PA 15601  
 Phone (724) 850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers			Comments	LAB USE ONLY
						1	2	3		
11	MCM-14	GRAB	8/16/2017 11:52	AAH0564-11	GW		2	0		0
12	MCM-01	GRAB	8/16/2017 15:56	AAH0564-12	GW		4	0		X
13	Dup-2	GRAB	8/16/2017 00:00	AAH0564-13	GW		2	0		X
14	FBI081617	GRAB	8/16/2017 13:12	AAH0564-14	GW		2	0		X
15	EWBL081617	GRAB	8/16/2017 13:16	AAH0564-15	GW		2	0		X
16										
17										
18										
19										
20										

Transfers Released By	Date/Time	Received By	Comments		
			Date/Time	Comments	Date/Time
1					
2					
3					

Cooler Temperature on Receipt	°C	Custody Seal Y or N	Received on Ice Y or N	Sample Intact Y or N
1				
2				
3				

\*\*\* In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-001 rev.00 24March2009

Page 2 of 2

## CHAIN OF CUSTODY RECORD

*Pace Analytical*  
www.pasats.com

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

PAGE: 1 OF 1

ANALYSIS REQUESTED									
CONTAINER TYPE	PREPARATION	L	CONTAINER TYPE	PRESERVATION					
PREPARATION	# of	A	P- PLASTIC	1- HCl 56°C					
C	O	B	A- AMBER GLASS	2- H <sub>2</sub> SO <sub>4</sub> , 56°C					
N	T	D	G- CLEAR GLASS	3- HNO <sub>3</sub>					
A	I	N	V- VIAL	4- NaOH, 56°C					
S	R	U	S- STERILE	5- NaOH/ZnAc, 56°C					
E	W	M	O- OTHER	6- Na <sub>2</sub> SO <sub>3</sub> , 56°C					
R	ST	W	7- 56°C not frozen						
SW	STORM WATER								
WW	WATER								
GW	GROUNDWATER								
SW	SURFACE WATER								
ST	STORM WATER								
W	WATER								
DW - DRINKING WATER S- SOIL									
E - WW - WASTEWATER SL - SLUDGE									
R - GW - GROUNDWATER SD - SOLID									
A - AIR									
L - LIQUID									
P - PRODUCT									
REMARKS/ADDITIONAL INFORMATION									
C255+3136 118 M5 822+922 W+P8 M5 2035 WS 25 SDH EPA 300 EPA 1020 + EPA 7470 III + II + I M5 M5 M5									
I J K L M N O P Q R S									
PROJECT NAME/STATE: <b>Plant M Means CCR</b> PROJECT #:									
Collection DATE	Collection TIME	MATRIX CODE	C	G	SAMPLE IDENTIFICATION				
9/15/17	10:11	GW	X	MCM-11	6	1	1	4	1
9/15/17	10:42	GW	X	MCM-09	4	1	1	2	2
9/15/17	13:40	GW	X	MCM-10	4	1	1	2	3
9/15/17	13:38	GW	X	MCM-12	4	1	1	2	4
9/15/17	15:15	GW	X	MCM-08	4	1	1	2	5
9/15/17	15:40	GW	X	MCM-17	4	1	1	2	6
9/15/17	—	GU	X	Dup - 1	4	1	1	2	7
9/15/17	16:17	W	X	FBL 081817	4	1	1	2	8
9/15/17	16:27	W	X	EQBL0817	4	1	1	2	9
RElinquished BY: <i>John Strohman</i> DATE/TIME: <u>8/15/17 17:30</u> DATE/TIME: <u>8/15/17 17:30</u>									
RElinquished BY: <i>John Strohman</i> DATE/TIME: <u>8/15/17 17:30</u> DATE/TIME: <u>8/15/17 17:30</u>									
RECEIVED BY LAB:	DATE/TIME:	SAMPLE SHIPPED VIA:	DATE/TIME:	LAB #: <i>AA</i>					
<i>John Strohman</i>	<u>8/15/17 17:30</u>	UPS FED-EX	<u>8/15/17 17:30</u>	<u>564</u>					
Pre-cooled Yes No NA	Temp: °F Min: °F Max: °F	Courier: Client: OTHER: FS:	Entered Info Lines: Tracking #: <i>77002784101</i>						
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Broken <input type="checkbox"/> Not Present <input type="checkbox"/> Coolers <input type="checkbox"/>							

**CHAIN OF CUSTODY RECORD**

PaceAnalytical  
www.paceatc.com

Pace Analytical Services, LLC - Atlanta  
110 TECHNOLOGY PARKWAY, PEACHTREE  
(770) 734-4200 : FAX (770) 734-4201

CLIENT NAME: <b>Sather Company Services</b>		ANALYSIS REQUESTED											
CLIENT ADDRESS/FAX NUMBER: 741 Park McGill Blvd SE B108S		CONTAINER TYPE:	P	P	P	P	P	P	P	P	P		
REPORT TO: <b>Lawn Party 95 in Abraham</b>		PRESERVATION # OF	3	7	3								
REQUESTED COMPLETION DATE:		02/26 + 51 days 04/08 - 15 822 + 922 w/ 100 703 SW 2540C 101, F 504 EPA 300 EPA 6020 + EPA 7420 MEta 5 PM HII											
PROJECT NAME/STATE: <b>Plant Materials CCR</b>													
PROJECT #:													
SAMPLE IDENTIFICATION													
Collection DATE	Collection TIME	MATRIX CODE	C	G	O	R	N	A	I	N	E	R	S
8/16/17	1010	GW	X										
8/16/17	1152	GW	X										
8/16/17	15510	GW	X										
8/16/17	—	GW	X										
8/16/17	1317	W	X										
8/16/17	1310	W	X										
PRESERVATION													
1 - HCl, 56°C 2 - H <sub>2</sub> SO <sub>4</sub> , 56°C 3 - HNO <sub>3</sub> 4 - NaOH, 56°C 5 - NaOH/ZnAc, 56°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , 56°C 7 - 56°C not frozen													
CONTAINER TYPE													
P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VAL S - STERILE O - OTHER													
MATRIX CODES:													
DW - DRINKING WATER WW - WASTEWATER GW - GROUNDWATER SW - SURFACE WATER ST - STORMWATER W - WATER													
S - SOIL SL - SLUDGE SD - SOLID A - AIR L - LIQUID													
REMARKS/ADDITIONAL INFORMATION													
10 11 12 13 14 15													
LAB #: <b>AAC 410564</b>													
Entered into Lab #: <b>Tracking #:</b>													
SAMPLED BY AND TITLE: <b>Jeff M / Kevin Shogren</b>		DATE/TIME: <b>8/16/17 16:55</b>		PRE-INQUIRIES BY: <b>John Sibley</b>		DATE/TIME: <b>8/17/17 09:10</b>		RELINQUISHED BY: <b>John Sibley</b>		DATE/TIME:			
RECEIVED BY LAB: <b>J. A. Johnson</b>		DATE/TIME: <b>8/17/17 09:10</b>		SAMPLE SHIPPED VIA: <b>AIR-EX UPS</b>		USPS:		CLIENT:		OTHER:			
RECEIVED BY: <b>Not Present</b>		DATE/TIME: <b>8/16/17 09:10</b>		CARRIER: <b>Not Present</b>		COOLER: <b>Not Present</b>		FS:		Cooler ID:			
PROTECTED: <b>No</b>		TEMPERATURE: <b>NA</b>		CUSTODY SIGN: <b>Not Present</b>		COOLER SIGN: <b>Not Present</b>		NOTES:		BRONZE:			

### Sample Condition Upon Receipt

Client Name: GIA Powers Project # AAH0564

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other  
 Tracking #: 7700 2784 9601

Custody Seal on Cooler/Box Present:  Yes  no Seals Intact:  Yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 1R-4

Type of Ice: Wet Blue None

Cooler Temperature 0.8

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: 8/17/17 - MZ

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	3. <u>30227596 -</u>
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	12. <u>GIA</u>
-Includes date/time/ID/Analysis Matrix:				
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution:

Field Data Required? Y / N

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

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

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

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

## Sample Condition Upon Receipt Pittsburgh

30227596

Pace Analytical

Client Name: PACE, GA Project # \_\_\_\_\_Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Label	<u>ANL</u>
LIMS Login	<u>KM</u>

Tracking #: 741366579498Custody Seal on Cooler/Box Present:  yes  no Seals Intact:  yes  noThermometer Used WIAType of Ice: Wet Blue None

Cooler Temperature Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: AT 8/18/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/			3.
Sampler Name & Signature on COC:	/			4.
Sample Labels match COC:	/			5.
-Includes date/time/ID Matrix:	<u>WT</u>			
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):		/		7.
Rush Turn Around Time Requested:		/		8.
Sufficient Volume:	/			9.
Correct Containers Used:	/			10.
-Pace Containers Used:	/			
Containers Intact:	/			11.
Orthophosphate field filtered		/		12.
Organic Samples checked for dechlorination:		/		13.
Filled volume received for Dissolved tests		/		14.
All containers have been checked for preservation.	/			15. <i>PH C2</i>
All containers needing preservation are found to be in compliance with EPA recommendation,	/			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed <u>8/18/17</u> Date/time of preservation Lot # of added preservative
Headspace in VOA Vials (>6mm):		/	/	16.
Trip Blank Present:		/	/	17.
Trip Blank Custody Seals Present			/	
Rad Aqueous Samples Screened > 0.5 mrem/hr		/		Initial when completed <u>8/18/17</u> Date: <u>8/18/17</u>

## Client Notification/ Resolution:

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

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ A check in this box indicates that additional information has been stored in eReports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS, the review is in the Status section of the Workorder Edit Screen.



## Quality Control Sample Performance Assessment

FaceAnalytical™  
www.pacealts.com

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test:	Ra-226
Analyst:	JC2
Date:	8/24/2017
Worklist:	37341
Matrix:	DW
<b>Method Blank Assessment</b>	
MB Sample ID:	1324793
MB concentration:	0.099
M/B Counting Uncertainty:	0.166
MB MDC:	0.373
MB Numerical Performance Indicator:	1.17
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass
<b>Laboratory Control Sample Assessment</b>	
LCS(Y or N)?	LCS37341
Count Date:	8/25/2017
Spike I.D.:	17-030
Spike Concentration (pCi/L):	80.195
Volume Used (mL):	0.10
Aliquot Volume (L, g, F):	0.504
Target Conc. (pCi/L, g, F):	15.913
Uncertainty (Calculated):	1.466
Result (pCi/L, g, F):	13.814
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.213
Numerical Performance Indicator:	-2.16
Percent Recovery:	86.81%
Status vs Numerical Indicator:	N/A
Status vs Recovery:	Pass
<b>Duplicate Sample Assessment</b>	
Sample I.D.:	LCS37341
Duplicate Sample I.D.:	LCS37341
Sample Result (pCi/L, g, F):	13.814
Sample Result Counting Uncertainty (pCi/L, g, F):	1.213
Sample Duplicate Result (pCi/L, g, F):	13.835
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.107
Are sample and/or duplicate results below MDC?	NO
Duplicate Numerical Performance Indicator:	-0.026
Duplicate Status vs Numerical Indicator:	0.15%
Duplicate Status vs RPD:	N/A
Duplicate Status vs Recovery:	Pass

<b>Sample Matrix Spike Control Assessment</b>	
Sample Collection Date:	Sample I.D.: Sample MS .D.
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	Sample MSD .D.
Spike Volume Used in MS (mL):	Sample MSD .D.
Spike Volume Used in MSD (mL):	Sample MSD .D.
MS Aliquot (L, g, F):	Sample I.D.: Sample MSD .D.
MS Target Conc.(pCi/L, g, F):	Sample MSD .D.
MSD Aliquot (L, g, F):	Sample MSD .D.
MSD Target Conc. (pCi/L, g, F):	Sample MSD .D.
MSD uncertainty (calculated):	Sample Result: Sample Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Result: Sample Matrix Result Counting Uncertainty (pCi/L, g, F);
MSD Numerical Performance Indicator:	Matrix Spike Result Counting Uncertainty (pCi/L, g, F); Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result: Sample Result Counting Uncertainty (pCi/L, g, F); MS Numerical Performance Indicator: MSD Numerical Performance Indicator: MS Percent Recovery: MSD Percent Recovery: MS Status vs Numerical Indicator: MSD Status vs Numerical Indicator: MS Status vs Recovery: MSD Status vs Recovery:
<b>Matrix Spike/Matrix Spike Duplicate Sample Assessment</b>	
Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	Sample I.D.: Sample MS .D. Sample MSD .D. Sample Matrix Spike Result: Sample Matrix Result Counting Uncertainty (pCi/L, g, F); Sample Matrix Spike Duplicate Result: Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F); Duplicate Numerical Performance Indicator: MSD Numerical Performance Indicator: MS/MSD Duplicate RPD: MS/MSD Duplicate Status vs Numerical Indicator: MS/MSD Duplicate Status vs RPD:

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:



## Quality Control Sample Performance Assessment

*Analyst Must Manually Enter All Fields Highlighted in Yellow.*

Method Blank Assessment		Sample Matrix Spike Control Assessment	
Test:	Ra-228	Sample Collection Date:	
Analyst:	JLW	Sample I.D.:	
Date:	8/24/2017	Sample MS. I.D.:	
Worklist:	37342	Spike I.D.:	
Matrix:	DW	MS/MSD Decay Corrected Spike Concentration (pCi/mL):	
		Spike Volume Used in MS (mL):	
		Spike Volume Used in MSD (mL):	
		MS Aliquot (L, g, F):	
		MS Target Conc. (pCi/L, g, F):	
		MSD Aliquot (L, g, F):	
		MSD Target Conc. (pCi/L, g, F):	
		Spike uncertainty (calculated):	
Laboratory Control Sample Assessment		Sample Result	
MB Sample ID:	1324795	Sample Counting Uncertainty (pCi/L, g, F):	
MB concentration:	0.351	Sample Matrix Spike Result:	
M/B Counting Uncertainty:	0.316	Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
MB MDC:	0.654	Sample Matrix Spike Duplicate Result:	
MB Numerical Performance Indicator:	2.18	Matrix Spike Duplicate Counting Uncertainty (pCi/L, g, F):	
MB Status vs Numerical Indicator:	N/A	MS Numerical Performance Indicator:	
MB Status vs. MDC:	Pass	MS Percent Recovery:	
		MSD Numerical Performance Indicator:	
		MSD Percent Recovery:	
		MS Status vs Numerical Indicator:	
		MSD Status vs Recovery:	
		MS Status vs Recovery:	
		MSD Status vs Recovery:	
Duplicate Sample Assessment		Matrix Spike/Matrix Spike Duplicate Sample Assessment	
Sample I.D.:	30227596001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	
Duplicate Sample I.D.:	30227596001DUP		
Sample Result (pCi/L, g, F):	0.161	Sample I.D.:	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.262	Sample MS. I.D.:	
Sample Duplicate Result (pCi/L, g, F):	0.682	Sample Matrix Spike Result:	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.317	Sample Matrix Spike Duplicate Result:	
Are sample and/or duplicate results below MDC?	See Below ##	Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	-2.479	Duplicate Numerical Performance Indicator:	
Duplicate Status vs Numerical Indicator:	123.47%	(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:	
Duplicate Status vs RPD:	N/A	MS/ MSD Duplicate Status vs Numerical Indicator:	
	Fail***	MS/ MSD Duplicate Status vs RPD:	

## Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

\*\*\*Batch must be re-prepped due to unacceptable precision.



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### Laboratory Report

**Prepared For:**

**Georgia Power  
2480 Maner Road  
Atlanta, GA 30339**

**Attention: Mr. Joju Abraham**

**Report Number: AAH0613**

**August 28, 2017**

**Project: CCR Event**

**Project #:Plant McManus**

We appreciate the opportunity to provide the analytical support for your project. The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Approved:

A handwritten signature in black ink, appearing to read "Betty McDaniel".

Project Manager

This report may not be reproduced, except in full, without written approval from Pace Analytical Services, LLC.  
All test results relate only to the samples analyzed.



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 28, 2017

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MCM-04	AAH0613-03	Ground Water	08/17/17 09:33	08/18/17 09:20
MCM-16	AAH0613-04	Ground Water	08/17/17 11:48	08/18/17 09:20
MCM-15	AAH0613-05	Ground Water	08/17/17 11:50	08/18/17 09:20
MCM-07	AAH0613-06	Ground Water	08/17/17 13:54	08/18/17 09:20
MCM-05	AAH0613-07	Ground Water	08/17/17 14:03	08/18/17 09:20
MCM-06	AAH0613-08	Ground Water	08/17/17 15:30	08/18/17 09:20



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 28, 2017

### Case Narrative

The Radium analysis by methods EPA 9315/9320 was performed by Pace-Pittsburgh, 1638 Roseytown Road - Suites 2, 3, 4, Greensburg PA 15601. The Pace-Pittsburgh lab contact is Jacquelyn Collins at 724-850-5612.



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 28, 2017

Report No.: AAH0613

Project: CCR Event

Client ID: MCM-04

Lab Number ID: AAH0613-03

Date/Time Sampled: 8/17/2017 9:33:00AM

Date/Time Received: 8/18/2017 9:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	445	25	10	mg/L	SM 2540 C		1	08/23/17 13:25	08/23/17 13:25	7080617	JPT
<b>Inorganic Anions</b>											
Chloride	210	2.5	0.24	mg/L	EPA 300.0		10	08/18/17 10:37	08/18/17 19:27	7080494	RLC
Fluoride	0.18	0.30	0.03	mg/L	EPA 300.0	J	1	08/18/17 10:37	08/18/17 14:38	7080494	RLC
Sulfate	110	10	0.17	mg/L	EPA 300.0		10	08/18/17 10:37	08/18/17 19:27	7080494	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Arsenic	0.0021	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Barium	0.0475	0.0100	0.0004	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Beryllium	0.0002	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Boron	0.128	0.0400	0.0060	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Calcium	8.17	0.500	0.0404	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Chromium	0.0013	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 16:45	7080532	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 16:23	7080561	MTC



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 28, 2017

Report No.: AAH0613

Project: CCR Event

Client ID: MCM-16

Lab Number ID: AAH0613-04

Date/Time Sampled: 8/17/2017 11:48:00AM

Date/Time Received: 8/18/2017 9:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	84	25	10	mg/L	SM 2540 C		1	08/23/17 13:25	08/23/17 13:25	7080617	JPT
<b>Inorganic Anions</b>											
Chloride	32	0.25	0.02	mg/L	EPA 300.0		1	08/18/17 10:37	08/18/17 14:58	7080494	RLC
Fluoride	0.04	0.30	0.03	mg/L	EPA 300.0	J	1	08/18/17 10:37	08/18/17 14:58	7080494	RLC
Sulfate	26	1.0	0.02	mg/L	EPA 300.0		1	08/18/17 10:37	08/18/17 14:58	7080494	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Barium	0.121	0.0100	0.0004	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Beryllium	0.0002	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Boron	0.0853	0.0400	0.0060	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Calcium	5.62	0.500	0.0404	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Chromium	0.0005	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Cobalt	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Thallium	0.00007	0.0010	0.00005	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:10	7080532	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 16:26	7080561	MTC



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 28, 2017

Report No.: AAH0613

Project: CCR Event

Client ID: MCM-15

Lab Number ID: AAH0613-05

Date/Time Sampled: 8/17/2017 11:50:00AM

Date/Time Received: 8/18/2017 9:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	51	25	10	mg/L	SM 2540 C		1	08/23/17 13:25	08/23/17 13:25	7080617	JPT
<b>Inorganic Anions</b>											
Chloride	12	0.25	0.02	mg/L	EPA 300.0		1	08/18/17 10:37	08/18/17 15:19	7080494	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	08/18/17 10:37	08/18/17 15:19	7080494	RLC
Sulfate	14	1.0	0.02	mg/L	EPA 300.0		1	08/18/17 10:37	08/18/17 15:19	7080494	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Arsenic	0.0028	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Barium	0.0370	0.0100	0.0004	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Beryllium	0.0001	0.0030	0.00009	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Boron	0.0593	0.0400	0.0060	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Calcium	5.53	0.500	0.0404	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Chromium	0.0027	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:21	7080532	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 16:28	7080561	MTC



## PACE ANALYTICAL SERVICES, LLC.

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 28, 2017

Report No.: AAH0613

Project: CCR Event

Client ID: MCM-07

Lab Number ID: AAH0613-06

Date/Time Sampled: 8/17/2017 1:54:00PM

Date/Time Received: 8/18/2017 9:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	8320	25	10	mg/L	SM 2540 C		1	08/23/17 13:25	08/23/17 13:25	7080617	JPT
<b>Inorganic Anions</b>											
Chloride	4600	25	2.4	mg/L	EPA 300.0		100	08/18/17 10:37	08/24/17 12:16	7080494	RLC
Fluoride	0.27	0.30	0.03	mg/L	EPA 300.0	J	1	08/18/17 10:37	08/18/17 16:21	7080494	RLC
Sulfate	510	100	1.7	mg/L	EPA 300.0		100	08/18/17 10:37	08/24/17 12:16	7080494	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Arsenic	0.0211	0.0050	0.0005	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Barium	0.124	0.0100	0.0004	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Boron	0.922	0.0400	0.0060	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Cadmium	ND	0.0050	0.0007	mg/L	EPA 6020B	R-01	5	08/22/17 14:40	08/24/17 16:32	7080532	CSW
Calcium	186	25.0	2.02	mg/L	EPA 6020B		50	08/22/17 14:40	08/23/17 17:38	7080532	CSW
Chromium	0.0022	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Lead	0.00008	0.0050	0.00007	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Selenium	0.0033	0.0100	0.0018	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Lithium	0.0241	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:32	7080532	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 16:31	7080561	MTC



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 28, 2017

Report No.: AAH0613

Project: CCR Event

Client ID: MCM-05

Lab Number ID: AAH0613-07

Date/Time Sampled: 8/17/2017 2:03:00PM

Date/Time Received: 8/18/2017 9:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4620	25	10	mg/L	SM 2540 C		1	08/23/17 13:25	08/23/17 13:25	7080617	JPT
<b>Inorganic Anions</b>											
Chloride	2600	25	2.4	mg/L	EPA 300.0		100	08/18/17 10:37	08/24/17 12:37	7080494	RLC
Fluoride	0.52	0.30	0.03	mg/L	EPA 300.0		1	08/18/17 10:37	08/18/17 16:42	7080494	RLC
Sulfate	80	20	0.34	mg/L	EPA 300.0		20	08/18/17 10:37	08/18/17 20:08	7080494	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Arsenic	0.0336	0.0050	0.0005	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Barium	0.0188	0.0100	0.0004	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Boron	0.516	0.0400	0.0060	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Calcium	100	25.0	2.02	mg/L	EPA 6020B		50	08/22/17 14:40	08/23/17 17:50	7080532	CSW
Chromium	0.0007	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Molybdenum	0.0012	0.0100	0.0010	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Lithium	0.0367	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:44	7080532	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 16:33	7080561	MTC



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110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 28, 2017

Report No.: AAH0613

Project: CCR Event

Client ID: MCM-06

Lab Number ID: AAH0613-08

Date/Time Sampled: 8/17/2017 3:30:00PM

Date/Time Received: 8/18/2017 9:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	5450	25	10	mg/L	SM 2540 C		1	08/23/17 13:25	08/23/17 13:25	7080617	JPT
<b>Inorganic Anions</b>											
Chloride	2700	25	2.4	mg/L	EPA 300.0		100	08/18/17 10:37	08/24/17 12:57	7080494	RLC
Fluoride	0.26	0.30	0.03	mg/L	EPA 300.0	J	1	08/18/17 10:37	08/18/17 17:02	7080494	RLC
Sulfate	69	20	0.34	mg/L	EPA 300.0		20	08/18/17 10:37	08/18/17 20:29	7080494	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Arsenic	0.458	0.0050	0.0005	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Barium	0.0596	0.0100	0.0004	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Boron	0.700	0.0400	0.0060	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Calcium	126	25.0	2.02	mg/L	EPA 6020B		50	08/22/17 14:40	08/23/17 18:01	7080532	CSW
Chromium	0.0007	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Cobalt	0.0003	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Molybdenum	0.0025	0.0100	0.0010	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Selenium	0.0020	0.0100	0.0018	mg/L	EPA 6020B	J	1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Lithium	0.0645	0.0500	0.0015	mg/L	EPA 6020B		1	08/22/17 14:40	08/23/17 17:55	7080532	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/22/17 09:45	08/22/17 16:40	7080561	MTC



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August 28, 2017

**Report No.: AAH0613**

### General Chemistry - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080617 - SM 2540 C</b>											
<b>Blank (7080617-BLK1)</b>										Prepared & Analyzed: 08/23/17	
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7080617-BS1)</b>										Prepared & Analyzed: 08/23/17	
Total Dissolved Solids	341	25	10	mg/L	400.00		85	84-108			
<b>Duplicate (7080617-DUP1)</b>										Prepared & Analyzed: 08/23/17	
Total Dissolved Solids	8230	25	10	mg/L		8320			1	10	



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**Report No.: AAH0613**

### Inorganic Anions - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080494 - EPA 300.0</b>											
<b>Blank (7080494-BLK1)</b>											
Prepared & Analyzed: 08/18/17											
Chloride	ND	0.25	0.02	mg/L							
Fluoride	ND	0.30	0.03	mg/L							
Sulfate	ND	1.0	0.02	mg/L							
<b>LCS (7080494-BS1)</b>											
Prepared & Analyzed: 08/18/17											
Chloride	10.4	0.25	0.02	mg/L	10.020		103	90-110			
Fluoride	10.5	0.30	0.03	mg/L	10.020		105	90-110			
Sulfate	10.3	1.0	0.02	mg/L	10.050		103	90-110			
<b>Matrix Spike (7080494-MS1)</b>											
Source: AAH0613-05											
Prepared & Analyzed: 08/18/17											
Chloride	22.1	0.25	0.02	mg/L	10.020	12.4	96	90-110			
Fluoride	10.5	0.30	0.03	mg/L	10.020	ND	105	90-110			
Sulfate	22.7	1.0	0.02	mg/L	10.050	13.8	89	90-110			QM-02
<b>Matrix Spike Dup (7080494-MSD1)</b>											
Source: AAH0613-05											
Prepared & Analyzed: 08/18/17											
Chloride	22.0	0.25	0.02	mg/L	10.020	12.4	96	90-110	0.3	15	
Fluoride	10.5	0.30	0.03	mg/L	10.020	ND	105	90-110	0	15	
Sulfate	22.8	1.0	0.02	mg/L	10.050	13.8	89	90-110	0.2	15	QM-02



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**Report No.: AAH0613**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### **Batch 7080532 - EPA 3005A**

Blank (7080532-BLK1)						Prepared: 08/22/17 Analyzed: 08/23/17				
Antimony	ND	0.0030	0.0006	mg/L						
Arsenic	ND	0.0050	0.0005	mg/L						
Barium	ND	0.0100	0.0004	mg/L						
Beryllium	ND	0.0030	0.00009	mg/L						
Boron	ND	0.0400	0.0060	mg/L						
Cadmium	ND	0.0010	0.0001	mg/L						
Calcium	ND	0.500	0.0404	mg/L						
Chromium	ND	0.0100	0.0005	mg/L						
Cobalt	ND	0.0100	0.0003	mg/L						
Copper	ND	0.0250	0.0003	mg/L						
Lead	ND	0.0050	0.00007	mg/L						
Molybdenum	ND	0.0100	0.0010	mg/L						
Nickel	ND	0.0100	0.0005	mg/L						
Selenium	ND	0.0100	0.0018	mg/L						
Silver	ND	0.0100	0.0002	mg/L						
Thallium	ND	0.0010	0.00005	mg/L						
Vanadium	ND	0.0100	0.0012	mg/L						
Zinc	0.0025	0.0100	0.0012	mg/L						J
Lithium	ND	0.0500	0.0015	mg/L						

LCS (7080532-BS1)						Prepared: 08/22/17 Analyzed: 08/23/17				
Antimony	0.107	0.0030	0.0006	mg/L	0.10000		107	80-120		
Arsenic	0.100	0.0050	0.0005	mg/L	0.10000		100	80-120		
Barium	0.101	0.0100	0.0004	mg/L	0.10000		101	80-120		
Beryllium	0.0953	0.0030	0.00009	mg/L	0.10000		95	80-120		
Boron	0.990	0.0400	0.0060	mg/L	1.0000		99	80-120		
Cadmium	0.104	0.0010	0.0001	mg/L	0.10000		104	80-120		
Calcium	1.04	0.500	0.0404	mg/L	1.0000		104	80-120		
Chromium	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120		
Cobalt	0.0994	0.0100	0.0003	mg/L	0.10000		99	80-120		
Copper	0.0995	0.0250	0.0003	mg/L	0.10000		99	80-120		
Lead	0.0992	0.0050	0.00007	mg/L	0.10000		99	80-120		
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000		106	80-120		
Nickel	0.100	0.0100	0.0005	mg/L	0.10000		100	80-120		
Selenium	0.100	0.0100	0.0018	mg/L	0.10000		100	80-120		
Silver	0.103	0.0100	0.0002	mg/L	0.10000		103	80-120		
Thallium	0.101	0.0010	0.00005	mg/L	0.10000		101	80-120		
Vanadium	0.102	0.0100	0.0012	mg/L	0.10000		102	80-120		
Zinc	0.104	0.0100	0.0012	mg/L	0.10000		104	80-120		
Lithium	0.0999	0.0500	0.0015	mg/L	0.10000		100	80-120		



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August 28, 2017

**Report No.: AAH0613**

## Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 7080532 - EPA 3005A

Matrix Spike (7080532-MS1)		Source: AAH0613-03			Prepared: 08/22/17 Analyzed: 08/23/17					
Antimony	0.108	0.0030	0.0006	mg/L	0.10000	ND	108	75-125		
Arsenic	0.105	0.0050	0.0005	mg/L	0.10000	0.0021	102	75-125		
Barium	0.148	0.0100	0.0004	mg/L	0.10000	0.0475	101	75-125		
Beryllium	0.0872	0.0030	0.00009	mg/L	0.10000	0.0002	87	75-125		
Boron	1.03	0.0400	0.0060	mg/L	1.0000	0.128	90	75-125		
Cadmium	0.104	0.0010	0.0001	mg/L	0.10000	ND	104	75-125		
Calcium	8.87	0.500	0.0404	mg/L	1.0000	8.17	70	75-125		QM-02
Chromium	0.105	0.0100	0.0005	mg/L	0.10000	0.0013	104	75-125		
Cobalt	0.101	0.0100	0.0003	mg/L	0.10000	ND	101	75-125		
Copper	0.0978	0.0250	0.0003	mg/L	0.10000	ND	98	75-125		
Lead	0.0935	0.0050	0.00007	mg/L	0.10000	ND	93	75-125		
Molybdenum	0.107	0.0100	0.0010	mg/L	0.10000	ND	107	75-125		
Nickel	0.0996	0.0100	0.0005	mg/L	0.10000	ND	100	75-125		
Selenium	0.102	0.0100	0.0018	mg/L	0.10000	ND	102	75-125		
Silver	0.0999	0.0100	0.0002	mg/L	0.10000	ND	100	75-125		
Thallium	0.0942	0.0010	0.00005	mg/L	0.10000	ND	94	75-125		
Vanadium	0.110	0.0100	0.0012	mg/L	0.10000	0.0047	105	75-125		
Zinc	0.102	0.0100	0.0012	mg/L	0.10000	0.0029	99	75-125		
Lithium	0.0881	0.0500	0.0015	mg/L	0.10000	ND	88	75-125		

Matrix Spike Dup (7080532-MSD1)		Source: AAH0613-03			Prepared: 08/22/17 Analyzed: 08/23/17					
Antimony	0.104	0.0030	0.0006	mg/L	0.10000	ND	104	75-125	4	20
Arsenic	0.104	0.0050	0.0005	mg/L	0.10000	0.0021	102	75-125	0.6	20
Barium	0.143	0.0100	0.0004	mg/L	0.10000	0.0475	95	75-125	4	20
Beryllium	0.0872	0.0030	0.00009	mg/L	0.10000	0.0002	87	75-125	0.02	20
Boron	1.02	0.0400	0.0060	mg/L	1.0000	0.128	89	75-125	1	20
Cadmium	0.102	0.0010	0.0001	mg/L	0.10000	ND	102	75-125	2	20
Calcium	9.05	0.500	0.0404	mg/L	1.0000	8.17	88	75-125	2	20
Chromium	0.107	0.0100	0.0005	mg/L	0.10000	0.0013	106	75-125	2	20
Cobalt	0.0975	0.0100	0.0003	mg/L	0.10000	ND	98	75-125	3	20
Copper	0.0965	0.0250	0.0003	mg/L	0.10000	ND	97	75-125	1	20
Lead	0.0924	0.0050	0.00007	mg/L	0.10000	ND	92	75-125	1	20
Molybdenum	0.103	0.0100	0.0010	mg/L	0.10000	ND	103	75-125	4	20
Nickel	0.0985	0.0100	0.0005	mg/L	0.10000	ND	98	75-125	1	20
Selenium	0.102	0.0100	0.0018	mg/L	0.10000	ND	102	75-125	0.1	20
Silver	0.0960	0.0100	0.0002	mg/L	0.10000	ND	96	75-125	4	20
Thallium	0.0953	0.0010	0.00005	mg/L	0.10000	ND	95	75-125	1	20
Vanadium	0.111	0.0100	0.0012	mg/L	0.10000	0.0047	107	75-125	1	20
Zinc	0.102	0.0100	0.0012	mg/L	0.10000	0.0029	99	75-125	0.7	20
Lithium	0.0866	0.0500	0.0015	mg/L	0.10000	ND	87	75-125	2	20



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August 28, 2017

**Report No.: AAH0613**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 7080532 - EPA 3005A

Post Spike (7080532-PS1)		Source: AAH0613-03			Prepared: 08/22/17 Analyzed: 08/23/17			
Antimony	103		ug/L	100.00	0.0565	103	80-120	
Arsenic	101		ug/L	100.00	2.09	99	80-120	
Barium	144		ug/L	100.00	47.5	97	80-120	
Beryllium	87.6		ug/L	100.00	0.245	87	80-120	
Boron	1040		ug/L	1000.0	128	91	80-120	
Cadmium	101		ug/L	100.00	0.0045	101	80-120	
Calcium	8960		ug/L	1000.0	8170	79	80-120	QM-02
Chromium	106		ug/L	100.00	1.27	105	80-120	
Cobalt	99.2		ug/L	100.00	0.234	99	80-120	
Copper	96.7		ug/L	100.00	0.0438	97	80-120	
Lead	92.1		ug/L	100.00	0.0270	92	80-120	
Molybdenum	106		ug/L	100.00	0.134	106	80-120	
Nickel	99.2		ug/L	100.00	0.300	99	80-120	
Selenium	104		ug/L	100.00	1.66	102	80-120	
Silver	96.0		ug/L	100.00	0.0040	96	80-120	
Thallium	95.3		ug/L	100.00	0.0035	95	80-120	
Vanadium	114		ug/L	100.00	4.67	109	80-120	
Zinc	98.9		ug/L	100.00	2.92	96	80-120	
Lithium	87.5		ug/L	100.00	1.22	86	80-120	

#### Batch 7080561 - EPA 7470A

Blank (7080561-BLK1)					Prepared & Analyzed: 08/22/17			
Mercury	ND	0.00050	0.000036	mg/L				
LCS (7080561-BS1)					Prepared & Analyzed: 08/22/17			
Mercury	0.00244	0.00050	0.000036	mg/L	2.5000E-3	98	80-120	



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Attention: Mr. Joju Abraham

August 28, 2017

**Report No.: AAH0613**

### Metals, Total - Quality Control

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080561 - EPA 7470A</b>											
<b>Matrix Spike (7080561-MS1)</b> <b>Source: AAH0613-03</b> Prepared & Analyzed: 08/22/17											
Mercury      0.00234      0.00050      0.000036      mg/L      2.5000E-3      ND      93      75-125											
<b>Matrix Spike Dup (7080561-MSD1)</b> <b>Source: AAH0613-03</b> Prepared & Analyzed: 08/22/17											
Mercury      0.00240      0.00050      0.000036      mg/L      2.5000E-3      ND      96      75-125      3      20											
<b>Post Spike (7080561-PS1)</b> <b>Source: AAH0613-03</b> Prepared & Analyzed: 08/22/17											
Mercury      1.67      ug/L      1.6667      -0.00602      100      80-120											



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August 28, 2017

## Legend

### Definition of Laboratory Terms

<b>ND</b>	- Not Detected at levels equal to or greater than the MDL
<b>BRL</b>	- Not Detected at levels equal to or greater than the RL
<b>RL</b>	- Reporting Limit
	<b>MDL</b> - Method Detection Limit
<b>SOP</b>	- Method run per Pace Standard Operating Procedure
<b>CFU</b>	- Colony Forming Units
<b>DF</b>	- Dilution Factor
	<b>TIC</b> - Tentatively Identified Compound

### Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrosodiphenylamine. Pace is not NELAC certified for N-Nitrosodiphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

### Definition of Qualifiers

**R-01** Elevated reporting limit due to matrix interference.

**QM-02** The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.

**J** Estimated value less than Reporting Limit (RL) but greater than Method Detection Limit(MDL) (CLP J-Flag).

**Note: Unless otherwise noted, all results are reported on an as received basis.**



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### Report Notes

Per communication with consultant 8/18/2017, all tests for sample volume identified as MCM-03 have been cancelled. BMcD

**CHAIN OF CUSTODY RECORD**

Pace Analytical<sup>®</sup> Pace Analytical Services, LLC - Atlanta Ga  
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
(770) 734-4200 : FAX (770) 734-4201  
[www.paceslab.com](http://www.paceslab.com)

PAGE: 1 OF 1

CLIENT NAME: Southern Sewer Services  
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:  
7411 Peachtree Blvd. SE Business  
Downtown GA 30303  
REPORT TO: CC: Strategic Surrises  
REQUESTED COMPLETION DATE: PO#:  
PROJECT NAME/STATE: Rain Water Runoff CCR  
PROJECT #:  

ANALYSIS REQUESTED									
CONTAINER TYPE:		P	O	S	F	G	C	L	PRESERVATION
PRESERVATION:		3	7	3	3	3	3	A	P - PLASTIC
# of								B	A - AMBER GLASS
								C	G - CLEAR GLASS
								D	V - VIAL
								E	S - STERILE
								F	O - OTHER
*MATRIX CODES:									
L - CONTAINER TYPE      P - PLASTIC      S - SOIL A - AMBER GLASS      1 - HCl, ≤6°C B - CLEAR GLASS      2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C C - VIAL      3 - HNO <sub>3</sub> D - STERILE      4 - NaOH, ≤6°C E - OTHER      5 - NaOH/ZnAc, ≤6°C F - OTHER      6 - Na <sub>2</sub> SO <sub>3</sub> , ≤6°C G - OTHER      7 - ≤6°C not frozen									
DW - DRINKING WATER      S - SOIL WW - WASTEWATER      SL - SLUDGE GW - GROUNDWATER      SD - SOLID SW - SURFACE WATER      A - AIR ST - STORM WATER      L - LIQUID									
W - WATER      P - PRODUCT									
REMARKS/ADDITIONAL INFORMATION									
Collection DATE	Collection TIME	MATRIX CODE: M P	G	C	G	C	G	P	
8/16/17	1525	GW	X	NCHa-03	X	1	1	1	1
8/16/17	1525	GW	X	NCHa-03	X	1	1	1	2
8/16/17	0933	GW	X	NCHa-04	X	1	1	1	3
8/16/17	1148	GW	X	NCHa-10	X	1	1	1	4
8/16/17	1150	GW	X	NCHa-15	X	1	1	1	5
8/16/17	1354	GW	X	NCHa-07	X	1	1	1	6
8/16/17	1403	GW	X	NCHa-03	X	1	1	1	7
8/16/17	1530	GW	X	NCHa-06	X	1	1	1	8
RELINQUISHED BY: <u>John Mann</u> DATE/TIME: <u>8/17/17 0934</u> RELINQUISHED BY: <u> </u> DATE/TIME: <u> </u>									
SAMPLE SHIPPED VIA: <u>FED-EX UPS</u> DATE/TIME: <u>8/17/17 0920</u> Custody Seal: <u> </u> Temperature: <u> </u> Courier: <u> </u> Other: <u> </u> Received by Lab: <u>John Mann</u> Date: <u>8/17/17</u> FS: <u> </u> Specified No: <u> </u> Yes: <u> </u> No: <u> </u> NA: <u> </u> # of Coolers: <u> </u> Specified No: <u> </u> Yes: <u> </u> No: <u> </u> NA: <u> </u> Broken: <u> </u> Not Present: <u> </u> N/A: <u> </u>									
FOR LAB USE ONLY LAB #: <u>AA 440613</u> DATE/TIME: <u>8/17/17 0940</u> Entered into LIMS: Tracking #: <u>770051205302</u>									

**Sample Condition Upon Receipt**

*Pace Analytical*

Client Name: GIA Powers

Project # AAH 0613

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other

Tracking #: 7700 5120 5302

Custody Seal on Cooler/Box Present:  Yes  No Seals intact:  Yes  No

Packing Material:  Bubble Wrap  Bubble Bags

Thermometer Used 12-4 Type of Ice: We Blue None

Cooler Temperature 2.3

Temp should be above freezing to 6°C

Optional	Proj Due Date
Proj Name	

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 8/18/17 M

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

**Client Notification/ Resolution:**

Field Data Required? Y / N

Person Contacted:

Date/Time:

Comments/ Resolution:


Project Manager Review:

Date:

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



## PACE ANALYTICAL SERVICES, LLC.

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
(770) 734-4200 FAX (770) 734-4201

### LOG-IN CHECKLIST

Printed: 8/28/2017 8:34:22AM

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 08/18/17 09:20

**Work Order:** AAH0613  
**Logged In By:** Mohammad M. Rahman

### OBSERVATIONS

<b>#Samples:</b> 8	<b>#Containers:</b> 29
<b>Minimum Temp(C):</b> 2.3	<b>Maximum Temp(C):</b> 2.3
<b>Custody Seal(s) Used:</b> Yes	

### CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	YES
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

### **Comments:**

Per communication with consultant 8/18/2017, all tests for sample volume identified as MCM-03 have been cancelled.  
BMcD

September 10, 2017

Mr. Joju Abraham  
Georgia Power  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: AAH0613 Plant McManus  
Pace Project No.: 30227761

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 21, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



Jacquelyn Collins  
jacquelyn.collins@pacelabs.com  
(724)850-5612  
Project Manager

Enclosures



#### **REPORT OF LABORATORY ANALYSIS**

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## CERTIFICATIONS

Project: AAH0613 Plant McManus  
 Pace Project No.: 30227761

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Montana Certification #: Cert 0082
L-A-B DOD-ELAP Accreditation #: L2417	Nebraska Certification #: NE-05-29-14
Alabama Certification #: 41590	Nevada Certification #: PA014572015-1
Arizona Certification #: AZ0734	New Hampshire/TNI Certification #: 2976
Arkansas Certification	New Jersey/TNI Certification #: PA 051
California Certification #: 04222CA	New Mexico Certification #: PA01457
Colorado Certification	New York/TNI Certification #: 10888
Connecticut Certification #: PH-0694	North Carolina Certification #: 42706
Delaware Certification	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Oregon/TNI Certification #: PA200002
Georgia Certification #: C040	Pennsylvania/TNI Certification #: 65-00282
Guam Certification	Puerto Rico Certification #: PA01457
Hawaii Certification	Rhode Island Certification #: 65-00282
Idaho Certification	South Dakota Certification
Illinois Certification	Tennessee Certification #: TN2867
Indiana Certification	Texas/TNI Certification #: T104704188-14-8
Iowa Certification #: 391	Utah/TNI Certification #: PA014572015-5
Kansas/TNI Certification #: E-10358	USDA Soil Permit #: P330-14-00213
Kentucky Certification #: 90133	Vermont Dept. of Health: ID# VT-0282
Louisiana DHH/TNI Certification #: LA140008	Virgin Island/PADEP Certification
Louisiana DEQ/TNI Certification #: 4086	Virginia/VELAP Certification #: 460198
Maine Certification #: PA00091	Washington Certification #: C868
Maryland Certification #: 308	West Virginia DEP Certification #: 143
Massachusetts Certification #: M-PA1457	West Virginia DHHR Certification #: 9964C
Michigan/PADEP Certification	Wisconsin Certification
Missouri Certification #: 235	Wyoming Certification #: 8TMS-L

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAH0613 Plant McManus  
 Pace Project No.: 30227761

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30227761002	MCM-04	Water	08/17/17 09:33	08/21/17 08:30
30227761003	MCM-16	Water	08/17/17 11:48	08/21/17 08:30
30227761004	MCM-15	Water	08/17/17 11:50	08/21/17 08:30
30227761005	MCM-07	Water	08/17/17 13:54	08/21/17 08:30
30227761006	MCM-05	Water	08/17/17 14:03	08/21/17 08:30
30227761007	MCM-06	Water	08/17/17 15:30	08/21/17 08:30

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: AAH0613 Plant McManus  
Pace Project No.: 30227761

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30227761002	MCM-04	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30227761003	MCM-16	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30227761004	MCM-15	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30227761005	MCM-07	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30227761006	MCM-05	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30227761007	MCM-06	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAH0613 Plant McManus

Pace Project No.: 30227761

<b>Sample: MCM-04</b>	<b>Lab ID: 30227761002</b>	Collected: 08/17/17 09:33	Received: 08/21/17 08:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>2.01 ± 0.462 (0.210)</b> C:84% T:NA	pCi/L	09/05/17 07:36
Radium-228	EPA 9320	<b>3.34 ± 0.867 (0.825)</b> C:72% T:76%	pCi/L	09/07/17 15:15
Total Radium	Total Radium Calculation	<b>5.35 ± 1.33 (1.04)</b>	pCi/L	09/10/17 13:12
<hr/>				
<b>Sample: MCM-16</b>	<b>Lab ID: 30227761003</b>	Collected: 08/17/17 11:48	Received: 08/21/17 08:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.544 ± 0.205 (0.199)</b> C:93% T:NA	pCi/L	09/05/17 07:36
Radium-228	EPA 9320	<b>1.17 ± 0.572 (0.973)</b> C:68% T:68%	pCi/L	09/07/17 15:16
Total Radium	Total Radium Calculation	<b>1.71 ± 0.777 (1.17)</b>	pCi/L	09/10/17 13:12
<hr/>				
<b>Sample: MCM-15</b>	<b>Lab ID: 30227761004</b>	Collected: 08/17/17 11:50	Received: 08/21/17 08:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>1.22 ± 0.329 (0.180)</b> C:89% T:NA	pCi/L	09/05/17 07:36
Radium-228	EPA 9320	<b>0.811 ± 0.532 (1.00)</b> C:67% T:65%	pCi/L	09/07/17 15:16
Total Radium	Total Radium Calculation	<b>2.03 ± 0.861 (1.18)</b>	pCi/L	09/10/17 13:12
<hr/>				
<b>Sample: MCM-07</b>	<b>Lab ID: 30227761005</b>	Collected: 08/17/17 13:54	Received: 08/21/17 08:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>2.83 ± 0.574 (0.168)</b> C:96% T:NA	pCi/L	09/05/17 07:30
Radium-228	EPA 9320	<b>3.55 ± 1.00 (1.00)</b> C:59% T:63%	pCi/L	09/07/17 15:16
Total Radium	Total Radium Calculation	<b>6.38 ± 1.57 (1.17)</b>	pCi/L	09/10/17 13:12
<hr/>				
<b>Sample: MCM-05</b>	<b>Lab ID: 30227761006</b>	Collected: 08/17/17 14:03	Received: 08/21/17 08:30	Matrix: Water
PWS:	Site ID:	Sample Type:		
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed
Radium-226	EPA 9315	<b>0.908 ± 0.289 (0.288)</b> C:90% T:NA	pCi/L	09/05/17 07:30
Radium-228	EPA 9320	<b>0.966 ± 0.519 (0.917)</b> C:67% T:72%	pCi/L	09/07/17 15:16

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAH0613 Plant McManus

Pace Project No.: 30227761

<b>Sample: MCM-05</b>	<b>Lab ID: 30227761006</b>	Collected: 08/17/17 14:03	Received: 08/21/17 08:30	Matrix: Water		
PWS:	Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed		
Total Radium	Total Radium Calculation	<b>1.87 ± 0.808 (1.21)</b>	pCi/L	09/10/17 13:12	7440-14-4	Qual

<b>Sample: MCM-06</b>	<b>Lab ID: 30227761007</b>	Collected: 08/17/17 15:30	Received: 08/21/17 08:30	Matrix: Water		
PWS:	Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed		
Radium-226	EPA 9315	<b>1.59 ± 0.387 (0.197)</b> C:93% T:NA	pCi/L	09/05/17 07:30	13982-63-3	Qual
Radium-228	EPA 9320	<b>1.74 ± 0.650 (0.925)</b> C:68% T:64%	pCi/L	09/07/17 15:16	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.33 ± 1.04 (1.12)</b>	pCi/L	09/10/17 13:12	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAH0613 Plant McManus

Pace Project No.: 30227761

---

QC Batch: 270015 Analysis Method: EPA 9315

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

Associated Lab Samples: 30227761002, 30227761003, 30227761004, 30227761005, 30227761006, 30227761007

---

METHOD BLANK: 1328717 Matrix: Water

Associated Lab Samples: 30227761002, 30227761003, 30227761004, 30227761005, 30227761006, 30227761007

---

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.268 ± 0.139 (0.154) C:96% T:NA	pCi/L	09/05/17 07:36	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: AAH0613 Plant McManus

Pace Project No.: 30227761

QC Batch: 270013 Analysis Method: EPA 9320

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

Associated Lab Samples: 30227761002, 30227761003, 30227761004, 30227761005, 30227761006, 30227761007

METHOD BLANK: 1328715 Matrix: Water

Associated Lab Samples: 30227761002, 30227761003, 30227761004, 30227761005, 30227761006, 30227761007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0454 ± 0.342 (0.809) C:75% T:79%	pCi/L	09/07/17 15:15	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: AAH0613 Plant McManus  
Pace Project No.: 30227761

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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**CHAIN OF CUSTODY RECORD**

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30227764  
PAGE: 1 OF 1

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

CLIENT NAME: <i>3000 S. Peachtree Street</i>	ANALYSIS REQUESTED																									
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 2110 Peachtree Street NW Atlanta GA 30303	CONTAINER TYPE: PRESERVATION:	P	D	S	P																					
REPORT TO: LAW FIRM	# of	3	3	3	3																					
REQUESTED COMPLETION DATE: PO#:	C	O	N	T	A	I	N	E	R	S																
PROJECT NAME/STATE: PROJECT #:	O	S	T	A	N	W	W	W	W	W																
SAMPLE IDENTIFICATION																										
Collection DATE	Collection TIME	MATRIX CODE*	OR	C	G	O	R	P	B																	
8/14/14	1525	GD	X	MACM-03																						
8/14/14	1525	GD	X	MACM-03																						
8/14/14	0833	GD	X	MACM-04																						
8/14/14	1148	GD	X	MACM-05																						
8/14/14	1150	GD	X	MACM-05																						
8/14/14	1354	GD	X	MACM-07																						
8/14/14	1403	GD	X	MACM-08																						
8/14/14	1530	GD	X	MACM-06																						
RELINQUISHED BY:																										
SAMPLED BY AND TITLE: S. L. H. - S. L. H. - S. L. H.	DATE/TIME: 8/14/14 16:34	RELINQUISHED BY: S. L. H. - S. L. H. - S. L. H.	DATE/TIME: 8/14/14 16:34	FOR LAB USE ONLY																						
RECEIVED BY: <i>John Mann</i>	DATE/TIME: 8/14/14 17:09:20	RELINQUISHED BY: S. L. H. - S. L. H. - S. L. H.	DATE/TIME: 8/14/14 17:09:20	LAB #: <i>AA440613</i>	Entered into LabS:																					
RECEIVED BY LAB: S. L. H. - S. L. H. - S. L. H.	DATE/TIME: 8/14/14 17:09:20	SAMPLE SHIPPED VIA: USPS - Fed-Ex -	COURIER:	CLIENT:	OTHER:	FS:																				
Shipped: Yes No	Temperature: Min: 23 Max: 30	Custody Seal: Broken Not Present	Label Coders N/A	Carrier ID: N/A																						
PRESERVATION																										
<table border="1"> <tr> <td>P - PLASTIC</td> <td>1 - HCl, 5°C</td> </tr> <tr> <td>A - AMBER GLASS</td> <td>2 - H<sub>2</sub>SO<sub>4</sub>, 5°C</td> </tr> <tr> <td>G - CLEAR GLASS</td> <td>3 - HNO<sub>3</sub></td> </tr> <tr> <td>V - VOA VAL</td> <td>4 - NaOH, 5°C</td> </tr> <tr> <td>S - STERILE</td> <td>5 - NaOH/HAc, 5°C</td> </tr> <tr> <td>O - OTHER</td> <td>6 - Na<sub>2</sub>SO<sub>4</sub>, 5°C</td> </tr> <tr> <td colspan="2">7 - 5°C not frozen</td> </tr> </table>													P - PLASTIC	1 - HCl, 5°C	A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , 5°C	G - CLEAR GLASS	3 - HNO <sub>3</sub>	V - VOA VAL	4 - NaOH, 5°C	S - STERILE	5 - NaOH/HAc, 5°C	O - OTHER	6 - Na <sub>2</sub> SO <sub>4</sub> , 5°C	7 - 5°C not frozen	
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7 - 5°C not frozen																										
*MATRIX CODES:																										
<table border="1"> <tr> <td>DW - DRINKING WATER</td> <td>S - SOIL</td> </tr> <tr> <td>WW - WASTEWATER</td> <td>SL - SLUDGE</td> </tr> <tr> <td>GW - GROUNDWATER</td> <td>SD - SOLID</td> </tr> <tr> <td>SW - SURFACE WATER</td> <td>A - AIR</td> </tr> <tr> <td>ST - STORMWATER</td> <td>L - LIQUID</td> </tr> <tr> <td colspan="2">W - WATER P - PRODUCT</td> </tr> </table>													DW - DRINKING WATER	S - SOIL	WW - WASTEWATER	SL - SLUDGE	GW - GROUNDWATER	SD - SOLID	SW - SURFACE WATER	A - AIR	ST - STORMWATER	L - LIQUID	W - WATER P - PRODUCT			
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SW - SURFACE WATER	A - AIR																									
ST - STORMWATER	L - LIQUID																									
W - WATER P - PRODUCT																										
REMARKS/ADDITIONAL INFORMATION																										
<p style="text-align: center;">1 2 3 4 5 6 7 8</p>																										



## Sample Condition Upon Receipt

30227761

AA40613

Client Name: GIA Powers

Project #

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other

Tracking #: 7700 5120 5302

Custody Seal on Cooler/Box Present:  Yes  no Seals Intact:  Yes  no

Optional Project Information
Proj. Due Date:
Proj. Name:

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used: 12-4

Type of Ice:  White  Blue  None

Cooler Temperature: 21.3

Biological Tissue Is Frozen: Yes  No

Temp should be above freezing to 6°C

Comments:

 Samples on ice, cooling process has begun

Date and Initials of person examining

contents: 8/18/17 MR

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

## Client Notification/ Resolution:

Field Data Required? Y / N

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

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


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

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

## Sample Condition Upon Receipt Pittsburgh

Pace Analytical

Client Name:

Pace CA

Project # 30227761

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7413 6658 0024

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

Thermometer Used N/A

Type of Ice: Wet Blue  None

Cooler Temperature Observed Temp N/A °C Correction Factor: °C Final Temp: °C

Temp should be above freezing to 6°C

Label ML  
LIMS Login DM

Comments:

Yes No N/A

Date and Initials of person examining contents: MC 8-21-17

Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.
Sample Labels match COC: -Includes date/time/ID	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used: -Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.
Organic Samples checked for dechlorination:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.
Filtered volume received for Dissolved tests	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14.
All containers have been checked for preservation:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>MC</u> Date/time of preservation: <u>8-21-17</u>
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	16.
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Rad Aqueous Samples Screened > 0.5 mrem/hr	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>MC</u> Date: <u>8-21-17</u>

Client Notification/ Resolution:

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

Comments/ Resolution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ A check in this box indicates that additional information has been stored in eReports.

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

\*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS, the review is in the Status section of the Workorder Edit Screen.

May 01, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 06, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

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### Atlanta Certification IDs

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

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Texas Certification #: T104704397-08-TX  
Virginia Certification #: 460204

### Pennsylvania Certification IDs

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

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

### Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804  
Florida/NELAP Certification #: E87648  
Massachusetts Certification #: M-NC030  
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40  
South Carolina Certification #: 99030001  
Virginia/VELAP Certification #: 460222

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
 Pace Project No.: 263684

Lab ID	Sample ID	Matrix	Date Collected	Date Received
263684001	MCM-11	Water	04/04/18 14:00	04/06/18 09:00
263684002	MCM-11	Water	04/04/18 14:00	04/06/18 09:00
263684003	MCM-04	Water	04/04/18 14:32	04/06/18 09:00
263684004	MCM-04	Water	04/04/18 14:32	04/06/18 09:00
263684005	MCM-15	Water	04/04/18 16:40	04/06/18 09:00
263684006	MCM-15	Water	04/04/18 16:40	04/06/18 09:00
263684007	MCM-10	Water	04/04/18 16:45	04/06/18 09:00
263684008	MCM-10	Water	04/04/18 16:45	04/06/18 09:00
263684009	Dup-1	Water	04/04/18 00:00	04/06/18 09:00
263684010	Dup-1	Water	04/04/18 00:00	04/06/18 09:00

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
263684001	MCM-11	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263684002	MCM-11	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
263684003	MCM-04	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263684004	MCM-04	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
263684005	MCM-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263684006	MCM-15	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
263684007	MCM-10	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263684008	MCM-10	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
263684009	Dup-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263684010	Dup-1	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

Sample: MCM-11	Lab ID: 263684002	Collected: 04/04/18 14:00	Received: 04/06/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	04/10/18 09:38	04/11/18 18:01	7440-36-0	
Arsenic	<b>0.017</b>	mg/L	0.0050	0.00057	1	04/10/18 09:38	04/11/18 18:01	7440-38-2	
Barium	<b>0.057</b>	mg/L	0.010	0.00078	1	04/10/18 09:38	04/11/18 18:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/18 09:38	04/11/18 18:01	7440-41-7	
Boron	<b>0.046</b>	mg/L	0.040	0.0039	1	04/10/18 09:38	04/11/18 18:01	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/10/18 09:38	04/11/18 18:01	7440-43-9	
Calcium	ND	mg/L	25.0	0.69	50	04/10/18 09:38	04/11/18 18:07	7440-70-2	D3,M6
Chromium	ND	mg/L	0.010	0.0016	1	04/10/18 09:38	04/11/18 18:01	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/10/18 09:38	04/11/18 18:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/10/18 09:38	04/11/18 18:01	7439-92-1	
Lithium	<b>0.0041J</b>	mg/L	0.050	0.00097	1	04/10/18 09:38	04/11/18 18:01	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/10/18 09:38	04/11/18 18:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/10/18 09:38	04/11/18 18:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/10/18 09:38	04/11/18 18:01	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:22	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>197</b>	mg/L	25.0	25.0	1		04/10/18 18:23		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>69.0</b>	mg/L	2.5	0.24	10		04/19/18 01:57	16887-00-6	M1
Fluoride	<b>0.32</b>	mg/L	0.30	0.029	1		04/12/18 19:19	16984-48-8	
Sulfate	<b>33.9</b>	mg/L	1.0	0.017	1		04/12/18 19:19	14808-79-8	M1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

Sample: MCM-04	Lab ID: 263684004	Collected: 04/04/18 14:32	Received: 04/06/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	04/10/18 09:38	04/11/18 18:53	7440-36-0	
Arsenic	<b>0.0023J</b>	mg/L	0.0050	0.00057	1	04/10/18 09:38	04/11/18 18:53	7440-38-2	
Barium	<b>0.035</b>	mg/L	0.010	0.00078	1	04/10/18 09:38	04/11/18 18:53	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/18 09:38	04/11/18 18:53	7440-41-7	
Boron	<b>0.10</b>	mg/L	0.040	0.0039	1	04/10/18 09:38	04/11/18 18:53	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/10/18 09:38	04/11/18 18:53	7440-43-9	
Calcium	<b>6.8</b>	mg/L	2.5	0.069	5	04/10/18 09:38	04/13/18 15:11	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/10/18 09:38	04/11/18 18:53	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/10/18 09:38	04/11/18 18:53	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/10/18 09:38	04/11/18 18:53	7439-92-1	
Lithium	<b>0.0013J</b>	mg/L	0.050	0.00097	1	04/10/18 09:38	04/11/18 18:53	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/10/18 09:38	04/11/18 18:53	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/10/18 09:38	04/11/18 18:53	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/10/18 09:38	04/11/18 18:53	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:32	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>365</b>	mg/L	25.0	25.0	1			04/10/18 18:23	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>156</b>	mg/L	2.5	0.24	10			04/19/18 02:18	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			04/12/18 20:26	16984-48-8
Sulfate	<b>70.6</b>	mg/L	10.0	0.17	10			04/19/18 02:18	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

Sample: MCM-15	Lab ID: 263684006	Collected: 04/04/18 16:40	Received: 04/06/18 09:00	Matrix: Water				
Parameters	Results	Units	Report	Prepared	Analyzed	CAS No.	Qual	
			Limit					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A						
Antimony	ND	mg/L	0.0030	0.00078	1	04/10/18 09:38	04/11/18 19:04	7440-36-0
Arsenic	<b>0.0029J</b>	mg/L	0.0050	0.00057	1	04/10/18 09:38	04/11/18 19:04	7440-38-2
Barium	<b>0.039</b>	mg/L	0.010	0.00078	1	04/10/18 09:38	04/11/18 19:04	7440-39-3
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/18 09:38	04/11/18 19:04	7440-41-7
Boron	<b>0.065</b>	mg/L	0.040	0.0039	1	04/10/18 09:38	04/11/18 19:04	7440-42-8
Cadmium	ND	mg/L	0.0010	0.000093	1	04/10/18 09:38	04/11/18 19:04	7440-43-9
Calcium	<b>6.5</b>	mg/L	2.5	0.069	5	04/10/18 09:38	04/13/18 15:16	7440-70-2
Chromium	ND	mg/L	0.010	0.0016	1	04/10/18 09:38	04/11/18 19:04	7440-47-3
Cobalt	ND	mg/L	0.010	0.00052	1	04/10/18 09:38	04/11/18 19:04	7440-48-4
Lead	ND	mg/L	0.0050	0.00027	1	04/10/18 09:38	04/11/18 19:04	7439-92-1
Lithium	<b>0.0015J</b>	mg/L	0.050	0.00097	1	04/10/18 09:38	04/11/18 19:04	7439-93-2
Molybdenum	ND	mg/L	0.010	0.0019	1	04/10/18 09:38	04/11/18 19:04	7439-98-7
Selenium	ND	mg/L	0.010	0.0014	1	04/10/18 09:38	04/11/18 19:04	7782-49-2
Thallium	ND	mg/L	0.0010	0.00014	1	04/10/18 09:38	04/11/18 19:04	7440-28-0
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A						
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:34	7439-97-6
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C						
Total Dissolved Solids	<b>90.0</b>	mg/L	25.0	25.0	1		04/10/18 18:23	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0						
Chloride	<b>13.4</b>	mg/L	0.25	0.024	1		04/12/18 20:48	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1		04/12/18 20:48	16984-48-8
Sulfate	<b>13.4</b>	mg/L	1.0	0.017	1		04/12/18 20:48	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

Sample: MCM-10	Lab ID: 263684008	Collected: 04/04/18 16:45	Received: 04/06/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	04/10/18 09:38	04/11/18 19:16	7440-36-0	
Arsenic	<b>0.029</b>	mg/L	0.0050	0.00057	1	04/10/18 09:38	04/11/18 19:16	7440-38-2	
Barium	<b>0.019</b>	mg/L	0.010	0.00078	1	04/10/18 09:38	04/11/18 19:16	7440-39-3	
Beryllium	<b>0.011</b>	mg/L	0.0030	0.000050	1	04/10/18 09:38	04/11/18 19:16	7440-41-7	
Boron	<b>0.21</b>	mg/L	0.040	0.0039	1	04/10/18 09:38	04/11/18 19:16	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/10/18 09:38	04/11/18 19:16	7440-43-9	
Calcium	<b>37.3</b>	mg/L	25.0	0.69	50	04/10/18 09:38	04/11/18 19:21	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/10/18 09:38	04/11/18 19:16	7440-47-3	
Cobalt	<b>0.024</b>	mg/L	0.010	0.00052	1	04/10/18 09:38	04/11/18 19:16	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/10/18 09:38	04/11/18 19:16	7439-92-1	
Lithium	<b>0.10</b>	mg/L	0.050	0.00097	1	04/10/18 09:38	04/11/18 19:16	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/10/18 09:38	04/11/18 19:16	7439-98-7	
Selenium	<b>0.027</b>	mg/L	0.010	0.0014	1	04/10/18 09:38	04/11/18 19:16	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/10/18 09:38	04/11/18 19:16	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:36	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>2990</b>	mg/L	250	250	1		04/10/18 18:23		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>667</b>	mg/L	12.5	1.2	50		04/19/18 02:38	16887-00-6	
Fluoride	<b>0.88</b>	mg/L	0.30	0.029	1		04/12/18 21:10	16984-48-8	
Sulfate	<b>1250</b>	mg/L	50.0	0.85	50		04/19/18 02:38	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

Sample: Dup-1	Lab ID: 263684010	Collected: 04/04/18 00:00	Received: 04/06/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	04/10/18 09:38	04/11/18 19:27	7440-36-0	
Arsenic	<b>0.016</b>	mg/L	0.0050	0.00057	1	04/10/18 09:38	04/11/18 19:27	7440-38-2	
Barium	<b>0.053</b>	mg/L	0.010	0.00078	1	04/10/18 09:38	04/11/18 19:27	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/18 09:38	04/11/18 19:27	7440-41-7	
Boron	<b>0.042</b>	mg/L	0.040	0.0039	1	04/10/18 09:38	04/11/18 19:27	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/10/18 09:38	04/11/18 19:27	7440-43-9	
Calcium	ND	mg/L	25.0	0.69	50	04/10/18 09:38	04/11/18 19:33	7440-70-2	D3
Chromium	ND	mg/L	0.010	0.0016	1	04/10/18 09:38	04/11/18 19:27	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/10/18 09:38	04/11/18 19:27	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/10/18 09:38	04/11/18 19:27	7439-92-1	
Lithium	<b>0.0038J</b>	mg/L	0.050	0.00097	1	04/10/18 09:38	04/11/18 19:27	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/10/18 09:38	04/11/18 19:27	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/10/18 09:38	04/11/18 19:27	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/10/18 09:38	04/11/18 19:27	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:39	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>232</b>	mg/L	25.0	25.0	1		04/10/18 18:23		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>60.4</b>	mg/L	2.5	0.24	10		04/19/18 02:59	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/12/18 21:33	16984-48-8	
Sulfate	<b>32.6</b>	mg/L	1.0	0.017	1		04/12/18 21:33	14808-79-8	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

QC Batch:	4045	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
Associated Lab Samples:	263684002, 263684004, 263684006, 263684008, 263684010		

METHOD BLANK: 20256                                  Matrix: Water

Associated Lab Samples: 263684002, 263684004, 263684006, 263684008, 263684010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	04/10/18 16:17	

LABORATORY CONTROL SAMPLE: 20257

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0023	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20258                                  20259

Parameter	Units	263684002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0022	0.0021	86	84	75-125	3	20	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 263684

QC Batch:	4003	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020B MET
Associated Lab Samples:	263684002, 263684004, 263684006, 263684008, 263684010		

METHOD BLANK: 20133                                  Matrix: Water

Associated Lab Samples: 263684002, 263684004, 263684006, 263684008, 263684010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/11/18 17:50	
Arsenic	mg/L	ND	0.0050	0.00057	04/11/18 17:50	
Barium	mg/L	ND	0.010	0.00078	04/11/18 17:50	
Beryllium	mg/L	ND	0.0030	0.000050	04/11/18 17:50	
Boron	mg/L	ND	0.040	0.0039	04/11/18 17:50	
Cadmium	mg/L	ND	0.0010	0.000093	04/11/18 17:50	
Calcium	mg/L	ND	0.50	0.014	04/11/18 17:50	
Chromium	mg/L	ND	0.010	0.0016	04/11/18 17:50	
Cobalt	mg/L	ND	0.010	0.00052	04/11/18 17:50	
Lead	mg/L	ND	0.0050	0.00027	04/11/18 17:50	
Lithium	mg/L	ND	0.050	0.00097	04/11/18 17:50	
Molybdenum	mg/L	ND	0.010	0.0019	04/11/18 17:50	
Selenium	mg/L	ND	0.010	0.0014	04/11/18 17:50	
Thallium	mg/L	ND	0.0010	0.00014	04/11/18 17:50	

LABORATORY CONTROL SAMPLE: 20134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	113	80-120	
Arsenic	mg/L	.1	0.10	101	80-120	
Barium	mg/L	.1	0.10	104	80-120	
Beryllium	mg/L	.1	0.10	105	80-120	
Boron	mg/L	1	1.1	108	80-120	
Cadmium	mg/L	.1	0.11	106	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.11	107	80-120	
Cobalt	mg/L	.1	0.10	102	80-120	
Lead	mg/L	.1	0.10	104	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.11	107	80-120	
Selenium	mg/L	.1	0.10	103	80-120	
Thallium	mg/L	.1	0.10	102	80-120	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 20135                                  20136

Parameter	Units	MS Result	MS Spike Conc.	MS Result	MS % Rec	MS Result	MS % Rec	% Rec Limits	RPD	Max RPD	Max Qual
Antimony	mg/L	ND	.1	.1	0.11	0.11	113	114	75-125	1	20

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## REPORT OF LABORATORY ANALYSIS

## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 263684

Parameter	Units	20135		20136									
		MS		MSD		MS		MSD		% Rec		Max	
		263684002	Spike Result	Conc.	Spike Conc.	Result	MSD	Result	% Rec	MSD % Rec	Limits	RPD	RPD
Arsenic	mg/L	0.017	.1	.1	.1	0.12	0.12	102	105	75-125	3	20	
Barium	mg/L	0.057	.1	.1	.1	0.16	0.16	102	101	75-125	1	20	
Beryllium	mg/L	ND	.1	.1	.11	0.11	0.11	107	105	75-125	2	20	
Boron	mg/L	0.046	1	1	1.1	1.1	1.1	108	108	75-125	0	20	
Cadmium	mg/L	ND	.1	.1	0.11	0.11	0.11	105	108	75-125	3	20	
Calcium	mg/L	ND	1	1	15.5J	16J	109	162	75-125	3	20	M6	
Chromium	mg/L	ND	.1	.1	0.11	0.11	0.11	107	108	75-125	0	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.11	0.11	106	107	75-125	1	20	
Lead	mg/L	ND	.1	.1	0.10	0.10	0.10	101	103	75-125	3	20	
Lithium	mg/L	0.0041J	.1	.1	0.11	0.11	0.11	106	101	75-125	5	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	0.11	108	109	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	0.11	101	106	75-125	5	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	0.10	100	102	75-125	2	20	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 263684

QC Batch: 405558 Analysis Method: SM 2540C

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 263684002, 263684004, 263684006, 263684008, 263684010

METHOD BLANK: 2249847 Matrix: Water

Associated Lab Samples: 263684002, 263684004, 263684006, 263684008, 263684010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	04/10/18 18:23	

LABORATORY CONTROL SAMPLE: 2249848

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	232	93	90-110	

SAMPLE DUPLICATE: 2249849

Parameter	Units	92379682010 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	46.0	37.0	22	5	D6

SAMPLE DUPLICATE: 2249850

Parameter	Units	263585019 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	303	298	2	5	

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## **QUALITY CONTROL DATA**

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

QC Batch: 4236 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 263684002, 263684004, 263684006, 263684008, 263684010

METHOD BLANK: 21038 Matrix: Water

Associated Lab Samples: 263684002, 263684004, 263684006, 263684008, 263684010

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Chloride	mg/L	ND	0.25	0.024	04/12/18 17:50	
Fluoride	mg/L	ND	0.30	0.029	04/12/18 17:50	
Sulfate	mg/L	ND	1.0	0.017	04/12/18 17:50	

LABORATORY CONTROL SAMPLE: 21039

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.0	100	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 21040 21041

Parameter	Units	MS		MSD		% Rec	MSD	% Rec	Max		
		263684002	Spike	Spike	MS				Limits	RPD	RPD
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec			Qual
Chloride	mg/L	69.0	10	10	70.4	70.4	13	13	90-110	0	15 E,M1
Fluoride	mg/L	0.32	10	10	10.5	10.5	102	102	90-110	0	15
Sulfate	mg/L	33.9	10	10	40.7	40.6	67	67	90-110	0	15 M1

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

**Sample: MCM-11**      Lab ID: **263684001**      Collected: 04/04/18 14:00      Received: 04/06/18 09:00      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.521 ± 0.224 (0.285)</b> C:96% T:NA	pCi/L	04/23/18 08:25	13982-63-3	
Radium-228	EPA 9320	<b>0.514 ± 0.308 (0.561)</b> C:81% T:89%	pCi/L	04/25/18 12:29	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.04 ± 0.532 (0.846)</b>	pCi/L	04/30/18 12:24	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 263684

**Sample: MCM-04**      Lab ID: **263684003**      Collected: 04/04/18 14:32      Received: 04/06/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.98 ± 0.477 (0.233)</b> C:83% T:NA	pCi/L	04/23/18 08:25	13982-63-3	
Radium-228	EPA 9320	<b>3.07 ± 0.818 (0.841)</b> C:75% T:73%	pCi/L	04/25/18 12:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>5.05 ± 1.30 (1.07)</b>	pCi/L	04/30/18 12:24	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 263684

**Sample: MCM-15**      Lab ID: **263684005**      Collected: 04/04/18 16:40      Received: 04/06/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.865 ± 0.280 (0.219)</b> C:92% T:NA	pCi/L	04/23/18 08:26	13982-63-3	
Radium-228	EPA 9320	<b>1.09 ± 0.517 (0.880)</b> C:74% T:71%	pCi/L	04/25/18 12:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.96 ± 0.797 (1.10)</b>	pCi/L	04/30/18 12:24	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

---

Sample: MCM-10	Lab ID: <b>263684007</b>	Collected: 04/04/18 16:45	Received: 04/06/18 09:00	Matrix: Water
PWS:	Site ID:	Sample Type:		

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.767 ± 0.277 (0.262)</b> C:82% T:NA	pCi/L	04/23/18 08:26	13982-63-3	
Radium-228	EPA 9320	<b>1.02 ± 0.539 (0.972)</b> C:69% T:82%	pCi/L	04/25/18 15:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.79 ± 0.816 (1.23)</b>	pCi/L	04/30/18 12:24	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 263684

**Sample:** Dup-1      **Lab ID:** 263684009      Collected: 04/04/18 00:00      Received: 04/06/18 09:00      Matrix: Water

**PWS:**      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.615 ± 0.241 (0.256)</b> C:87% T:NA	pCi/L	04/23/18 08:26	13982-63-3	
Radium-228	EPA 9320	<b>0.503 ± 0.395 (0.782)</b> C:73% T:86%	pCi/L	04/25/18 15:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.12 ± 0.636 (1.04)</b>	pCi/L	04/30/18 12:24	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 263684

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QC Batch: 295226 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 263684001, 263684003, 263684005, 263684007, 263684009

---

METHOD BLANK: 1445489 Matrix: Water

Associated Lab Samples: 263684001, 263684003, 263684005, 263684007, 263684009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.408 ± 0.193 (0.217) C:97% T:NA	pCi/L	04/23/18 08:24	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 263684

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QC Batch: 295250 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 263684001, 263684003, 263684005, 263684007, 263684009

---

METHOD BLANK: 1445581 Matrix: Water

Associated Lab Samples: 263684001, 263684003, 263684005, 263684007, 263684009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.620 ± 0.360 (0.645) C:79% T:76%	pCi/L	04/25/18 12:29	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus Ash Ponds  
 Pace Project No.: 263684

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-A Pace Analytical Services - Asheville  
 PASI-GA Pace Analytical Services - Atlanta, GA  
 PASI-PA Pace Analytical Services - Greensburg

### ANALYTE QUALIFIERS

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

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 263684

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
263684002	MCM-11	EPA 3005A	4003	EPA 6020B	4188
263684004	MCM-04	EPA 3005A	4003	EPA 6020B	4188
263684006	MCM-15	EPA 3005A	4003	EPA 6020B	4188
263684008	MCM-10	EPA 3005A	4003	EPA 6020B	4188
263684010	Dup-1	EPA 3005A	4003	EPA 6020B	4188
263684002	MCM-11	EPA 7470A	4045	EPA 7470A	4092
263684004	MCM-04	EPA 7470A	4045	EPA 7470A	4092
263684006	MCM-15	EPA 7470A	4045	EPA 7470A	4092
263684008	MCM-10	EPA 7470A	4045	EPA 7470A	4092
263684010	Dup-1	EPA 7470A	4045	EPA 7470A	4092
263684001	MCM-11	EPA 9315	295226		
263684003	MCM-04	EPA 9315	295226		
263684005	MCM-15	EPA 9315	295226		
263684007	MCM-10	EPA 9315	295226		
263684009	Dup-1	EPA 9315	295226		
263684001	MCM-11	EPA 9320	295250		
263684003	MCM-04	EPA 9320	295250		
263684005	MCM-15	EPA 9320	295250		
263684007	MCM-10	EPA 9320	295250		
263684009	Dup-1	EPA 9320	295250		
263684001	MCM-11	Total Radium Calculation	296443		
263684003	MCM-04	Total Radium Calculation	296443		
263684005	MCM-15	Total Radium Calculation	296443		
263684007	MCM-10	Total Radium Calculation	296443		
263684009	Dup-1	Total Radium Calculation	296443		
263684002	MCM-11	SM 2540C	405558		
263684004	MCM-04	SM 2540C	405558		
263684006	MCM-15	SM 2540C	405558		
263684008	MCM-10	SM 2540C	405558		
263684010	Dup-1	SM 2540C	405558		
263684002	MCM-11	EPA 300.0	4236		
263684004	MCM-04	EPA 300.0	4236		
263684006	MCM-15	EPA 300.0	4236		
263684008	MCM-10	EPA 300.0	4236		
263684010	Dup-1	EPA 300.0	4236		

### REPORT OF LABORATORY ANALYSIS

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FaceAnalytical

## CHAIN-OF-CUSTODY / Analytical Request Document

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

### Section A Required Client Information:

Company: Georgia Power	Report To: Joju Abraham	Attention: Company Name:																																																								
Address: 2480 Maran Road	Copy To:	Address:																																																								
Atlanta, GA 30339		Pace Quotient:																																																								
Email: labraham@southemco.com	Project Name: Georgia Power - Plant McManus CCR Scope	Pace Project Manager: baisy.modania@paceciabs.com,																																																								
Phone: (404) 505-7239	Fax	Project #: Project #:																																																								
Requested Due Date:		Pace Profile #: 334																																																								
Section B Required Project Information:																																																										
<table border="1"> <tr> <td>SAMPLE ID</td> <td>MATRIX</td> <td>CODE</td> <td>COLLECTED</td> <td>START</td> <td>END</td> <td>TIME</td> <td>DATE</td> <td>TIME</td> <td>DATE</td> <td>TIME</td> <td>COLLECTED</td> <td>Preservatives</td> <td>ANALYSES TESTS</td> <td>RADON TEST</td> <td>METALS</td> <td>CHLORIDE, FLUORIDE, SULFATE</td> <td>TDS BY 2540C</td> <td>RESIDUE CHLORINE (Y/N)</td> </tr> <tr> <td>One Character per box. (A-Z, 0-9, -) Sample Ids must be unique</td> <td>Dinking Ware Waste Ware Product Soil/Ground Oil Wise Air Other Tissue Grand Total</td> <td>DW WT WW P SL OL WP AR OZ TS G</td> <td></td> </tr> <tr> <td>ITEM #</td> <td></td> </tr> </table>			SAMPLE ID	MATRIX	CODE	COLLECTED	START	END	TIME	DATE	TIME	DATE	TIME	COLLECTED	Preservatives	ANALYSES TESTS	RADON TEST	METALS	CHLORIDE, FLUORIDE, SULFATE	TDS BY 2540C	RESIDUE CHLORINE (Y/N)	One Character per box. (A-Z, 0-9, -) Sample Ids must be unique	Dinking Ware Waste Ware Product Soil/Ground Oil Wise Air Other Tissue Grand Total	DW WT WW P SL OL WP AR OZ TS G																ITEM #																		
SAMPLE ID	MATRIX	CODE	COLLECTED	START	END	TIME	DATE	TIME	DATE	TIME	COLLECTED	Preservatives	ANALYSES TESTS	RADON TEST	METALS	CHLORIDE, FLUORIDE, SULFATE	TDS BY 2540C	RESIDUE CHLORINE (Y/N)																																								
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ITEM #																																																										
1	MCM-11	G	4/4/18	1400		X	X	X	X	X																																																
2	MCM-04	G	4/4/18	1432		X	X	X	X	X																																																
3	MCM-15	G	4/4/18	1640		X	X	X	X	X																																																
4	MUM-10	G	4/4/18	1645		X	X	X	X	X																																																
5	DUR-1	G	4/4/18	—		X	X	X	X	X																																																
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Section C Invoice Information:																																																										
ITEM #	QTY	UNIT	DESCRIPTION	QUANTITY	UNIT	DESCRIPTION	QUANTITY	UNIT	DESCRIPTION	QUANTITY	UNIT	DESCRIPTION	QUANTITY	UNIT	DESCRIPTION	QUANTITY	UNIT	DESCRIPTION																																								
Section D Additional Comments:																																																										
<p><b>WO# : 263684</b></p> <p><b>263684</b></p> <p>Sample Condition: <b>Good</b></p> <p>Date: <b>4/4/18</b></p> <p>Time: <b>1205</b></p> <p>Location: <b>Plant McManus 4/4/18 0900 2020</b></p> <p>Sample Name and Signature:  <b>John B. Hill</b>          Print Name of Sampler: <b>John B. Hill</b>          Signature of Sampler: <b>John B. Hill</b>          Date Signed: <b>4/4/18</b></p>																																																										

## Sample Condition Upon Receipt

Pace Analytical

Client Name: GIA Powers

Project #

WO# : 263684

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace OtherTracking #: 780394268397Custody Seal on Copier/Box Present:  yes  no Seals intact:  yes Packing Material:  Bubble Wrap  Bubble Bags  None  OtherThermometer Used 83Type of Ice: Wet Blue None Cooler Temperature 1.4

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 4/6/18 MR

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

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

Project Manager Review:   Date:   

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

May 01, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on April 06, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

---

### Atlanta Certification IDs

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

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Texas Certification #: T104704397-08-TX  
Virginia Certification #: 460204

### Pennsylvania Certification IDs

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

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

### Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804  
Florida/NELAP Certification #: E87648  
Massachusetts Certification #: M-NC030  
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40  
South Carolina Certification #: 99030001  
Virginia/VELAP Certification #: 460222

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
 Pace Project No.: 263686

Lab ID	Sample ID	Matrix	Date Collected	Date Received
263686001	MCM-08	Water	04/05/18 09:45	04/06/18 09:00
263686002	MCM-08	Water	04/05/18 09:45	04/06/18 09:00
263686003	MCM-02	Water	04/05/18 10:53	04/06/18 09:00
263686004	MCM-02	Water	04/05/18 10:53	04/06/18 09:00
263686005	FBL 040518	Water	04/05/18 10:45	04/06/18 09:00
263686006	FBL 040518	Water	04/05/18 10:45	04/06/18 09:00
263686007	EQBL 040518	Water	04/05/18 10:55	04/06/18 09:00
263686008	EQBL 040518	Water	04/05/18 10:55	04/06/18 09:00

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
263686001	MCM-08	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263686002	MCM-08	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
263686003	MCM-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263686004	MCM-02	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
263686005	FBL 040518	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263686006	FBL 040518	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
263686007	EQBL 040518	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
263686008	EQBL 040518	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	EJJ	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

Sample: MCM-08	Lab ID: 263686002	Collected: 04/05/18 09:45	Received: 04/06/18 09:00	Matrix: Water				
Parameters	Results	Units	Report	Prepared	Analyzed	CAS No.	Qual	
			Limit					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A						
Antimony	ND	mg/L	0.0030	0.00078	1	04/10/18 09:38	04/11/18 19:39	7440-36-0
Arsenic	<b>0.024</b>	mg/L	0.0050	0.00057	1	04/10/18 09:38	04/11/18 19:39	7440-38-2
Barium	<b>0.61</b>	mg/L	0.50	0.039	50	04/10/18 09:38	04/11/18 19:44	7440-39-3
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/18 09:38	04/11/18 19:39	7440-41-7
Boron	<b>0.39</b>	mg/L	0.040	0.0039	1	04/10/18 09:38	04/11/18 19:39	7440-42-8
Cadmium	ND	mg/L	0.0010	0.000093	1	04/10/18 09:38	04/11/18 19:39	7440-43-9
Calcium	<b>39.4</b>	mg/L	25.0	0.69	50	04/10/18 09:38	04/11/18 19:44	7440-70-2
Chromium	ND	mg/L	0.010	0.0016	1	04/10/18 09:38	04/11/18 19:39	7440-47-3
Cobalt	ND	mg/L	0.010	0.00052	1	04/10/18 09:38	04/11/18 19:39	7440-48-4
Lead	ND	mg/L	0.0050	0.00027	1	04/10/18 09:38	04/11/18 19:39	7439-92-1
Lithium	<b>0.0022J</b>	mg/L	0.050	0.00097	1	04/10/18 09:38	04/11/18 19:39	7439-93-2
Molybdenum	<b>0.0031J</b>	mg/L	0.010	0.0019	1	04/10/18 09:38	04/11/18 19:39	7439-98-7
Selenium	ND	mg/L	0.010	0.0014	1	04/10/18 09:38	04/11/18 19:39	7782-49-2
Thallium	ND	mg/L	0.0010	0.00014	1	04/10/18 09:38	04/11/18 19:39	7440-28-0
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A						
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:46	7439-97-6
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C						
Total Dissolved Solids	<b>3460</b>	mg/L	250	250	1		04/10/18 17:43	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0						
Chloride	<b>1900</b>	mg/L	12.5	1.2	50		04/19/18 03:20	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1		04/12/18 21:55	16984-48-8
Sulfate	<b>350</b>	mg/L	50.0	0.85	50		04/19/18 03:20	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

Sample: MCM-02	Lab ID: 263686004	Collected: 04/05/18 10:53	Received: 04/06/18 09:00	Matrix: Water				
Parameters	Results	Units	Report	Prepared	Analyzed	CAS No.	Qual	
			Limit					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A						
Antimony	ND	mg/L	0.0030	0.00078	1	04/10/18 09:38	04/11/18 20:02	7440-36-0
Arsenic	<b>0.00098J</b>	mg/L	0.0050	0.00057	1	04/10/18 09:38	04/11/18 20:02	7440-38-2
Barium	<b>0.12</b>	mg/L	0.010	0.00078	1	04/10/18 09:38	04/11/18 20:02	7440-39-3
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/18 09:38	04/11/18 20:02	7440-41-7
Boron	<b>0.13</b>	mg/L	0.040	0.0039	1	04/10/18 09:38	04/11/18 20:02	7440-42-8
Cadmium	ND	mg/L	0.0010	0.000093	1	04/10/18 09:38	04/11/18 20:02	7440-43-9
Calcium	<b>5.0</b>	mg/L	0.50	0.014	1	04/10/18 09:38	04/11/18 20:02	7440-70-2
Chromium	ND	mg/L	0.010	0.0016	1	04/10/18 09:38	04/11/18 20:02	7440-47-3
Cobalt	ND	mg/L	0.010	0.00052	1	04/10/18 09:38	04/11/18 20:02	7440-48-4
Lead	ND	mg/L	0.0050	0.00027	1	04/10/18 09:38	04/11/18 20:02	7439-92-1
Lithium	ND	mg/L	0.050	0.00097	1	04/10/18 09:38	04/11/18 20:02	7439-93-2
Molybdenum	ND	mg/L	0.010	0.0019	1	04/10/18 09:38	04/11/18 20:02	7439-98-7
Selenium	ND	mg/L	0.010	0.0014	1	04/10/18 09:38	04/11/18 20:02	7782-49-2
Thallium	ND	mg/L	0.0010	0.00014	1	04/10/18 09:38	04/11/18 20:02	7440-28-0
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A						
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:48	7439-97-6
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C						
Total Dissolved Solids	<b>128</b>	mg/L	25.0	25.0	1		04/10/18 17:43	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0						
Chloride	<b>40.2</b>	mg/L	0.25	0.024	1		04/12/18 22:17	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1		04/12/18 22:17	16984-48-8
Sulfate	<b>33.4</b>	mg/L	1.0	0.017	1		04/12/18 22:17	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

Sample: FBL 040518		Lab ID: 263686006		Collected: 04/05/18 10:45		Received: 04/06/18 09:00		Matrix: Water	
Parameters	Results	Units	Report				Analyzed	CAS No.	Qual
			Limit	MDL	DF	Prepared			
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	04/10/18 09:38	04/11/18 20:19	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/10/18 09:38	04/11/18 20:19	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	04/10/18 09:38	04/11/18 20:19	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/18 09:38	04/11/18 20:19	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	04/10/18 09:38	04/11/18 20:19	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/10/18 09:38	04/11/18 20:19	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	04/10/18 09:38	04/11/18 20:19	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/10/18 09:38	04/11/18 20:19	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/10/18 09:38	04/11/18 20:19	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/10/18 09:38	04/11/18 20:19	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	04/10/18 09:38	04/11/18 20:19	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/10/18 09:38	04/11/18 20:19	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/10/18 09:38	04/11/18 20:19	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/10/18 09:38	04/11/18 20:19	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:51	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	25.0	25.0	1			04/10/18 17:43	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	ND	mg/L	0.25	0.024	1			04/12/18 22:40	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			04/12/18 22:40	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			04/12/18 22:40	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

Sample: EQBL 040518	Lab ID: 263686008	Collected: 04/05/18 10:55	Received: 04/06/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	04/10/18 09:38	04/11/18 20:24	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	04/10/18 09:38	04/11/18 20:24	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	04/10/18 09:38	04/11/18 20:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	04/10/18 09:38	04/11/18 20:24	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	04/10/18 09:38	04/11/18 20:24	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	04/10/18 09:38	04/11/18 20:24	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	04/10/18 09:38	04/11/18 20:24	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	04/10/18 09:38	04/11/18 20:24	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	04/10/18 09:38	04/11/18 20:24	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	04/10/18 09:38	04/11/18 20:24	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	04/10/18 09:38	04/11/18 20:24	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	04/10/18 09:38	04/11/18 20:24	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	04/10/18 09:38	04/11/18 20:24	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	04/10/18 09:38	04/11/18 20:24	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	04/10/18 11:35	04/10/18 16:53	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	25.0	25.0	1			04/10/18 17:43	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	ND	mg/L	0.25	0.024	1			04/13/18 00:33	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			04/13/18 00:33	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			04/13/18 00:33	14808-79-8

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

QC Batch:	4045	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
Associated Lab Samples:	263686002, 263686004, 263686006, 263686008		

METHOD BLANK: 20256    Matrix: Water

Associated Lab Samples: 263686002, 263686004, 263686006, 263686008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	04/10/18 16:17	

LABORATORY CONTROL SAMPLE: 20257

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0023	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 20258    20259

Parameter	Units	263684002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0022	0.0021	86	84	75-125	3	20	

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 263686

QC Batch:	4003	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020B MET
Associated Lab Samples:	263686002, 263686004, 263686006, 263686008		

METHOD BLANK: 20133                                  Matrix: Water

Associated Lab Samples: 263686002, 263686004, 263686006, 263686008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	04/11/18 17:50	
Arsenic	mg/L	ND	0.0050	0.00057	04/11/18 17:50	
Barium	mg/L	ND	0.010	0.00078	04/11/18 17:50	
Beryllium	mg/L	ND	0.0030	0.000050	04/11/18 17:50	
Boron	mg/L	ND	0.040	0.0039	04/11/18 17:50	
Cadmium	mg/L	ND	0.0010	0.000093	04/11/18 17:50	
Calcium	mg/L	ND	0.50	0.014	04/11/18 17:50	
Chromium	mg/L	ND	0.010	0.0016	04/11/18 17:50	
Cobalt	mg/L	ND	0.010	0.00052	04/11/18 17:50	
Lead	mg/L	ND	0.0050	0.00027	04/11/18 17:50	
Lithium	mg/L	ND	0.050	0.00097	04/11/18 17:50	
Molybdenum	mg/L	ND	0.010	0.0019	04/11/18 17:50	
Selenium	mg/L	ND	0.010	0.0014	04/11/18 17:50	
Thallium	mg/L	ND	0.0010	0.00014	04/11/18 17:50	

LABORATORY CONTROL SAMPLE: 20134

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	113	80-120	
Arsenic	mg/L	.1	0.10	101	80-120	
Barium	mg/L	.1	0.10	104	80-120	
Beryllium	mg/L	.1	0.10	105	80-120	
Boron	mg/L	1	1.1	108	80-120	
Cadmium	mg/L	.1	0.11	106	80-120	
Calcium	mg/L	1	1.0	101	80-120	
Chromium	mg/L	.1	0.11	107	80-120	
Cobalt	mg/L	.1	0.10	102	80-120	
Lead	mg/L	.1	0.10	104	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.11	107	80-120	
Selenium	mg/L	.1	0.10	103	80-120	
Thallium	mg/L	.1	0.10	102	80-120	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 20135                                  20136

Parameter	Units	MS Result	MS Spike Conc.	MS Result	MS % Rec	MS Result	MS % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	.1	.1	0.11	0.11	113	114	75-125	1	20

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## REPORT OF LABORATORY ANALYSIS

## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 263686

Parameter	Units	20135		20136									
		MS		MSD		MS		MSD		% Rec		Max	
		263684002	Spike Result	Conc.	Spike Conc.	Result	MSD	Result	% Rec	MSD % Rec	Limits	RPD RPD	Qual
Arsenic	mg/L	0.017	.1	.1	.1	0.12	0.12	102	105	75-125	3	20	
Barium	mg/L	0.057	.1	.1	.1	0.16	0.16	102	101	75-125	1	20	
Beryllium	mg/L	ND	.1	.1	.11	0.11	0.11	107	105	75-125	2	20	
Boron	mg/L	0.046	1	1	1.1	1.1	1.1	108	108	75-125	0	20	
Cadmium	mg/L	ND	.1	.1	0.11	0.11	0.11	105	108	75-125	3	20	
Calcium	mg/L	ND	1	1	15.5J	16J	109	162	75-125	3	20	M6	
Chromium	mg/L	ND	.1	.1	0.11	0.11	0.11	107	108	75-125	0	20	
Cobalt	mg/L	ND	.1	.1	0.11	0.11	0.11	106	107	75-125	1	20	
Lead	mg/L	ND	.1	.1	0.10	0.10	0.10	101	103	75-125	3	20	
Lithium	mg/L	0.0041J	.1	.1	0.11	0.11	0.11	106	101	75-125	5	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	0.11	108	109	75-125	1	20	
Selenium	mg/L	ND	.1	.1	0.10	0.10	0.11	101	106	75-125	5	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	0.10	100	102	75-125	2	20	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

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QC Batch:	405723	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	263686002, 263686004, 263686006, 263686008		

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METHOD BLANK: 2250735                          Matrix: Water

Associated Lab Samples: 263686002, 263686004, 263686006, 263686008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	04/10/18 17:43	

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LABORATORY CONTROL SAMPLE: 2250736

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	248	99	90-110	

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SAMPLE DUPLICATE: 2250737

Parameter	Units	92379764004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	490	530	8	5	D6

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SAMPLE DUPLICATE: 2250738

Parameter	Units	92379815004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	53.0	48.0	10	5	D6

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## **QUALITY CONTROL DATA**

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

QC Batch: 4236 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 263686002, 263686004, 263686006, 263686008

METHOD BLANK: 21038 Matrix: Water

Associated Lab Samples: 263686002, 263686004, 263686006, 263686008

Parameter	Units	Blank	Reporting		Analyzed	Qualifiers
		Result	Limit	MDL		
Chloride	mg/L	ND	0.25	0.024	04/12/18 17:50	
Fluoride	mg/L	ND	0.30	0.029	04/12/18 17:50	
Sulfate	mg/L	ND	1.0	0.017	04/12/18 17:50	

LABORATORY CONTROL SAMPLE: 21039

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.0	100	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.1	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 21040 21041

Parameter	Units	MS		MSD		% Rec	MSD	% Rec	Max		
		263684002	Spike	Spike	MS				Limits	RPD	RPD
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec			Qual
Chloride	mg/L	69.0	10	10	70.4	70.4	13	13	90-110	0	15 E,M1
Fluoride	mg/L	0.32	10	10	10.5	10.5	102	102	90-110	0	15
Sulfate	mg/L	33.9	10	10	40.7	40.6	67	67	90-110	0	15 M1

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

**Sample: MCM-08**      Lab ID: **263686001**      Collected: 04/05/18 09:45      Received: 04/06/18 09:00      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>13.2 ± 2.11 (0.137)</b> C:86% T:NA	pCi/L	04/27/18 09:53	13982-63-3	
Radium-228	EPA 9320	<b>6.87 ± 1.51 (0.980)</b> C:66% T:77%	pCi/L	04/25/18 15:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>20.1 ± 3.62 (1.12)</b>	pCi/L	04/30/18 12:24	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

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**Sample: MCM-02**      Lab ID: **263686003**      Collected: 04/05/18 10:53      Received: 04/06/18 09:00      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.597 ± 0.246 (0.313)</b> C:97% T:NA	pCi/L	04/23/18 08:26	13982-63-3	
Radium-228	EPA 9320	<b>0.271 ± 0.358 (0.766)</b> C:87% T:87%	pCi/L	04/25/18 15:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.868 ± 0.604 (1.08)</b>	pCi/L	04/30/18 12:24	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 263686

**Sample: FBL 040518**      Lab ID: **263686005**      Collected: 04/05/18 10:45      Received: 04/06/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.194 ± 0.136 (0.214)</b> C:94% T:NA	pCi/L	04/23/18 09:59	13982-63-3	
Radium-228	EPA 9320	<b>0.563 ± 0.437 (0.867)</b> C:69% T:88%	pCi/L	04/25/18 15:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.757 ± 0.573 (1.08)</b>	pCi/L	04/30/18 12:24	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 263686

**Sample: EQBL 040518**      Lab ID: **263686007**      Collected: 04/05/18 10:55      Received: 04/06/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.175 ± 0.133 (0.223)</b> C:97% T:NA	pCi/L	04/23/18 09:59	13982-63-3	
Radium-228	EPA 9320	<b>0.661 ± 0.458 (0.885)</b> C:71% T:82%	pCi/L	04/25/18 15:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.836 ± 0.591 (1.11)</b>	pCi/L	04/30/18 12:24	7440-14-4	

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 263686

QC Batch:	295226	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples: 263686001, 263686003, 263686005, 263686007			

METHOD BLANK: 1445489	Matrix: Water
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Associated Lab Samples: 263686001, 263686003, 263686005, 263686007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.408 ± 0.193 (0.217) C:97% T:NA	pCi/L	04/23/18 08:24	

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

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 263686

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QC Batch: 295250 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 263686001, 263686003, 263686005, 263686007

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METHOD BLANK: 1445581 Matrix: Water

Associated Lab Samples: 263686001, 263686003, 263686005, 263686007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.620 ± 0.360 (0.645) C:79% T:76%	pCi/L	04/25/18 12:29	

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

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## QUALIFIERS

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-A Pace Analytical Services - Asheville  
PASI-GA Pace Analytical Services - Atlanta, GA  
PASI-PA Pace Analytical Services - Greensburg

### ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 263686

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
263686002	MCM-08	EPA 3005A	4003	EPA 6020B	4188
263686004	MCM-02	EPA 3005A	4003	EPA 6020B	4188
263686006	FBL 040518	EPA 3005A	4003	EPA 6020B	4188
263686008	EQBL 040518	EPA 3005A	4003	EPA 6020B	4188
263686002	MCM-08	EPA 7470A	4045	EPA 7470A	4092
263686004	MCM-02	EPA 7470A	4045	EPA 7470A	4092
263686006	FBL 040518	EPA 7470A	4045	EPA 7470A	4092
263686008	EQBL 040518	EPA 7470A	4045	EPA 7470A	4092
263686001	MCM-08	EPA 9315	295226		
263686003	MCM-02	EPA 9315	295226		
263686005	FBL 040518	EPA 9315	295226		
263686007	EQBL 040518	EPA 9315	295226		
263686001	MCM-08	EPA 9320	295250		
263686003	MCM-02	EPA 9320	295250		
263686005	FBL 040518	EPA 9320	295250		
263686007	EQBL 040518	EPA 9320	295250		
263686001	MCM-08	Total Radium Calculation	296443		
263686003	MCM-02	Total Radium Calculation	296443		
263686005	FBL 040518	Total Radium Calculation	296443		
263686007	EQBL 040518	Total Radium Calculation	296443		
263686002	MCM-08	SM 2540C	405723		
263686004	MCM-02	SM 2540C	405723		
263686006	FBL 040518	SM 2540C	405723		
263686008	EQBL 040518	SM 2540C	405723		
263686002	MCM-08	EPA 300.0	4236		
263686004	MCM-02	EPA 300.0	4236		
263686006	FBL 040518	EPA 300.0	4236		
263686008	EQBL 040518	EPA 300.0	4236		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

## Sample Condition Upon Receipt

Pace Analytical

Client Name: GAPower

Project #

WO# : 263686

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace OtherTracking #: 780394268397Custody Seal on Coder/Box Present:  yes  no Seals intact:  yes Packing Material:  Bubble Wrap  Bubble Bags  None  OtherThermometer Used 83Type of Ice: Wet Blue None Cooler Temperature 1.4

Biological Tissue Is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

PM: BM Due Date: 04/13/18

CLIENT: GAPower-CCR

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

## Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: Kevin Stephenson Date/Time: 4/6/2018 10:50Comments/ Resolution: Consultant provided Performance monitoring COC with CCR samples. Per Kevin, MCM-08, MCM-02, EBL040518 and EBL040518 set analysis for radium, App III and App. IV metals, chloride, fluoride, sulfate, TDS.

Project Manager Review:

\* BMDate: 4/6/2018

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

May 21, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on May 10, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

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### Atlanta Certification IDs

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

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Texas Certification #: T104704397-08-TX  
Virginia Certification #: 460204

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### Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804  
Florida/NELAP Certification #: E87648  
Massachusetts Certification #: M-NC030  
North Carolina Drinking Water Certification #: 37712

North Carolina Wastewater Certification #: 40  
South Carolina Certification #: 99030001  
Virginia/VELAP Certification #: 460222

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
 Pace Project No.: 264852

Lab ID	Sample ID	Matrix	Date Collected	Date Received
264852001	MCM-04	Water	05/08/18 14:00	05/10/18 08:00
264852002	MCM-11	Water	05/08/18 14:00	05/10/18 08:00
264852003	MCM-15	Water	05/08/18 15:46	05/10/18 08:00
264852004	MCM-10	Water	05/08/18 16:11	05/10/18 08:00
264852005	MCM-08	Water	05/09/18 09:22	05/10/18 08:00
264852006	MCM-02	Water	05/09/18 09:24	05/10/18 08:00
264852007	Dup-1	Water	05/08/18 00:00	05/10/18 08:00
264852008	FBL050918	Water	05/09/18 10:21	05/10/18 08:00
264852009	EQBL050918	Water	05/09/18 10:30	05/10/18 08:00

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
264852001	MCM-04	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	NAL	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
264852002	MCM-11	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	NAL	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
264852003	MCM-15	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	NAL	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
264852004	MCM-10	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	NAL	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
264852005	MCM-08	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	MVC	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
264852006	MCM-02	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	MVC	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
264852007	Dup-1	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	NAL	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
264852008	FBL050918	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	MVC	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA
264852009	EQBL050918	EPA 6020B	CSW	14	PASI-GA
		EPA 7470A	AAP	1	PASI-GA
		SM 2540C	MVC	1	PASI-A
		EPA 300.0	RLC	3	PASI-GA

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Sample: MCM-04		Lab ID: 264852001		Collected: 05/08/18 14:00		Received: 05/10/18 08:00		Matrix: Water	
Parameters	Results	Units	Report				Analyzed	CAS No.	Qual
			Limit	MDL	DF	Prepared			
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	05/11/18 07:53	05/11/18 16:39	7440-36-0	
Arsenic	<b>0.0048J</b>	mg/L	0.0050	0.00057	1	05/11/18 07:53	05/11/18 16:39	7440-38-2	
Barium	<b>0.027</b>	mg/L	0.010	0.00078	1	05/11/18 07:53	05/11/18 16:39	7440-39-3	
Beryllium	<b>0.00025J</b>	mg/L	0.0030	0.000050	1	05/11/18 07:53	05/11/18 16:39	7440-41-7	
Boron	<b>0.074</b>	mg/L	0.040	0.0039	1	05/11/18 07:53	05/11/18 16:39	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	05/11/18 07:53	05/11/18 16:39	7440-43-9	
Calcium	<b>5.7</b>	mg/L	0.50	0.014	1	05/11/18 07:53	05/11/18 16:39	7440-70-2	M1
Chromium	ND	mg/L	0.010	0.0016	1	05/11/18 07:53	05/11/18 16:39	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	05/11/18 07:53	05/11/18 16:39	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	05/11/18 07:53	05/11/18 16:39	7439-92-1	
Lithium	<b>0.0012J</b>	mg/L	0.050	0.00097	1	05/11/18 07:53	05/11/18 16:39	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	05/11/18 07:53	05/11/18 16:39	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	05/11/18 07:53	05/11/18 16:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	05/11/18 07:53	05/11/18 16:39	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	05/11/18 07:13	05/11/18 10:24	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>304</b>	mg/L	25.0	25.0	1			05/14/18 18:14	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>140</b>	mg/L	2.5	0.24	10			05/17/18 14:28	16887-00-6
Fluoride	<b>0.56</b>	mg/L	0.30	0.029	1			05/11/18 13:19	16984-48-8
Sulfate	<b>61.4</b>	mg/L	10.0	0.17	10			05/17/18 14:28	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Sample: MCM-11	Lab ID: 264852002	Collected: 05/08/18 14:00	Received: 05/10/18 08:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	05/11/18 07:53	05/11/18 18:30	7440-36-0	
Arsenic	<b>0.016</b>	mg/L	0.0050	0.00057	1	05/11/18 07:53	05/11/18 18:30	7440-38-2	
Barium	<b>0.062</b>	mg/L	0.010	0.00078	1	05/11/18 07:53	05/11/18 18:30	7440-39-3	
Beryllium	<b>0.00010J</b>	mg/L	0.0030	0.000050	1	05/11/18 07:53	05/11/18 18:30	7440-41-7	
Boron	<b>0.048</b>	mg/L	0.040	0.0039	1	05/11/18 07:53	05/11/18 18:30	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	05/11/18 07:53	05/11/18 18:30	7440-43-9	
Calcium	<b>18.4J</b>	mg/L	25.0	0.69	50	05/11/18 07:53	05/11/18 18:35	7440-70-2	D3
Chromium	ND	mg/L	0.010	0.0016	1	05/11/18 07:53	05/11/18 18:30	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	05/11/18 07:53	05/11/18 18:30	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	05/11/18 07:53	05/11/18 18:30	7439-92-1	
Lithium	<b>0.0052J</b>	mg/L	0.050	0.00097	1	05/11/18 07:53	05/11/18 18:30	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	05/11/18 07:53	05/11/18 18:30	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	05/11/18 07:53	05/11/18 18:30	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	05/11/18 07:53	05/11/18 18:30	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	05/11/18 07:13	05/11/18 10:26	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>225</b>	mg/L	25.0	25.0	1			05/14/18 18:14	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>72.3</b>	mg/L	2.5	0.24	10			05/17/18 14:49	16887-00-6
Fluoride	<b>0.63</b>	mg/L	0.30	0.029	1			05/11/18 13:40	16984-48-8
Sulfate	<b>35.7</b>	mg/L	1.0	0.017	1			05/11/18 13:40	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Sample: MCM-15	Lab ID: 264852003	Collected: 05/08/18 15:46	Received: 05/10/18 08:00	Matrix: Water				
Parameters	Results	Units	Report	Prepared	Analyzed	CAS No.	Qual	
			Limit					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A						
Antimony	ND	mg/L	0.0030	0.00078	1	05/11/18 07:53	05/11/18 18:41	7440-36-0
Arsenic	<b>0.0048J</b>	mg/L	0.0050	0.00057	1	05/11/18 07:53	05/11/18 18:41	7440-38-2
Barium	<b>0.037</b>	mg/L	0.010	0.00078	1	05/11/18 07:53	05/11/18 18:41	7440-39-3
Beryllium	<b>0.00031J</b>	mg/L	0.0030	0.000050	1	05/11/18 07:53	05/11/18 18:41	7440-41-7
Boron	<b>0.062</b>	mg/L	0.040	0.0039	1	05/11/18 07:53	05/11/18 18:41	7440-42-8
Cadmium	ND	mg/L	0.0010	0.000093	1	05/11/18 07:53	05/11/18 18:41	7440-43-9
Calcium	<b>6.7</b>	mg/L	0.50	0.014	1	05/11/18 07:53	05/11/18 18:41	7440-70-2
Chromium	<b>0.0029J</b>	mg/L	0.010	0.0016	1	05/11/18 07:53	05/11/18 18:41	7440-47-3
Cobalt	ND	mg/L	0.010	0.00052	1	05/11/18 07:53	05/11/18 18:41	7440-48-4
Lead	ND	mg/L	0.0050	0.00027	1	05/11/18 07:53	05/11/18 18:41	7439-92-1
Lithium	<b>0.0014J</b>	mg/L	0.050	0.00097	1	05/11/18 07:53	05/11/18 18:41	7439-93-2
Molybdenum	<b>0.0020J</b>	mg/L	0.010	0.0019	1	05/11/18 07:53	05/11/18 18:41	7439-98-7
Selenium	<b>0.0016J</b>	mg/L	0.010	0.0014	1	05/11/18 07:53	05/11/18 18:41	7782-49-2
Thallium	ND	mg/L	0.0010	0.00014	1	05/11/18 07:53	05/11/18 18:41	7440-28-0
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A						
Mercury	ND	mg/L	0.00050	0.000036	1	05/11/18 07:13	05/11/18 10:29	7439-97-6
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C						
Total Dissolved Solids	<b>89.0</b>	mg/L	25.0	25.0	1		05/14/18 18:14	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0						
Chloride	<b>13.2</b>	mg/L	0.25	0.024	1		05/11/18 14:01	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1		05/11/18 14:01	16984-48-8
Sulfate	<b>14.8</b>	mg/L	1.0	0.017	1		05/11/18 14:01	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Sample: MCM-10	Lab ID: 264852004	Collected: 05/08/18 16:11	Received: 05/10/18 08:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	05/11/18 07:53	05/11/18 18:52	7440-36-0	
Arsenic	<b>0.031</b>	mg/L	0.0050	0.00057	1	05/11/18 07:53	05/11/18 18:52	7440-38-2	
Barium	<b>0.016</b>	mg/L	0.010	0.00078	1	05/11/18 07:53	05/11/18 18:52	7440-39-3	
Beryllium	<b>0.014</b>	mg/L	0.0030	0.000050	1	05/11/18 07:53	05/11/18 18:52	7440-41-7	
Boron	<b>0.17</b>	mg/L	0.040	0.0039	1	05/11/18 07:53	05/11/18 18:52	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	05/11/18 07:53	05/11/18 18:52	7440-43-9	
Calcium	<b>56.0</b>	mg/L	25.0	0.69	50	05/11/18 07:53	05/11/18 18:58	7440-70-2	
Chromium	<b>0.0042J</b>	mg/L	0.010	0.0016	1	05/11/18 07:53	05/11/18 18:52	7440-47-3	
Cobalt	<b>0.020</b>	mg/L	0.010	0.00052	1	05/11/18 07:53	05/11/18 18:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	05/11/18 07:53	05/11/18 18:52	7439-92-1	
Lithium	<b>0.10</b>	mg/L	0.050	0.00097	1	05/11/18 07:53	05/11/18 18:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	05/11/18 07:53	05/11/18 18:52	7439-98-7	
Selenium	<b>0.031</b>	mg/L	0.010	0.0014	1	05/11/18 07:53	05/11/18 18:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	05/11/18 07:53	05/11/18 18:52	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	05/11/18 07:13	05/11/18 10:31	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>3240</b>	mg/L	250	250	1			05/14/18 18:14	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>654</b>	mg/L	12.5	1.2	50			05/17/18 15:10	16887-00-6 M1
Fluoride	<b>1.5</b>	mg/L	0.30	0.029	1			05/11/18 14:21	16984-48-8
Sulfate	<b>1570</b>	mg/L	50.0	0.85	50			05/17/18 15:10	14808-79-8 M1

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Sample: MCM-08	Lab ID: 264852005	Collected: 05/09/18 09:22	Received: 05/10/18 08:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	05/11/18 07:53	05/11/18 19:04	7440-36-0	
Arsenic	<b>0.022</b>	mg/L	0.0050	0.00057	1	05/11/18 07:53	05/11/18 19:04	7440-38-2	
Barium	<b>0.50</b>	mg/L	0.010	0.00078	1	05/11/18 07:53	05/11/18 19:04	7440-39-3	
Beryllium	<b>0.00041J</b>	mg/L	0.0030	0.000050	1	05/11/18 07:53	05/11/18 19:04	7440-41-7	
Boron	<b>0.35</b>	mg/L	0.040	0.0039	1	05/11/18 07:53	05/11/18 19:04	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	05/11/18 07:53	05/11/18 19:04	7440-43-9	
Calcium	<b>37.0</b>	mg/L	25.0	0.69	50	05/11/18 07:53	05/11/18 19:10	7440-70-2	
Chromium	<b>0.0080J</b>	mg/L	0.010	0.0016	1	05/11/18 07:53	05/11/18 19:04	7440-47-3	
Cobalt	<b>0.0042J</b>	mg/L	0.010	0.00052	1	05/11/18 07:53	05/11/18 19:04	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	05/11/18 07:53	05/11/18 19:04	7439-92-1	
Lithium	<b>0.0020J</b>	mg/L	0.050	0.00097	1	05/11/18 07:53	05/11/18 19:04	7439-93-2	
Molybdenum	<b>0.0028J</b>	mg/L	0.010	0.0019	1	05/11/18 07:53	05/11/18 19:04	7439-98-7	
Selenium	<b>0.0081J</b>	mg/L	0.010	0.0014	1	05/11/18 07:53	05/11/18 19:04	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	05/11/18 07:53	05/11/18 19:04	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	05/11/18 07:13	05/11/18 10:34	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>3680</b>	mg/L	500	500	1			05/16/18 16:45	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>1870</b>	mg/L	12.5	1.2	50			05/17/18 15:30	16887-00-6
Fluoride	<b>0.23J</b>	mg/L	0.30	0.029	1			05/11/18 15:23	16984-48-8
Sulfate	<b>353</b>	mg/L	50.0	0.85	50			05/17/18 15:30	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Sample: MCM-02		Lab ID: 264852006		Collected: 05/09/18 09:24		Received: 05/10/18 08:00		Matrix: Water	
Parameters	Results	Units	Report				Analyzed	CAS No.	Qual
			Limit	MDL	DF	Prepared			
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	05/11/18 07:53	05/11/18 19:15	7440-36-0	
Arsenic	<b>0.0014J</b>	mg/L	0.0050	0.00057	1	05/11/18 07:53	05/11/18 19:15	7440-38-2	
Barium	<b>0.11</b>	mg/L	0.010	0.00078	1	05/11/18 07:53	05/11/18 19:15	7440-39-3	
Beryllium	<b>0.00017J</b>	mg/L	0.0030	0.000050	1	05/11/18 07:53	05/11/18 19:15	7440-41-7	
Boron	<b>0.12</b>	mg/L	0.040	0.0039	1	05/11/18 07:53	05/11/18 19:15	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	05/11/18 07:53	05/11/18 19:15	7440-43-9	
Calcium	<b>4.7</b>	mg/L	0.50	0.014	1	05/11/18 07:53	05/11/18 19:15	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	05/11/18 07:53	05/11/18 19:15	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	05/11/18 07:53	05/11/18 19:15	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	05/11/18 07:53	05/11/18 19:15	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	05/11/18 07:53	05/11/18 19:15	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	05/11/18 07:53	05/11/18 19:15	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	05/11/18 07:53	05/11/18 19:15	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	05/11/18 07:53	05/11/18 19:15	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	05/11/18 07:13	05/11/18 10:36	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>127</b>	mg/L	25.0	25.0	1			05/16/18 16:45	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>40.6</b>	mg/L	0.25	0.024	1			05/11/18 15:44	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			05/11/18 15:44	16984-48-8
Sulfate	<b>36.0</b>	mg/L	1.0	0.017	1			05/11/18 15:44	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Sample: Dup-1	Lab ID: 264852007	Collected: 05/08/18 00:00	Received: 05/10/18 08:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	05/11/18 07:53	05/11/18 19:38	7440-36-0	
Arsenic	<b>0.0033J</b>	mg/L	0.0050	0.00057	1	05/11/18 07:53	05/11/18 19:38	7440-38-2	
Barium	<b>0.037</b>	mg/L	0.010	0.00078	1	05/11/18 07:53	05/11/18 19:38	7440-39-3	
Beryllium	<b>0.00033J</b>	mg/L	0.0030	0.000050	1	05/11/18 07:53	05/11/18 19:38	7440-41-7	
Boron	<b>0.062</b>	mg/L	0.040	0.0039	1	05/11/18 07:53	05/11/18 19:38	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	05/11/18 07:53	05/11/18 19:38	7440-43-9	
Calcium	<b>6.7</b>	mg/L	0.50	0.014	1	05/11/18 07:53	05/11/18 19:38	7440-70-2	
Chromium	<b>0.0026J</b>	mg/L	0.010	0.0016	1	05/11/18 07:53	05/11/18 19:38	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	05/11/18 07:53	05/11/18 19:38	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	05/11/18 07:53	05/11/18 19:38	7439-92-1	
Lithium	<b>0.0013J</b>	mg/L	0.050	0.00097	1	05/11/18 07:53	05/11/18 19:38	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	05/11/18 07:53	05/11/18 19:38	7439-98-7	
Selenium	<b>0.0016J</b>	mg/L	0.010	0.0014	1	05/11/18 07:53	05/11/18 19:38	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	05/11/18 07:53	05/11/18 19:38	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	05/11/18 07:13	05/11/18 10:38	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>96.0</b>	mg/L	25.0	25.0	1			05/14/18 18:14	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>13.3</b>	mg/L	0.25	0.024	1			05/11/18 16:05	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			05/11/18 16:05	16984-48-8
Sulfate	<b>15.2</b>	mg/L	1.0	0.017	1			05/11/18 16:05	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Sample: FBL050918	Lab ID: 264852008	Collected: 05/09/18 10:21	Received: 05/10/18 08:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	05/11/18 07:53	05/11/18 19:55	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	05/11/18 07:53	05/11/18 19:55	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	05/11/18 07:53	05/11/18 19:55	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	05/11/18 07:53	05/11/18 19:55	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	05/11/18 07:53	05/11/18 19:55	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	05/11/18 07:53	05/11/18 19:55	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	05/11/18 07:53	05/11/18 19:55	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	05/11/18 07:53	05/11/18 19:55	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	05/11/18 07:53	05/11/18 19:55	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	05/11/18 07:53	05/11/18 19:55	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	05/11/18 07:53	05/11/18 19:55	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	05/11/18 07:53	05/11/18 19:55	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	05/11/18 07:53	05/11/18 19:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	05/11/18 07:53	05/11/18 19:55	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	05/11/18 07:13	05/11/18 10:41	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	25.0	25.0	1			05/16/18 16:45	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>0.091J</b>	mg/L	0.25	0.024	1			05/11/18 16:25	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			05/11/18 16:25	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			05/11/18 16:25	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Sample: EQBL050918	Lab ID: 264852009	Collected: 05/09/18 10:30	Received: 05/10/18 08:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	05/11/18 07:53	05/11/18 20:01	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	05/11/18 07:53	05/11/18 20:01	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	05/11/18 07:53	05/11/18 20:01	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	05/11/18 07:53	05/11/18 20:01	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	05/11/18 07:53	05/11/18 20:01	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	05/11/18 07:53	05/11/18 20:01	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	05/11/18 07:53	05/11/18 20:01	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	05/11/18 07:53	05/11/18 20:01	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	05/11/18 07:53	05/11/18 20:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	05/11/18 07:53	05/11/18 20:01	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	05/11/18 07:53	05/11/18 20:01	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	05/11/18 07:53	05/11/18 20:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	05/11/18 07:53	05/11/18 20:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	05/11/18 07:53	05/11/18 20:01	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	05/11/18 07:13	05/11/18 10:48	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	25.0	25.0	1			05/16/18 16:45	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>0.078J</b>	mg/L	0.25	0.024	1			05/11/18 18:08	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			05/11/18 18:08	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			05/11/18 18:08	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

QC Batch:	5924	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
Associated Lab Samples:	264852001, 264852002, 264852003, 264852004, 264852005, 264852006, 264852007, 264852008, 264852009		

METHOD BLANK:	28658	Matrix: Water				
Associated Lab Samples:	264852001, 264852002, 264852003, 264852004, 264852005, 264852006, 264852007, 264852008, 264852009					
Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	05/11/18 09:53	

LABORATORY CONTROL SAMPLE:	28659					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	28660	28661										
Parameter	Units	264268019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0026	0.0025	104	99	75-125	5	20	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 264852

QC Batch: 5941 Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A Analysis Description: 6020B MET

Associated Lab Samples: 264852001, 264852002, 264852003, 264852004, 264852005, 264852006, 264852007, 264852008, 264852009

METHOD BLANK: 28737 Matrix: Water

Associated Lab Samples: 264852001, 264852002, 264852003, 264852004, 264852005, 264852006, 264852007, 264852008, 264852009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	05/11/18 16:27	
Arsenic	mg/L	ND	0.0050	0.00057	05/11/18 16:27	
Barium	mg/L	ND	0.010	0.00078	05/11/18 16:27	
Beryllium	mg/L	ND	0.0030	0.000050	05/11/18 16:27	
Boron	mg/L	ND	0.040	0.0039	05/11/18 16:27	
Cadmium	mg/L	ND	0.0010	0.000093	05/11/18 16:27	
Calcium	mg/L	0.029J	0.50	0.014	05/11/18 16:27	
Chromium	mg/L	ND	0.010	0.0016	05/11/18 16:27	
Cobalt	mg/L	ND	0.010	0.00052	05/11/18 16:27	
Lead	mg/L	0.00050J	0.0050	0.00027	05/11/18 16:27	
Lithium	mg/L	ND	0.050	0.00097	05/11/18 16:27	
Molybdenum	mg/L	ND	0.010	0.0019	05/11/18 16:27	
Selenium	mg/L	ND	0.010	0.0014	05/11/18 16:27	
Thallium	mg/L	ND	0.0010	0.00014	05/11/18 16:27	

LABORATORY CONTROL SAMPLE: 28738

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	103	80-120	
Arsenic	mg/L	.1	0.10	101	80-120	
Barium	mg/L	.1	0.10	103	80-120	
Beryllium	mg/L	.1	0.10	104	80-120	
Boron	mg/L	1	1.1	108	80-120	
Cadmium	mg/L	.1	0.10	103	80-120	
Calcium	mg/L	1	1.0	103	80-120	
Chromium	mg/L	.1	0.11	109	80-120	
Cobalt	mg/L	.1	0.11	106	80-120	
Lead	mg/L	.1	0.11	105	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.11	107	80-120	
Selenium	mg/L	.1	0.10	104	80-120	
Thallium	mg/L	.1	0.11	107	80-120	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 28739 28740

Parameter	Units	MS Result	MS Spike Conc.	MS Result	MS % Rec	MS Result	MS % Rec	% Rec Limits	RPD RPD	Max Qual
Antimony	mg/L	ND	.1	.1	0.11	0.10	108	103 75-125	4 20	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 264852

Parameter	Units	28739		28740		MS % Rec	MSD % Rec	% Rec Limits	Max					
		MS		MSD					MS Result	MSD Result	RPD			
		264852001	Spike Conc.	Spike Conc.	MS Result									
Arsenic	mg/L	0.0048J	.1	.1	0.11	0.11	108	104	75-125	4	20			
Barium	mg/L	0.027	.1	.1	0.13	0.13	105	105	75-125	0	20			
Beryllium	mg/L	0.00025J	.1	.1	0.11	0.11	110	106	75-125	4	20			
Boron	mg/L	0.074	1	1	1.2	1.2	109	109	75-125	0	20			
Cadmium	mg/L	ND	.1	.1	0.11	0.10	109	102	75-125	7	20			
Calcium	mg/L	5.7	1	1	7.1	7.0	133	129	75-125	1	20 M1			
Chromium	mg/L	ND	.1	.1	0.11	0.11	112	113	75-125	1	20			
Cobalt	mg/L	ND	.1	.1	0.11	0.11	110	108	75-125	2	20			
Lead	mg/L	ND	.1	.1	0.10	0.10	105	102	75-125	2	20			
Lithium	mg/L	0.0012J	.1	.1	0.11	0.11	105	107	75-125	2	20			
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	108	108	75-125	1	20			
Selenium	mg/L	ND	.1	.1	0.11	0.11	114	106	75-125	7	20			
Thallium	mg/L	ND	.1	.1	0.11	0.10	107	103	75-125	3	20			

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

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QC Batch:	410535	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	264852001, 264852002, 264852003, 264852004, 264852007		

---

METHOD BLANK: 2277568                          Matrix: Water

Associated Lab Samples: 264852001, 264852002, 264852003, 264852004, 264852007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	05/14/18 18:14	

---

LABORATORY CONTROL SAMPLE: 2277569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	264	106	90-110	

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SAMPLE DUPLICATE: 2277570

Parameter	Units	Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	46.0	31.0	39	5	D6

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SAMPLE DUPLICATE: 2277571

Parameter	Units	Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	92.0	99.0	7	5	D6

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 264852

QC Batch: 410860 Analysis Method: SM 2540C

QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 264852005, 264852006, 264852008, 264852009

METHOD BLANK: 2279305 Matrix: Water

Associated Lab Samples: 264852005, 264852006, 264852008, 264852009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	25.0	25.0	05/16/18 16:45	

LABORATORY CONTROL SAMPLE: 2279306

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	250	100	90-110	

SAMPLE DUPLICATE: 2279307

Parameter	Units	92383431021 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	627	626	0	5	

SAMPLE DUPLICATE: 2279308

Parameter	Units	92384289003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1110	1130	2	5	

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

## REPORT OF LABORATORY ANALYSIS

## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 264852

QC Batch: 5948 Analysis Method: EPA 300.0

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

Associated Lab Samples: 264852001, 264852002, 264852003, 264852004, 264852005, 264852006, 264852007, 264852008, 264852009

METHOD BLANK: 28771 Matrix: Water

Associated Lab Samples: 264852001, 264852002, 264852003, 264852004, 264852005, 264852006, 264852007, 264852008, 264852009

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Chloride	mg/L	ND	0.25	0.024	05/11/18 12:38	
Fluoride	mg/L	ND	0.30	0.029	05/11/18 12:38	
Sulfate	mg/L	ND	1.0	0.017	05/11/18 12:38	

LABORATORY CONTROL SAMPLE: 28772

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Chloride	mg/L	10	10.2	102	90-110	
Fluoride	mg/L	10	9.7	97	90-110	
Sulfate	mg/L	10	10.1	101	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 28799 28800

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Limits	RPD	RPD	Max
		264852004	Spike	Spike	Result	Result	Result	% Rec	% Rec	RPD	RPD	Qual	
Chloride	mg/L	654	10	10	314	314	-3400	-3400	-3400	90-110	0	15	E,M1
Fluoride	mg/L	1.5	10	10	10.8	11.0	93	93	94	90-110	1	15	
Sulfate	mg/L	1570	10	10	564	564	-10000	-10000	-10000	90-110	0	15	E,M1

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 264852

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-A Pace Analytical Services - Asheville

PASI-GA Pace Analytical Services - Atlanta, GA

### ANALYTE QUALIFIERS

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

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 264852

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
264852001	MCM-04	EPA 3005A	5941	EPA 6020B	5999
264852002	MCM-11	EPA 3005A	5941	EPA 6020B	5999
264852003	MCM-15	EPA 3005A	5941	EPA 6020B	5999
264852004	MCM-10	EPA 3005A	5941	EPA 6020B	5999
264852005	MCM-08	EPA 3005A	5941	EPA 6020B	5999
264852006	MCM-02	EPA 3005A	5941	EPA 6020B	5999
264852007	Dup-1	EPA 3005A	5941	EPA 6020B	5999
264852008	FBL050918	EPA 3005A	5941	EPA 6020B	5999
264852009	EQBL050918	EPA 3005A	5941	EPA 6020B	5999
264852001	MCM-04	EPA 7470A	5924	EPA 7470A	5951
264852002	MCM-11	EPA 7470A	5924	EPA 7470A	5951
264852003	MCM-15	EPA 7470A	5924	EPA 7470A	5951
264852004	MCM-10	EPA 7470A	5924	EPA 7470A	5951
264852005	MCM-08	EPA 7470A	5924	EPA 7470A	5951
264852006	MCM-02	EPA 7470A	5924	EPA 7470A	5951
264852007	Dup-1	EPA 7470A	5924	EPA 7470A	5951
264852008	FBL050918	EPA 7470A	5924	EPA 7470A	5951
264852009	EQBL050918	EPA 7470A	5924	EPA 7470A	5951
264852001	MCM-04	SM 2540C	410535		
264852002	MCM-11	SM 2540C	410535		
264852003	MCM-15	SM 2540C	410535		
264852004	MCM-10	SM 2540C	410535		
264852005	MCM-08	SM 2540C	410860		
264852006	MCM-02	SM 2540C	410860		
264852007	Dup-1	SM 2540C	410535		
264852008	FBL050918	SM 2540C	410860		
264852009	EQBL050918	SM 2540C	410860		
264852001	MCM-04	EPA 300.0	5948		
264852002	MCM-11	EPA 300.0	5948		
264852003	MCM-15	EPA 300.0	5948		
264852004	MCM-10	EPA 300.0	5948		
264852005	MCM-08	EPA 300.0	5948		
264852006	MCM-02	EPA 300.0	5948		
264852007	Dup-1	EPA 300.0	5948		
264852008	FBL050918	EPA 300.0	5948		
264852009	EQBL050918	EPA 300.0	5948		

## REPORT OF LABORATORY ANALYSIS

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# CHAIN-OF-CUSTODY / Analytical Request Document

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

## Section A

## Required Client Information:

Company: Georgia Power - Coal Combustion Residuals  
 Address: 2480 Maner Road  
 Atlanta, GA 30339  
 Email: jahrahani@southernenco.com  
 Phone: (404)505-7239 Fax  
 Requested Due Date:

## Section B

## Required Project Information:

Report To: Joji Abraham  
 Copy To:  
 Purchase Order #: Project Name: Plant McMathus CCR  
 Project #: Project #: 334

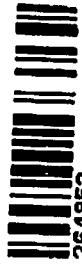
## Section C

## Invoice Information:

Attention: Company Name:  
 Address: Pace Quoter:  
 Pace Project Manager: betsy.mcdaniel@pacolabs.com,

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9, -, ) Sample Ids must be unique	MATRIX CODE Drinking Water Water Water/Water Product Beer/Soda Oil Wipe Air Other Tissue	MATRIX CODE (See Valid Codes to Left) DW WT WW P SL OL WP AR OT TS	SAMPLE TYPE (G=GRAS C=COMP) (See Valid Codes to Left)	# OF CONTAINERS	SAMPLE TEMP AT COLLECTION	START	END	COLLECTED				Preservatives				ANALYSTS TESTED				REQUESTED ANALYSIS FILTERED (Y/N)					
									DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME
1	MCM-07				1	5/18/18 1400	5/18/18 1400	5/18/18 1400	5/18/18	1400	5/18/18	1400	X	X												
2	MCM-11				1	5/18/18 1400	5/18/18 1400	5/18/18 1400	5/18/18	1400	5/18/18	1400	X	X												
3	MCM-15				1	5/18/18 1500	5/18/18 1500	5/18/18 1500	5/18/18	1500	5/18/18	1500	X	X												
4	MCM-10				1	5/18/18 1611	5/18/18 1611	5/18/18 1611	5/18/18	1611	5/18/18	1611	X	X												
5	MCM-08				1	5/18/18 0622	5/18/18 0622	5/18/18 0622	5/18/18	0622	5/18/18	0622	X	X												
6	MCM-07				1	5/18/18 0924	5/18/18 0924	5/18/18 0924	5/18/18	0924	5/18/18	0924	X	X												
7	DUP-1				1	5/18/18 —	5/18/18 —	5/18/18 —	5/18/18	—	5/18/18	—	X	X												
8	FBL050918				1	5/18/18 1021	5/18/18 1021	5/18/18 1021	5/18/18	1021	5/18/18	1021	X	X												
9	FB21050918				1	5/18/18 1030	5/18/18 1030	5/18/18 1030	5/18/18	1030	5/18/18	1030	X	X												
10																										
11																										
12																										

MO# . 264852



ACCEPTED BY / AFFILIATION <i>Karl Schell</i>	DATE: 5/18/18	TIME: 10:00	SAMPLE NAME AND SIGNATURE <i>M. L. Alman</i>
PRINT NAME OF SAMPLER <i>Karl Schell</i>	DATE: 5/18/18	TIME: 08:00	DATE SIGNED: 5/18/18
RECORDED ON (Y/N)	RECORDED COPIES (Y/N)	RECORDED SITES (Y/N)	TEMP IN (C)
RECORDED COPIES (Y/N)	RECORDED SITES (Y/N)	RECORDED COPIES (Y/N)	RECORDED COPIES (Y/N)

## Sample Condition Upon Receipt

Pace Analytical

Client Name: GIA Power

Project # \_\_\_\_\_

WO# : **264852**

PM: BM Due Date: 05/17/18

CLIENT: GIA Power-CCR

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace OtherTracking #: 780889269630Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes Packing Material:  Bubble Wrap  Bubble Bags  None  OtherThermometer Used: 83Type of Ice: Wet Blue None Cooler Temperature: 0.3

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 5/10/18 M

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes date/time/ID/Analysis Matrix:	<u>G1</u>		
All containers needing preservation have been checked:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.	
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.	
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

## Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: \_\_\_\_\_

Date/Time: \_\_\_\_\_

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

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

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

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

June 04, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 264853

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on May 10, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
 Pace Project No.: 264853

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
 Pace Project No.: 264853

Lab ID	Sample ID	Matrix	Date Collected	Date Received
264853001	MCM-04	Water	05/08/18 14:00	05/10/18 08:00
264853002	MCM-11	Water	05/08/18 14:00	05/10/18 08:00
264853003	MCM-15	Water	05/08/18 15:46	05/10/18 08:00
264853004	MCM-10	Water	05/08/18 16:11	05/10/18 08:00
264853005	MCM-08	Water	05/09/18 09:22	05/10/18 08:00
264853006	MCM-02	Water	05/09/18 09:24	05/10/18 08:00
264853007	Dup-1	Water	05/08/18 00:00	05/10/18 08:00
264853008	FBL050918	Water	05/09/18 10:21	05/10/18 08:00
264853009	EQBL050918	Water	05/09/18 10:30	05/10/18 08:00

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 264853

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
264853001	MCM-04	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
264853002	MCM-11	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
264853003	MCM-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
264853004	MCM-10	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
264853005	MCM-08	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
264853006	MCM-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
264853007	Dup-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
264853008	FBL050918	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
264853009	EQBL050918	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 264853

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**Sample: MCM-04**      Lab ID: **264853001**      Collected: 05/08/18 14:00      Received: 05/10/18 08:00      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.64 ± 0.507 (0.408)</b> C:88% T:NA	pCi/L	05/29/18 08:18	13982-63-3	
Radium-228	EPA 9320	<b>1.61 ± 0.607 (0.920)</b> C:80% T:84%	pCi/L	05/28/18 21:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.25 ± 1.11 (1.33)</b>	pCi/L	06/04/18 13:20	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 264853

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<b>Sample: MCM-11</b>	<b>Lab ID: 264853002</b>	Collected: 05/08/18 14:00	Received: 05/10/18 08:00	Matrix: Water
PWS:	Site ID:	Sample Type:		

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.599 ± 0.301 (0.383)</b> C:93% T:NA	pCi/L	05/29/18 08:18	13982-63-3	
Radium-228	EPA 9320	<b>1.35 ± 0.621 (1.05)</b> C:79% T:77%	pCi/L	05/28/18 21:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.95 ± 0.922 (1.43)</b>	pCi/L	06/04/18 13:20	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 264853

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**Sample: MCM-15**      Lab ID: **264853003**      Collected: 05/08/18 15:46      Received: 05/10/18 08:00      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.03 ± 0.384 (0.387)</b> C:94% T:NA	pCi/L	05/29/18 08:18	13982-63-3	
Radium-228	EPA 9320	<b>0.657 ± 0.450 (0.857)</b> C:83% T:88%	pCi/L	05/28/18 21:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.69 ± 0.834 (1.24)</b>	pCi/L	06/04/18 13:20	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 264853

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**Sample: MCM-10**      Lab ID: **264853004**      Collected: 05/08/18 16:11      Received: 05/10/18 08:00      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.05 ± 0.404 (0.484)</b> C:92% T:NA	pCi/L	05/29/18 08:18	13982-63-3	
Radium-228	EPA 9320	<b>0.954 ± 0.514 (0.909)</b> C:72% T:87%	pCi/L	05/28/18 21:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.00 ± 0.918 (1.39)</b>	pCi/L	06/04/18 13:20	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 264853

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<b>Sample: MCM-08</b>	<b>Lab ID: 264853005</b>	Collected: 05/09/18 09:22	Received: 05/10/18 08:00	Matrix: Water
PWS:	Site ID:	Sample Type:		

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>14.2 ± 2.19 (0.111)</b> C:95% T:NA	pCi/L	06/04/18 07:58	13982-63-3	
Radium-228	EPA 9320	<b>5.33 ± 1.26 (1.08)</b> C:66% T:86%	pCi/L	05/28/18 21:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>19.5 ± 3.45 (1.19)</b>	pCi/L	06/04/18 13:20	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 264853

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<b>Sample: MCM-02</b>	<b>Lab ID: 264853006</b>	Collected: 05/09/18 09:24	Received: 05/10/18 08:00	Matrix: Water
PWS:	Site ID:	Sample Type:		

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.610 ± 0.321 (0.466)</b> C:90% T:NA	pCi/L	05/29/18 08:19	13982-63-3	
Radium-228	EPA 9320	<b>0.278 ± 0.445 (0.943)</b> C:79% T:82%	pCi/L	05/28/18 21:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.888 ± 0.766 (1.41)</b>	pCi/L	06/04/18 13:20	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 264853

<b>Sample:</b> Dup-1	<b>Lab ID:</b> 264853007	Collected: 05/08/18 00:00	Received: 05/10/18 08:00	Matrix: Water		
PWS:	Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.531 ± 0.268 (0.352)</b> C:99% T:NA	pCi/L	05/29/18 08:19	13982-63-3	
Radium-228	EPA 9320	<b>0.877 ± 0.504 (0.921)</b> C:83% T:86%	pCi/L	05/28/18 21:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.41 ± 0.772 (1.27)</b>	pCi/L	06/04/18 13:20	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 264853

**Sample: FBL050918**      Lab ID: **264853008**      Collected: 05/09/18 10:21      Received: 05/10/18 08:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.330 ± 0.254 (0.453)</b> C:86% T:NA	pCi/L	05/29/18 08:20	13982-63-3	
Radium-228	EPA 9320	<b>0.520 ± 0.462 (0.920)</b> C:76% T:90%	pCi/L	05/28/18 21:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.850 ± 0.716 (1.37)</b>	pCi/L	06/04/18 13:20	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 264853

**Sample:** EQBL050918      **Lab ID:** 264853009      Collected: 05/09/18 10:30      Received: 05/10/18 08:00      Matrix: Water

**PWS:**      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.170 ± 0.256 (0.566)</b> C:89% T:NA	pCi/L	05/29/18 08:31	13982-63-3	
Radium-228	EPA 9320	<b>0.273 ± 0.440 (0.934)</b> C:83% T:86%	pCi/L	05/28/18 21:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.443 ± 0.696 (1.50)</b>	pCi/L	06/04/18 13:20	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
 Pace Project No.: 264853

---

QC Batch:	299606	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples: 264853001, 264853002, 264853003, 264853004, 264853005, 264853006, 264853007, 264853008, 264853009			

---

METHOD BLANK: 1466605	Matrix: Water
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Associated Lab Samples: 264853001, 264853002, 264853003, 264853004, 264853005, 264853006, 264853007, 264853008, 264853009	
---	--

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.175 ± 0.204 (0.419) C:94% T:NA	pCi/L	05/29/18 08:14	

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

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 264853

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QC Batch: 299164 Analysis Method: EPA 9320

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

Associated Lab Samples: 264853001, 264853002, 264853003, 264853004, 264853005, 264853006, 264853007, 264853008, 264853009

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METHOD BLANK: 1464803 Matrix: Water

Associated Lab Samples: 264853001, 264853002, 264853003, 264853004, 264853005, 264853006, 264853007, 264853008, 264853009

---

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.569 ± 0.499 (0.997) C:84% T:81%	pCi/L	05/28/18 21:26	

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

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## QUALIFIERS

Project: Plant McManus Ash Ponds  
Pace Project No.: 264853

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 264853

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
264853001	MCM-04	EPA 9315	299606		
264853002	MCM-11	EPA 9315	299606		
264853003	MCM-15	EPA 9315	299606		
264853004	MCM-10	EPA 9315	299606		
264853005	MCM-08	EPA 9315	299606		
264853006	MCM-02	EPA 9315	299606		
264853007	Dup-1	EPA 9315	299606		
264853008	FBL050918	EPA 9315	299606		
264853009	EQBL050918	EPA 9315	299606		
264853001	MCM-04	EPA 9320	299164		
264853002	MCM-11	EPA 9320	299164		
264853003	MCM-15	EPA 9320	299164		
264853004	MCM-10	EPA 9320	299164		
264853005	MCM-08	EPA 9320	299164		
264853006	MCM-02	EPA 9320	299164		
264853007	Dup-1	EPA 9320	299164		
264853008	FBL050918	EPA 9320	299164		
264853009	EQBL050918	EPA 9320	299164		
264853001	MCM-04	Total Radium Calculation	300615		
264853002	MCM-11	Total Radium Calculation	300615		
264853003	MCM-15	Total Radium Calculation	300615		
264853004	MCM-10	Total Radium Calculation	300615		
264853005	MCM-08	Total Radium Calculation	300615		
264853006	MCM-02	Total Radium Calculation	300615		
264853007	Dup-1	Total Radium Calculation	300615		
264853008	FBL050918	Total Radium Calculation	300615		
264853009	EQBL050918	Total Radium Calculation	300615		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

# Sample Condition Upon Receipt

Pace Analytical

Client Name: GIA Power

Project #

**WO# : 264853**

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: 7808 8926 9630

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 8.3 Type of Ice: Wet Blue None

Cooler Temperature 0.3 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C Comments:

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 5/10/18 mx

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

## Client Notification/ Resolution:

Field Data Required? Y / N

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

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

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

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

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

July 03, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 22, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

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### Atlanta Certification IDs

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

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Texas Certification #: T104704397-08-TX  
Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Lab ID	Sample ID	Matrix	Date Collected	Date Received
266416001	MCM-12	Water	06/19/18 09:15	06/22/18 09:20
266416002	MCM-09	Water	06/19/18 09:30	06/22/18 09:20
266416003	MCM-11	Water	06/19/18 09:46	06/22/18 09:20
266416004	MCM-10	Water	06/19/18 11:55	06/22/18 09:20
266416005	MCM-14	Water	06/19/18 11:40	06/22/18 09:20
266416006	MCM-08	Water	06/19/18 14:16	06/22/18 09:20
266416007	MCM-01	Water	06/19/18 14:40	06/22/18 09:20
266416008	MCM-17	Water	06/19/18 15:18	06/22/18 09:20
266416009	MCM-15	Water	06/19/18 15:56	06/22/18 09:20
266416010	MCM-02	Water	06/19/18 16:20	06/22/18 09:20
266416011	MCM-16	Water	06/20/18 10:34	06/22/18 09:20
266416012	MCM-05	Water	06/20/18 10:53	06/22/18 09:20
266416013	MCM-06	Water	06/20/18 12:56	06/22/18 09:20
266416014	MCM-04	Water	06/20/18 14:25	06/22/18 09:20
266416015	MCM-07	Water	06/21/18 09:43	06/22/18 09:20
266416016	FBL061918	Water	06/19/18 16:40	06/22/18 09:20
266416017	EQBL061918	Water	06/19/18 16:45	06/22/18 09:20
266416018	FBL062018	Water	06/20/18 08:20	06/22/18 09:20
266416019	EQBL062018	Water	06/20/18 08:25	06/22/18 09:20
266416020	Dup-1	Water	06/19/18 00:00	06/22/18 09:20
266416021	Dup-2	Water	06/20/18 00:00	06/22/18 09:20

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Lab ID	Sample ID	Method	Analysts	Analytes Reported
266416001	MCM-12	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
266416002	MCM-09	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
266416003	MCM-11	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
266416004	MCM-10	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
266416005	MCM-14	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
266416006	MCM-08	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
266416007	MCM-01	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
266416008	MCM-17	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
266416009	MCM-15	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
266416010	MCM-02	EPA 6020B	CSW	14

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Lab ID	Sample ID	Method	Analysts	Analytes Reported
266416011	MCM-16	EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
		EPA 6020B	CSW	14
266416012	MCM-05	EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
		EPA 6020B	CSW	14
266416013	MCM-06	EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
		EPA 6020B	CSW	14
266416014	MCM-04	EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
		EPA 6020B	CSW	14
266416015	MCM-07	EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
		EPA 6020B	CSW	14
266416016	FBL061918	EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
		EPA 6020B	CSW	14
266416017	EQBL061918	EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
		EPA 6020B	CSW	14
266416018	FBL062018	EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
		EPA 6020B	CSW	14
266416019	EQBL062018	EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
		EPA 6020B	CSW	14

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Lab ID	Sample ID	Method	Analysts	Analytics Reported
266416020	Dup-1	SM 2540C	JPT	1
		EPA 300.0	RLC	3
		EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
266416021	Dup-2	EPA 300.0	RLC	3
		EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-12	Lab ID: 266416001	Collected: 06/19/18 09:15		Received: 06/22/18 09:20		Matrix: Water			
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 16:29	7440-36-0	
Arsenic	<b>0.0010J</b>	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 16:29	7440-38-2	
Barium	<b>0.13</b>	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 16:29	7440-39-3	
Beryllium	<b>0.00065J</b>	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 16:29	7440-41-7	
Boron	<b>1.2</b>	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 16:29	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 16:29	7440-43-9	
Calcium	<b>8.3</b>	mg/L	0.50	0.014	1	06/25/18 10:50	06/26/18 16:29	7440-70-2	
Chromium	<b>0.0047J</b>	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 16:29	7440-47-3	
Cobalt	<b>0.00053J</b>	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 16:29	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/26/18 16:29	7439-92-1	
Lithium	<b>0.012J</b>	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 16:29	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 16:29	7439-98-7	
Selenium	<b>0.0017J</b>	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 16:29	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/26/18 16:29	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 11:30	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>1820</b>	mg/L	10.0	10.0	1			06/25/18 11:51	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>760</b>	mg/L	5.0	0.48	20			06/29/18 05:43	16887-00-6 M1
Fluoride	<b>0.91</b>	mg/L	0.30	0.029	1			06/25/18 23:26	16984-48-8
Sulfate	<b>1.6</b>	mg/L	1.0	0.017	1			06/25/18 23:26	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-09	Lab ID: 266416002	Collected: 06/19/18 09:30		Received: 06/22/18 09:20		Matrix: Water			
Parameters	Results	Units	Report	MDL	DF	Prepared	Analyzed	CAS No.	Qual
			Limit						
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 16:41	7440-36-0	
Arsenic	<b>0.0013J</b>	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 16:41	7440-38-2	
Barium	<b>0.15</b>	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 16:41	7440-39-3	
Beryllium	<b>0.00070J</b>	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 16:41	7440-41-7	
Boron	<b>0.085</b>	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 16:41	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 16:41	7440-43-9	
Calcium	<b>312</b>	mg/L	25.0	0.69	50	06/25/18 10:50	06/26/18 16:47	7440-70-2	M6
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 16:41	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 16:41	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/26/18 16:41	7439-92-1	
Lithium	<b>0.059</b>	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 16:41	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 16:41	7439-98-7	
Selenium	<b>0.0017J</b>	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 16:41	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/26/18 16:41	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 11:32	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>3660</b>	mg/L	10.0	10.0	1			06/25/18 11:51	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>1750</b>	mg/L	12.5	1.2	50			06/29/18 06:04	16887-00-6
Fluoride	<b>0.20J</b>	mg/L	0.30	0.029	1			06/26/18 00:28	16984-48-8
Sulfate	<b>633</b>	mg/L	50.0	0.85	50			06/29/18 06:04	14808-79-8
									M1

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-11	Lab ID: 266416003	Collected: 06/19/18 09:46	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 17:34	7440-36-0	
Arsenic	<b>0.011</b>	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 17:34	7440-38-2	
Barium	<b>0.031</b>	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 17:34	7440-39-3	
Beryllium	<b>0.00011J</b>	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 17:34	7440-41-7	
Boron	<b>0.040</b>	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 17:34	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 17:34	7440-43-9	
Calcium	<b>4.3</b>	mg/L	0.50	0.014	1	06/25/18 10:50	06/26/18 17:34	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 17:34	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 17:34	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/26/18 17:34	7439-92-1	
Lithium	<b>0.0017J</b>	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 17:34	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 17:34	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 17:34	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/26/18 17:34	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 11:34	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>112</b>	mg/L	10.0	10.0	1			06/25/18 11:51	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>17.3</b>	mg/L	0.25	0.024	1			06/26/18 00:49	16887-00-6
Fluoride	<b>0.17J</b>	mg/L	0.30	0.029	1			06/26/18 00:49	16984-48-8
Sulfate	<b>23.7</b>	mg/L	1.0	0.017	1			06/26/18 00:49	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-10	Lab ID: 266416004	Collected: 06/19/18 11:55	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 17:45	7440-36-0	
Arsenic	<b>0.048</b>	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 17:45	7440-38-2	
Barium	<b>0.017</b>	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 17:45	7440-39-3	
Beryllium	<b>0.014</b>	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 17:45	7440-41-7	
Boron	<b>0.19</b>	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 17:45	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 17:45	7440-43-9	
Calcium	<b>55.9</b>	mg/L	25.0	0.69	50	06/25/18 10:50	06/26/18 17:51	7440-70-2	
Chromium	<b>0.0035J</b>	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 17:45	7440-47-3	
Cobalt	<b>0.022</b>	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 17:45	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/26/18 17:45	7439-92-1	
Lithium	<b>0.11</b>	mg/L	0.050	0.00097	1	06/25/18 10:50	06/27/18 14:39	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 17:45	7439-98-7	
Selenium	<b>0.036</b>	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 17:45	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/26/18 17:45	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 11:37	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>3290</b>	mg/L	10.0	10.0	1			06/25/18 11:51	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>660</b>	mg/L	12.5	1.2	50			06/29/18 06:24	16887-00-6
Fluoride	<b>1.1</b>	mg/L	0.30	0.029	1			06/26/18 01:10	16984-48-8
Sulfate	<b>1590</b>	mg/L	50.0	0.85	50			06/29/18 06:24	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-14	Lab ID: 266416005	Collected: 06/19/18 11:40	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.015	0.0039	5	06/25/18 10:50	06/27/18 15:48	7440-36-0	D3
Arsenic	<b>0.0062J</b>	mg/L	0.025	0.0028	5	06/25/18 10:50	06/27/18 15:48	7440-38-2	D3
Barium	<b>0.092</b>	mg/L	0.050	0.0039	5	06/25/18 10:50	06/27/18 15:48	7440-39-3	
Beryllium	ND	mg/L	0.015	0.00025	5	06/25/18 10:50	06/27/18 15:48	7440-41-7	D3
Boron	<b>0.76</b>	mg/L	0.20	0.020	5	06/25/18 10:50	06/27/18 15:48	7440-42-8	
Cadmium	ND	mg/L	0.0050	0.00046	5	06/25/18 10:50	06/27/18 15:48	7440-43-9	D3
Calcium	<b>285</b>	mg/L	25.0	0.69	50	06/25/18 10:50	06/26/18 18:02	7440-70-2	
Chromium	ND	mg/L	0.050	0.0078	5	06/25/18 10:50	06/27/18 15:48	7440-47-3	D3
Cobalt	ND	mg/L	0.050	0.0026	5	06/25/18 10:50	06/27/18 15:48	7440-48-4	D3
Lead	ND	mg/L	0.025	0.0014	5	06/25/18 10:50	06/27/18 15:48	7439-92-1	D3
Lithium	<b>0.044J</b>	mg/L	0.25	0.0049	5	06/25/18 10:50	06/27/18 15:48	7439-93-2	D3
Molybdenum	ND	mg/L	0.050	0.0097	5	06/25/18 10:50	06/27/18 15:48	7439-98-7	D3
Selenium	ND	mg/L	0.050	0.0068	5	06/25/18 10:50	06/27/18 15:48	7782-49-2	D3
Thallium	ND	mg/L	0.0050	0.00071	5	06/25/18 10:50	06/27/18 15:48	7440-28-0	D3
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 11:39	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>8630</b>	mg/L	10.0	10.0	1			06/25/18 11:51	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>5180</b>	mg/L	50.0	4.8	200			06/29/18 06:45	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			06/26/18 01:30	16984-48-8
Sulfate	<b>498</b>	mg/L	50.0	0.85	50			06/29/18 07:06	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-08	Lab ID: 266416006	Collected: 06/19/18 14:16	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report	Prepared	Analyzed	CAS No.	Qual		
			Limit						
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 18:08	7440-36-0	
Arsenic	<b>0.022</b>	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 18:08	7440-38-2	
Barium	<b>0.56</b>	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 18:08	7440-39-3	
Beryllium	<b>0.00044J</b>	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 18:08	7440-41-7	
Boron	<b>0.38</b>	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 18:08	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 18:08	7440-43-9	
Calcium	<b>39.8</b>	mg/L	25.0	0.69	50	06/25/18 10:50	06/26/18 18:14	7440-70-2	
Chromium	<b>0.0087J</b>	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 18:08	7440-47-3	
Cobalt	<b>0.0048J</b>	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 18:08	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/26/18 18:08	7439-92-1	
Lithium	<b>0.0024J</b>	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 18:08	7439-93-2	
Molybdenum	<b>0.0028J</b>	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 18:08	7439-98-7	
Selenium	<b>0.0095J</b>	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 18:08	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/26/18 18:08	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 11:42	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>3600</b>	mg/L	10.0	10.0	1			06/25/18 11:51	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>1890</b>	mg/L	12.5	1.2	50			06/29/18 07:26	16887-00-6
Fluoride	<b>0.043J</b>	mg/L	0.30	0.029	1			06/26/18 01:51	16984-48-8
Sulfate	<b>359</b>	mg/L	50.0	0.85	50			06/29/18 07:26	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-01	Lab ID: 266416007	Collected: 06/19/18 14:40	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 18:31	7440-36-0	
Arsenic	<b>0.0069</b>	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 18:31	7440-38-2	
Barium	<b>0.083</b>	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 18:31	7440-39-3	
Beryllium	<b>0.00011J</b>	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 18:31	7440-41-7	
Boron	<b>0.040J</b>	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 18:31	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 18:31	7440-43-9	
Calcium	<b>11.6J</b>	mg/L	25.0	0.69	50	06/25/18 10:50	06/26/18 18:37	7440-70-2	D3
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 18:31	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 18:31	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/26/18 18:31	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 18:31	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 18:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 18:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/26/18 18:31	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 11:44	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>142</b>	mg/L	10.0	10.0	1			06/25/18 11:51	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>24.4</b>	mg/L	0.25	0.024	1			06/26/18 02:11	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			06/26/18 02:11	16984-48-8
Sulfate	<b>50.3</b>	mg/L	1.0	0.017	1			06/26/18 02:11	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-17	Lab ID: 266416008	Collected: 06/19/18 15:18	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0060	0.0016	2	06/25/18 10:50	06/27/18 15:04	7440-36-0	D3
Arsenic	<b>0.0029J</b>	mg/L	0.010	0.0011	2	06/25/18 10:50	06/27/18 15:04	7440-38-2	D3
Barium	<b>0.076</b>	mg/L	0.020	0.0016	2	06/25/18 10:50	06/27/18 15:04	7440-39-3	
Beryllium	<b>0.00032J</b>	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 18:42	7440-41-7	
Boron	<b>1.7</b>	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 18:42	7440-42-8	
Cadmium	ND	mg/L	0.0020	0.00019	2	06/25/18 10:50	06/27/18 15:04	7440-43-9	D3
Calcium	<b>136</b>	mg/L	25.0	0.69	50	06/25/18 10:50	06/26/18 18:48	7440-70-2	
Chromium	<b>0.013J</b>	mg/L	0.020	0.0031	2	06/25/18 10:50	06/27/18 15:04	7440-47-3	D3
Cobalt	ND	mg/L	0.020	0.0010	2	06/25/18 10:50	06/27/18 15:04	7440-48-4	D3
Lead	ND	mg/L	0.010	0.00055	2	06/25/18 10:50	06/27/18 15:04	7439-92-1	D3
Lithium	<b>0.021J</b>	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 18:42	7439-93-2	
Molybdenum	ND	mg/L	0.020	0.0039	2	06/25/18 10:50	06/27/18 15:04	7439-98-7	D3
Selenium	ND	mg/L	0.020	0.0027	2	06/25/18 10:50	06/27/18 15:04	7782-49-2	D3
Thallium	ND	mg/L	0.0020	0.00028	2	06/25/18 10:50	06/27/18 15:04	7440-28-0	D3
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 11:46	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>5640</b>	mg/L	10.0	10.0	1			06/25/18 11:51	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>3050</b>	mg/L	50.0	4.8	200			06/29/18 07:47	16887-00-6
Fluoride	<b>0.60</b>	mg/L	0.30	0.029	1			06/26/18 02:32	16984-48-8
Sulfate	<b>218</b>	mg/L	50.0	0.85	50			06/29/18 09:30	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-15	Lab ID: 266416009	Collected: 06/19/18 15:56	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 18:54	7440-36-0	
Arsenic	<b>0.0019J</b>	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 18:54	7440-38-2	
Barium	<b>0.038</b>	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 18:54	7440-39-3	
Beryllium	<b>0.00034J</b>	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 18:54	7440-41-7	
Boron	<b>0.064</b>	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 18:54	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 18:54	7440-43-9	
Calcium	<b>7.4</b>	mg/L	0.50	0.014	1	06/25/18 10:50	06/26/18 18:54	7440-70-2	
Chromium	<b>0.0020J</b>	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 18:54	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 18:54	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/26/18 18:54	7439-92-1	
Lithium	<b>0.0016J</b>	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 18:54	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 18:54	7439-98-7	
Selenium	<b>0.0022J</b>	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 18:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/26/18 18:54	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 11:49	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>110</b>	mg/L	10.0	10.0	1			06/25/18 11:51	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>13.7</b>	mg/L	0.25	0.024	1			06/26/18 04:15	16887-00-6
Fluoride	<b>0.057J</b>	mg/L	0.30	0.029	1			06/26/18 04:15	16984-48-8
Sulfate	<b>15.5</b>	mg/L	1.0	0.017	1			06/26/18 04:15	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-02	Lab ID: 266416010	Collected: 06/19/18 16:20	Received: 06/22/18 09:20	Matrix: Water				
Parameters	Results	Units	Report	Prepared	Analyzed	CAS No.	Qual	
			Limit					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A						
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 19:05	7440-36-0
Arsenic	<b>0.0011J</b>	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 19:05	7440-38-2
Barium	<b>0.10</b>	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 19:05	7440-39-3
Beryllium	<b>0.00017J</b>	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 19:05	7440-41-7
Boron	<b>0.13</b>	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 19:05	7440-42-8
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 19:05	7440-43-9
Calcium	<b>4.8</b>	mg/L	0.50	0.014	1	06/25/18 10:50	06/26/18 19:05	7440-70-2
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 19:05	7440-47-3
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 19:05	7440-48-4
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/26/18 19:05	7439-92-1
Lithium	ND	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 19:05	7439-93-2
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 19:05	7439-98-7
Selenium	ND	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 19:05	7782-49-2
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/26/18 19:05	7440-28-0
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A						
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 12:13	7439-97-6
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C						
Total Dissolved Solids	<b>143</b>	mg/L	10.0	10.0	1		06/25/18 11:51	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0						
Chloride	<b>37.7</b>	mg/L	0.25	0.024	1		06/26/18 04:36	16887-00-6
Fluoride	<b>0.065J</b>	mg/L	0.30	0.029	1		06/26/18 04:36	16984-48-8
Sulfate	<b>35.5</b>	mg/L	1.0	0.017	1		06/26/18 04:36	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-16	Lab ID: 266416011	Collected: 06/20/18 10:34	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 19:17	7440-36-0	
Arsenic	<b>0.00058J</b>	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 19:17	7440-38-2	
Barium	<b>0.13</b>	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 19:17	7440-39-3	
Beryllium	<b>0.00024J</b>	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 19:17	7440-41-7	
Boron	<b>0.079</b>	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 19:17	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 19:17	7440-43-9	
Calcium	<b>5.7</b>	mg/L	0.50	0.014	1	06/25/18 10:50	06/26/18 19:17	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 19:17	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 19:17	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/26/18 19:17	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 19:17	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 19:17	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 19:17	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/26/18 19:17	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 12:15	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>123</b>	mg/L	10.0	10.0	1		06/25/18 14:16		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>30.0</b>	mg/L	0.25	0.024	1		06/26/18 05:17	16887-00-6	
Fluoride	<b>0.038J</b>	mg/L	0.30	0.029	1		06/26/18 05:17	16984-48-8	
Sulfate	<b>31.2</b>	mg/L	1.0	0.017	1		06/26/18 05:17	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-05	Lab ID: 266416012	Collected: 06/20/18 10:53	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 19:40	7440-36-0	
Arsenic	<b>0.019</b>	mg/L	0.010	0.0011	2	06/25/18 10:50	06/27/18 15:10	7440-38-2	
Barium	<b>0.014</b>	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 19:40	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 19:40	7440-41-7	
Boron	<b>0.51</b>	mg/L	0.080	0.0079	2	06/25/18 10:50	06/27/18 15:10	7440-42-8	
Cadmium	ND	mg/L	0.0020	0.00019	2	06/25/18 10:50	06/27/18 15:10	7440-43-9	D3
Calcium	<b>72.8</b>	mg/L	25.0	0.69	50	06/25/18 10:50	06/26/18 19:45	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 19:40	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 19:40	7440-48-4	
Lead	ND	mg/L	0.010	0.00055	2	06/25/18 10:50	06/27/18 15:10	7439-92-1	D3
Lithium	<b>0.034J</b>	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 19:40	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 19:40	7439-98-7	
Selenium	ND	mg/L	0.020	0.0027	2	06/25/18 10:50	06/27/18 15:10	7782-49-2	D3
Thallium	ND	mg/L	0.0020	0.00028	2	06/25/18 10:50	06/27/18 15:10	7440-28-0	D3
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 12:18	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>3370</b>	mg/L	10.0	10.0	1			06/25/18 14:16	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>1800</b>	mg/L	25.0	2.4	100			06/29/18 09:51	16887-00-6
Fluoride	<b>0.50</b>	mg/L	0.30	0.029	1			06/26/18 05:38	16984-48-8
Sulfate	<b>46.0J</b>	mg/L	100	1.7	100			06/29/18 09:51	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-06	Lab ID: 266416013	Collected: 06/20/18 12:56	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report	Prepared	Analyzed	CAS No.	Qual		
			Limit						
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0060	0.0016	2	06/25/18 10:50	06/27/18 15:16	7440-36-0	D3
Arsenic	<b>0.44</b>	mg/L	0.010	0.0011	2	06/25/18 10:50	06/27/18 15:16	7440-38-2	
Barium	<b>0.060</b>	mg/L	0.020	0.0016	2	06/25/18 10:50	06/27/18 15:16	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 19:51	7440-41-7	
Boron	<b>0.69</b>	mg/L	0.080	0.0079	2	06/25/18 10:50	06/27/18 15:16	7440-42-8	
Cadmium	ND	mg/L	0.0020	0.00019	2	06/25/18 10:50	06/27/18 15:16	7440-43-9	D3
Calcium	<b>121</b>	mg/L	25.0	0.69	50	06/25/18 10:50	06/26/18 19:57	7440-70-2	
Chromium	ND	mg/L	0.020	0.0031	2	06/25/18 10:50	06/27/18 15:16	7440-47-3	D3
Cobalt	ND	mg/L	0.020	0.0010	2	06/25/18 10:50	06/27/18 15:16	7440-48-4	D3
Lead	ND	mg/L	0.010	0.00055	2	06/25/18 10:50	06/27/18 15:16	7439-92-1	D3
Lithium	<b>0.066J</b>	mg/L	0.10	0.0019	2	06/25/18 10:50	06/27/18 15:16	7439-93-2	D3
Molybdenum	ND	mg/L	0.020	0.0039	2	06/25/18 10:50	06/27/18 15:16	7439-98-7	D3
Selenium	ND	mg/L	0.020	0.0027	2	06/25/18 10:50	06/27/18 15:16	7782-49-2	D3
Thallium	ND	mg/L	0.0020	0.00028	2	06/25/18 10:50	06/27/18 15:16	7440-28-0	D3
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 12:20	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>4940</b>	mg/L	10.0	10.0	1			06/25/18 14:16	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>3100</b>	mg/L	50.0	4.8	200			06/29/18 10:11	16887-00-6
Fluoride	<b>0.22J</b>	mg/L	0.30	0.029	1			06/26/18 05:58	16984-48-8
Sulfate	<b>33.0</b>	mg/L	1.0	0.017	1			06/26/18 05:58	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-04	Lab ID: 266416014	Collected: 06/20/18 14:25	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 20:03	7440-36-0	
Arsenic	<b>0.0099</b>	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 20:03	7440-38-2	
Barium	<b>0.027</b>	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 20:03	7440-39-3	
Beryllium	<b>0.00021J</b>	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 20:03	7440-41-7	
Boron	<b>0.045</b>	mg/L	0.040	0.0039	1	06/25/18 10:50	06/27/18 14:34	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 20:03	7440-43-9	
Calcium	<b>4.3</b>	mg/L	0.50	0.014	1	06/25/18 10:50	06/26/18 20:03	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 20:03	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 20:03	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/27/18 14:34	7439-92-1	
Lithium	<b>0.0015J</b>	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 20:03	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 20:03	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 20:03	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/27/18 14:34	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/25/18 15:20	06/26/18 12:23	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>114</b>	mg/L	10.0	10.0	1			06/25/18 14:16	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>27.5</b>	mg/L	0.25	0.024	1			06/26/18 06:19	16887-00-6
Fluoride	<b>0.033J</b>	mg/L	0.30	0.029	1			06/26/18 06:19	16984-48-8
Sulfate	<b>25.3</b>	mg/L	1.0	0.017	1			06/26/18 06:19	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: MCM-07	Lab ID: 266416015	Collected: 06/21/18 09:43	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.015	0.0039	5	06/25/18 10:50	06/27/18 15:54	7440-36-0	D3
Arsenic	<b>0.022J</b>	mg/L	0.025	0.0028	5	06/25/18 10:50	06/27/18 15:54	7440-38-2	D3
Barium	<b>0.10</b>	mg/L	0.050	0.0039	5	06/25/18 10:50	06/27/18 15:54	7440-39-3	
Beryllium	ND	mg/L	0.015	0.00025	5	06/25/18 10:50	06/27/18 15:54	7440-41-7	D3
Boron	<b>0.99</b>	mg/L	0.20	0.020	5	06/25/18 10:50	06/27/18 15:54	7440-42-8	
Cadmium	ND	mg/L	0.0050	0.00046	5	06/25/18 10:50	06/27/18 15:54	7440-43-9	D3
Calcium	<b>179</b>	mg/L	25.0	0.69	50	06/25/18 10:50	06/26/18 20:20	7440-70-2	
Chromium	ND	mg/L	0.050	0.0078	5	06/25/18 10:50	06/27/18 15:54	7440-47-3	D3
Cobalt	ND	mg/L	0.050	0.0026	5	06/25/18 10:50	06/27/18 15:54	7440-48-4	D3
Lead	ND	mg/L	0.025	0.0014	5	06/25/18 10:50	06/27/18 15:54	7439-92-1	D3
Lithium	<b>0.030J</b>	mg/L	0.25	0.0049	5	06/25/18 10:50	06/27/18 15:54	7439-93-2	D3
Molybdenum	ND	mg/L	0.050	0.0097	5	06/25/18 10:50	06/27/18 15:54	7439-98-7	D3
Selenium	ND	mg/L	0.050	0.0068	5	06/25/18 10:50	06/27/18 15:54	7782-49-2	D3
Thallium	ND	mg/L	0.0050	0.00071	5	06/25/18 10:50	06/27/18 15:54	7440-28-0	D3
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/26/18 11:45	06/26/18 15:54	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>7500</b>	mg/L	10.0	10.0	1			06/25/18 15:46	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>3920</b>	mg/L	125	12.0	500			06/29/18 10:32	16887-00-6
Fluoride	<b>0.28J</b>	mg/L	0.30	0.029	1			06/26/18 06:40	16984-48-8
Sulfate	<b>481</b>	mg/L	25.0	0.42	25			06/29/18 10:53	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: FBL061918	Lab ID: 266416016	Collected: 06/19/18 16:40	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 20:25	7440-36-0	
Arsenic	<b>0.00066J</b>	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 20:25	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 20:25	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 20:25	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 20:25	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 20:25	7440-43-9	
Calcium	<b>0.076J</b>	mg/L	0.50	0.014	1	06/25/18 10:50	06/26/18 20:25	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 20:25	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 20:25	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/27/18 14:11	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 20:25	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 20:25	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 20:25	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/27/18 14:11	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/26/18 11:45	06/26/18 16:03	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>12.0</b>	mg/L	10.0	10.0	1		06/25/18 11:51		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>0.44</b>	mg/L	0.25	0.024	1		06/26/18 07:00	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		06/26/18 07:00	16984-48-8	
Sulfate	<b>0.050J</b>	mg/L	1.0	0.017	1		06/26/18 07:00	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: EQBL061918	Lab ID: 266416017	Collected: 06/19/18 16:45	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 20:31	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 20:31	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 20:31	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 20:31	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 20:31	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 20:31	7440-43-9	
Calcium	<b>0.040J</b>	mg/L	0.50	0.014	1	06/25/18 10:50	06/26/18 20:31	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 20:31	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 20:31	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/27/18 14:17	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 20:31	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 20:31	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 20:31	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/27/18 14:17	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/26/18 11:45	06/26/18 16:06	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>14.0</b>	mg/L	10.0	10.0	1			06/25/18 11:51	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>0.32</b>	mg/L	0.25	0.024	1			06/26/18 07:21	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			06/26/18 07:21	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			06/26/18 07:21	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: FBL062018	Lab ID: 266416018	Collected: 06/20/18 08:20	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 20:48	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 20:48	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 20:48	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 20:48	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 20:48	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/26/18 20:48	7440-43-9	
Calcium	<b>0.060J</b>	mg/L	0.50	0.014	1	06/25/18 10:50	06/26/18 20:48	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 20:48	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 20:48	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/27/18 14:22	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 20:48	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 20:48	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 20:48	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/27/18 14:22	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/26/18 11:45	06/26/18 16:08	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>26.0</b>	mg/L	10.0	10.0	1			06/25/18 14:16	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>0.28</b>	mg/L	0.25	0.024	1			06/26/18 09:05	16887-00-6 B
Fluoride	ND	mg/L	0.30	0.029	1			06/26/18 09:05	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			06/26/18 09:05	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: EQBL062018	Lab ID: 266416019	Collected: 06/20/18 08:25	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 10:50	06/26/18 20:54	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	06/25/18 10:50	06/26/18 20:54	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	06/25/18 10:50	06/26/18 20:54	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 20:54	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	06/25/18 10:50	06/26/18 20:54	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 10:50	06/27/18 14:28	7440-43-9	
Calcium	<b>0.048J</b>	mg/L	0.50	0.014	1	06/25/18 10:50	06/26/18 20:54	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 10:50	06/26/18 20:54	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 10:50	06/26/18 20:54	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 10:50	06/27/18 14:28	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 20:54	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 10:50	06/26/18 20:54	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/25/18 10:50	06/26/18 20:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 10:50	06/27/18 14:28	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	06/26/18 11:45	06/26/18 16:15	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>16.0</b>	mg/L	10.0	10.0	1			06/25/18 15:45	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>0.28</b>	mg/L	0.25	0.024	1			06/26/18 09:26	16887-00-6 B
Fluoride	ND	mg/L	0.30	0.029	1			06/26/18 09:26	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			06/26/18 09:26	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: Dup-1	Lab ID: 266416020	Collected: 06/19/18 00:00	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0060	0.0016	2	06/25/18 10:50	06/27/18 15:21	7440-36-0	D3
Arsenic	ND	mg/L	0.010	0.0011	2	06/25/18 10:50	06/27/18 15:21	7440-38-2	D3
Barium	0.13	mg/L	0.020	0.0016	2	06/25/18 10:50	06/27/18 15:21	7440-39-3	
Beryllium	0.00077J	mg/L	0.0030	0.000050	1	06/25/18 10:50	06/26/18 21:00	7440-41-7	
Boron	1.3	mg/L	0.080	0.0079	2	06/25/18 10:50	06/27/18 15:21	7440-42-8	
Cadmium	ND	mg/L	0.0020	0.00019	2	06/25/18 10:50	06/27/18 15:21	7440-43-9	D3
Calcium	8.5	mg/L	0.50	0.014	1	06/25/18 10:50	06/26/18 21:00	7440-70-2	
Chromium	0.0043J	mg/L	0.020	0.0031	2	06/25/18 10:50	06/27/18 15:21	7440-47-3	D3
Cobalt	ND	mg/L	0.020	0.0010	2	06/25/18 10:50	06/27/18 15:21	7440-48-4	D3
Lead	ND	mg/L	0.010	0.00055	2	06/25/18 10:50	06/27/18 15:21	7439-92-1	D3
Lithium	0.014J	mg/L	0.050	0.00097	1	06/25/18 10:50	06/26/18 21:00	7439-93-2	
Molybdenum	ND	mg/L	0.020	0.0039	2	06/25/18 10:50	06/27/18 15:21	7439-98-7	D3
Selenium	ND	mg/L	0.020	0.0027	2	06/25/18 10:50	06/27/18 15:21	7782-49-2	D3
Thallium	ND	mg/L	0.0020	0.00028	2	06/25/18 10:50	06/27/18 15:21	7440-28-0	D3
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/26/18 11:45	06/26/18 16:18	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	1850	mg/L	10.0	10.0	1			06/25/18 12:50	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	737	mg/L	5.0	0.48	20			06/29/18 11:14	16887-00-6
Fluoride	0.88	mg/L	0.30	0.029	1			06/26/18 09:47	16984-48-8
Sulfate	2.0	mg/L	1.0	0.017	1			06/26/18 09:47	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Sample: Dup-2	Lab ID: 266416021	Collected: 06/20/18 00:00	Received: 06/22/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	06/25/18 12:50	06/27/18 15:59	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	06/25/18 12:50	06/27/18 15:59	7440-38-2	
Barium	<b>0.15</b>	mg/L	0.010	0.00078	1	06/25/18 12:50	06/27/18 15:59	7440-39-3	
Beryllium	<b>0.00022J</b>	mg/L	0.0030	0.000050	1	06/25/18 12:50	06/27/18 15:59	7440-41-7	
Boron	<b>0.083</b>	mg/L	0.040	0.0039	1	06/25/18 12:50	06/27/18 15:59	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	06/25/18 12:50	06/27/18 15:59	7440-43-9	
Calcium	<b>5.6</b>	mg/L	0.50	0.014	1	06/25/18 12:50	06/27/18 15:59	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	06/25/18 12:50	06/27/18 15:59	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	06/25/18 12:50	06/27/18 15:59	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	06/25/18 12:50	06/27/18 15:59	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	06/25/18 12:50	06/27/18 15:59	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	06/25/18 12:50	06/27/18 15:59	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	06/25/18 12:50	06/27/18 15:59	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	06/25/18 12:50	06/27/18 15:59	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	06/26/18 11:45	06/26/18 16:20	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>128</b>	mg/L	10.0	10.0	1			06/25/18 15:46	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>30.3</b>	mg/L	0.25	0.024	1			06/27/18 19:30	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			06/27/18 19:30	16984-48-8
Sulfate	<b>32.1</b>	mg/L	1.0	0.017	1			06/27/18 19:30	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 266416

QC Batch: 8688 Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury

Associated Lab Samples: 266416001, 266416002, 266416003, 266416004, 266416005, 266416006, 266416007, 266416008, 266416009, 266416010, 266416011, 266416012, 266416013, 266416014

METHOD BLANK: 39925 Matrix: Water

Associated Lab Samples: 266416001, 266416002, 266416003, 266416004, 266416005, 266416006, 266416007, 266416008, 266416009, 266416010, 266416011, 266416012, 266416013, 266416014

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Mercury	mg/L	ND	0.00050	0.000036	06/26/18 10:59	

LABORATORY CONTROL SAMPLE: 39926

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Mercury	mg/L	.0025	0.0027	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 39927 39928

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max	
		266355001	Spike								
Mercury	mg/L	ND	.0025	.0025	0.0027	0.0027	105	107	75-125	1	20

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 266416

QC Batch: 8744 Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury

Associated Lab Samples: 266416015, 266416016, 266416017, 266416018, 266416019, 266416020, 266416021

METHOD BLANK: 40129 Matrix: Water

Associated Lab Samples: 266416015, 266416016, 266416017, 266416018, 266416019, 266416020, 266416021

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Mercury	mg/L	ND	0.00050	0.000036	06/26/18 15:49	

LABORATORY CONTROL SAMPLE: 40130

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Mercury	mg/L	.0025	0.0026	106	80-120	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 40131

40132

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max	RPD	RPD	Qual
		266416015	Spike	Conc.	Result	Result	% Rec	% Rec	% Rec	Limits	RPD	RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0026	0.0026	103	103	103	75-125	0	20	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 266416

QC Batch: 8630 Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A Analysis Description: 6020B MET

Associated Lab Samples: 266416001, 266416002, 266416003, 266416004, 266416005, 266416006, 266416007, 266416008, 266416009, 266416010, 266416011, 266416012, 266416013, 266416014, 266416015, 266416016, 266416017, 266416018, 266416019, 266416020

METHOD BLANK: 39793

Matrix: Water

Associated Lab Samples: 266416001, 266416002, 266416003, 266416004, 266416005, 266416006, 266416007, 266416008, 266416009, 266416010, 266416011, 266416012, 266416013, 266416014, 266416015, 266416016, 266416017, 266416018, 266416019, 266416020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	06/26/18 16:18	
Arsenic	mg/L	ND	0.0050	0.00057	06/26/18 16:18	
Barium	mg/L	ND	0.010	0.00078	06/26/18 16:18	
Beryllium	mg/L	ND	0.0030	0.000050	06/26/18 16:18	
Boron	mg/L	ND	0.040	0.0039	06/26/18 16:18	
Cadmium	mg/L	ND	0.0010	0.000093	06/26/18 16:18	
Calcium	mg/L	ND	0.50	0.014	06/26/18 16:18	
Chromium	mg/L	ND	0.010	0.0016	06/26/18 16:18	
Cobalt	mg/L	ND	0.010	0.00052	06/26/18 16:18	
Lead	mg/L	ND	0.0050	0.00027	06/26/18 16:18	
Lithium	mg/L	ND	0.050	0.00097	06/26/18 16:18	
Molybdenum	mg/L	ND	0.010	0.0019	06/26/18 16:18	
Selenium	mg/L	ND	0.010	0.0014	06/26/18 16:18	
Thallium	mg/L	ND	0.0010	0.00014	06/26/18 16:18	

LABORATORY CONTROL SAMPLE: 39794

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	102	80-120	
Arsenic	mg/L	.1	0.099	99	80-120	
Barium	mg/L	.1	0.10	100	80-120	
Beryllium	mg/L	.1	0.11	105	80-120	
Boron	mg/L	1	1.1	109	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.1	105	80-120	
Chromium	mg/L	.1	0.11	110	80-120	
Cobalt	mg/L	.1	0.11	108	80-120	
Lead	mg/L	.1	0.10	101	80-120	
Lithium	mg/L	.1	0.11	109	80-120	
Molybdenum	mg/L	.1	0.10	103	80-120	
Selenium	mg/L	.1	0.10	100	80-120	
Thallium	mg/L	.1	0.10	100	80-120	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 266416

Parameter	Units	266416002		MS		MSD		39856				
		Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max		
										RPD	RPD	Qual
Antimony	mg/L	ND	.1	.1	0.10	0.099	104	99	75-125	5	20	
Arsenic	mg/L	0.0013J	.1	.1	0.11	0.10	108	103	75-125	4	20	
Barium	mg/L	0.15	.1	.1	0.25	0.24	100	92	75-125	3	20	
Beryllium	mg/L	0.00070J	.1	.1	0.089	0.087	88	86	75-125	2	20	
Boron	mg/L	0.085	1	1	0.95	0.93	87	85	75-125	2	20	
Cadmium	mg/L	ND	.1	.1	0.093	0.090	93	90	75-125	3	20	
Calcium	mg/L	312	1	1	326	318	1370	520	75-125	3	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.11	106	105	75-125	0	20	
Cobalt	mg/L	ND	.1	.1	0.10	0.10	105	100	75-125	4	20	
Lead	mg/L	ND	.1	.1	0.090	0.086	90	86	75-125	4	20	
Lithium	mg/L	0.059	.1	.1	0.15	0.15	96	90	75-125	4	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	113	108	75-125	4	20	
Selenium	mg/L	0.0017J	.1	.1	0.11	0.10	105	101	75-125	4	20	
Thallium	mg/L	ND	.1	.1	0.093	0.089	93	89	75-125	4	20	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 266416

QC Batch:	8657	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020B MET
Associated Lab Samples:	266416021		

METHOD BLANK: 39888    Matrix: Water

Associated Lab Samples: 266416021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	06/27/18 15:47	
Arsenic	mg/L	ND	0.0050	0.00057	06/27/18 15:47	
Barium	mg/L	ND	0.010	0.00078	06/27/18 15:47	
Beryllium	mg/L	ND	0.0030	0.000050	06/27/18 15:47	
Boron	mg/L	ND	0.040	0.0039	06/27/18 15:47	
Cadmium	mg/L	ND	0.0010	0.000093	06/27/18 15:47	
Calcium	mg/L	ND	0.50	0.014	06/27/18 15:47	
Chromium	mg/L	ND	0.010	0.0016	06/27/18 15:47	
Cobalt	mg/L	ND	0.010	0.00052	06/27/18 15:47	
Lead	mg/L	ND	0.0050	0.00027	06/27/18 15:47	
Lithium	mg/L	ND	0.050	0.00097	06/27/18 15:47	
Molybdenum	mg/L	ND	0.010	0.0019	06/27/18 15:47	
Selenium	mg/L	ND	0.010	0.0014	06/27/18 15:47	
Thallium	mg/L	ND	0.0010	0.00014	06/27/18 15:47	

LABORATORY CONTROL SAMPLE: 39889

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.098	98	80-120	
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.095	95	80-120	
Beryllium	mg/L	.1	0.11	106	80-120	
Boron	mg/L	1	1.1	109	80-120	
Cadmium	mg/L	.1	0.10	100	80-120	
Calcium	mg/L	1	1.0	100	80-120	
Chromium	mg/L	.1	0.10	102	80-120	
Cobalt	mg/L	.1	0.10	102	80-120	
Lead	mg/L	.1	0.098	98	80-120	
Lithium	mg/L	.1	0.11	111	80-120	
Molybdenum	mg/L	.1	0.098	98	80-120	
Selenium	mg/L	.1	0.098	98	80-120	
Thallium	mg/L	.1	0.10	100	80-120	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 39890                                  39891

Parameter	Units	MS Result	MS Spike Conc.	MS Result	MS % Rec	MS Result	MS % Rec	% Rec Limits	RPD	Max RPD	Max Qual
Antimony	mg/L	ND	.1	.1	0.10	0.10	104	104	75-125	0	20

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 266416

Parameter	Units	266151001		MSD		39891		% Rec	Limits	Max	
		MS	Spike	MSD	Spike	MS	MSD			RPD	RPD
		Result	Conc.	Result	Conc.	Result	Result	% Rec	% Rec	Qual	
Arsenic	mg/L	0.0015J	.1	.1	.11	0.11	108	108	75-125	1	20
Barium	mg/L	0.031	.1	.1	0.13	0.13	100	99	75-125	1	20
Beryllium	mg/L	ND	.1	.1	0.099	0.10	99	100	75-125	1	20
Boron	mg/L	3.6	1	1	4.5	4.5	93	89	75-125	1	20
Cadmium	mg/L	ND	.1	.1	0.10	0.10	102	103	75-125	1	20
Calcium	mg/L	234	1	1	227	224	-703	-958	75-125	1	20 M6
Chromium	mg/L	ND	.1	.1	0.11	0.11	106	106	75-125	0	20
Cobalt	mg/L	ND	.1	.1	0.10	0.10	104	104	75-125	0	20
Lead	mg/L	ND	.1	.1	0.094	0.095	94	95	75-125	1	20
Lithium	mg/L	0.020J	.1	.1	0.12	0.13	104	106	75-125	1	20
Molybdenum	mg/L	0.016	.1	.1	0.12	0.12	105	105	75-125	0	20
Selenium	mg/L	ND	.1	.1	0.10	0.11	103	108	75-125	5	20
Thallium	mg/L	ND	.1	.1	0.097	0.099	97	99	75-125	2	20

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

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QC Batch:	8649	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	266416001, 266416002, 266416003, 266416004, 266416005, 266416006, 266416007, 266416008, 266416009, 266416010, 266416016, 266416017, 266416020		

---

LABORATORY CONTROL SAMPLE: 39849

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	394	98	84-108	

---

SAMPLE DUPLICATE: 39850

Parameter	Units	266416005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	8630	8690	1	10	

---

SAMPLE DUPLICATE: 39851

Parameter	Units	266380005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	570	565	1	10	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

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QC Batch:	8666	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	266416011, 266416012, 266416013, 266416014, 266416018		

---

LABORATORY CONTROL SAMPLE: 39896

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	406	102	84-108	

---

SAMPLE DUPLICATE: 39899

Parameter	Units	266380016 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	92.0	88.0	4	10	

---

SAMPLE DUPLICATE: 39900

Parameter	Units	266416012 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3370	3330	1	10	

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

## REPORT OF LABORATORY ANALYSIS

## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 266416

QC Batch:	8668	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	266416015, 266416019, 266416021		

LABORATORY CONTROL SAMPLE: 39901

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	409	102	84-108	

SAMPLE DUPLICATE: 39902

Parameter	Units	266416021 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	128	136	6	10	

SAMPLE DUPLICATE: 39903

Parameter	Units	266396001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	379	395	4	10	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 266416

QC Batch:	8655	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
Associated Lab Samples:	266416001, 266416002, 266416003, 266416004, 266416005, 266416006, 266416007, 266416008, 266416009, 266416010, 266416011, 266416012, 266416013, 266416014, 266416015, 266416016, 266416017, 266416018, 266416019, 266416020		

METHOD BLANK: 39867

Matrix: Water

Associated Lab Samples: 266416001, 266416002, 266416003, 266416004, 266416005, 266416006, 266416007, 266416008, 266416009, 266416010, 266416011, 266416012, 266416013, 266416014, 266416015, 266416016, 266416017, 266416018, 266416019, 266416020

Parameter	Units	Blank	Reporting		Analyzed	Qualifiers
		Result	Limit	MDL		
Chloride	mg/L	0.29	0.25	0.024	06/25/18 22:45	
Fluoride	mg/L	ND	0.30	0.029	06/25/18 22:45	
Sulfate	mg/L	ND	1.0	0.017	06/25/18 22:45	

LABORATORY CONTROL SAMPLE: 39868

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Chloride	mg/L	10	9.5	95	90-110	
Fluoride	mg/L	10	9.9	99	90-110	
Sulfate	mg/L	10	9.6	96	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 39869

39870

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	RPD	RPD	Max
		266416001	Spike	Spike	Spike	Result	Result	% Rec	% Rec	Limits	Qual	
Chloride	mg/L	760	10	10	337	336	-4230	-4240	90-110	0	15	E,M1
Fluoride	mg/L	0.91	10	10	10.8	10.8	99	99	90-110	1	15	
Sulfate	mg/L	1.6	10	10	11.9	11.4	103	98	90-110	4	15	

MATRIX SPIKE SAMPLE: 39871

Parameter	Units	266416002	Spike	MS	MS	% Rec	% Rec	Limits	Qualifiers
		Result	Conc.	Result	% Rec				
Chloride	mg/L	1750	10	537	-12100			90-110	M1
Fluoride	mg/L	0.20J	10	9.5	93			90-110	
Sulfate	mg/L	633	10	321	-3120			90-110	E,M1

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## **QUALITY CONTROL DATA**

Project: Plant McManus Ash Ponds

Pace Project No.: 266416

QC Batch: 8816 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 266416021

METHOD BLANK: 40405 Matrix: Water

Associated Lab Samples: 266416021

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Chloride	mg/L	0.66	0.25	0.024	06/27/18 18:44	
Fluoride	mg/L	ND	0.30	0.029	06/27/18 18:44	
Sulfate	mg/L	ND	1.0	0.017	06/27/18 18:44	

LABORATORY CONTROL SAMPLE: 40406

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	9.2	92	90-110	
Fluoride	mg/L	10	10.5	105	90-110	
Sulfate	mg/L	10	9.3	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 40407

40408

Parameter	Units	266085003		MS		MSD		MS		MSD		% Rec		Max RPD	
		Spike Conc.	Result	Spike Conc.	Result	MSD Result	% Rec	MS % Rec	% Rec	Limits	RPD	RPD	Qual		
Chloride	mg/L		2.0	10	10	11.4	11.5	94	95	90-110	1	15			
Fluoride	mg/L		ND	10	10	11.1	11.2	111	112	90-110	1	15	M1		
Sulfate	mg/L		1.1	10	10	10.9	11.0	98	99	90-110	1	15			

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MATRIX SPIKE SAMPLE 40409

Parameter	Units	266085006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	17.6	10	25.1	76	90-110	M1
Fluoride	mg/L	ND	10	11.0	110	90-110	
Sulfate	mg/L	8.2	10	17.3	91	90-110	

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## **REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
266416001	MCM-12	EPA 3005A	8630	EPA 6020B	8766
266416002	MCM-09	EPA 3005A	8630	EPA 6020B	8766
266416003	MCM-11	EPA 3005A	8630	EPA 6020B	8766
266416004	MCM-10	EPA 3005A	8630	EPA 6020B	8766
266416005	MCM-14	EPA 3005A	8630	EPA 6020B	8766
266416006	MCM-08	EPA 3005A	8630	EPA 6020B	8766
266416007	MCM-01	EPA 3005A	8630	EPA 6020B	8766
266416008	MCM-17	EPA 3005A	8630	EPA 6020B	8766
266416009	MCM-15	EPA 3005A	8630	EPA 6020B	8766
266416010	MCM-02	EPA 3005A	8630	EPA 6020B	8766
266416011	MCM-16	EPA 3005A	8630	EPA 6020B	8766
266416012	MCM-05	EPA 3005A	8630	EPA 6020B	8766
266416013	MCM-06	EPA 3005A	8630	EPA 6020B	8766
266416014	MCM-04	EPA 3005A	8630	EPA 6020B	8766
266416015	MCM-07	EPA 3005A	8630	EPA 6020B	8766
266416016	FBL061918	EPA 3005A	8630	EPA 6020B	8766
266416017	EQBL061918	EPA 3005A	8630	EPA 6020B	8766
266416018	FBL062018	EPA 3005A	8630	EPA 6020B	8766
266416019	EQBL062018	EPA 3005A	8630	EPA 6020B	8766
266416020	Dup-1	EPA 3005A	8630	EPA 6020B	8766
266416021	Dup-2	EPA 3005A	8657	EPA 6020B	8854
266416001	MCM-12	EPA 7470A	8688	EPA 7470A	8709
266416002	MCM-09	EPA 7470A	8688	EPA 7470A	8709
266416003	MCM-11	EPA 7470A	8688	EPA 7470A	8709
266416004	MCM-10	EPA 7470A	8688	EPA 7470A	8709
266416005	MCM-14	EPA 7470A	8688	EPA 7470A	8709
266416006	MCM-08	EPA 7470A	8688	EPA 7470A	8709
266416007	MCM-01	EPA 7470A	8688	EPA 7470A	8709
266416008	MCM-17	EPA 7470A	8688	EPA 7470A	8709
266416009	MCM-15	EPA 7470A	8688	EPA 7470A	8709
266416010	MCM-02	EPA 7470A	8688	EPA 7470A	8709
266416011	MCM-16	EPA 7470A	8688	EPA 7470A	8709
266416012	MCM-05	EPA 7470A	8688	EPA 7470A	8709
266416013	MCM-06	EPA 7470A	8688	EPA 7470A	8709
266416014	MCM-04	EPA 7470A	8688	EPA 7470A	8709
266416015	MCM-07	EPA 7470A	8744	EPA 7470A	8768
266416016	FBL061918	EPA 7470A	8744	EPA 7470A	8768
266416017	EQBL061918	EPA 7470A	8744	EPA 7470A	8768
266416018	FBL062018	EPA 7470A	8744	EPA 7470A	8768
266416019	EQBL062018	EPA 7470A	8744	EPA 7470A	8768
266416020	Dup-1	EPA 7470A	8744	EPA 7470A	8768
266416021	Dup-2	EPA 7470A	8744	EPA 7470A	8768
266416001	MCM-12	SM 2540C	8649		
266416002	MCM-09	SM 2540C	8649		
266416003	MCM-11	SM 2540C	8649		
266416004	MCM-10	SM 2540C	8649		
266416005	MCM-14	SM 2540C	8649		

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant McManus Ash Ponds  
Pace Project No.: 266416

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
266416006	MCM-08	SM 2540C	8649		
266416007	MCM-01	SM 2540C	8649		
266416008	MCM-17	SM 2540C	8649		
266416009	MCM-15	SM 2540C	8649		
266416010	MCM-02	SM 2540C	8649		
266416011	MCM-16	SM 2540C	8666		
266416012	MCM-05	SM 2540C	8666		
266416013	MCM-06	SM 2540C	8666		
266416014	MCM-04	SM 2540C	8666		
266416015	MCM-07	SM 2540C	8668		
266416016	FBL061918	SM 2540C	8649		
266416017	EQBL061918	SM 2540C	8649		
266416018	FBL062018	SM 2540C	8666		
266416019	EQBL062018	SM 2540C	8668		
266416020	Dup-1	SM 2540C	8649		
266416021	Dup-2	SM 2540C	8668		
266416001	MCM-12	EPA 300.0	8655		
266416002	MCM-09	EPA 300.0	8655		
266416003	MCM-11	EPA 300.0	8655		
266416004	MCM-10	EPA 300.0	8655		
266416005	MCM-14	EPA 300.0	8655		
266416006	MCM-08	EPA 300.0	8655		
266416007	MCM-01	EPA 300.0	8655		
266416008	MCM-17	EPA 300.0	8655		
266416009	MCM-15	EPA 300.0	8655		
266416010	MCM-02	EPA 300.0	8655		
266416011	MCM-16	EPA 300.0	8655		
266416012	MCM-05	EPA 300.0	8655		
266416013	MCM-06	EPA 300.0	8655		
266416014	MCM-04	EPA 300.0	8655		
266416015	MCM-07	EPA 300.0	8655		
266416016	FBL061918	EPA 300.0	8655		
266416017	EQBL061918	EPA 300.0	8655		
266416018	FBL062018	EPA 300.0	8655		
266416019	EQBL062018	EPA 300.0	8655		
266416020	Dup-1	EPA 300.0	8655		
266416021	Dup-2	EPA 300.0	8816		

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**CHAIN-OF-CUSTODY / Analytical Request Document**

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

Page Approved

# CHAIN-OF-CUSTODY / Analytical Request Document

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

## Section A

### Required Client Information:

Company:	Georgia Power	Report To:	Jojo Abraham / Lauren Petty
Address:	2480 Maner Road	Copy To:	Resolute
Email:	joabraham@southernco.com	Purchase Order #:	SCS10348606
Phone:	(404) 506-7239	Project Name:	Georgia Power - Plant McRae CCR Scope
Requested Due Date:		Project #:	

## Section B

### Required Project Information:

Report To:	Jojo Abraham / Lauren Petty	Attention:	scsinvvoices@southernco.com
Copy To:	Resolute	Company Name:	
Address:		Address:	
Pace Quote:		Pace Project Manager:	betsy.moraine@southernco.com
Pace Profile #:	334	Pace Profile #:	

## Section C

### Invoicing Information:

Residue/Chlorine (Y/N)	
State/Location:	GA

**SAMPLE ID**  
One Character per box.  
(A-Z, 0-9, !, ?)  
Sample Ids must be unique

ITEM #	COLLECTED	SAMPLE TEMP AT COLLECTION			Requested Analysis Filtered (Y/N)		
		START	END	TIME	DATE	TIME	DATE
1	1254	1254		1	1	1	1
2	1425	1425		1	1	1	1
3	1425	1425		1	1	1	1
4	1425	1425		1	1	1	1
5	1425	1425		1	1	1	1
6	1425	1425		1	1	1	1
7	1425	1425		1	1	1	1
8	DUB-1	DUB-1		1	1	1	1
9	DUB-2	DUB-2		1	1	1	1
10							
11							
12							

### ADDITIONAL COMMENTS

RECEIVED ON	DATE	TIME	RECEIVED BY / AFFILIATION
TEMP IN	C		
COOLER (Y/N)			
CUSTODY (Y/N)			
SHIPPED (Y/N)			
DATE SHIPPED:	6/2/18		

### SAFETY CONDITIONS

TEMP IN	C	Due Date:	06/29/18
PM:	BN		
CLIENT:	GAPower-CCR		
NO#:	266416		

### SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:  
V. L. Mahaman  
SIGNATURE OF SAMPLER:  
V. L. Mahaman

**Sample Condition Upon Receipt**

*Pace Analytical*

Client Name: GIA Power

Project #

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other

Tracking #: 781524582431

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 83 Type of Ice:  Wet  Blue  None

Cooler Temperature 1.8 Biological Tissue is Frozen: Yes  No

Temp should be above freezing to 6°C Comments:

**WO# : 266416**

PM: BM Due Date: 06/29/18

CLIENT: GIA Power-CCR

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 6/27/18 MZ

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

**Client Notification/ Resolution:**

Field Data Required? Y N

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

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

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

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

July 23, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 266417

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 22, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
 Pace Project No.: 266417

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
Pace Project No.: 266417

Lab ID	Sample ID	Matrix	Date Collected	Date Received
266417001	MCM-12	Water	06/19/18 09:15	06/22/18 09:20
266417002	MCM-09	Water	06/19/18 09:30	06/22/18 09:20
266417003	MCM-11	Water	06/19/18 09:46	06/22/18 09:20
266417004	MCM-10	Water	06/19/18 11:55	06/22/18 09:20
266417005	MCM-14	Water	06/19/18 11:40	06/22/18 09:20
266417006	MCM-08	Water	06/19/18 14:16	06/22/18 09:20
266417007	MCM-01	Water	06/19/18 14:40	06/22/18 09:20
266417008	MCM-17	Water	06/19/18 15:18	06/22/18 09:20
266417009	MCM-15	Water	06/19/18 15:56	06/22/18 09:20
266417010	MCM-02	Water	06/19/18 16:20	06/22/18 09:20
266417011	MCM-16	Water	06/20/18 10:34	06/22/18 09:20
266417012	MCM-05	Water	06/20/18 10:53	06/22/18 09:20
266417013	MCM-06	Water	06/20/18 12:56	06/22/18 09:20
266417014	MCM-04	Water	06/20/18 14:25	06/22/18 09:20
266417015	MCM-07	Water	06/21/18 09:43	06/22/18 09:20
266417016	FBL061918	Water	06/19/18 16:40	06/22/18 09:20
266417017	EQBL061918	Water	06/19/18 16:45	06/22/18 09:20
266417018	FBL062018	Water	06/20/18 08:20	06/22/18 09:20
266417019	EQBL062018	Water	06/20/18 08:25	06/22/18 09:20
266417020	Dup-1	Water	06/19/18 00:00	06/22/18 09:20
266417021	Dup-2	Water	06/20/18 00:00	06/22/18 09:20

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 266417

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
266417001	MCM-12	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417002	MCM-09	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417003	MCM-11	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417004	MCM-10	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417005	MCM-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417006	MCM-08	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417007	MCM-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417008	MCM-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417009	MCM-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417010	MCM-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417011	MCM-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417012	MCM-05	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417013	MCM-06	EPA 9315	LAL	1	PASI-PA

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 266417

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
266417014	MCM-04	EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
266417015	MCM-07	Total Radium Calculation	RMK	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417016	FBL061918	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
266417017	EQBL061918	EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
266417018	FBL062018	Total Radium Calculation	RMK	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
266417019	EQBL062018	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
266417020	Dup-1	EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
266417021	Dup-2	Total Radium Calculation	RMK	1	PASI-PA
		EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-12**      Lab ID: **266417001**      Collected: 06/19/18 09:15      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.19 ± 0.733 (0.754)</b> C:94% T:NA	pCi/L	07/02/18 09:02	13982-63-3	
Radium-228	EPA 9320	<b>0.766 ± 0.415 (0.751)</b> C:77% T:83%	pCi/L	07/19/18 12:09	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.96 ± 1.15 (1.51)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-09**      Lab ID: **266417002**      Collected: 06/19/18 09:30      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.34 ± 0.534 (0.278)</b> C:97% T:NA	pCi/L	07/02/18 09:02	13982-63-3	
Radium-228	EPA 9320	<b>1.41 ± 0.495 (0.712)</b> C:82% T:81%	pCi/L	07/19/18 12:09	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.75 ± 1.03 (0.990)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-11**      Lab ID: **266417003**      Collected: 06/19/18 09:46      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.306 ± 0.175 (0.251)</b> C:92% T:NA	pCi/L	07/02/18 09:02	13982-63-3	
Radium-228	EPA 9320	<b>0.479 ± 0.377 (0.755)</b> C:79% T:90%	pCi/L	07/19/18 12:09	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.785 ± 0.552 (1.01)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-10**      Lab ID: **266417004**      Collected: 06/19/18 11:55      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.691 ± 0.249 (0.234)</b> C:94% T:NA	pCi/L	07/02/18 09:02	13982-63-3	
Radium-228	EPA 9320	<b>0.701 ± 0.390 (0.715)</b> C:79% T:89%	pCi/L	07/19/18 12:09	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.39 ± 0.639 (0.949)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-14**      Lab ID: **266417005**      Collected: 06/19/18 11:40      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.49 ± 0.550 (0.214)</b> C:93% T:NA	pCi/L	07/02/18 10:48	13982-63-3	
Radium-228	EPA 9320	<b>2.90 ± 0.806 (0.997)</b> C:74% T:85%	pCi/L	07/19/18 12:12	15262-20-1	
Total Radium	Total Radium Calculation	<b>5.39 ± 1.36 (1.21)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-08**      Lab ID: **266417006**      Collected: 06/19/18 14:16      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>14.1 ± 2.19 (0.122)</b> C:91% T:NA	pCi/L	07/09/18 08:15	13982-63-3	
Radium-228	EPA 9320	<b>6.15 ± 1.32 (0.848)</b> C:76% T:87%	pCi/L	07/19/18 12:12	15262-20-1	
Total Radium	Total Radium Calculation	<b>20.3 ± 3.51 (0.970)</b>	pCi/L	07/20/18 17:30	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-01**      Lab ID: **266417007**      Collected: 06/19/18 14:40      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.537 ± 0.221 (0.233)</b> C:88% T:NA	pCi/L	07/02/18 10:48	13982-63-3	
Radium-228	EPA 9320	<b>0.695 ± 0.492 (0.967)</b> C:73% T:78%	pCi/L	07/19/18 12:12	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.23 ± 0.713 (1.20)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-17**      Lab ID: **266417008**      Collected: 06/19/18 15:18      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.43 ± 0.764 (0.565)</b> C:90% T:NA	pCi/L	07/02/18 10:48	13982-63-3	
Radium-228	EPA 9320	<b>0.393 ± 0.544 (1.17)</b> C:68% T:88%	pCi/L	07/19/18 12:12	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.82 ± 1.31 (1.74)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-15**      Lab ID: **266417009**      Collected: 06/19/18 15:56      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.31 ± 0.352 (0.196)</b> C:96% T:NA	pCi/L	07/02/18 10:48	13982-63-3	
Radium-228	EPA 9320	<b>0.524 ± 0.537 (1.12)</b> C:72% T:75%	pCi/L	07/19/18 12:12	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.83 ± 0.889 (1.32)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-02**      Lab ID: **266417010**      Collected: 06/19/18 16:20      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.483 ± 0.210 (0.225)</b> C:85% T:NA	pCi/L	07/02/18 10:48	13982-63-3	
Radium-228	EPA 9320	<b>-0.593 ± 0.493 (1.20)</b> C:75% T:77%	pCi/L	07/19/18 12:12	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.483 ± 0.703 (1.43)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-16**      Lab ID: **266417011**      Collected: 06/20/18 10:34      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.811 ± 0.282 (0.303)</b> C:90% T:NA	pCi/L	07/02/18 10:48	13982-63-3	
Radium-228	EPA 9320	<b>0.969 ± 0.495 (0.853)</b> C:74% T:71%	pCi/L	07/19/18 12:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.78 ± 0.777 (1.16)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-05**      Lab ID: **266417012**      Collected: 06/20/18 10:53      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.931 ± 0.309 (0.295)</b> C:87% T:NA	pCi/L	07/02/18 10:48	13982-63-3	
Radium-228	EPA 9320	<b>1.02 ± 0.450 (0.708)</b> C:74% T:76%	pCi/L	07/19/18 12:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.95 ± 0.759 (1.00)</b>	pCi/L	07/20/18 17:30	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-06**      Lab ID: **266417013**      Collected: 06/20/18 12:56      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.47 ± 0.397 (0.258)</b> C:89% T:NA	pCi/L	07/02/18 10:48	13982-63-3	
Radium-228	EPA 9320	<b>1.37 ± 0.541 (0.821)</b> C:73% T:76%	pCi/L	07/19/18 12:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.84 ± 0.938 (1.08)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-04**      Lab ID: **266417014**      Collected: 06/20/18 14:25      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.59 ± 0.410 (0.239)</b> C:90% T:NA	pCi/L	07/02/18 10:48	13982-63-3	
Radium-228	EPA 9320	<b>1.94 ± 0.672 (0.934)</b> C:70% T:72%	pCi/L	07/19/18 12:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.53 ± 1.08 (1.17)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: MCM-07**      Lab ID: **266417015**      Collected: 06/21/18 09:43      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.46 ± 0.507 (0.182)</b> C:97% T:NA	pCi/L	07/09/18 08:06	13982-63-3	
Radium-228	EPA 9320	<b>2.78 ± 0.741 (0.750)</b> C:74% T:85%	pCi/L	07/19/18 12:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>5.24 ± 1.25 (0.932)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample:** FBL061918      **Lab ID:** 266417016      Collected: 06/19/18 16:40      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.337 ± 0.152 (0.176)</b> C:95% T:NA	pCi/L	07/09/18 08:06	13982-63-3	
Radium-228	EPA 9320	<b>0.360 ± 0.362 (0.744)</b> C:76% T:77%	pCi/L	07/19/18 12:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.697 ± 0.514 (0.920)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample:** EQBL061918      **Lab ID:** 266417017      Collected: 06/19/18 16:45      Received: 06/22/18 09:20      Matrix: Water

**PWS:**      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.197 ± 0.134 (0.215)</b> C:81% T:NA	pCi/L	07/09/18 08:06	13982-63-3	
Radium-228	EPA 9320	<b>0.643 ± 0.417 (0.778)</b> C:74% T:75%	pCi/L	07/19/18 12:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.840 ± 0.551 (0.993)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: FBL062018**      Lab ID: **266417018**      Collected: 06/20/18 08:20      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.351 ± 0.158 (0.178)</b> C:90% T:NA	pCi/L	07/09/18 08:06	13982-63-3	
Radium-228	EPA 9320	<b>0.885 ± 0.449 (0.780)</b> C:76% T:80%	pCi/L	07/19/18 12:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.24 ± 0.607 (0.958)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

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**Sample:** EQBL062018      **Lab ID:** 266417019      Collected: 06/20/18 08:25      Received: 06/22/18 09:20      Matrix: Water

PWS:                              Site ID:                              Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.356 ± 0.157 (0.181)</b> C:94% T:NA	pCi/L	07/09/18 08:06	13982-63-3	
Radium-228	EPA 9320	<b>1.34 ± 0.543 (0.831)</b> C:72% T:72%	pCi/L	07/19/18 12:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.70 ± 0.700 (1.01)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample:** Dup-1      **Lab ID:** 266417020      Collected: 06/19/18 00:00      Received: 06/22/18 09:20      Matrix: Water

**PWS:**      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.44 ± 0.368 (0.272)</b> C:83% T:NA	pCi/L	07/09/18 08:06	13982-63-3	
Radium-228	EPA 9320	<b>0.414 ± 0.363 (0.726)</b> C:70% T:81%	pCi/L	07/19/18 12:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.85 ± 0.731 (0.998)</b>	pCi/L	07/20/18 17:30	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

**Sample: Dup-2**      Lab ID: **266417021**      Collected: 06/20/18 00:00      Received: 06/22/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.760 ± 0.240 (0.220)</b> C:95% T:NA	pCi/L	07/09/18 08:06	13982-63-3	
Radium-228	EPA 9320	<b>1.00 ± 0.475 (0.793)</b> C:77% T:76%	pCi/L	07/19/18 15:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.76 ± 0.715 (1.01)</b>	pCi/L	07/20/18 17:35	7440-14-4	

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

QC Batch: 303816 Analysis Method: EPA 9315

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

Associated Lab Samples: 266417001, 266417002, 266417003, 266417004, 266417005, 266417006, 266417007, 266417008, 266417009,  
 266417010, 266417011, 266417012, 266417013, 266417014

METHOD BLANK: 1486463 Matrix: Water

Associated Lab Samples: 266417001, 266417002, 266417003, 266417004, 266417005, 266417006, 266417007, 266417008, 266417009,  
 266417010, 266417011, 266417012, 266417013, 266417014

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0950 ± 0.112 (0.224) C:97% T:NA	pCi/L	07/02/18 08:24	

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

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

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QC Batch: 304503 Analysis Method: EPA 9315

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

Associated Lab Samples: 266417015, 266417016, 266417017, 266417018, 266417019, 266417020, 266417021

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METHOD BLANK: 1489835 Matrix: Water

Associated Lab Samples: 266417015, 266417016, 266417017, 266417018, 266417019, 266417020, 266417021

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.224 ± 0.132 (0.194) C:96% T:NA	pCi/L	07/09/18 08:06	

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

QC Batch: 304502

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 266417021

METHOD BLANK: 1489833

Matrix: Water

Associated Lab Samples: 266417021

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.518 ± 0.408 (0.794) C:78% T:66%	pCi/L	07/19/18 15:40	

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

QC Batch: 304049 Analysis Method: EPA 9320

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

Associated Lab Samples: 266417001, 266417002, 266417003, 266417004, 266417005, 266417006, 266417007, 266417008, 266417009, 266417010, 266417011, 266417012, 266417013, 266417014, 266417015, 266417016, 266417017, 266417018, 266417019, 266417020

METHOD BLANK: 1487473 Matrix: Water

Associated Lab Samples: 266417001, 266417002, 266417003, 266417004, 266417005, 266417006, 266417007, 266417008, 266417009, 266417010, 266417011, 266417012, 266417013, 266417014, 266417015, 266417016, 266417017, 266417018, 266417019, 266417020

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.337 ± 0.314 (0.636) C:79% T:76%	pCi/L	07/19/18 12:08	

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

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 266417

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 266417

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
266417001	MCM-12	EPA 9315	303816		
266417002	MCM-09	EPA 9315	303816		
266417003	MCM-11	EPA 9315	303816		
266417004	MCM-10	EPA 9315	303816		
266417005	MCM-14	EPA 9315	303816		
266417006	MCM-08	EPA 9315	303816		
266417007	MCM-01	EPA 9315	303816		
266417008	MCM-17	EPA 9315	303816		
266417009	MCM-15	EPA 9315	303816		
266417010	MCM-02	EPA 9315	303816		
266417011	MCM-16	EPA 9315	303816		
266417012	MCM-05	EPA 9315	303816		
266417013	MCM-06	EPA 9315	303816		
266417014	MCM-04	EPA 9315	303816		
266417015	MCM-07	EPA 9315	304503		
266417016	FBL061918	EPA 9315	304503		
266417017	EQBL061918	EPA 9315	304503		
266417018	FBL062018	EPA 9315	304503		
266417019	EQBL062018	EPA 9315	304503		
266417020	Dup-1	EPA 9315	304503		
266417021	Dup-2	EPA 9315	304503		
266417001	MCM-12	EPA 9320	304049		
266417002	MCM-09	EPA 9320	304049		
266417003	MCM-11	EPA 9320	304049		
266417004	MCM-10	EPA 9320	304049		
266417005	MCM-14	EPA 9320	304049		
266417006	MCM-08	EPA 9320	304049		
266417007	MCM-01	EPA 9320	304049		
266417008	MCM-17	EPA 9320	304049		
266417009	MCM-15	EPA 9320	304049		
266417010	MCM-02	EPA 9320	304049		
266417011	MCM-16	EPA 9320	304049		
266417012	MCM-05	EPA 9320	304049		
266417013	MCM-06	EPA 9320	304049		
266417014	MCM-04	EPA 9320	304049		
266417015	MCM-07	EPA 9320	304049		
266417016	FBL061918	EPA 9320	304049		
266417017	EQBL061918	EPA 9320	304049		
266417018	FBL062018	EPA 9320	304049		
266417019	EQBL062018	EPA 9320	304049		
266417020	Dup-1	EPA 9320	304049		
266417021	Dup-2	EPA 9320	304502		
266417001	MCM-12	Total Radium Calculation	306648		
266417002	MCM-09	Total Radium Calculation	306648		
266417003	MCM-11	Total Radium Calculation	306648		
266417004	MCM-10	Total Radium Calculation	306648		
266417005	MCM-14	Total Radium Calculation	306648		

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
 Pace Project No.: 266417

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
266417006	MCM-08	Total Radium Calculation	306648		
266417007	MCM-01	Total Radium Calculation	306648		
266417008	MCM-17	Total Radium Calculation	306648		
266417009	MCM-15	Total Radium Calculation	306648		
266417010	MCM-02	Total Radium Calculation	306648		
266417011	MCM-16	Total Radium Calculation	306648		
266417012	MCM-05	Total Radium Calculation	306648		
266417013	MCM-06	Total Radium Calculation	306648		
266417014	MCM-04	Total Radium Calculation	306648		
266417015	MCM-07	Total Radium Calculation	306648		
266417016	FBL061918	Total Radium Calculation	306648		
266417017	EQBL061918	Total Radium Calculation	306648		
266417018	FBL062018	Total Radium Calculation	306648		
266417019	EQBL062018	Total Radium Calculation	306648		
266417020	Dup-1	Total Radium Calculation	306648		
266417021	Dup-2	Total Radium Calculation	306649		

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252

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page Arithmetical

C-H-A-I-N-O-F-C-U-S-T-O-D-Y / Analytical Request Document

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

## Sample Condition Upon Receipt

PaceAnalytical

Client Name: GIA Power

Project #

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace OtherTracking #: 781524582431Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yesPacking Material:  Bubble Wrap  Bubble Bags  None  OtherThermometer Used 83 Type of Ice:  Wet  Blue  NoneCooler Temperature 1.8 Biological Tissue is Frozen: Yes  No

Temp should be above freezing to 6°C Comments:

WO# : **266417**

PM: BM

Due Date:

07/23/18

CLIENT: GIA Power-CCR

 Samples on ice, cooling process has begunDate and Initials of person examining  
contents: 6/27/18 M

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

## Client Notification/ Resolution:

Field Data Required? Y N

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

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

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

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

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DE-NA Certification Office - if out of hold, incorrect preservative, out of temp, incorrect containers

July 11, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 266698

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266698

---

### Atlanta Certification IDs

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

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Texas Certification #: T104704397-08-TX  
Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
Pace Project No.: 266698

Lab ID	Sample ID	Matrix	Date Collected	Date Received
266698001	MCM-08	Water	06/28/18 17:42	06/30/18 08:00

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 266698

Lab ID	Sample ID	Method	Analysts	Analytes Reported
266698001	MCM-08	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	MWB, RLC	3

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 266698

Sample: MCM-08	Lab ID: 266698001	Collected: 06/28/18 17:42	Received: 06/30/18 08:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	07/03/18 09:55	07/09/18 18:02	7440-36-0	
Arsenic	<b>0.014</b>	mg/L	0.0050	0.00057	1	07/03/18 09:55	07/09/18 18:02	7440-38-2	
Barium	<b>0.58</b>	mg/L	0.010	0.00078	1	07/03/18 09:55	07/09/18 18:02	7440-39-3	
Beryllium	<b>0.00040J</b>	mg/L	0.0030	0.000050	1	07/03/18 09:55	07/09/18 18:02	7440-41-7	
Boron	<b>0.38</b>	mg/L	0.040	0.0039	1	07/03/18 09:55	07/09/18 18:02	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	07/03/18 09:55	07/09/18 18:02	7440-43-9	
Calcium	<b>42.9</b>	mg/L	25.0	0.69	50	07/03/18 09:55	07/09/18 18:08	7440-70-2	
Chromium	<b>0.0079J</b>	mg/L	0.010	0.0016	1	07/03/18 09:55	07/09/18 18:02	7440-47-3	
Cobalt	<b>0.0030J</b>	mg/L	0.010	0.00052	1	07/03/18 09:55	07/09/18 18:02	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	07/03/18 09:55	07/09/18 18:02	7439-92-1	
Lithium	<b>0.0033J</b>	mg/L	0.050	0.00097	1	07/03/18 09:55	07/09/18 18:02	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	07/03/18 09:55	07/09/18 18:02	7439-98-7	
Selenium	<b>0.0030J</b>	mg/L	0.010	0.0014	1	07/03/18 09:55	07/09/18 18:02	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	07/03/18 09:55	07/09/18 18:02	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	07/05/18 15:33	07/06/18 11:33	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>3440</b>	mg/L	25.0	10.0	1		07/03/18 17:30		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>1910</b>	mg/L	12.5	1.2	50		07/10/18 15:08	16887-00-6	
Fluoride	<b>0.12J</b>	mg/L	0.30	0.029	1		07/07/18 14:30	16984-48-8	
Sulfate	<b>352</b>	mg/L	50.0	0.85	50		07/10/18 15:08	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 266698

QC Batch:	9328	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
Associated Lab Samples:	266698001		

METHOD BLANK: 42413                                  Matrix: Water

Associated Lab Samples: 266698001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	07/06/18 11:05	

LABORATORY CONTROL SAMPLE: 42414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 42418                                  42419

Parameter	Units	266698001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0025	0.0024	101	96	75-125	5	20	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 266698

QC Batch:	9204	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020B MET
Associated Lab Samples:	266698001		

METHOD BLANK: 41980    Matrix: Water

Associated Lab Samples: 266698001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	07/09/18 15:28	
Arsenic	mg/L	ND	0.0050	0.00057	07/09/18 15:28	
Barium	mg/L	ND	0.010	0.00078	07/09/18 15:28	
Beryllium	mg/L	ND	0.0030	0.000050	07/09/18 15:28	
Boron	mg/L	ND	0.040	0.0039	07/09/18 15:28	
Cadmium	mg/L	ND	0.0010	0.000093	07/09/18 15:28	
Calcium	mg/L	0.038J	0.50	0.014	07/09/18 15:28	
Chromium	mg/L	ND	0.010	0.0016	07/09/18 15:28	
Cobalt	mg/L	ND	0.010	0.00052	07/09/18 15:28	
Lead	mg/L	ND	0.0050	0.00027	07/09/18 15:28	
Lithium	mg/L	ND	0.050	0.00097	07/09/18 15:28	
Molybdenum	mg/L	ND	0.010	0.0019	07/09/18 15:28	
Selenium	mg/L	ND	0.010	0.0014	07/09/18 15:28	
Thallium	mg/L	ND	0.0010	0.00014	07/09/18 15:28	

LABORATORY CONTROL SAMPLE: 41981

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	108	80-120	
Arsenic	mg/L	.1	0.10	104	80-120	
Barium	mg/L	.1	0.10	101	80-120	
Beryllium	mg/L	.1	0.11	111	80-120	
Boron	mg/L	1	1.1	106	80-120	
Cadmium	mg/L	.1	0.10	103	80-120	
Calcium	mg/L	1	1.1	114	80-120	
Chromium	mg/L	.1	0.11	106	80-120	
Cobalt	mg/L	.1	0.11	105	80-120	
Lead	mg/L	.1	0.10	104	80-120	
Lithium	mg/L	.1	0.12	116	80-120	
Molybdenum	mg/L	.1	0.10	104	80-120	
Selenium	mg/L	.1	0.11	106	80-120	
Thallium	mg/L	.1	0.10	104	80-120	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 42006                                  42007

Parameter	Units	MS Result	MS Spike Conc.	MS Result	MS % Rec	MS Result	MS % Rec	% Rec Limits	RPD RPD	Max Qual
Antimony	mg/L	ND	.1	.1	0.11	0.11	106	108 75-125	2 20	

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 266698

Parameter	Units	266688001		MSD		42007		% Rec	MSD % Rec	% Rec Limits	Max	
		MS Result	Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				RPD RPD	RPD RPD
Arsenic	mg/L	0.00062J	.1	.1	0.10	0.11	104	108	75-125	3	20	
Barium	mg/L	0.028	.1	.1	0.13	0.13	101	99	75-125	2	20	
Beryllium	mg/L	0.0038	.1	.1	0.11	0.11	105	102	75-125	3	20	
Boron	mg/L	14.1	1	1	16.0	16.1	192	193	75-125	0	20	
Cadmium	mg/L	0.00025J	.1	.1	0.10	0.11	104	105	75-125	2	20	
Calcium	mg/L	42.2	1	1	44.1	43.6	195	141	75-125	1	20	M6
Chromium	mg/L	ND	.1	.1	0.11	0.10	108	103	75-125	5	20	
Cobalt	mg/L	0.00069J	.1	.1	0.11	0.10	105	104	75-125	1	20	
Lead	mg/L	0.0011J	.1	.1	0.10	0.10	98	101	75-125	2	20	
Lithium	mg/L	0.0042J	.1	.1	0.11	0.11	104	102	75-125	2	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.11	105	105	75-125	0	20	
Selenium	mg/L	0.066	.1	.1	0.18	0.18	109	114	75-125	3	20	
Thallium	mg/L	ND	.1	.1	0.10	0.10	100	100	75-125	1	20	

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 266698

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QC Batch:	9270	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	266698001		

---

LABORATORY CONTROL SAMPLE: 42245

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	400	100	84-108	

---

SAMPLE DUPLICATE: 42246

Parameter	Units	Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	17400	16900	3	10	

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## REPORT OF LABORATORY ANALYSIS

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## **QUALITY CONTROL DATA**

Project: Plant McManus Ash Ponds

Pace Project No.: 266698

QC Batch: 9362 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 266698001

METHOD BLANK: 42594 Matrix: Water

Associated Lab Samples: 266698001

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Chloride	mg/L	0.41	0.25	0.024	07/07/18 02:32	
Fluoride	mg/L	ND	0.30	0.029	07/07/18 02:32	
Sulfate	mg/L	ND	1.0	0.017	07/07/18 02:32	

LABORATORY CONTROL SAMPLE: 42595

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Chloride	mg/L	10	9.9	99	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	9.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 42596

42597

Parameter	Units	266698001		MS		MSD		MS		MSD		% Rec		Max	
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual			
Chloride	mg/L	1910	10	10	108	318	-18000	-15900	90-110	98	15	E,M1, R2			
Fluoride	mg/L	0.12J	10	10	10.2	10.2	100	101	90-110	1	15				
Sulfate	mg/L	352	10	10	222	222	-1290	-1290	90-110	0	15	E,M1			

## MATRIX SPIKE SAMPLE:

42598

Parameter	Units	266701006		MS Result	MS % Rec	% Rec Limits	Qualifiers
		Result	Spike Conc.				
Chloride	mg/L	4010	10	768	-32500	90-110	E
Fluoride	mg/L	0.12J	10	9.3	92	90-110	
Sulfate	mg/L	741	10	355	-3860	90-110	E

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

## **REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 266698

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

R2 RPD value was outside control limits due to matrix interference

## REPORT OF LABORATORY ANALYSIS

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### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant McManus Ash Ponds  
 Pace Project No.: 266698

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
266698001	MCM-08	EPA 3005A	9204	EPA 6020B	9327
266698001	MCM-08	EPA 7470A	9328	EPA 7470A	9359
266698001	MCM-08	SM 2540C	9270		
266698001	MCM-08	EPA 300.0	9362		

### **REPORT OF LABORATORY ANALYSIS**

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**CHAIN OF CUSTODY RECORD**

Pace Analytical  
[www.pacelabs.com](http://www.pacelabs.com)

**Pace Analytical Services, LLC - Atlanta GA**  
110 TECHNOLOGY PARKWAY, PEACHTREE CITY, GA 30092  
**(770) 734-4200 : FAX (770) 734-4201**

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OF  
PAGE:

110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
(770) 734-4200 : FAX (770) 734-4201

Rev. 12/15/2016



## Sample Condition Upon Receipt

Client Name: GAPower

Project #

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other

Tracking #:

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yesPacking Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used

83Type of Ice:  Wet  Blue  None

Cooler Temperature

0'5Biological Tissue is Frozen: Yes  No

Temp should be above freezing to 6°C

Comments:

 Samples on ice, cooling process has begunDate and Initials of person examining contents: 6/30/18 MR

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

## Client Notification/ Resolution:

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

Field Data Required?

Y      N

Comments/ Resolution:


Project Manager Review:

Date:

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

July 27, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 266699

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on June 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
 Pace Project No.: 266699

---

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
Pace Project No.: 266699

Lab ID	Sample ID	Matrix	Date Collected	Date Received
266699001	MCM-08	Water	06/28/18 17:42	06/30/18 08:00

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
 Pace Project No.: 266699

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
266699001	MCM-08	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 266699

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**Sample: MCM-08**      Lab ID: **266699001**      Collected: 06/28/18 17:42      Received: 06/30/18 08:00      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>13.3 ± 2.01 (0.0638)</b> C:97% T:NA	pCi/L	07/23/18 18:57	13982-63-3	
Radium-228	EPA 9320	<b>7.47 ± 1.58 (0.853)</b> C:71% T:80%	pCi/L	07/25/18 14:34	15262-20-1	
Total Radium	Total Radium Calculation	<b>20.8 ± 3.59 (0.917)</b>	pCi/L	07/27/18 14:38	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266699

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QC Batch: 305323

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 266699001

---

METHOD BLANK: 1493261

Matrix: Water

Associated Lab Samples: 266699001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.239 ± 0.154 (0.219) C:98% T:NA	pCi/L	07/16/18 08:15	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 266699

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QC Batch: 305493

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 266699001

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METHOD BLANK: 1494006

Matrix: Water

Associated Lab Samples: 266699001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.330 ± 0.315 (0.644) C:74% T:91%	pCi/L	07/25/18 14:33	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 266699

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
 Pace Project No.: 266699

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
266699001	MCM-08	EPA 9315	305323		
266699001	MCM-08	EPA 9320	305493		
266699001	MCM-08	Total Radium Calculation	307474		

## REPORT OF LABORATORY ANALYSIS

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**CHAIN OF CUSTODY RECORD**

Pace Analytical  
[www.pacelabs.com](http://www.pacelabs.com)

**Pace Analytical Services, LLC - Atlanta GA**  
110 TECHNOLOGY PARKWAY, PEACHTREE C  
(770) 734-4200 : FAX (770) 734-4201

www.PaceLab3.com

# Sample Condition Upon Receipt

PaceAnalytical

Client Name: GAPower

Project #

**WO# : 266699**

PM: BM

Due Date: 07/31/18

CLIENT: GAPower-CCR

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other

Tracking #:

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 33 Type of Ice: Wet Blue None

Cooler Temperature 0.5

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 6/30/18 MR

Chain of Custody Present:  Yes  No  N/A 1.

Chain of Custody Filled Out:  Yes  No  N/A 2.

Chain of Custody Relinquished:  Yes  No  N/A 3.

Sampler Name & Signature on COC:  Yes  No  N/A 4.

Samples Arrived within Hold Time:  Yes  No  N/A 5.

Short Hold Time Analysis (<72hr):  Yes  No  N/A 6.

Rush Turn Around Time Requested:  Yes  No  N/A 7.

Sufficient Volume:  Yes  No  N/A 8.

Correct Containers Used:  Yes  No  N/A 9.

-Pace Containers Used:  Yes  No  N/A

Containers Intact:  Yes  No  N/A 10.

Filtered volume received for Dissolved tests  Yes  No  N/A 11.

Sample Labels match COC:  Yes  No  N/A 12.

-Includes date/time/ID/Analysis Matrix: GCA

All containers needing preservation have been checked  Yes  No  N/A 13.

All containers needing preservation are found to be in compliance with EPA recommendation.  Yes  No  N/A

exceptions: VOA, californ, TOC, O&G, WI-ORO (water)  Yes  No  N/A

Initial when completed

Lot # of added preservative

Samples checked for dechlorination:  Yes  No  N/A 14.

Headspace in VOA Vials (>6mm):  Yes  No  N/A 15.

Trip Blank Present:  Yes  No  N/A 16.

Trip Blank Custody Seals Present  Yes  No  N/A

Pace Trip Blank Lot # (if purchased): \_\_\_\_\_

Client Notification/ Resolution:

Field Data Required? Y N

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

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

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

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DE-NR Identification Office - if out of hold, incorrect preservative, out of temp, incorrect containers

October 04, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

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### Atlanta Certification IDs

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

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Texas Certification #: T104704397-08-TX  
Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
 Pace Project No.: 269692

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269692001	MCM-14	Water	09/25/18 15:25	09/26/18 09:30
269692002	MCM-09	Water	09/25/18 09:48	09/26/18 09:30
269692003	MCM-12	Water	09/25/18 13:20	09/26/18 09:30
269692004	MCM-11	Water	09/25/18 11:11	09/26/18 09:30
269692005	FBL 092518	Water	09/25/18 16:10	09/26/18 09:30
269692006	EQBL 092518	Water	09/25/18 16:15	09/26/18 09:30
269692007	Dup-1	Water	09/25/18 00:00	09/26/18 09:30

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

Lab ID	Sample ID	Method	Analysts	Analytics Reported
269692001	<b>MCM-14</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269692002	<b>MCM-09</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269692003	<b>MCM-12</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269692004	<b>MCM-11</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269692005	<b>FBL 092518</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269692006	<b>EQBL 092518</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269692007	<b>Dup-1</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

Sample: MCM-14	Lab ID: 269692001	Collected: 09/25/18 15:25	Received: 09/26/18 09:30	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.015	0.0039	5	10/01/18 13:57	10/03/18 15:32	7440-36-0	D3
Arsenic	<b>0.0031J</b>	mg/L	0.0050	0.00057	1	10/01/18 13:57	10/02/18 23:09	7440-38-2	
Barium	<b>0.098</b>	mg/L	0.050	0.0039	5	10/01/18 13:57	10/03/18 15:32	7440-39-3	
Beryllium	<b>0.000050J</b>	mg/L	0.0030	0.000050	1	10/01/18 13:57	10/02/18 23:09	7440-41-7	
Boron	<b>0.61</b>	mg/L	0.040	0.0039	1	10/01/18 13:57	10/02/18 23:09	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/02/18 23:09	7440-43-9	
Calcium	<b>283</b>	mg/L	25.0	0.69	50	10/01/18 13:57	10/02/18 23:15	7440-70-2	
Chromium	ND	mg/L	0.050	0.0078	5	10/01/18 13:57	10/03/18 15:32	7440-47-3	D3
Cobalt	ND	mg/L	0.050	0.0026	5	10/01/18 13:57	10/03/18 15:32	7440-48-4	D3
Lead	ND	mg/L	0.0050	0.00027	1	10/01/18 13:57	10/02/18 23:09	7439-92-1	
Lithium	<b>0.041J</b>	mg/L	0.050	0.00097	1	10/01/18 13:57	10/02/18 23:09	7439-93-2	
Molybdenum	ND	mg/L	0.050	0.0097	5	10/01/18 13:57	10/03/18 15:32	7439-98-7	D3
Selenium	<b>0.0019J</b>	mg/L	0.010	0.0014	1	10/01/18 13:57	10/02/18 23:09	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/18 13:57	10/02/18 23:09	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/02/18 11:15	10/02/18 17:43	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>10700</b>	mg/L	25.0	10.0	1			09/26/18 15:53	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>7220</b>	mg/L	50.0	4.8	200			10/03/18 13:32	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			09/29/18 00:08	16984-48-8
Sulfate	<b>790</b>	mg/L	50.0	0.85	50			09/29/18 06:40	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

Sample: MCM-09	Lab ID: 269692002	Collected: 09/25/18 09:48	Received: 09/26/18 09:30	Matrix: Water				
Parameters	Results	Units	Report	DF	Prepared	Analyzed	CAS No.	Qual
			Limit					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A						
Antimony	ND	mg/L	0.0030	0.00078	1	10/01/18 13:57	10/02/18 23:20	7440-36-0
Arsenic	<b>0.00093J</b>	mg/L	0.0050	0.00057	1	10/01/18 13:57	10/02/18 23:20	7440-38-2
Barium	<b>0.13</b>	mg/L	0.010	0.00078	1	10/01/18 13:57	10/02/18 23:20	7440-39-3
Beryllium	<b>0.00027J</b>	mg/L	0.0030	0.000050	1	10/01/18 13:57	10/02/18 23:20	7440-41-7
Boron	<b>0.070</b>	mg/L	0.040	0.0039	1	10/01/18 13:57	10/02/18 23:20	7440-42-8
Cadmium	ND	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/02/18 23:20	7440-43-9
Calcium	<b>316</b>	mg/L	25.0	0.69	50	10/01/18 13:57	10/02/18 23:26	7440-70-2
Chromium	ND	mg/L	0.050	0.0078	5	10/01/18 13:57	10/03/18 15:38	7440-47-3
Cobalt	ND	mg/L	0.050	0.0026	5	10/01/18 13:57	10/03/18 15:38	7440-48-4
Lead	ND	mg/L	0.0050	0.00027	1	10/01/18 13:57	10/02/18 23:20	7439-92-1
Lithium	<b>0.049J</b>	mg/L	0.050	0.00097	1	10/01/18 13:57	10/02/18 23:20	7439-93-2
Molybdenum	ND	mg/L	0.010	0.0019	1	10/01/18 13:57	10/02/18 23:20	7439-98-7
Selenium	ND	mg/L	0.010	0.0014	1	10/01/18 13:57	10/02/18 23:20	7782-49-2
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/18 13:57	10/02/18 23:20	7440-28-0
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A						
Mercury	ND	mg/L	0.00050	0.000036	1	10/02/18 11:15	10/02/18 17:45	7439-97-6
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C						
Total Dissolved Solids	<b>3600</b>	mg/L	25.0	10.0	1		09/26/18 15:53	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0						
Chloride	<b>1740</b>	mg/L	12.5	1.2	50		09/29/18 07:02	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1		09/29/18 00:29	16984-48-8
Sulfate	<b>638</b>	mg/L	50.0	0.85	50		09/29/18 07:02	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

Sample: MCM-12	Lab ID: 269692003	Collected: 09/25/18 13:20	Received: 09/26/18 09:30	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/01/18 13:57	10/02/18 23:32	7440-36-0	
Arsenic	<b>0.0011J</b>	mg/L	0.0050	0.00057	1	10/01/18 13:57	10/02/18 23:32	7440-38-2	
Barium	<b>0.12</b>	mg/L	0.010	0.00078	1	10/01/18 13:57	10/02/18 23:32	7440-39-3	
Beryllium	<b>0.00066J</b>	mg/L	0.0030	0.000050	1	10/01/18 13:57	10/02/18 23:32	7440-41-7	
Boron	<b>1.0</b>	mg/L	0.040	0.0039	1	10/01/18 13:57	10/02/18 23:32	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/02/18 23:32	7440-43-9	
Calcium	<b>6.8</b>	mg/L	0.50	0.014	1	10/01/18 13:57	10/02/18 23:32	7440-70-2	
Chromium	ND	mg/L	0.050	0.0078	5	10/01/18 13:57	10/03/18 15:44	7440-47-3	D3
Cobalt	ND	mg/L	0.050	0.0026	5	10/01/18 13:57	10/03/18 15:44	7440-48-4	D3
Lead	ND	mg/L	0.0050	0.00027	1	10/01/18 13:57	10/02/18 23:32	7439-92-1	
Lithium	<b>0.011J</b>	mg/L	0.050	0.00097	1	10/01/18 13:57	10/02/18 23:32	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/01/18 13:57	10/02/18 23:32	7439-98-7	
Selenium	<b>0.0020J</b>	mg/L	0.010	0.0014	1	10/01/18 13:57	10/02/18 23:32	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/18 13:57	10/02/18 23:32	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/02/18 11:15	10/02/18 17:48	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>1760</b>	mg/L	25.0	10.0	1			09/26/18 15:53	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>752</b>	mg/L	12.5	1.2	50			10/02/18 19:27	16887-00-6
Fluoride	<b>1.1</b>	mg/L	0.30	0.029	1			09/29/18 01:12	16984-48-8
Sulfate	<b>1.0</b>	mg/L	1.0	0.017	1			09/29/18 01:12	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

Sample: MCM-11	Lab ID: 269692004	Collected: 09/25/18 11:11	Received: 09/26/18 09:30	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/01/18 13:57	10/02/18 23:55	7440-36-0	
Arsenic	<b>0.011</b>	mg/L	0.0050	0.00057	1	10/01/18 13:57	10/02/18 23:55	7440-38-2	
Barium	<b>0.041</b>	mg/L	0.010	0.00078	1	10/01/18 13:57	10/02/18 23:55	7440-39-3	
Beryllium	<b>0.00010J</b>	mg/L	0.0030	0.000050	1	10/01/18 13:57	10/02/18 23:55	7440-41-7	
Boron	<b>0.043</b>	mg/L	0.040	0.0039	1	10/01/18 13:57	10/02/18 23:55	7440-42-8	
Cadmium	<b>0.00020J</b>	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/02/18 23:55	7440-43-9	
Calcium	<b>6.2</b>	mg/L	0.50	0.014	1	10/01/18 13:57	10/02/18 23:55	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/01/18 13:57	10/03/18 15:49	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/01/18 13:57	10/03/18 15:49	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/01/18 13:57	10/02/18 23:55	7439-92-1	
Lithium	<b>0.0018J</b>	mg/L	0.050	0.00097	1	10/01/18 13:57	10/02/18 23:55	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/01/18 13:57	10/02/18 23:55	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/01/18 13:57	10/02/18 23:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/18 13:57	10/02/18 23:55	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/02/18 11:15	10/02/18 17:55	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>137</b>	mg/L	25.0	10.0	1		09/26/18 15:53		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>31.3</b>	mg/L	0.25	0.024	1		09/29/18 01:33	16887-00-6	
Fluoride	<b>0.15J</b>	mg/L	0.30	0.029	1		09/29/18 01:33	16984-48-8	
Sulfate	<b>25.6</b>	mg/L	1.0	0.017	1		09/29/18 01:33	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

Sample: FBL 092518	Lab ID: 269692005	Collected: 09/25/18 16:10	Received: 09/26/18 09:30	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/01/18 13:57	10/03/18 00:06	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/01/18 13:57	10/03/18 00:06	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	10/01/18 13:57	10/03/18 00:06	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/01/18 13:57	10/03/18 00:06	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	10/01/18 13:57	10/03/18 00:06	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/03/18 00:06	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	10/01/18 13:57	10/03/18 00:06	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/01/18 13:57	10/03/18 15:55	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/01/18 13:57	10/03/18 15:55	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/01/18 13:57	10/03/18 00:06	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/01/18 13:57	10/03/18 00:06	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/01/18 13:57	10/03/18 00:06	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/01/18 13:57	10/03/18 00:06	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/18 13:57	10/03/18 00:06	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/02/18 11:15	10/02/18 17:57	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>13.0J</b>	mg/L	25.0	10.0	1		09/26/18 15:53		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>0.094J</b>	mg/L	0.25	0.024	1		09/29/18 01:55	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		09/29/18 01:55	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		09/29/18 01:55	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

Sample: EQBL 092518	Lab ID: 269692006	Collected: 09/25/18 16:15	Received: 09/26/18 09:30	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/01/18 13:57	10/03/18 00:12	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/01/18 13:57	10/03/18 00:12	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	10/01/18 13:57	10/03/18 00:12	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/01/18 13:57	10/03/18 00:12	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	10/01/18 13:57	10/03/18 00:12	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/03/18 00:12	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	10/01/18 13:57	10/03/18 00:12	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/01/18 13:57	10/03/18 16:01	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/01/18 13:57	10/03/18 16:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/01/18 13:57	10/03/18 00:12	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/01/18 13:57	10/03/18 00:12	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/01/18 13:57	10/03/18 00:12	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/01/18 13:57	10/03/18 00:12	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/18 13:57	10/03/18 00:12	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/02/18 11:15	10/02/18 18:00	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	25.0	10.0	1			09/26/18 15:53	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>0.076J</b>	mg/L	0.25	0.024	1			09/29/18 02:17	16887-00-6 B
Fluoride	ND	mg/L	0.30	0.029	1			09/29/18 02:17	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			09/29/18 02:17	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

Sample: Dup-1	Lab ID: 269692007	Collected: 09/25/18 00:00	Received: 09/26/18 09:30	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/01/18 13:57	10/03/18 00:18	7440-36-0	
Arsenic	<b>0.00075J</b>	mg/L	0.0050	0.00057	1	10/01/18 13:57	10/03/18 00:18	7440-38-2	
Barium	<b>0.13</b>	mg/L	0.010	0.00078	1	10/01/18 13:57	10/03/18 00:18	7440-39-3	
Beryllium	<b>0.00027J</b>	mg/L	0.0030	0.000050	1	10/01/18 13:57	10/03/18 00:18	7440-41-7	
Boron	<b>0.069</b>	mg/L	0.040	0.0039	1	10/01/18 13:57	10/03/18 00:18	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/03/18 00:18	7440-43-9	
Calcium	<b>296</b>	mg/L	25.0	0.69	50	10/01/18 13:57	10/03/18 00:23	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/01/18 13:57	10/03/18 16:07	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/01/18 13:57	10/03/18 16:07	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/01/18 13:57	10/03/18 00:18	7439-92-1	
Lithium	<b>0.051</b>	mg/L	0.050	0.00097	1	10/01/18 13:57	10/03/18 00:18	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/01/18 13:57	10/03/18 00:18	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/01/18 13:57	10/03/18 00:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/18 13:57	10/03/18 00:18	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/02/18 11:15	10/02/18 18:02	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>3750</b>	mg/L	25.0	10.0	1		09/26/18 15:53		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>1790</b>	mg/L	12.5	1.2	50		09/29/18 07:24	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		09/29/18 02:38	16984-48-8	
Sulfate	<b>663</b>	mg/L	50.0	0.85	50		09/29/18 07:24	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## **QUALITY CONTROL DATA**

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

QC Batch: 14520 Analysis Method: EPA 7470A  
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury  
Associated Lab Samples: 269692001, 269692002, 269692003, 269692004, 269692005, 269692006, 269692007

METHOD BLANK: 64902 Matrix: Water

Associated Lab Samples: 269692001, 269692002, 269692003, 269692004, 269692005, 269692006, 269692007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/02/18 17:07	

LABORATORY CONTROL SAMPLE: 64903

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 64904 64905

Parameter	Units	MS		MSD		% Rec	MSD % Rec	% Rec Limits	Max RPD		Qual
		269623001 Result	Spike Conc.	Spike Conc.	MS Result				RPD	RPD	
Mercury	mg/L	ND	.0025	.0025	0.0026	0.0026	101	104	75-125	3	20

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## **REPORT OF LABORATORY ANALYSIS**

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269692

QC Batch: 14492 Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A Analysis Description: 6020B MET

Associated Lab Samples: 269692001, 269692002, 269692003, 269692004, 269692005, 269692006, 269692007

METHOD BLANK: 64829 Matrix: Water

Associated Lab Samples: 269692001, 269692002, 269692003, 269692004, 269692005, 269692006, 269692007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/02/18 20:46	
Arsenic	mg/L	ND	0.0050	0.00057	10/02/18 20:46	
Barium	mg/L	ND	0.010	0.00078	10/02/18 20:46	
Beryllium	mg/L	ND	0.0030	0.000050	10/02/18 20:46	
Boron	mg/L	ND	0.040	0.0039	10/02/18 20:46	
Cadmium	mg/L	ND	0.0010	0.000093	10/02/18 20:46	
Calcium	mg/L	0.026J	0.50	0.014	10/02/18 20:46	
Chromium	mg/L	ND	0.010	0.0016	10/02/18 20:46	
Cobalt	mg/L	ND	0.010	0.00052	10/02/18 20:46	
Lead	mg/L	ND	0.0050	0.00027	10/02/18 20:46	
Lithium	mg/L	ND	0.050	0.00097	10/02/18 20:46	
Molybdenum	mg/L	ND	0.010	0.0019	10/02/18 20:46	
Selenium	mg/L	ND	0.010	0.0014	10/02/18 20:46	
Thallium	mg/L	ND	0.0010	0.00014	10/02/18 20:46	

LABORATORY CONTROL SAMPLE: 64830

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	103	80-120	
Arsenic	mg/L	.1	0.099	99	80-120	
Barium	mg/L	.1	0.098	98	80-120	
Beryllium	mg/L	.1	0.10	102	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	.1	0.10	103	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	.1	0.10	105	80-120	
Cobalt	mg/L	.1	0.11	107	80-120	
Lead	mg/L	.1	0.10	101	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.10	103	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.099	99	80-120	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 64831 64832

Parameter	Units	MS Result	MS Spike Conc.	MS Result	MS % Rec	MS Result	MS % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	.1	.1	0.11	0.11	107	107	75-125	0	20

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269692

Parameter	Units	64831		64832						Max			
		MS		MSD		MS		MSD		% Rec		RPD	RPD
		269623001	Spike Result	Conc.	Spike Conc.	Result	MSD	Result	% Rec	MSD % Rec	Limits		Qual
Arsenic	mg/L	0.00094J	.1	.1	.10	0.10	103	102	75-125	1	20		
Barium	mg/L	0.047	.1	.1	0.15	0.15	104	99	75-125	3	20		
Beryllium	mg/L	0.00029J	.1	.1	0.091	0.089	90	89	75-125	2	20		
Boron	mg/L	16.5	1	1	19.0	18.8	254	226	75-125	1	20	M6	
Cadmium	mg/L	0.00069J	.1	.1	0.10	0.10	103	102	75-125	0	20		
Calcium	mg/L	115	1	1	123	118	748	314	75-125	4	20	M6	
Chromium	mg/L	ND	.1	.1	0.10	0.10	102	100	75-125	2	20		
Cobalt	mg/L	0.0071J	.1	.1	0.11	0.11	102	101	75-125	2	20		
Lead	mg/L	ND	.1	.1	0.097	0.092	97	92	75-125	5	20		
Lithium	mg/L	0.028J	.1	.1	0.12	0.12	92	90	75-125	2	20		
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	107	103	75-125	4	20		
Selenium	mg/L	0.33	.1	.1	0.44	0.42	107	95	75-125	3	20		
Thallium	mg/L	ND	.1	.1	0.096	0.093	96	93	75-125	3	20		

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

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QC Batch:	14248	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	269692001, 269692002, 269692003, 269692004, 269692005, 269692006, 269692007		

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LABORATORY CONTROL SAMPLE: 63405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	405	101	84-108	

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SAMPLE DUPLICATE: 63406

Parameter	Units	269623001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1090	1080	1	10	

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SAMPLE DUPLICATE: 63407

Parameter	Units	269684001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	121	119	2	10	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269692

QC Batch: 14360 Analysis Method: EPA 300.0

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

Associated Lab Samples: 269692001, 269692002, 269692003, 269692004, 269692005, 269692006, 269692007

METHOD BLANK: 64130 Matrix: Water

Associated Lab Samples: 269692001, 269692002, 269692003, 269692004, 269692005, 269692006, 269692007

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Chloride	mg/L	0.059J	0.25	0.024	09/28/18 18:29	
Fluoride	mg/L	ND	0.30	0.029	09/28/18 18:29	
Sulfate	mg/L	ND	1.0	0.017	09/28/18 18:29	

LABORATORY CONTROL SAMPLE: 64131

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Chloride	mg/L	10	10.1	101	90-110	
Fluoride	mg/L	10	10.3	103	90-110	
Sulfate	mg/L	10	10.1	101	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 64132 64133

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	RPD	RPD	Max
		269623001	Spike	Spike	Result	% Rec	Result	% Rec	Limits	RPD	RPD	Qual
Chloride	mg/L	4.9	10	10	14.6	14.6	97	97	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.4	10.5	104	105	90-110	0	15	
Sulfate	mg/L	674	10	10	322	322	-3520	-3520	90-110	0	15	E,M1

MATRIX SPIKE SAMPLE: 64134

Parameter	Units	269623002	Spike	MS	MS	% Rec	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits		
Chloride	mg/L	5.9	10	15.3	94	90-110		
Fluoride	mg/L	0.034J	10	10.8	108	90-110		
Sulfate	mg/L	872	10	369	-5030	90-110	E,M1	

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## QUALIFIERS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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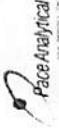
**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant McManus Ash Ponds  
Pace Project No.: 269692

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269692001	MCM-14	EPA 3005A	14492	EPA 6020B	14586
269692002	MCM-09	EPA 3005A	14492	EPA 6020B	14586
269692003	MCM-12	EPA 3005A	14492	EPA 6020B	14586
269692004	MCM-11	EPA 3005A	14492	EPA 6020B	14586
269692005	FBL 092518	EPA 3005A	14492	EPA 6020B	14586
269692006	EQBL 092518	EPA 3005A	14492	EPA 6020B	14586
269692007	Dup-1	EPA 3005A	14492	EPA 6020B	14586
269692001	MCM-14	EPA 7470A	14520	EPA 7470A	14584
269692002	MCM-09	EPA 7470A	14520	EPA 7470A	14584
269692003	MCM-12	EPA 7470A	14520	EPA 7470A	14584
269692004	MCM-11	EPA 7470A	14520	EPA 7470A	14584
269692005	FBL 092518	EPA 7470A	14520	EPA 7470A	14584
269692006	EQBL 092518	EPA 7470A	14520	EPA 7470A	14584
269692007	Dup-1	EPA 7470A	14520	EPA 7470A	14584
269692001	MCM-14	SM 2540C	14248		
269692002	MCM-09	SM 2540C	14248		
269692003	MCM-12	SM 2540C	14248		
269692004	MCM-11	SM 2540C	14248		
269692005	FBL 092518	SM 2540C	14248		
269692006	EQBL 092518	SM 2540C	14248		
269692007	Dup-1	SM 2540C	14248		
269692001	MCM-14	EPA 300.0	14360		
269692002	MCM-09	EPA 300.0	14360		
269692003	MCM-12	EPA 300.0	14360		
269692004	MCM-11	EPA 300.0	14360		
269692005	FBL 092518	EPA 300.0	14360		
269692006	EQBL 092518	EPA 300.0	14360		
269692007	Dup-1	EPA 300.0	14360		

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CHAIN-OF-CUSTODY / Analytical Request Document

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



## Sample Condition Upon Receipt

Client Name: <u>GAPower</u>		Project #	
Courier: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Client		<input type="checkbox"/> Commercial	<input type="checkbox"/> Pace Other
Tracking #: _____			
Custody Seal on Cooler/Box Present: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no		Seals intact: <input checked="" type="checkbox"/> yes	
Packing Material: <input type="checkbox"/> Bubble Wrap <input type="checkbox"/> Bubble Bags <input checked="" type="checkbox"/> None <input type="checkbox"/> Other			
Thermometer Used <u>83</u>		Type of Ice: <input checked="" type="checkbox"/> Wet <input type="checkbox"/> Blue <input type="checkbox"/> None	
Cooler Temperature <u>0.2</u>		Biological Tissue is Frozen: Yes <input type="checkbox"/> No	
Temp should be above freezing to 6°C		Comments:	
Chain of Custody Present:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):		<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>W</u>			
All containers needing preservation have been checked.		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed      Lot # of added preservative
Samples checked for dechlorination:		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):			

**WO# : 269692**

PM: BM

Due Date: 10/03/18

CLIENT: GAPower-CCR

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 9/26/18 JH

Client Notification/ Resolution:		Field Data Required? <input type="checkbox"/> Y / <input type="checkbox"/> N
Person Contacted: _____ Date/Time: _____		
Comments/ Resolution:		
Project Manager Review: _____		Date: _____

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

December 17, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 269693

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revision 1: This report replaces the report from October 19, 2018. Report reissued December 17, 2018 to include the Ra-226/228 calculations.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
 Pace Project No.: 269693

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
 Pace Project No.: 269693

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269693001	MCM-14	Water	09/25/18 15:25	09/26/18 09:30
269693002	MCM-09	Water	09/25/18 09:48	09/26/18 09:30
269693003	MCM-12	Water	09/25/18 13:20	09/26/18 09:30
269693004	MCM-11	Water	09/25/18 11:11	09/26/18 09:30
269693005	FBL 092518	Water	09/25/18 16:10	09/26/18 09:30
269693006	EQBL 092518	Water	09/25/18 16:15	09/26/18 09:30
269693007	Dup-1	Water	09/25/18 00:00	09/26/18 09:30

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 269693

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
269693001	MCM-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269693002	MCM-09	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269693003	MCM-12	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269693004	MCM-11	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269693005	FBL 092518	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269693006	EQBL 092518	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269693007	Dup-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 269693

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**Sample: MCM-14**      Lab ID: **269693001**      Collected: 09/25/18 15:25      Received: 09/26/18 09:30      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.40 ± 0.479 (0.186)</b> C:103% T:NA	pCi/L	10/09/18 21:00	13982-63-3	
Radium-228	EPA 9320	<b>3.82 ± 1.10 (1.42)</b> C:62% T:72%	pCi/L	10/10/18 13:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>6.22 ± 1.58 (1.61)</b>	pCi/L	10/12/18 14:50	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 269693

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**Sample: MCM-09**      Lab ID: **269693002**      Collected: 09/25/18 09:48      Received: 09/26/18 09:30      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.88 ± 0.473 (0.270)</b> C:94% T:NA	pCi/L	10/10/18 11:24	13982-63-3	
Radium-228	EPA 9320	<b>1.60 ± 0.607 (0.952)</b> C:79% T:72%	pCi/L	10/10/18 13:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.48 ± 1.08 (1.22)</b>	pCi/L	12/17/18 12:43	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 269693

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**Sample: MCM-12**      Lab ID: **269693003**      Collected: 09/25/18 13:20      Received: 09/26/18 09:30      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.20 ± 0.354 (0.277)</b> C:104% T:NA	pCi/L	10/10/18 08:13	13982-63-3	
Radium-228	EPA 9320	<b>1.03 ± 0.529 (0.980)</b> C:78% T:88%	pCi/L	10/10/18 13:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.23 ± 0.883 (1.26)</b>	pCi/L	12/17/18 12:43	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 269693

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**Sample: MCM-11**      Lab ID: **269693004**      Collected: 09/25/18 11:11      Received: 09/26/18 09:30      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.473 ± 0.243 (0.356)</b> C:100% T:NA	pCi/L	10/10/18 08:13	13982-63-3	
Radium-228	EPA 9320	<b>0.680 ± 0.516 (1.04)</b> C:79% T:83%	pCi/L	10/10/18 13:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.15 ± 0.759 (1.40)</b>	pCi/L	12/17/18 12:43	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269693

**Sample: FBL 092518**      Lab ID: **269693005**      Collected: 09/25/18 16:10      Received: 09/26/18 09:30      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.236 ± 0.174 (0.293)</b> C:104% T:NA	pCi/L	10/10/18 08:13	13982-63-3	
Radium-228	EPA 9320	<b>0.398 ± 0.467 (0.989)</b> C:80% T:77%	pCi/L	10/10/18 13:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.634 ± 0.641 (1.28)</b>	pCi/L	12/17/18 12:43	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269693

**Sample: EQBL 092518**      Lab ID: **269693006**      Collected: 09/25/18 16:15      Received: 09/26/18 09:30      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.107 ± 0.128 (0.259)</b> C:102% T:NA	pCi/L	10/10/18 08:14	13982-63-3	
Radium-228	EPA 9320	<b>-0.0394 ± 0.534 (1.23)</b> C:80% T:67%	pCi/L	10/10/18 13:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.107 ± 0.662 (1.49)</b>	pCi/L	12/17/18 12:43	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 269693

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<b>Sample:</b> Dup-1	<b>Lab ID:</b> 269693007	<b>Collected:</b> 09/25/18 00:00	<b>Received:</b> 09/26/18 09:30
<b>PWS:</b>	Site ID:	Matrix: Water	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.52 ± 0.419 (0.283)</b> C:106% T:NA	pCi/L	10/10/18 08:14	13982-63-3	
Radium-228	EPA 9320	<b>1.02 ± 0.474 (0.810)</b> C:78% T:77%	pCi/L	10/10/18 13:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.54 ± 0.893 (1.09)</b>	pCi/L	12/17/18 12:43	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269693

QC Batch: 315078

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 269693001, 269693002

METHOD BLANK: 1537989

Matrix: Water

Associated Lab Samples: 269693001, 269693002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.157 ± 0.116 (0.204) C:102% T:NA	pCi/L	10/09/18 20:06	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269693

---

QC Batch: 315398 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 269693003, 269693004, 269693005, 269693006, 269693007

---

METHOD BLANK: 1539348 Matrix: Water

Associated Lab Samples: 269693003, 269693004, 269693005, 269693006, 269693007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0354 ± 0.113 (0.282) C:99% T:NA	pCi/L	10/10/18 08:13	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269693

---

QC Batch: 315079 Analysis Method: EPA 9320

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

Associated Lab Samples: 269693001, 269693002, 269693003, 269693004, 269693005, 269693006, 269693007

---

METHOD BLANK: 1537990 Matrix: Water

Associated Lab Samples: 269693001, 269693002, 269693003, 269693004, 269693005, 269693006, 269693007

---

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.483 ± 0.322 (0.612) C:82% T:88%	pCi/L	10/10/18 13:07	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269693

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 269693

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269693001	MCM-14	EPA 9315	315078		
269693002	MCM-09	EPA 9315	315078		
269693003	MCM-12	EPA 9315	315398		
269693004	MCM-11	EPA 9315	315398		
269693005	FBL 092518	EPA 9315	315398		
269693006	EQBL 092518	EPA 9315	315398		
269693007	Dup-1	EPA 9315	315398		
269693001	MCM-14	EPA 9320	315079		
269693002	MCM-09	EPA 9320	315079		
269693003	MCM-12	EPA 9320	315079		
269693004	MCM-11	EPA 9320	315079		
269693005	FBL 092518	EPA 9320	315079		
269693006	EQBL 092518	EPA 9320	315079		
269693007	Dup-1	EPA 9320	315079		
269693001	MCM-14	Total Radium Calculation	316532		
269693002	MCM-09	Total Radium Calculation	324178		
269693003	MCM-12	Total Radium Calculation	324178		
269693004	MCM-11	Total Radium Calculation	324178		
269693005	FBL 092518	Total Radium Calculation	324178		
269693006	EQBL 092518	Total Radium Calculation	324178		
269693007	Dup-1	Total Radium Calculation	324178		

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# CHAIN-OF-CUSTODY / Analytical Request Document

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

## Section A Required Client Information:

Company	Georgia Power	
Address	2480 Maner Road	
Atlanta, GA 30339		
Email	jabrahmi@southernenco.com	
Phone	(404) 566-7239	Fax
Requested Due Date		

## Section B Required Project Information:

Report To	Joi Abraham / Lauren Petty	
Copy To	Resolute	
Purchase Order #	SCS10348606	
Project Name:	Georgia Power - Plant McManus CCR Scope	
Project #:		
Pace Profile #	334	

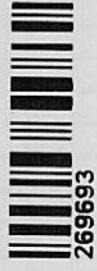
## Section C Invoice Information:

Attention	SCSInvoices@scs.southernenco.com	
Company Name		
Address		
Pace Quote		
State / Location	GA	

ITEM #	SAMPLE ID	One Character per box. (A-Z, 0-9, -, ) Sample Ids must be unique	MATRIX	CODE	COLLECTED		# OF CONTAINERS	SAMPLE TEMP AT COLLECTION		Preservatives		# OF PRESERVED	ANALYSES TEST		Pace Profile #	334	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	
					START	END		DATE	TIME	DATE	TIME		HCl	NaOH	Na2SO3	Methanol	Other	Metals APP III & APP IV	Radium 226/228
1	MCM-14		Drinking Water	DW	✓ G 9/25/18 1525		4	1	3				X	X	X				
2	MCM-09		Water	WT	✓ G 9/25/18 0948		6	1	5				X	X	X				
3	MCM-12		Waste Water	WW	✓ G 9/25/18 1320		4	1	3				X	X	X				
4	MCM-11		Product	P	✓ G 9/25/18 1111		4	1	3				X	X	X				
5	FOL 092518		Sol/Solid	SL	✓ G 9/25/18 1610		4	1	3				X	X	X				
6	EQBL 092518		Oil	OL	✓ G 9/25/18 1615		4	1	3				X	X	X				
7	DUP-1		Air	AR	✓ G 9/25/18 —		4	1	3				X	X	X				
8			Other	OT															
9			Filter	TS															
10																			
11																			
12																			

Page : 1 Of 1

WO# : 269693



SAMPLER NAME AND SIGNATURE	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Print Name of SAMPLER: <b>Audrey Crafton, Veronica Fay</b>	9/25/18 1640		Signature of SAMPLER: <b>Audrey Crafton</b>	9/26/18 0920		
Received in C						
Sealed (Y/N)						
Custody Seal (Y/N)						
Specimen (Y/N)						



## Sample Condition Upon Receipt

Client Name: GIA Power

Project # \_\_\_\_\_

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

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 83 Type of Ice: Wet Blue None

Cooler Temperature 0.2

Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Comments: \_\_\_\_\_

**WO# : 269693**

**PM: BM**

**Due Date:** **10/24/18**

**CLIENT: GIA Power-CCR**

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 9/26/18 JZ

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

**Client Notification/ Resolution:**

 Field Data Required?  Y  N

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

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

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

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

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

October 05, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 269813

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269813

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### Atlanta Certification IDs

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

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Texas Certification #: T104704397-08-TX  
Virginia Certification #: 460204

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds

Pace Project No.: 269813

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
269813001	MCM-04	Water	09/27/18 12:44	09/28/18 09:00
269813002	MCM-05	Water	09/27/18 09:50	09/28/18 09:00
269813003	MCM-06	Water	09/27/18 11:08	09/28/18 09:00
269813004	MCM-07	Water	09/27/18 14:50	09/28/18 09:00
269813005	MCM-10	Water	09/27/18 10:42	09/28/18 09:00

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
 Pace Project No.: 269813

Lab ID	Sample ID	Method	Analysts	Analytes Reported
269813001	<b>MCM-04</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269813002	<b>MCM-05</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269813003	<b>MCM-06</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269813004	<b>MCM-07</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269813005	<b>MCM-10</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269813

Sample: MCM-04	Lab ID: 269813001	Collected: 09/27/18 12:44	Received: 09/28/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/01/18 13:57	10/03/18 00:29	7440-36-0	
Arsenic	<b>0.010</b>	mg/L	0.0050	0.00057	1	10/01/18 13:57	10/03/18 00:29	7440-38-2	
Barium	<b>0.14</b>	mg/L	0.010	0.00078	1	10/01/18 13:57	10/03/18 00:29	7440-39-3	
Beryllium	<b>0.00031J</b>	mg/L	0.0030	0.000050	1	10/01/18 13:57	10/03/18 00:29	7440-41-7	
Boron	<b>0.060</b>	mg/L	0.040	0.0039	1	10/01/18 13:57	10/03/18 00:29	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/03/18 00:29	7440-43-9	
Calcium	<b>16.4J</b>	mg/L	25.0	0.69	50	10/01/18 13:57	10/03/18 00:35	7440-70-2	D3
Chromium	ND	mg/L	0.010	0.0016	1	10/01/18 13:57	10/03/18 16:12	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/01/18 13:57	10/03/18 16:12	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/01/18 13:57	10/03/18 00:29	7439-92-1	
Lithium	<b>0.0021J</b>	mg/L	0.050	0.00097	1	10/01/18 13:57	10/03/18 00:29	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/01/18 13:57	10/03/18 00:29	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/01/18 13:57	10/03/18 00:29	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/18 13:57	10/03/18 00:29	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:02	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>255</b>	mg/L	25.0	10.0	1			10/01/18 15:23	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>101</b>	mg/L	2.5	0.24	10			10/03/18 07:20	16887-00-6
Fluoride	<b>0.12J</b>	mg/L	0.30	0.029	1			10/03/18 05:27	16984-48-8
Sulfate	<b>63.4</b>	mg/L	10.0	0.17	10			10/03/18 07:20	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269813

Sample: MCM-05	Lab ID: 269813002	Collected: 09/27/18 09:50	Received: 09/28/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/01/18 13:57	10/03/18 00:40	7440-36-0	
Arsenic	<b>0.0035J</b>	mg/L	0.0050	0.00057	1	10/01/18 13:57	10/03/18 00:40	7440-38-2	
Barium	<b>0.0097J</b>	mg/L	0.010	0.00078	1	10/01/18 13:57	10/03/18 00:40	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/01/18 13:57	10/03/18 00:40	7440-41-7	
Boron	<b>0.47</b>	mg/L	0.040	0.0039	1	10/01/18 13:57	10/03/18 00:40	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/03/18 00:40	7440-43-9	
Calcium	<b>46.6</b>	mg/L	25.0	0.69	50	10/01/18 13:57	10/03/18 00:46	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/01/18 13:57	10/03/18 16:30	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/01/18 13:57	10/03/18 16:30	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/01/18 13:57	10/03/18 00:40	7439-92-1	
Lithium	<b>0.023J</b>	mg/L	0.050	0.00097	1	10/01/18 13:57	10/03/18 00:40	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/01/18 13:57	10/03/18 00:40	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/01/18 13:57	10/03/18 00:40	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/18 13:57	10/03/18 00:40	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:09	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>2360</b>	mg/L	25.0	10.0	1			10/01/18 15:23	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>1300</b>	mg/L	25.0	2.4	100			10/03/18 07:43	16887-00-6
Fluoride	<b>0.32</b>	mg/L	0.30	0.029	1			10/03/18 05:50	16984-48-8
Sulfate	<b>58.5J</b>	mg/L	100	1.7	100			10/03/18 07:43	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269813

Sample: MCM-06	Lab ID: 269813003	Collected: 09/27/18 11:08	Received: 09/28/18 09:00	Matrix: Water				
Parameters	Results	Units	Report	Prepared	Analyzed	CAS No.	Qual	
			Limit					
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A						
Antimony	ND	mg/L	0.0030	0.00078	1	10/01/18 13:57	10/03/18 01:03	7440-36-0
Arsenic	<b>0.27</b>	mg/L	0.0050	0.00057	1	10/01/18 13:57	10/03/18 16:36	7440-38-2
Barium	<b>0.060</b>	mg/L	0.010	0.00078	1	10/01/18 13:57	10/03/18 01:03	7440-39-3
Beryllium	ND	mg/L	0.0030	0.000050	1	10/01/18 13:57	10/03/18 16:36	7440-41-7
Boron	<b>0.62</b>	mg/L	0.040	0.0039	1	10/01/18 13:57	10/03/18 16:36	7440-42-8
Cadmium	ND	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/03/18 01:03	7440-43-9
Calcium	<b>95.1</b>	mg/L	25.0	0.69	50	10/01/18 13:57	10/04/18 14:11	7440-70-2
Chromium	ND	mg/L	0.010	0.0016	1	10/01/18 13:57	10/03/18 16:36	7440-47-3
Cobalt	ND	mg/L	0.010	0.00052	1	10/01/18 13:57	10/03/18 16:36	7440-48-4
Lead	ND	mg/L	0.0050	0.00027	1	10/01/18 13:57	10/03/18 01:03	7439-92-1
Lithium	<b>0.045J</b>	mg/L	0.050	0.00097	1	10/01/18 13:57	10/03/18 16:36	7439-93-2
Molybdenum	ND	mg/L	0.010	0.0019	1	10/01/18 13:57	10/03/18 01:03	7439-98-7
Selenium	ND	mg/L	0.010	0.0014	1	10/01/18 13:57	10/03/18 16:36	7782-49-2
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/18 13:57	10/03/18 01:03	7440-28-0
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A						
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:11	7439-97-6
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C						
Total Dissolved Solids	<b>4480</b>	mg/L	25.0	10.0	1			10/01/18 15:23
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0						
Chloride	<b>2510</b>	mg/L	12.5	1.2	50			10/05/18 12:32
Fluoride	<b>0.068J</b>	mg/L	0.30	0.029	1			16984-48-8
Sulfate	<b>29.4</b>	mg/L	1.0	0.017	1			10/03/18 09:59
								M1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269813

Sample: MCM-07	Lab ID: 269813004	Collected: 09/27/18 14:50	Received: 09/28/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/01/18 13:57	10/03/18 01:15	7440-36-0	
Arsenic	<b>0.015</b>	mg/L	0.0050	0.00057	1	10/01/18 13:57	10/03/18 16:42	7440-38-2	
Barium	<b>0.12</b>	mg/L	0.010	0.00078	1	10/01/18 13:57	10/03/18 01:15	7440-39-3	
Beryllium	<b>0.000074J</b>	mg/L	0.0030	0.000050	1	10/01/18 13:57	10/03/18 16:42	7440-41-7	
Boron	<b>0.88</b>	mg/L	0.040	0.0039	1	10/01/18 13:57	10/03/18 16:42	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/03/18 01:15	7440-43-9	
Calcium	<b>193</b>	mg/L	25.0	0.69	50	10/01/18 13:57	10/04/18 14:17	7440-70-2	
Chromium	<b>0.0024J</b>	mg/L	0.010	0.0016	1	10/01/18 13:57	10/03/18 16:42	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/01/18 13:57	10/03/18 16:42	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/01/18 13:57	10/03/18 01:15	7439-92-1	
Lithium	<b>0.034J</b>	mg/L	0.050	0.00097	1	10/01/18 13:57	10/03/18 16:42	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/01/18 13:57	10/03/18 01:15	7439-98-7	
Selenium	<b>0.0023J</b>	mg/L	0.010	0.0014	1	10/01/18 13:57	10/03/18 16:42	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/01/18 13:57	10/03/18 01:15	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:14	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>10200</b>	mg/L	25.0	10.0	1			10/01/18 17:25	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>5660</b>	mg/L	125	12.0	500			10/03/18 20:26	16887-00-6
Fluoride	<b>0.32</b>	mg/L	0.30	0.029	1			10/03/18 11:09	16984-48-8
Sulfate	<b>777</b>	mg/L	25.0	0.42	25			10/03/18 20:49	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269813

Sample: MCM-10	Lab ID: 269813005	Collected: 09/27/18 10:42	Received: 09/28/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/01/18 13:57	10/03/18 01:26	7440-36-0	
Arsenic	<b>0.049</b>	mg/L	0.025	0.0028	5	10/01/18 13:57	10/03/18 16:48	7440-38-2	
Barium	<b>0.017</b>	mg/L	0.010	0.00078	1	10/01/18 13:57	10/03/18 01:26	7440-39-3	
Beryllium	<b>0.026</b>	mg/L	0.015	0.00025	5	10/01/18 13:57	10/03/18 16:48	7440-41-7	
Boron	<b>0.18J</b>	mg/L	0.20	0.020	5	10/01/18 13:57	10/03/18 16:48	7440-42-8	D3
Cadmium	ND	mg/L	0.0010	0.000093	1	10/01/18 13:57	10/03/18 01:26	7440-43-9	
Calcium	<b>94.8</b>	mg/L	25.0	0.69	50	10/01/18 13:57	10/04/18 14:23	7440-70-2	
Chromium	ND	mg/L	0.050	0.0078	5	10/01/18 13:57	10/03/18 16:48	7440-47-3	D3
Cobalt	<b>0.017J</b>	mg/L	0.050	0.0026	5	10/01/18 13:57	10/03/18 16:48	7440-48-4	D3
Lead	ND	mg/L	0.025	0.0014	5	10/01/18 13:57	10/03/18 16:48	7439-92-1	D3
Lithium	<b>0.14J</b>	mg/L	0.25	0.0049	5	10/01/18 13:57	10/03/18 16:48	7439-93-2	D3
Molybdenum	ND	mg/L	0.010	0.0019	1	10/01/18 13:57	10/03/18 01:26	7439-98-7	
Selenium	<b>0.041J</b>	mg/L	0.050	0.0068	5	10/01/18 13:57	10/03/18 16:48	7782-49-2	D3
Thallium	ND	mg/L	0.0050	0.00071	5	10/01/18 13:57	10/03/18 16:48	7440-28-0	D3
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:16	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>3970</b>	mg/L	25.0	10.0	1			10/01/18 17:25	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>660</b>	mg/L	12.5	1.2	50			10/03/18 21:13	16887-00-6
Fluoride	<b>1.6</b>	mg/L	0.30	0.029	1			10/03/18 11:32	16984-48-8
Sulfate	<b>2150</b>	mg/L	50.0	0.85	50			10/03/18 21:13	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 269813

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QC Batch:	14661	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
Associated Lab Samples:	269813001, 269813002, 269813003, 269813004, 269813005		

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METHOD BLANK: 65448                                  Matrix: Water

Associated Lab Samples: 269813001, 269813002, 269813003, 269813004, 269813005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/03/18 18:39	

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LABORATORY CONTROL SAMPLE: 65449

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0024	95	80-120	

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MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65450                                  65451

Parameter	Units	269730001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0021	0.0021	84	83	75-125	2	20	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269813

QC Batch:	14492	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020B MET
Associated Lab Samples:	269813001, 269813002, 269813003, 269813004, 269813005		

METHOD BLANK: 64829   Matrix: Water

Associated Lab Samples: 269813001, 269813002, 269813003, 269813004, 269813005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	10/02/18 20:46	
Arsenic	mg/L	ND	0.0050	0.00057	10/02/18 20:46	
Barium	mg/L	ND	0.010	0.00078	10/02/18 20:46	
Beryllium	mg/L	ND	0.0030	0.000050	10/02/18 20:46	
Boron	mg/L	ND	0.040	0.0039	10/02/18 20:46	
Cadmium	mg/L	ND	0.0010	0.000093	10/02/18 20:46	
Calcium	mg/L	0.026J	0.50	0.014	10/02/18 20:46	
Chromium	mg/L	ND	0.010	0.0016	10/02/18 20:46	
Cobalt	mg/L	ND	0.010	0.00052	10/02/18 20:46	
Lead	mg/L	ND	0.0050	0.00027	10/02/18 20:46	
Lithium	mg/L	ND	0.050	0.00097	10/02/18 20:46	
Molybdenum	mg/L	ND	0.010	0.0019	10/02/18 20:46	
Selenium	mg/L	ND	0.010	0.0014	10/02/18 20:46	
Thallium	mg/L	ND	0.0010	0.00014	10/02/18 20:46	

LABORATORY CONTROL SAMPLE: 64830

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	103	80-120	
Arsenic	mg/L	.1	0.099	99	80-120	
Barium	mg/L	.1	0.098	98	80-120	
Beryllium	mg/L	.1	0.10	102	80-120	
Boron	mg/L	1	1.0	102	80-120	
Cadmium	mg/L	.1	0.10	103	80-120	
Calcium	mg/L	1	1.0	104	80-120	
Chromium	mg/L	.1	0.10	105	80-120	
Cobalt	mg/L	.1	0.11	107	80-120	
Lead	mg/L	.1	0.10	101	80-120	
Lithium	mg/L	.1	0.11	107	80-120	
Molybdenum	mg/L	.1	0.10	103	80-120	
Selenium	mg/L	.1	0.10	102	80-120	
Thallium	mg/L	.1	0.099	99	80-120	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 64831   64832

Parameter	Units	MS Result	MS Spike Conc.	MS Result	MS % Rec	MS Result	MS % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	.1	.1	0.11	0.11	107	107	75-125	0	20

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## REPORT OF LABORATORY ANALYSIS

## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269813

Parameter	Units	269623001		MSD		64832		% Rec	MSD % Rec	% Rec Limits	Max	
		MS Result	Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				RPD RPD	RPD RPD
Arsenic	mg/L	0.00094J	.1	.1	0.10	0.10	103	102	75-125	1	20	
Barium	mg/L	0.047	.1	.1	0.15	0.15	104	99	75-125	3	20	
Beryllium	mg/L	0.00029J	.1	.1	0.091	0.089	90	89	75-125	2	20	
Boron	mg/L	16.5	1	1	19.0	18.8	254	226	75-125	1	20	M6
Cadmium	mg/L	0.00069J	.1	.1	0.10	0.10	103	102	75-125	0	20	
Calcium	mg/L	115	1	1	123	118	748	314	75-125	4	20	M6
Chromium	mg/L	ND	.1	.1	0.10	0.10	102	100	75-125	2	20	
Cobalt	mg/L	0.0071J	.1	.1	0.11	0.11	102	101	75-125	2	20	
Lead	mg/L	ND	.1	.1	0.097	0.092	97	92	75-125	5	20	
Lithium	mg/L	0.028J	.1	.1	0.12	0.12	92	90	75-125	2	20	
Molybdenum	mg/L	ND	.1	.1	0.11	0.10	107	103	75-125	4	20	
Selenium	mg/L	0.33	.1	.1	0.44	0.42	107	95	75-125	3	20	
Thallium	mg/L	ND	.1	.1	0.096	0.093	96	93	75-125	3	20	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269813

QC Batch:	14462	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	269813001, 269813002, 269813003		

LABORATORY CONTROL SAMPLE: 64734

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	398	100	84-108	

SAMPLE DUPLICATE: 64735

Parameter	Units	269800015 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	12.0J		10	

SAMPLE DUPLICATE: 64736

Parameter	Units	269800018 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	81.0	76.0	6	10	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269813

QC Batch:	14509	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	269813004, 269813005		

LABORATORY CONTROL SAMPLE: 64873

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	400	100	84-108	

SAMPLE DUPLICATE: 64874

Parameter	Units	269840001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	478	477	0	10	

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## REPORT OF LABORATORY ANALYSIS

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## **QUALITY CONTROL DATA**

Project: Plant McManus Ash Ponds

Pace Project No.: 269813

QC Batch: 14554 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 269813001, 269813002

METHOD BLANK: 65003 Matrix: Water

Associated Lab Samples: 269813001, 269813002

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Chloride	mg/L	0.083J	0.25	0.024	10/02/18 17:45	
Fluoride	mg/L	ND	0.30	0.029	10/02/18 17:45	
Sulfate	mg/L	ND	1.0	0.017	10/02/18 17:45	

LABORATORY CONTROL SAMPLE: 65004

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	10.9	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 65005

65006

Parameter	Units	MS		MSD		% Rec	MSD % Rec	% Rec Limits	Max		
		269800001	Spike Conc.	Spike Conc.	MS Result				RPD	RPD	Qual
Chloride	mg/L	5.6	10	10	15.8	15.8	101	102	90-110	0	15
Fluoride	mg/L	ND	10	10	10.7	10.7	107	107	90-110	0	15
Sulfate	mg/L	6.1	10	10	20.4	16.8	143	108	90-110	19	15 M1,R1

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MATRIX SPIKE SAMPLE: 65007

Parameter	Units	269800002		MS Result	MS % Rec	% Rec Limits	Qualifiers
		Result	Spike Conc.				
Chloride	mg/L	7.8	10	17.3	95	90-110	
Fluoride	mg/L	ND	10	10.3	103	90-110	
Sulfate	mg/L	1.5	10	12.5	110	90-110	

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## **REPORT OF LABORATORY ANALYSIS**

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269813

QC Batch: 14555 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 269813003, 269813004, 269813005

METHOD BLANK: 65008 Matrix: Water

Associated Lab Samples: 269813003, 269813004, 269813005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.073J	0.25	0.024	10/03/18 09:13	
Fluoride	mg/L	ND	0.30	0.029	10/03/18 09:13	
Sulfate	mg/L	ND	1.0	0.017	10/03/18 09:13	

LABORATORY CONTROL SAMPLE: 65009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.9	109	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 65010 65011

Parameter	Units	269813003		MSD		MS Result	% Rec	MSD % Rec	% Rec Limits	RPD RPD	Max Qual
		MS Result	Spiked Conc.	MSD Spike Conc.	MS Result						
Chloride	mg/L	2510	10	10	617	617	-19000	-19000	90-110	0	15 E
Fluoride	mg/L	0.068J	10	10	9.5	9.5	95	94	90-110	0	15
Sulfate	mg/L	29.4	10	10	36.9	36.9	75	75	90-110	0	15 M1

MATRIX SPIKE SAMPLE: 65012

Parameter	Units	269813004		Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
		MS Result	Spiked Conc.					
Chloride	mg/L	5660	10		915	-47400	90-110	E
Fluoride	mg/L	0.32	10		8.7	84	90-110	M1
Sulfate	mg/L	777	10		321	-4560	90-110	E

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 269813

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

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

E        Analyte concentration exceeded the calibration range. The reported result is estimated.

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

M6        Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

R1        RPD value was outside control limits.

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 269813

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269813001	MCM-04	EPA 3005A	14492	EPA 6020B	14586
269813002	MCM-05	EPA 3005A	14492	EPA 6020B	14586
269813003	MCM-06	EPA 3005A	14492	EPA 6020B	14586
269813004	MCM-07	EPA 3005A	14492	EPA 6020B	14586
269813005	MCM-10	EPA 3005A	14492	EPA 6020B	14586
269813001	MCM-04	EPA 7470A	14661	EPA 7470A	14692
269813002	MCM-05	EPA 7470A	14661	EPA 7470A	14692
269813003	MCM-06	EPA 7470A	14661	EPA 7470A	14692
269813004	MCM-07	EPA 7470A	14661	EPA 7470A	14692
269813005	MCM-10	EPA 7470A	14661	EPA 7470A	14692
269813001	MCM-04	SM 2540C	14462		
269813002	MCM-05	SM 2540C	14462		
269813003	MCM-06	SM 2540C	14462		
269813004	MCM-07	SM 2540C	14509		
269813005	MCM-10	SM 2540C	14509		
269813001	MCM-04	EPA 300.0	14554		
269813002	MCM-05	EPA 300.0	14554		
269813003	MCM-06	EPA 300.0	14555		
269813004	MCM-07	EPA 300.0	14555		
269813005	MCM-10	EPA 300.0	14555		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

0



## Sample Condition Upon Receipt

Client Name:

GA Power

Project #

WO# : 269813

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: 782980005643

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yesPacking Material:  Bubble Wrap  Bubble Bags  None  OtherThermometer Used: 83 Type of Ice:  Wet  Blue  None

Cooler Temperature: 0.9

Temp should be above freezing to 6°C

PM: BM

Due Date: 10/05/18

CLIENT: GA Power-CCR

 Samples on ice, cooling process has begunDate and Initials of person examining  
contents: 9/28/18 MR

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

## Client Notification/ Resolution:

Field Data Required? Y / N

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

Comments/ Resolution:
_____
_____
_____
_____
_____
_____
_____
_____

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

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

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

October 26, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 269815

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
 Pace Project No.: 269815

---

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
Pace Project No.: 269815

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269815001	MCM-04	Water	09/27/18 12:44	09/28/18 09:00
269815002	MCM-05	Water	09/27/18 09:50	09/28/18 09:00
269815003	MCM-06	Water	09/27/18 11:08	09/28/18 09:00
269815004	MCM-07	Water	09/27/18 14:50	09/28/18 09:00
269815005	MCM-10	Water	09/27/18 10:42	09/28/18 09:00

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 269815

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
269815001	MCM-04	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269815002	MCM-05	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269815003	MCM-06	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269815004	MCM-07	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269815005	MCM-10	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 269815

---

<b>Sample: MCM-04</b>	<b>Lab ID: 269815001</b>	Collected: 09/27/18 12:44	Received: 09/28/18 09:00	Matrix: Water
PWS:	Site ID:	Sample Type:		

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>3.91 ± 0.801 (0.241)</b> C:98% T:NA	pCi/L	10/10/18 08:27	13982-63-3	
Radium-228	EPA 9320	<b>3.16 ± 0.816 (0.779)</b> C:73% T:77%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>7.07 ± 1.62 (1.02)</b>	pCi/L	10/19/18 13:53	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269815

**Sample: MCM-05**      Lab ID: **269815002**      Collected: 09/27/18 09:50      Received: 09/28/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.442 ± 0.253 (0.414)</b> C:98% T:NA	pCi/L	10/10/18 08:28	13982-63-3	
Radium-228	EPA 9320	<b>0.187 ± 0.386 (0.852)</b> C:70% T:81%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.629 ± 0.639 (1.27)</b>	pCi/L	10/19/18 13:53	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269815

**Sample: MCM-06**      Lab ID: **269815003**      Collected: 09/27/18 11:08      Received: 09/28/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.44 ± 0.401 (0.267)</b> C:104% T:NA	pCi/L	10/10/18 08:28	13982-63-3	
Radium-228	EPA 9320	<b>0.497 ± 0.367 (0.714)</b> C:73% T:83%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.94 ± 0.768 (0.981)</b>	pCi/L	10/19/18 13:53	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269815

**Sample: MCM-07**      Lab ID: **269815004**      Collected: 09/27/18 14:50      Received: 09/28/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>4.33 ± 0.865 (0.292)</b> C:101% T:NA	pCi/L	10/10/18 08:28	13982-63-3	
Radium-228	EPA 9320	<b>1.78 ± 0.572 (0.747)</b> C:68% T:88%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>6.11 ± 1.44 (1.04)</b>	pCi/L	10/19/18 13:53	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269815

**Sample: MCM-10**      Lab ID: **269815005**      Collected: 09/27/18 10:42      Received: 09/28/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.20 ± 0.375 (0.354)</b> C:101% T:NA	pCi/L	10/10/18 08:28	13982-63-3	
Radium-228	EPA 9320	<b>0.519 ± 0.361 (0.693)</b> C:75% T:85%	pCi/L	10/11/18 15:09	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.72 ± 0.736 (1.05)</b>	pCi/L	10/19/18 13:53	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269815

---

QC Batch: 315399 Analysis Method: EPA 9320

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

Associated Lab Samples: 269815001, 269815002, 269815003, 269815004, 269815005

---

METHOD BLANK: 1539349 Matrix: Water

Associated Lab Samples: 269815001, 269815002, 269815003, 269815004, 269815005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0552 ± 0.277 (0.660) C:75% T:91%	pCi/L	10/11/18 15:07	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269815

---

QC Batch: 315398 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 269815001, 269815002, 269815003, 269815004, 269815005

---

METHOD BLANK: 1539348 Matrix: Water

Associated Lab Samples: 269815001, 269815002, 269815003, 269815004, 269815005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0354 ± 0.113 (0.282) C:99% T:NA	pCi/L	10/10/18 08:13	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269815

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
 Pace Project No.: 269815

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269815001	MCM-04	EPA 9315	315398		
269815002	MCM-05	EPA 9315	315398		
269815003	MCM-06	EPA 9315	315398		
269815004	MCM-07	EPA 9315	315398		
269815005	MCM-10	EPA 9315	315398		
269815001	MCM-04	EPA 9320	315399		
269815002	MCM-05	EPA 9320	315399		
269815003	MCM-06	EPA 9320	315399		
269815004	MCM-07	EPA 9320	315399		
269815005	MCM-10	EPA 9320	315399		
269815001	MCM-04	Total Radium Calculation	317357		
269815002	MCM-05	Total Radium Calculation	317357		
269815003	MCM-06	Total Radium Calculation	317357		
269815004	MCM-07	Total Radium Calculation	317357		
269815005	MCM-10	Total Radium Calculation	317357		

## REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

# Sample Condition Upon Receipt

Pace Analytical

Client Name: GAPower

Project #

**WO# : 269815**

PM: BM

Due Date: 10/26/18

CLIENT: GAPower-CCR

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

Tracking #: 782980005643

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 83 Type of Ice: Wet Blue None

Cooler Temperature 0.9 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C Comments:

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 9/28/18 MR

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

**Client Notification/ Resolution:**

Field Data Required? Y / N

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

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

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

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

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

October 05, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 269817

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269817

---

### Atlanta Certification IDs

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

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Texas Certification #: T104704397-08-TX  
Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
 Pace Project No.: 269817

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269817001	MCM-01	Water	09/26/18 09:27	09/28/18 09:00
269817002	MCM-15	Water	09/26/18 14:25	09/28/18 09:00
269817003	MCM-16	Water	09/26/18 11:05	09/28/18 09:00
269817004	MCM-8	Water	09/26/18 14:31	09/28/18 09:00
269817005	MCM-2	Water	09/26/18 16:00	09/28/18 09:00
269817006	MCM-17	Water	09/26/18 17:27	09/28/18 09:00
269817007	MCM-17 Filtered	Water	09/26/18 17:43	09/28/18 09:00
269817008	Dup-2	Water	09/26/18 00:00	09/28/18 09:00
269817009	FBL 092618	Water	09/26/18 15:25	09/28/18 09:00
269817010	EQBL 092618	Water	09/26/18 15:30	09/28/18 09:00

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 269817

Lab ID	Sample ID	Method	Analysts	Analytes Reported
269817001	<b>MCM-01</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269817002	<b>MCM-15</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269817003	<b>MCM-16</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269817004	<b>MCM-8</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269817005	<b>MCM-2</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269817006	<b>MCM-17</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269817007	<b>MCM-17 Filtered</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269817008	<b>Dup-2</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269817009	<b>FBL 092618</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
269817010	<b>EQBL 092618</b>	EPA 6020B	CSW	14

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 269817

Lab ID	Sample ID	Method	Analysts	Analytics Reported
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269817

Sample: MCM-01		Lab ID: 269817001		Collected: 09/26/18 09:27		Received: 09/28/18 09:00		Matrix: Water	
Parameters	Results	Units	Report				Analyzed	CAS No.	Qual
			Limit	MDL	DF	Prepared			
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/02/18 11:06	10/04/18 22:21	7440-36-0	
Arsenic	<b>0.0081</b>	mg/L	0.0050	0.00057	1	10/02/18 11:06	10/04/18 22:21	7440-38-2	
Barium	<b>0.073</b>	mg/L	0.010	0.00078	1	10/02/18 11:06	10/04/18 22:21	7440-39-3	
Beryllium	<b>0.000092J</b>	mg/L	0.0030	0.000050	1	10/02/18 11:06	10/04/18 22:21	7440-41-7	
Boron	<b>0.038J</b>	mg/L	0.040	0.0039	1	10/02/18 11:06	10/04/18 22:21	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/02/18 11:06	10/04/18 22:21	7440-43-9	
Calcium	<b>12.8J</b>	mg/L	25.0	0.69	50	10/02/18 11:06	10/04/18 22:27	7440-70-2	D3
Chromium	ND	mg/L	0.010	0.0016	1	10/02/18 11:06	10/04/18 22:21	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/02/18 11:06	10/04/18 22:21	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/02/18 11:06	10/04/18 22:21	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/02/18 11:06	10/04/18 22:21	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/02/18 11:06	10/04/18 22:21	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/02/18 11:06	10/04/18 22:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/18 11:06	10/04/18 22:21	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:18	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>133</b>	mg/L	25.0	10.0	1			10/01/18 15:22	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>23.4</b>	mg/L	0.25	0.024	1			10/03/18 11:55	16887-00-6
Fluoride	<b>0.12J</b>	mg/L	0.30	0.029	1			10/03/18 11:55	16984-48-8
Sulfate	<b>54.1</b>	mg/L	2.0	0.034	2			10/03/18 21:36	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

Sample: MCM-15		Lab ID: 269817002		Collected: 09/26/18 14:25		Received: 09/28/18 09:00		Matrix: Water	
Parameters	Results	Units	Report				Analyzed	CAS No.	Qual
			Limit	MDL	DF	Prepared			
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/02/18 11:06	10/04/18 22:33	7440-36-0	
Arsenic	<b>0.0023J</b>	mg/L	0.0050	0.00057	1	10/02/18 11:06	10/04/18 22:33	7440-38-2	
Barium	<b>0.049</b>	mg/L	0.010	0.00078	1	10/02/18 11:06	10/04/18 22:33	7440-39-3	
Beryllium	<b>0.00039J</b>	mg/L	0.0030	0.000050	1	10/02/18 11:06	10/04/18 22:33	7440-41-7	
Boron	<b>0.060</b>	mg/L	0.040	0.0039	1	10/02/18 11:06	10/04/18 22:33	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/02/18 11:06	10/04/18 22:33	7440-43-9	
Calcium	<b>8.5J</b>	mg/L	25.0	0.69	50	10/02/18 11:06	10/04/18 22:38	7440-70-2	D3
Chromium	<b>0.0030J</b>	mg/L	0.010	0.0016	1	10/02/18 11:06	10/04/18 22:33	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/02/18 11:06	10/04/18 22:33	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/02/18 11:06	10/04/18 22:33	7439-92-1	
Lithium	<b>0.0018J</b>	mg/L	0.050	0.00097	1	10/02/18 11:06	10/04/18 22:33	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/02/18 11:06	10/04/18 22:33	7439-98-7	
Selenium	<b>0.0015J</b>	mg/L	0.010	0.0014	1	10/02/18 11:06	10/04/18 22:33	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/18 11:06	10/04/18 22:33	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:21	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>124</b>	mg/L	25.0	10.0	1			10/01/18 15:22	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>18.5</b>	mg/L	0.25	0.024	1			10/03/18 12:18	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			10/03/18 12:18	16984-48-8
Sulfate	<b>23.0</b>	mg/L	1.0	0.017	1			10/03/18 12:18	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

Sample: MCM-16		Lab ID: 269817003		Collected: 09/26/18 11:05		Received: 09/28/18 09:00		Matrix: Water	
Parameters	Results	Units	Report				Analyzed	CAS No.	Qual
			Limit	MDL	DF	Prepared			
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/02/18 11:06	10/03/18 22:10	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/02/18 11:06	10/03/18 22:10	7440-38-2	
Barium	<b>0.13</b>	mg/L	0.010	0.00078	1	10/02/18 11:06	10/03/18 22:10	7440-39-3	M1
Beryllium	<b>0.00019J</b>	mg/L	0.0030	0.000050	1	10/02/18 11:06	10/03/18 22:10	7440-41-7	
Boron	<b>0.072</b>	mg/L	0.040	0.0039	1	10/02/18 11:06	10/03/18 22:10	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/02/18 11:06	10/03/18 22:10	7440-43-9	
Calcium	<b>5.3</b>	mg/L	0.50	0.014	1	10/02/18 11:06	10/03/18 22:10	7440-70-2	M1
Chromium	ND	mg/L	0.010	0.0016	1	10/02/18 11:06	10/03/18 22:10	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/02/18 11:06	10/03/18 22:10	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/02/18 11:06	10/03/18 22:10	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/02/18 11:06	10/03/18 22:10	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/02/18 11:06	10/03/18 22:10	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/02/18 11:06	10/03/18 22:10	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/18 11:06	10/03/18 22:10	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:23	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>117</b>	mg/L	25.0	10.0	1			10/01/18 15:23	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>28.4</b>	mg/L	0.25	0.024	1			10/03/18 12:42	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			10/03/18 12:42	16984-48-8
Sulfate	<b>36.8</b>	mg/L	1.0	0.017	1			10/03/18 12:42	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269817

Sample: MCM-8	Lab ID: 269817004	Collected: 09/26/18 14:31	Received: 09/28/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/02/18 11:06	10/03/18 23:02	7440-36-0	
Arsenic	<b>0.023</b>	mg/L	0.0050	0.00057	1	10/02/18 11:06	10/03/18 23:02	7440-38-2	
Barium	<b>0.59</b>	mg/L	0.50	0.039	50	10/02/18 11:06	10/03/18 23:07	7440-39-3	
Beryllium	<b>0.00040J</b>	mg/L	0.0030	0.000050	1	10/02/18 11:06	10/03/18 23:02	7440-41-7	
Boron	<b>0.32</b>	mg/L	0.040	0.0039	1	10/02/18 11:06	10/03/18 23:02	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/02/18 11:06	10/03/18 23:02	7440-43-9	
Calcium	<b>42.6</b>	mg/L	25.0	0.69	50	10/02/18 11:06	10/03/18 23:07	7440-70-2	
Chromium	<b>0.0088J</b>	mg/L	0.010	0.0016	1	10/02/18 11:06	10/03/18 23:02	7440-47-3	
Cobalt	<b>0.0049J</b>	mg/L	0.010	0.00052	1	10/02/18 11:06	10/03/18 23:02	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/02/18 11:06	10/03/18 23:02	7439-92-1	
Lithium	<b>0.0021J</b>	mg/L	0.050	0.00097	1	10/02/18 11:06	10/03/18 23:02	7439-93-2	
Molybdenum	<b>0.0028J</b>	mg/L	0.010	0.0019	1	10/02/18 11:06	10/03/18 23:02	7439-98-7	
Selenium	<b>0.0059J</b>	mg/L	0.010	0.0014	1	10/02/18 11:06	10/03/18 23:02	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/18 11:06	10/03/18 23:02	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:26	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>3610</b>	mg/L	25.0	10.0	1			10/01/18 15:23	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>2040</b>	mg/L	12.5	1.2	50			10/05/18 12:53	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			10/03/18 13:05	16984-48-8
Sulfate	<b>423</b>	mg/L	50.0	0.85	50			10/05/18 12:53	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269817

Sample: MCM-2	Lab ID: 269817005	Collected: 09/26/18 16:00	Received: 09/28/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/02/18 11:06	10/03/18 23:13	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/02/18 11:06	10/03/18 23:13	7440-38-2	
Barium	0.11	mg/L	0.010	0.00078	1	10/02/18 11:06	10/03/18 23:13	7440-39-3	
Beryllium	0.00017J	mg/L	0.0030	0.000050	1	10/02/18 11:06	10/03/18 23:13	7440-41-7	
Boron	0.10	mg/L	0.040	0.0039	1	10/02/18 11:06	10/03/18 23:13	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/02/18 11:06	10/03/18 23:13	7440-43-9	
Calcium	4.6	mg/L	0.50	0.014	1	10/02/18 11:06	10/03/18 23:13	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/02/18 11:06	10/03/18 23:13	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/02/18 11:06	10/03/18 23:13	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/02/18 11:06	10/03/18 23:13	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/02/18 11:06	10/03/18 23:13	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/02/18 11:06	10/03/18 23:13	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/02/18 11:06	10/03/18 23:13	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/18 11:06	10/03/18 23:13	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:28	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	132	mg/L	25.0	10.0	1			10/01/18 15:23	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	33.4	mg/L	0.25	0.024	1			10/03/18 13:28	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			10/03/18 13:28	16984-48-8
Sulfate	39.6	mg/L	1.0	0.017	1			10/03/18 13:28	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269817

Sample: MCM-17	Lab ID: 269817006	Collected: 09/26/18 17:27	Received: 09/28/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/02/18 11:06	10/03/18 23:25	7440-36-0	
Arsenic	<b>0.0015J</b>	mg/L	0.0050	0.00057	1	10/02/18 11:06	10/03/18 23:25	7440-38-2	
Barium	<b>0.099</b>	mg/L	0.010	0.00078	1	10/02/18 11:06	10/03/18 23:25	7440-39-3	
Beryllium	<b>0.00024J</b>	mg/L	0.0030	0.000050	1	10/02/18 11:06	10/03/18 23:25	7440-41-7	
Boron	<b>1.3</b>	mg/L	0.040	0.0039	1	10/02/18 11:06	10/03/18 23:25	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/02/18 11:06	10/03/18 23:25	7440-43-9	
Calcium	<b>148</b>	mg/L	25.0	0.69	50	10/02/18 11:06	10/03/18 23:30	7440-70-2	
Chromium	<b>0.0092J</b>	mg/L	0.010	0.0016	1	10/02/18 11:06	10/03/18 23:25	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/02/18 11:06	10/03/18 23:25	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/02/18 11:06	10/03/18 23:25	7439-92-1	
Lithium	<b>0.020J</b>	mg/L	0.050	0.00097	1	10/02/18 11:06	10/03/18 23:25	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/02/18 11:06	10/03/18 23:25	7439-98-7	
Selenium	<b>0.0016J</b>	mg/L	0.010	0.0014	1	10/02/18 11:06	10/03/18 23:25	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/18 11:06	10/03/18 23:25	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:30	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>6920</b>	mg/L	25.0	10.0	1			10/01/18 15:23	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>4050</b>	mg/L	50.0	4.8	200			10/03/18 21:59	16887-00-6
Fluoride	<b>0.42</b>	mg/L	0.30	0.029	1			10/03/18 15:48	16984-48-8
Sulfate	<b>360</b>	mg/L	50.0	0.85	50			10/03/18 22:22	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

Sample: MCM-17 Filtered		Lab ID: 269817007		Collected: 09/26/18 17:43		Received: 09/28/18 09:00		Matrix: Water	
Parameters	Results	Units	Report Limit		DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS, Dissolved</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony, Dissolved	ND	mg/L	0.015	0.0039	5	10/02/18 11:54	10/04/18 23:13	7440-36-0	D3
Arsenic, Dissolved	<b>0.0034J</b>	mg/L	0.025	0.0028	5	10/02/18 11:54	10/04/18 23:13	7440-38-2	D3
Barium, Dissolved	<b>0.084</b>	mg/L	0.050	0.0039	5	10/02/18 11:54	10/04/18 23:13	7440-39-3	
Beryllium, Dissolved	ND	mg/L	0.015	0.00025	5	10/02/18 11:54	10/04/18 23:13	7440-41-7	D3
Boron, Dissolved	<b>1.7</b>	mg/L	0.20	0.020	5	10/02/18 11:54	10/04/18 23:13	7440-42-8	
Cadmium, Dissolved	ND	mg/L	0.0050	0.00046	5	10/02/18 11:54	10/04/18 23:13	7440-43-9	D3
Calcium, Dissolved	<b>137</b>	mg/L	25.0	0.69	50	10/02/18 11:54	10/04/18 23:18	7440-70-2	M6
Chromium, Dissolved	<b>0.0084J</b>	mg/L	0.050	0.0078	5	10/02/18 11:54	10/04/18 23:13	7440-47-3	D3
Cobalt, Dissolved	ND	mg/L	0.050	0.0026	5	10/02/18 11:54	10/04/18 23:13	7440-48-4	D3
Lead, Dissolved	ND	mg/L	0.025	0.0014	5	10/02/18 11:54	10/04/18 23:13	7439-92-1	D3
Lithium, Dissolved	<b>0.022J</b>	mg/L	0.25	0.0049	5	10/02/18 11:54	10/04/18 23:13	7439-93-2	D3
Molybdenum, Dissolved	ND	mg/L	0.050	0.0097	5	10/02/18 11:54	10/04/18 23:13	7439-98-7	D3
Selenium, Dissolved	ND	mg/L	0.050	0.0068	5	10/02/18 11:54	10/04/18 23:13	7782-49-2	D3
Thallium, Dissolved	ND	mg/L	0.0050	0.00071	5	10/02/18 11:54	10/04/18 23:13	7440-28-0	D3
<b>7470 Mercury, Dissolved</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury, Dissolved	ND	mg/L	0.00050	0.000036	1	10/03/18 12:46	10/03/18 17:11	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>6620</b>	mg/L	25.0	10.0	1			10/01/18 15:23	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>3880</b>	mg/L	25.0	2.4	100			10/05/18 13:14	16887-00-6
Fluoride	<b>0.46</b>	mg/L	0.30	0.029	1			10/03/18 16:11	16984-48-8
Sulfate	<b>306</b>	mg/L	50.0	0.85	50			10/05/18 12:32	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

Sample: Dup-2	Lab ID: 269817008	Collected: 09/26/18 00:00	Received: 09/28/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/02/18 11:06	10/03/18 23:36	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/02/18 11:06	10/03/18 23:36	7440-38-2	
Barium	<b>0.12</b>	mg/L	0.010	0.00078	1	10/02/18 11:06	10/03/18 23:36	7440-39-3	
Beryllium	<b>0.00018J</b>	mg/L	0.0030	0.000050	1	10/02/18 11:06	10/03/18 23:36	7440-41-7	
Boron	<b>0.070</b>	mg/L	0.040	0.0039	1	10/02/18 11:06	10/03/18 23:36	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/02/18 11:06	10/03/18 23:36	7440-43-9	
Calcium	<b>5.4</b>	mg/L	0.50	0.014	1	10/02/18 11:06	10/03/18 23:36	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/02/18 11:06	10/03/18 23:36	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/02/18 11:06	10/03/18 23:36	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/02/18 11:06	10/03/18 23:36	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/02/18 11:06	10/03/18 23:36	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/02/18 11:06	10/03/18 23:36	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/02/18 11:06	10/03/18 23:36	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/18 11:06	10/03/18 23:36	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:37	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>112</b>	mg/L	25.0	10.0	1			10/01/18 15:23	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>28.5</b>	mg/L	0.25	0.024	1			10/03/18 16:57	16887-00-6
Fluoride	<b>0.069J</b>	mg/L	0.30	0.029	1			10/03/18 16:57	16984-48-8
Sulfate	<b>36.4</b>	mg/L	1.0	0.017	1			10/03/18 16:57	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269817

Sample: FBL 092618	Lab ID: 269817009	Collected: 09/26/18 15:25	Received: 09/28/18 09:00	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	10/02/18 11:06	10/03/18 23:48	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/02/18 11:06	10/03/18 23:48	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	10/02/18 11:06	10/03/18 23:48	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/02/18 11:06	10/03/18 23:48	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	10/02/18 11:06	10/03/18 23:48	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/02/18 11:06	10/03/18 23:48	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	10/02/18 11:06	10/03/18 23:48	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/02/18 11:06	10/03/18 23:48	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/02/18 11:06	10/03/18 23:48	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/02/18 11:06	10/03/18 23:48	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/02/18 11:06	10/03/18 23:48	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/02/18 11:06	10/03/18 23:48	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/02/18 11:06	10/03/18 23:48	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/18 11:06	10/03/18 23:48	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:40	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>26.0</b>	mg/L	25.0	10.0	1			10/01/18 15:23	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>0.062J</b>	mg/L	0.25	0.024	1			10/03/18 17:21	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			10/03/18 17:21	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			10/03/18 17:21	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

Sample: EQBL 092618		Lab ID: 269817010		Collected: 09/26/18 15:30		Received: 09/28/18 09:00		Matrix: Water	
Parameters	Results	Units	Report				Analyzed	CAS No.	Qual
			Limit	MDL	DF	Prepared			
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	10/02/18 11:06	10/03/18 23:53	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	10/02/18 11:06	10/03/18 23:53	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	10/02/18 11:06	10/03/18 23:53	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	10/02/18 11:06	10/03/18 23:53	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	10/02/18 11:06	10/03/18 23:53	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	10/02/18 11:06	10/03/18 23:53	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	10/02/18 11:06	10/03/18 23:53	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	10/02/18 11:06	10/03/18 23:53	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	10/02/18 11:06	10/03/18 23:53	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	10/02/18 11:06	10/03/18 23:53	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	10/02/18 11:06	10/03/18 23:53	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	10/02/18 11:06	10/03/18 23:53	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	10/02/18 11:06	10/03/18 23:53	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	10/02/18 11:06	10/03/18 23:53	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	10/03/18 13:51	10/03/18 19:42	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>16.0J</b>	mg/L	25.0	10.0	1			10/01/18 15:23	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>0.11J</b>	mg/L	0.25	0.024	1			10/03/18 17:44	16887-00-6 B
Fluoride	ND	mg/L	0.30	0.029	1			10/03/18 17:44	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			10/03/18 17:44	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

QC Batch: 14661 Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury

Associated Lab Samples: 269817001, 269817002, 269817003, 269817004, 269817005, 269817006, 269817008, 269817009, 269817010

METHOD BLANK: 65448 Matrix: Water

Associated Lab Samples: 269817001, 269817002, 269817003, 269817004, 269817005, 269817006, 269817008, 269817009, 269817010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	10/03/18 18:39	

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

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

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QC Batch: 14659

Analysis Method: EPA 7470A

QC Batch Method: EPA 7470A

Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples:

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

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

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QC Batch: 14541

Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A

Analysis Description: 6020B MET

Associated Lab Samples:

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

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

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QC Batch: 14542

Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A

Analysis Description: 6020B MET

Associated Lab Samples:

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

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

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QC Batch: 14571

Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A

Analysis Description: 6020B MET Dissolved

Associated Lab Samples:

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

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

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QC Batch: 14462

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples:

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

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 269817

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QC Batch: 14555

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples:

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus Ash Ponds  
Pace Project No.: 269817

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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



## Sample Condition Upon Receipt

Client Name: GIA Power

Project #

WO# : 269817

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace OtherTracking #: 7829 8005 7581Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes Packing Material:  Bubble Wrap  Bubble Bags  None  OtherThermometer Used 83 Type of Ice:  Wet  Blue  NoneCooler Temperature 0'1

Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes  No

Comments:

PM: BM

Due Date: 10/05/18

CLIENT: GIA Power-CCR

 Samples on ice, cooling process has begunDate and Initials of person examining contents: 9/28/18 MR

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

## Client Notification/ Resolution:

Field Data Required? Y / N

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

Comments/ Resolution:

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

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

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

October 26, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 269818

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
 Pace Project No.: 269818

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds

Pace Project No.: 269818

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
269818001	<b>MCM-01</b>	Water	09/26/18 09:27	09/28/18 09:00
269818002	<b>MCM-15</b>	Water	09/26/18 14:25	09/28/18 09:00
269818003	<b>MCM-16</b>	Water	09/26/18 11:05	09/28/18 09:00
269818004	<b>MCM-8</b>	Water	09/26/18 14:31	09/28/18 09:00
269818005	<b>MCM-2</b>	Water	09/26/18 16:00	09/28/18 09:00
269818006	<b>MCM-17</b>	Water	09/26/18 17:27	09/28/18 09:00
269818007	<b>MCM-17 Filtered</b>	Water	09/26/18 17:43	09/28/18 09:00
269818008	<b>Dup-2</b>	Water	09/26/18 00:00	09/28/18 09:00
269818009	<b>FBL 092618</b>	Water	09/26/18 15:25	09/28/18 09:00
269818010	<b>EQBL 092618</b>	Water	09/26/18 15:30	09/28/18 09:00

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 269818

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
269818001	MCM-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269818002	MCM-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269818003	MCM-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269818004	MCM-8	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269818005	MCM-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269818006	MCM-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269818007	MCM-17 Filtered	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269818008	Dup-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269818009	FBL 092618	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
269818010	EQBL 092618	EPA 9315	LAL	1	PASI-PA
		EPA 9320	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269818

**Sample: MCM-01**      Lab ID: **269818001**      Collected: 09/26/18 09:27      Received: 09/28/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.284 ± 0.186 (0.294)</b> C:96% T:NA	pCi/L	10/10/18 08:14	13982-63-3	
Radium-228	EPA 9320	<b>0.436 ± 0.396 (0.807)</b> C:74% T:83%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.720 ± 0.582 (1.10)</b>	pCi/L	10/19/18 13:53	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 269818

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<b>Sample: MCM-15</b>	<b>Lab ID: 269818002</b>	Collected: 09/26/18 14:25	Received: 09/28/18 09:00	Matrix: Water
PWS:	Site ID:	Sample Type:		

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.471 ± 0.228 (0.320)</b> C:104% T:NA	pCi/L	10/10/18 08:14	13982-63-3	
Radium-228	EPA 9320	<b>0.166 ± 0.354 (0.784)</b> C:72% T:85%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.637 ± 0.582 (1.10)</b>	pCi/L	10/19/18 13:53	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 269818

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<b>Sample: MCM-16</b>	<b>Lab ID: 269818003</b>	Collected: 09/26/18 11:05	Received: 09/28/18 09:00	Matrix: Water
PWS:	Site ID:	Sample Type:		

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.895 ± 0.311 (0.315)</b> C:99% T:NA	pCi/L	10/10/18 08:14	13982-63-3	
Radium-228	EPA 9320	<b>0.669 ± 0.406 (0.755)</b> C:75% T:80%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.56 ± 0.717 (1.07)</b>	pCi/L	10/19/18 13:53	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269818

<b>Sample: MCM-8</b>	<b>Lab ID: 269818004</b>	Collected: 09/26/18 14:31	Received: 09/28/18 09:00	Matrix: Water
PWS:	Site ID:	Sample Type:		

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>15.8 ± 2.59 (0.274)</b> C:99% T:NA	pCi/L	10/10/18 08:14	13982-63-3	
Radium-228	EPA 9320	<b>6.84 ± 1.52 (1.16)</b> C:74% T:71%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>22.6 ± 4.11 (1.43)</b>	pCi/L	10/19/18 13:53	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 269818

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<b>Sample: MCM-2</b>	<b>Lab ID: 269818005</b>	Collected: 09/26/18 16:00	Received: 09/28/18 09:00	Matrix: Water
PWS:	Site ID:	Sample Type:		

---

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.441 ± 0.236 (0.352)</b> C:99% T:NA	pCi/L	10/10/18 08:14	13982-63-3	
Radium-228	EPA 9320	<b>0.289 ± 0.385 (0.821)</b> C:71% T:85%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.730 ± 0.621 (1.17)</b>	pCi/L	10/19/18 13:53	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269818

**Sample: MCM-17**      Lab ID: **269818006**      Collected: 09/26/18 17:27      Received: 09/28/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.16 ± 0.543 (0.276)</b> C:83% T:NA	pCi/L	10/10/18 08:14	13982-63-3	
Radium-228	EPA 9320	<b>0.939 ± 0.433 (0.733)</b> C:71% T:91%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.10 ± 0.976 (1.01)</b>	pCi/L	10/19/18 13:53	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269818

**Sample: MCM-17 Filtered**      Lab ID: **269818007**      Collected: 09/26/18 17:43      Received: 09/28/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.27 ± 0.543 (0.287)</b> C:99% T:NA	pCi/L	10/10/18 08:14	13982-63-3	
Radium-228	EPA 9320	<b>0.934 ± 0.495 (0.891)</b> C:71% T:80%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.20 ± 1.04 (1.18)</b>	pCi/L	10/19/18 13:53	7440-14-4	

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

## **ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: Plant McManus Ash Ponds

Pace Project No.: 269818

**Sample:** Dup-2      **Lab ID:** 269818008      Collected: 09/26/18 00:00      Received: 09/28/18 09:00      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.830 ± 0.296 (0.290)</b> C:97% T:NA	pCi/L	10/10/18 08:15	13982-63-3	
Radium-228	EPA 9320	<b>0.328 ± 0.374 (0.786)</b> C:71% T:86%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.16 ± 0.670 (1.08)</b>	pCi/L	10/19/18 13:53	7440-14-4	

## **REPORT OF LABORATORY ANALYSIS**

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269818

**Sample: FBL 092618**      Lab ID: **269818009**      Collected: 09/26/18 15:25      Received: 09/28/18 09:00      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0680 ± 0.153 (0.359)</b> C:104% T:NA	pCi/L	10/10/18 08:15	13982-63-3	
Radium-228	EPA 9320	<b>0.0457 ± 0.283 (0.652)</b> C:75% T:84%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.114 ± 0.436 (1.01)</b>	pCi/L	10/19/18 13:53	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269818

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Sample: EQBL 092618	Lab ID: 269818010	Collected: 09/26/18 15:30	Received: 09/28/18 09:00	Matrix: Water
PWS:	Site ID:	Sample Type:		

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Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.110 ± 0.163 (0.357)</b> C:101% T:NA	pCi/L	10/10/18 08:15	13982-63-3	
Radium-228	EPA 9320	<b>-0.167 ± 0.324 (0.783)</b> C:75% T:89%	pCi/L	10/11/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.110 ± 0.487 (1.14)</b>	pCi/L	10/19/18 13:53	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 269818

QC Batch: 315399 Analysis Method: EPA 9320

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

Associated Lab Samples: 269818001, 269818002, 269818003, 269818004, 269818005, 269818006, 269818007, 269818008, 269818009, 269818010

METHOD BLANK: 1539349 Matrix: Water

Associated Lab Samples: 269818001, 269818002, 269818003, 269818004, 269818005, 269818006, 269818007, 269818008, 269818009, 269818010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0552 ± 0.277 (0.660) C:75% T:91%	pCi/L	10/11/18 15:07	

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

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 269818

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QC Batch: 315398 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 269818001, 269818002, 269818003, 269818004, 269818005, 269818006, 269818007, 269818008, 269818009,  
269818010

---

METHOD BLANK: 1539348 Matrix: Water  
Associated Lab Samples: 269818001, 269818002, 269818003, 269818004, 269818005, 269818006, 269818007, 269818008, 269818009,  
269818010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0354 ± 0.113 (0.282) C:99% T:NA	pCi/L	10/10/18 08:13	

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

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 269818

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
 Pace Project No.: 269818

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
269818001	MCM-01	EPA 9315	315398		
269818002	MCM-15	EPA 9315	315398		
269818003	MCM-16	EPA 9315	315398		
269818004	MCM-8	EPA 9315	315398		
269818005	MCM-2	EPA 9315	315398		
269818006	MCM-17	EPA 9315	315398		
269818007	MCM-17 Filtered	EPA 9315	315398		
269818008	Dup-2	EPA 9315	315398		
269818009	FBL 092618	EPA 9315	315398		
269818010	EQBL 092618	EPA 9315	315398		
269818001	MCM-01	EPA 9320	315399		
269818002	MCM-15	EPA 9320	315399		
269818003	MCM-16	EPA 9320	315399		
269818004	MCM-8	EPA 9320	315399		
269818005	MCM-2	EPA 9320	315399		
269818006	MCM-17	EPA 9320	315399		
269818007	MCM-17 Filtered	EPA 9320	315399		
269818008	Dup-2	EPA 9320	315399		
269818009	FBL 092618	EPA 9320	315399		
269818010	EQBL 092618	EPA 9320	315399		
269818001	MCM-01	Total Radium Calculation	317357		
269818002	MCM-15	Total Radium Calculation	317357		
269818003	MCM-16	Total Radium Calculation	317357		
269818004	MCM-8	Total Radium Calculation	317357		
269818005	MCM-2	Total Radium Calculation	317357		
269818006	MCM-17	Total Radium Calculation	317357		
269818007	MCM-17 Filtered	Total Radium Calculation	317357		
269818008	Dup-2	Total Radium Calculation	317357		
269818009	FBL 092618	Total Radium Calculation	317357		
269818010	EQBL 092618	Total Radium Calculation	317357		

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CHAIN-OF-CUSTODY / Analytical Request Document

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

# Sample Condition Upon Receipt

Pace Analytical

Client Name:

*GIA Power*

Project #

WO# : 269818

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other

Tracking #: *7829 8005 7581*

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used *83* Type of Ice:  Wet  Blue  None

Cooler Temperature *0°1*

Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes  No

Comments:

Samples on ice, cooling process has begun

Date and Initials of person examining contents: *9/28/18 MR*

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

## Client Notification/ Resolution:

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

Field Data Required? Y / N

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

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

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

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

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

November 15, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on November 07, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

This report replaces the November 14, 2018 final report. This report was re-issued to revise incorrect dilution factor entry on samples MCM-07, MCM-09, and MCM-14 for 300.0 analysis. No other changes have been made to this report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta

Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

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### Atlanta Certification IDs

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

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Texas Certification #: T104704397-08-TX  
Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2611266001	MCM-04	Water	11/06/18 15:45	11/07/18 09:25
2611266002	MCM-07	Water	11/06/18 15:20	11/07/18 09:25
2611266003	MCM-09	Water	11/06/18 13:45	11/07/18 09:25
2611266004	MCM-10	Water	11/06/18 14:22	11/07/18 09:25
2611266005	MCM-11	Water	11/06/18 11:32	11/07/18 09:25
2611266006	MCM-14	Water	11/06/18 14:38	11/07/18 09:25
2611266007	MCM-17	Water	11/06/18 11:14	11/07/18 09:25
2611266008	FBL 110618	Water	11/06/18 15:26	11/07/18 09:25
2611266009	EQBL 110618	Water	11/06/18 15:32	11/07/18 09:25
2611266010	Dup-1	Water	11/06/18 00:00	11/07/18 09:25

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2611266001	MCM-04	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611266002	MCM-07	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611266003	MCM-09	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611266004	MCM-10	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611266005	MCM-11	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611266006	MCM-14	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611266007	MCM-17	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611266008	FBL 110618	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611266009	EQBL 110618	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611266010	Dup-1	EPA 6020B	CSW	14

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Lab ID	Sample ID	Method	Analysts	Analytics Reported
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Sample: MCM-04		Lab ID: 2611266001		Collected: 11/06/18 15:45		Received: 11/07/18 09:25		Matrix: Water		
Parameters	Results	Units	Report Limit				Prepared	Analyzed	CAS No.	Qual
			MDL	DF						
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	11/08/18 10:56	11/09/18 14:12	7440-36-0		
Arsenic	<b>0.013</b>	mg/L	0.0050	0.00057	1	11/08/18 10:56	11/09/18 14:12	7440-38-2		
Barium	<b>0.31</b>	mg/L	0.010	0.00078	1	11/08/18 10:56	11/09/18 14:12	7440-39-3		
Beryllium	<b>0.00077J</b>	mg/L	0.0030	0.000050	1	11/08/18 10:56	11/09/18 14:12	7440-41-7		
Boron	<b>0.060</b>	mg/L	0.040	0.0039	1	11/08/18 10:56	11/09/18 14:12	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	11/08/18 10:56	11/09/18 14:12	7440-43-9		
Calcium	<b>39.5</b>	mg/L	25.0	0.69	50	11/08/18 10:56	11/09/18 14:17	7440-70-2	M6	
Chromium	<b>0.0017J</b>	mg/L	0.010	0.0016	1	11/08/18 10:56	11/09/18 14:12	7440-47-3		
Cobalt	<b>0.0048J</b>	mg/L	0.010	0.00052	1	11/08/18 10:56	11/09/18 14:12	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	11/08/18 10:56	11/09/18 14:12	7439-92-1		
Lithium	<b>0.0038J</b>	mg/L	0.050	0.00097	1	11/08/18 10:56	11/09/18 14:12	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	11/08/18 10:56	11/09/18 14:12	7439-98-7		
Selenium	<b>0.0025J</b>	mg/L	0.010	0.0014	1	11/08/18 10:56	11/09/18 14:12	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	11/08/18 10:56	11/09/18 14:12	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.00071</b>	mg/L	0.00050	0.000036	1	11/08/18 16:01	11/09/18 12:42	7439-97-6	B	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>388</b>	mg/L	25.0	10.0	1			11/12/18 09:51		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>107</b>	mg/L	2.5	0.24	10			11/13/18 21:45	16887-00-6	M1
Fluoride	ND	mg/L	0.30	0.029	1			11/12/18 19:56	16984-48-8	
Sulfate	<b>136</b>	mg/L	10.0	0.17	10			11/13/18 21:45	14808-79-8	M1

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Sample: MCM-07		Lab ID: 2611266002		Collected: 11/06/18 15:20		Received: 11/07/18 09:25		Matrix: Water	
Parameters	Results	Units	Report				Analyzed	CAS No.	Qual
			Limit	MDL	DF	Prepared			
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	11/08/18 10:56	11/09/18 15:23	7440-36-0	
Arsenic	<b>0.012</b>	mg/L	0.0050	0.00057	1	11/08/18 10:56	11/09/18 15:23	7440-38-2	
Barium	<b>0.12</b>	mg/L	0.010	0.00078	1	11/08/18 10:56	11/09/18 15:23	7440-39-3	
Beryllium	<b>0.00012J</b>	mg/L	0.0030	0.000050	1	11/08/18 10:56	11/09/18 15:23	7440-41-7	B
Boron	<b>1.1</b>	mg/L	0.040	0.0039	1	11/08/18 10:56	11/09/18 15:23	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/08/18 10:56	11/09/18 15:23	7440-43-9	
Calcium	<b>219</b>	mg/L	25.0	0.69	50	11/08/18 10:56	11/09/18 15:28	7440-70-2	
Chromium	<b>0.0020J</b>	mg/L	0.010	0.0016	1	11/08/18 10:56	11/09/18 15:23	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/08/18 10:56	11/09/18 15:23	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/08/18 10:56	11/09/18 15:23	7439-92-1	
Lithium	<b>0.037J</b>	mg/L	0.050	0.00097	1	11/08/18 10:56	11/09/18 15:23	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/08/18 10:56	11/09/18 15:23	7439-98-7	
Selenium	<b>0.0048J</b>	mg/L	0.010	0.0014	1	11/08/18 10:56	11/09/18 15:23	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/08/18 10:56	11/09/18 15:23	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.00067</b>	mg/L	0.00050	0.000036	1	11/08/18 16:01	11/09/18 12:51	7439-97-6	B
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>11000</b>	mg/L	25.0	10.0	1			11/12/18 09:51	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>6520</b>	mg/L	50.0	4.8	200			11/14/18 12:05	16887-00-6
Fluoride	<b>0.086J</b>	mg/L	0.30	0.029	1			11/12/18 21:04	16984-48-8
Sulfate	<b>926</b>	mg/L	100	1.7	100			11/13/18 22:08	14808-79-8
									M1

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Sample: MCM-09		Lab ID: 2611266003		Collected: 11/06/18 13:45		Received: 11/07/18 09:25		Matrix: Water		
Parameters	Results	Units	Report Limit				Prepared	Analyzed	CAS No.	Qual
			MDL	DF						
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	11/08/18 10:56	11/09/18 15:34	7440-36-0		
Arsenic	<b>0.00066J</b>	mg/L	0.0050	0.00057	1	11/08/18 10:56	11/09/18 15:34	7440-38-2		
Barium	<b>0.13</b>	mg/L	0.010	0.00078	1	11/08/18 10:56	11/09/18 15:34	7440-39-3		
Beryllium	<b>0.00030J</b>	mg/L	0.0030	0.000050	1	11/08/18 10:56	11/09/18 15:34	7440-41-7	B	
Boron	<b>0.087</b>	mg/L	0.040	0.0039	1	11/08/18 10:56	11/09/18 15:34	7440-42-8		
Cadmium	ND	mg/L	0.0010	0.000093	1	11/08/18 10:56	11/09/18 15:34	7440-43-9		
Calcium	<b>301</b>	mg/L	25.0	0.69	50	11/08/18 10:56	11/09/18 15:40	7440-70-2		
Chromium	ND	mg/L	0.010	0.0016	1	11/08/18 10:56	11/09/18 15:34	7440-47-3		
Cobalt	ND	mg/L	0.010	0.00052	1	11/08/18 10:56	11/09/18 15:34	7440-48-4		
Lead	ND	mg/L	0.0050	0.00027	1	11/08/18 10:56	11/09/18 15:34	7439-92-1		
Lithium	<b>0.061</b>	mg/L	0.050	0.00097	1	11/08/18 10:56	11/09/18 15:34	7439-93-2		
Molybdenum	ND	mg/L	0.010	0.0019	1	11/08/18 10:56	11/09/18 15:34	7439-98-7		
Selenium	ND	mg/L	0.010	0.0014	1	11/08/18 10:56	11/09/18 15:34	7782-49-2		
Thallium	ND	mg/L	0.0010	0.00014	1	11/08/18 10:56	11/09/18 15:34	7440-28-0		
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.00068</b>	mg/L	0.00050	0.000036	1	11/08/18 16:01	11/09/18 12:53	7439-97-6	B	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C								
Total Dissolved Solids	<b>3340</b>	mg/L	25.0	10.0	1			11/12/18 09:51		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0								
Chloride	<b>1610</b>	mg/L	12.5	1.2	50			11/14/18 12:27	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1			11/12/18 21:27	16984-48-8	
Sulfate	<b>534</b>	mg/L	50.0	0.85	50			11/14/18 12:27	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Sample: MCM-10	Lab ID: 2611266004	Collected: 11/06/18 14:22	Received: 11/07/18 09:25	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	11/08/18 10:56	11/09/18 15:46	7440-36-0	
Arsenic	<b>0.049</b>	mg/L	0.0050	0.00057	1	11/08/18 10:56	11/09/18 15:46	7440-38-2	
Barium	<b>0.016</b>	mg/L	0.010	0.00078	1	11/08/18 10:56	11/09/18 15:46	7440-39-3	
Beryllium	<b>0.020</b>	mg/L	0.0030	0.000050	1	11/08/18 10:56	11/09/18 15:46	7440-41-7	
Boron	<b>0.19</b>	mg/L	0.040	0.0039	1	11/08/18 10:56	11/09/18 15:46	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/08/18 10:56	11/09/18 15:46	7440-43-9	
Calcium	<b>71.2</b>	mg/L	25.0	0.69	50	11/08/18 10:56	11/09/18 15:51	7440-70-2	
Chromium	<b>0.0036J</b>	mg/L	0.010	0.0016	1	11/08/18 10:56	11/09/18 15:46	7440-47-3	
Cobalt	<b>0.016</b>	mg/L	0.010	0.00052	1	11/08/18 10:56	11/09/18 15:46	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/08/18 10:56	11/09/18 15:46	7439-92-1	
Lithium	<b>0.12</b>	mg/L	0.050	0.00097	1	11/08/18 10:56	11/09/18 15:46	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/08/18 10:56	11/09/18 15:46	7439-98-7	
Selenium	<b>0.041</b>	mg/L	0.010	0.0014	1	11/08/18 10:56	11/09/18 15:46	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/08/18 10:56	11/09/18 15:46	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.00066</b>	mg/L	0.00050	0.000036	1	11/08/18 16:01	11/09/18 12:56	7439-97-6	B
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>3600</b>	mg/L	25.0	10.0	1			11/12/18 09:51	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>696</b>	mg/L	12.5	1.2	50			11/13/18 22:53	16887-00-6
Fluoride	<b>0.89</b>	mg/L	0.30	0.029	1			11/12/18 21:49	16984-48-8
Sulfate	<b>2050</b>	mg/L	50.0	0.85	50			11/13/18 22:53	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Sample: MCM-11	Lab ID: 2611266005	Collected: 11/06/18 11:32	Received: 11/07/18 09:25	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	11/08/18 10:56	11/09/18 15:57	7440-36-0	
Arsenic	<b>0.0043J</b>	mg/L	0.0050	0.00057	1	11/08/18 10:56	11/09/18 15:57	7440-38-2	
Barium	<b>0.031</b>	mg/L	0.010	0.00078	1	11/08/18 10:56	11/09/18 15:57	7440-39-3	
Beryllium	<b>0.00012J</b>	mg/L	0.0030	0.000050	1	11/08/18 10:56	11/09/18 15:57	7440-41-7	B
Boron	<b>0.046</b>	mg/L	0.040	0.0039	1	11/08/18 10:56	11/09/18 15:57	7440-42-8	B
Cadmium	ND	mg/L	0.0010	0.000093	1	11/08/18 10:56	11/09/18 15:57	7440-43-9	
Calcium	<b>1.8</b>	mg/L	0.50	0.014	1	11/08/18 10:56	11/09/18 15:57	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/08/18 10:56	11/09/18 15:57	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/08/18 10:56	11/09/18 15:57	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/08/18 10:56	11/09/18 15:57	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	11/08/18 10:56	11/09/18 15:57	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/08/18 10:56	11/09/18 15:57	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	11/08/18 10:56	11/09/18 15:57	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/08/18 10:56	11/09/18 15:57	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.00070</b>	mg/L	0.00050	0.000036	1	11/08/18 16:01	11/09/18 12:58	7439-97-6	B
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>89.0</b>	mg/L	25.0	10.0	1			11/12/18 09:51	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>9.8</b>	mg/L	0.25	0.024	1			11/12/18 22:12	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			11/12/18 22:12	16984-48-8
Sulfate	<b>25.2</b>	mg/L	1.0	0.017	1			11/12/18 22:12	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Sample: MCM-14	Lab ID: 2611266006	Collected: 11/06/18 14:38	Received: 11/07/18 09:25	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	11/08/18 10:56	11/09/18 16:09	7440-36-0	
Arsenic	<b>0.0014J</b>	mg/L	0.0050	0.00057	1	11/08/18 10:56	11/09/18 16:09	7440-38-2	
Barium	<b>0.10</b>	mg/L	0.010	0.00078	1	11/08/18 10:56	11/09/18 16:09	7440-39-3	
Beryllium	<b>0.000097J</b>	mg/L	0.0030	0.000050	1	11/08/18 10:56	11/09/18 16:09	7440-41-7	B
Boron	<b>0.75</b>	mg/L	0.040	0.0039	1	11/08/18 10:56	11/09/18 16:09	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/08/18 10:56	11/09/18 16:09	7440-43-9	
Calcium	<b>297</b>	mg/L	25.0	0.69	50	11/08/18 10:56	11/09/18 16:14	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/08/18 10:56	11/09/18 16:09	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/08/18 10:56	11/09/18 16:09	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/08/18 10:56	11/09/18 16:09	7439-92-1	
Lithium	<b>0.047J</b>	mg/L	0.050	0.00097	1	11/08/18 10:56	11/09/18 16:09	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/08/18 10:56	11/09/18 16:09	7439-98-7	
Selenium	<b>0.0057J</b>	mg/L	0.010	0.0014	1	11/08/18 10:56	11/09/18 16:09	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/08/18 10:56	11/09/18 16:09	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.00066</b>	mg/L	0.00050	0.000036	1	11/08/18 16:01	11/09/18 13:05	7439-97-6	B
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>11100</b>	mg/L	25.0	10.0	1			11/12/18 09:51	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>6020</b>	mg/L	50.0	4.8	200			11/14/18 12:50	16887-00-6
Fluoride	<b>0.084J</b>	mg/L	0.30	0.029	1			11/12/18 22:35	16984-48-8
Sulfate	<b>875</b>	mg/L	50.0	0.85	50			11/13/18 23:38	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Sample: MCM-17		Lab ID: 2611266007		Collected: 11/06/18 11:14		Received: 11/07/18 09:25		Matrix: Water	
Parameters	Results	Units	Report Limit						Qual
			MDL	DF	Prepared	Analyzed	CAS No.		
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.015	0.0039	5	11/08/18 10:56	11/12/18 14:38	7440-36-0	D3
Arsenic	ND	mg/L	0.025	0.0028	5	11/08/18 10:56	11/12/18 14:38	7440-38-2	D3
Barium	<b>0.052</b>	mg/L	0.050	0.0039	5	11/08/18 10:56	11/12/18 14:38	7440-39-3	
Beryllium	<b>0.00026J</b>	mg/L	0.015	0.00025	5	11/08/18 10:56	11/12/18 14:38	7440-41-7	B,D3
Boron	<b>1.8</b>	mg/L	0.20	0.020	5	11/08/18 10:56	11/12/18 14:38	7440-42-8	
Cadmium	ND	mg/L	0.0050	0.00046	5	11/08/18 10:56	11/12/18 14:38	7440-43-9	D3
Calcium	<b>24.7</b>	mg/L	2.5	0.069	5	11/08/18 10:56	11/12/18 14:38	7440-70-2	
Chromium	ND	mg/L	0.050	0.0078	5	11/08/18 10:56	11/12/18 14:38	7440-47-3	D3
Cobalt	ND	mg/L	0.050	0.0026	5	11/08/18 10:56	11/12/18 14:38	7440-48-4	D3
Lead	ND	mg/L	0.025	0.0014	5	11/08/18 10:56	11/12/18 14:38	7439-92-1	D3
Lithium	<b>0.017J</b>	mg/L	0.25	0.0049	5	11/08/18 10:56	11/12/18 14:38	7439-93-2	D3
Molybdenum	ND	mg/L	0.050	0.0097	5	11/08/18 10:56	11/12/18 14:38	7439-98-7	D3
Selenium	ND	mg/L	0.050	0.0068	5	11/08/18 10:56	11/12/18 14:38	7782-49-2	D3
Thallium	ND	mg/L	0.0050	0.00071	5	11/08/18 10:56	11/12/18 14:38	7440-28-0	D3
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.00064</b>	mg/L	0.00050	0.000036	1	11/08/18 16:01	11/09/18 13:08	7439-97-6	B
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>4160</b>	mg/L	25.0	10.0	1			11/12/18 09:51	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>2230</b>	mg/L	12.5	1.2	50			11/14/18 00:01	16887-00-6
Fluoride	<b>0.40</b>	mg/L	0.30	0.029	1			11/12/18 22:57	16984-48-8
Sulfate	<b>182</b>	mg/L	10.0	0.17	10			11/14/18 00:23	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Sample: FBL 110618	Lab ID: 2611266008	Collected: 11/06/18 15:26	Received: 11/07/18 09:25	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	11/08/18 10:56	11/12/18 14:50	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	11/08/18 10:56	11/12/18 14:50	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	11/08/18 10:56	11/12/18 14:50	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	11/08/18 10:56	11/12/18 14:50	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	11/08/18 10:56	11/12/18 14:50	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/08/18 10:56	11/12/18 14:50	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	11/08/18 10:56	11/12/18 14:50	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/08/18 10:56	11/12/18 14:50	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/08/18 10:56	11/12/18 14:50	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/08/18 10:56	11/12/18 14:50	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	11/08/18 10:56	11/12/18 14:50	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/08/18 10:56	11/12/18 14:50	7439-98-7	
Selenium	<b>0.0014J</b>	mg/L	0.010	0.0014	1	11/08/18 10:56	11/12/18 14:50	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/08/18 10:56	11/12/18 14:50	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.00075</b>	mg/L	0.00050	0.000036	1	11/08/18 16:01	11/09/18 13:10	7439-97-6	B
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>20.0J</b>	mg/L	25.0	10.0	1			11/12/18 09:51	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>0.30</b>	mg/L	0.25	0.024	1			11/12/18 23:20	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			11/12/18 23:20	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			11/12/18 23:20	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Sample: EQBL 110618	Lab ID: 2611266009	Collected: 11/06/18 15:32	Received: 11/07/18 09:25	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	11/08/18 10:56	11/12/18 14:56	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	11/08/18 10:56	11/12/18 14:56	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	11/08/18 10:56	11/12/18 14:56	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	11/08/18 10:56	11/12/18 14:56	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	11/08/18 10:56	11/12/18 14:56	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/08/18 10:56	11/12/18 14:56	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	11/08/18 10:56	11/12/18 14:56	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/08/18 10:56	11/12/18 14:56	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/08/18 10:56	11/12/18 14:56	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/08/18 10:56	11/12/18 14:56	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	11/08/18 10:56	11/12/18 14:56	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/08/18 10:56	11/12/18 14:56	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	11/08/18 10:56	11/12/18 14:56	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/08/18 10:56	11/12/18 14:56	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	<b>0.00066</b>	mg/L	0.00050	0.000036	1	11/08/18 16:01	11/09/18 13:12	7439-97-6	B
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>17.0J</b>	mg/L	25.0	10.0	1			11/12/18 09:51	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>0.082J</b>	mg/L	0.25	0.024	1			11/13/18 01:13	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			11/13/18 01:13	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			11/13/18 01:13	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Sample: Dup-1	Lab ID: 2611266010	Collected: 11/06/18 00:00	Received: 11/07/18 09:25	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	11/08/18 10:56	11/12/18 15:01	7440-36-0	
Arsenic	<b>0.0045J</b>	mg/L	0.0050	0.00057	1	11/08/18 10:56	11/12/18 15:01	7440-38-2	
Barium	<b>0.030</b>	mg/L	0.010	0.00078	1	11/08/18 10:56	11/12/18 15:01	7440-39-3	
Beryllium	<b>0.00013J</b>	mg/L	0.0030	0.000050	1	11/08/18 10:56	11/12/18 15:01	7440-41-7	B
Boron	<b>0.044</b>	mg/L	0.040	0.0039	1	11/08/18 10:56	11/12/18 15:01	7440-42-8	B
Cadmium	ND	mg/L	0.0010	0.000093	1	11/08/18 10:56	11/12/18 15:01	7440-43-9	
Calcium	<b>1.7</b>	mg/L	0.50	0.014	1	11/08/18 10:56	11/12/18 15:01	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/08/18 10:56	11/12/18 15:01	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/08/18 10:56	11/12/18 15:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/08/18 10:56	11/12/18 15:01	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	11/08/18 10:56	11/12/18 15:01	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/08/18 10:56	11/12/18 15:01	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	11/08/18 10:56	11/12/18 15:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/08/18 10:56	11/12/18 15:01	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	<b>0.00065</b>	mg/L	0.00050	0.000036	1	11/08/18 16:01	11/09/18 13:15	7439-97-6	B
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>82.0</b>	mg/L	25.0	10.0	1			11/12/18 09:51	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>9.3</b>	mg/L	0.25	0.024	1			11/13/18 01:36	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			11/13/18 01:36	16984-48-8
Sulfate	<b>23.7</b>	mg/L	1.0	0.017	1			11/13/18 01:36	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## **QUALITY CONTROL DATA**

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

QC Batch: 16801 Analysis Method: EPA 7470A  
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury  
Associated Lab Samples: 2611266001, 2611266002, 2611266003, 2611266004, 2611266005, 2611266006, 2611266007, 2611266009, 2611266010

METHOD BLANK: 75423 Matrix: Water  
Associated Lab Samples: 2611266001, 2611266002, 2611266003, 2611266004, 2611266005, 2611266006, 2611266009, 2611266010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	0.00012J	0.00050	0.000036	11/09/18 12:37	

LABORATORY CONTROL SAMPLE: 75424

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0026	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 75425 75426

Parameter	Units	MS		MSD		MS		MSD		% Rec		Max	
		2611266001	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Mercury	mg/L	0.00071	.0025	.0025	0.0029	0.0031	89	96	75-125	5	20		

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## **REPORT OF LABORATORY ANALYSIS**

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 2611266

QC Batch: 16835 Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A Analysis Description: 6020B MET

Associated Lab Samples: 2611266001, 2611266002, 2611266003, 2611266004, 2611266005, 2611266006, 2611266007, 2611266008,  
2611266009, 2611266010

METHOD BLANK: 75595 Matrix: Water

Associated Lab Samples: 2611266001, 2611266002, 2611266003, 2611266004, 2611266005, 2611266006, 2611266007, 2611266008,  
2611266009, 2611266010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	11/09/18 13:59	
Arsenic	mg/L	ND	0.0050	0.00057	11/09/18 13:59	
Barium	mg/L	ND	0.010	0.00078	11/09/18 13:59	
Beryllium	mg/L	0.000058J	0.0030	0.000050	11/09/18 13:59	
Boron	mg/L	0.0055J	0.040	0.0039	11/09/18 13:59	
Cadmium	mg/L	ND	0.0010	0.000093	11/09/18 13:59	
Calcium	mg/L	0.021J	0.50	0.014	11/09/18 13:59	
Chromium	mg/L	ND	0.010	0.0016	11/09/18 13:59	
Cobalt	mg/L	ND	0.010	0.00052	11/09/18 13:59	
Lead	mg/L	ND	0.0050	0.00027	11/09/18 13:59	
Lithium	mg/L	ND	0.050	0.00097	11/09/18 13:59	
Molybdenum	mg/L	ND	0.010	0.0019	11/09/18 13:59	
Selenium	mg/L	ND	0.010	0.0014	11/09/18 13:59	
Thallium	mg/L	ND	0.0010	0.00014	11/09/18 13:59	

LABORATORY CONTROL SAMPLE: 75596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.10	102	80-120	
Arsenic	mg/L	.1	0.10	100	80-120	
Barium	mg/L	.1	0.10	101	80-120	
Beryllium	mg/L	.1	0.11	111	80-120	
Boron	mg/L	1	1.1	112	80-120	
Cadmium	mg/L	.1	0.098	98	80-120	
Calcium	mg/L	1	1.0	102	80-120	
Chromium	mg/L	.1	0.10	102	80-120	
Cobalt	mg/L	.1	0.098	98	80-120	
Lead	mg/L	.1	0.098	98	80-120	
Lithium	mg/L	.1	0.11	108	80-120	
Molybdenum	mg/L	.1	0.11	105	80-120	
Selenium	mg/L	.1	0.10	103	80-120	
Thallium	mg/L	.1	0.098	98	80-120	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 2611266

Parameter	Units	2611266001		MSD		75598		% Rec	Limits	Max	
		Result	Spike Conc.	Spike Conc.	MS Result	MSD	% Rec			RPD	RPD
Antimony	mg/L	ND	.1	.1	0.10	0.099	101	99	75-125	2	20
Arsenic	mg/L	0.013	.1	.1	0.11	0.11	101	100	75-125	2	20
Barium	mg/L	0.31	.1	.1	0.40	0.39	94	83	75-125	3	20
Beryllium	mg/L	0.00077J	.1	.1	0.10	0.10	104	103	75-125	1	20
Boron	mg/L	0.060	1	1	1.1	1.1	103	104	75-125	1	20
Cadmium	mg/L	ND	.1	.1	0.097	0.097	97	97	75-125	0	20
Calcium	mg/L	39.5	1	1	39.6	37.6	3	-193	75-125	5	20 M6
Chromium	mg/L	0.0017J	.1	.1	0.10	0.099	100	98	75-125	2	20
Cobalt	mg/L	0.0048J	.1	.1	0.10	0.10	98	95	75-125	3	20
Lead	mg/L	ND	.1	.1	0.096	0.094	96	94	75-125	2	20
Lithium	mg/L	0.0038J	.1	.1	0.10	0.10	101	99	75-125	1	20
Molybdenum	mg/L	ND	.1	.1	0.10	0.10	104	102	75-125	3	20
Selenium	mg/L	0.0025J	.1	.1	0.11	0.11	111	106	75-125	5	20
Thallium	mg/L	ND	.1	.1	0.096	0.094	96	94	75-125	2	20

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

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QC Batch:	16942	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	2611266001, 2611266002, 2611266003, 2611266004, 2611266005, 2611266006, 2611266007, 2611266008, 2611266009, 2611266010		

---

LABORATORY CONTROL SAMPLE: 76543

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	416	104	84-108	

---

SAMPLE DUPLICATE: 76544

Parameter	Units	2611264001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	10100	10400	3	10	

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SAMPLE DUPLICATE: 76545

Parameter	Units	2611269006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	512	505	1	10	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 2611266

QC Batch: 17031 Analysis Method: EPA 300.0

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

Associated Lab Samples: 2611266001, 2611266002, 2611266003, 2611266004, 2611266005, 2611266006, 2611266007, 2611266008,  
2611266009, 2611266010

METHOD BLANK: 76755 Matrix: Water

Associated Lab Samples: 2611266001, 2611266002, 2611266003, 2611266004, 2611266005, 2611266006, 2611266007, 2611266008,  
2611266009, 2611266010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.024	11/12/18 19:11	
Fluoride	mg/L	ND	0.30	0.029	11/12/18 19:11	
Sulfate	mg/L	ND	1.0	0.017	11/12/18 19:11	

LABORATORY CONTROL SAMPLE: 76756

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.2	102	90-110	
Fluoride	mg/L	10	9.5	95	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 76757 76758

Parameter	Units	MS 2611266001		MSD Spike Conc.		MS 2611266002		MSD % Rec		% Rec Limits		RPD	Max RPD	Qual
		Result	Spike Conc.	Result	Conc.	Result	% Rec	Result	% Rec	Limits				
Chloride	mg/L	107	10	10	89.6	89.6	-172	-171	90-110	0	15	E,M1		
Fluoride	mg/L	ND	10	10	10.8	10.8	108	108	90-110	1	15			
Sulfate	mg/L	136	10	10	101	101	-357	-357	90-110	0	15	E,M1		

MATRIX SPIKE SAMPLE: 76759

Parameter	Units	2611266002		Spike Conc.	MS Result		MS % Rec		% Rec Limits		Qualifiers		
		Result	Conc.	Result	% Rec	Result	% Rec	Limits					
Chloride	mg/L	6520	10	1010	-55100			90-110	E				
Fluoride	mg/L	0.086J	10	6.7	67			90-110	M1				
Sulfate	mg/L	926	10	341	-5850			90-110	E,M1				

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 2611266

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611266

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2611266001	MCM-04	EPA 3005A	16835	EPA 6020B	16846
2611266002	MCM-07	EPA 3005A	16835	EPA 6020B	16846
2611266003	MCM-09	EPA 3005A	16835	EPA 6020B	16846
2611266004	MCM-10	EPA 3005A	16835	EPA 6020B	16846
2611266005	MCM-11	EPA 3005A	16835	EPA 6020B	16846
2611266006	MCM-14	EPA 3005A	16835	EPA 6020B	16846
2611266007	MCM-17	EPA 3005A	16835	EPA 6020B	16846
2611266008	FBL 110618	EPA 3005A	16835	EPA 6020B	16846
2611266009	EQBL 110618	EPA 3005A	16835	EPA 6020B	16846
2611266010	Dup-1	EPA 3005A	16835	EPA 6020B	16846
2611266001	MCM-04	EPA 7470A	16801	EPA 7470A	16863
2611266002	MCM-07	EPA 7470A	16801	EPA 7470A	16863
2611266003	MCM-09	EPA 7470A	16801	EPA 7470A	16863
2611266004	MCM-10	EPA 7470A	16801	EPA 7470A	16863
2611266005	MCM-11	EPA 7470A	16801	EPA 7470A	16863
2611266006	MCM-14	EPA 7470A	16801	EPA 7470A	16863
2611266007	MCM-17	EPA 7470A	16801	EPA 7470A	16863
2611266008	FBL 110618	EPA 7470A	16801	EPA 7470A	16863
2611266009	EQBL 110618	EPA 7470A	16801	EPA 7470A	16863
2611266010	Dup-1	EPA 7470A	16801	EPA 7470A	16863
2611266001	MCM-04	SM 2540C	16942		
2611266002	MCM-07	SM 2540C	16942		
2611266003	MCM-09	SM 2540C	16942		
2611266004	MCM-10	SM 2540C	16942		
2611266005	MCM-11	SM 2540C	16942		
2611266006	MCM-14	SM 2540C	16942		
2611266007	MCM-17	SM 2540C	16942		
2611266008	FBL 110618	SM 2540C	16942		
2611266009	EQBL 110618	SM 2540C	16942		
2611266010	Dup-1	SM 2540C	16942		
2611266001	MCM-04	EPA 300.0	17031		
2611266002	MCM-07	EPA 300.0	17031		
2611266003	MCM-09	EPA 300.0	17031		
2611266004	MCM-10	EPA 300.0	17031		
2611266005	MCM-11	EPA 300.0	17031		
2611266006	MCM-14	EPA 300.0	17031		
2611266007	MCM-17	EPA 300.0	17031		
2611266008	FBL 110618	EPA 300.0	17031		
2611266009	EQBL 110618	EPA 300.0	17031		
2611266010	Dup-1	EPA 300.0	17031		

### REPORT OF LABORATORY ANALYSIS

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# CHAIN-OF-CUSTODY / Analytical Request Document

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

## Section A

### Required Client Information:

Company	Georgia Power	Report To	Jeri Abraham / Lauren Petty
Address	2480 Market Road	Copy To	Resolute
Email	<a href="mailto:Abraham_GK@southemco.com">Abraham_GK@southemco.com</a>	Purchase Order #	SCS10348506
Phone	(404) 505-7259	Project Name:	Georgia Power - Plant McRae CCR Scope
Requested Due Date		Project #	334

## Section B

### Required Project Information:

Attention:	<a href="mailto:SCSInvoices@southemco.com">SCSInvoices@southemco.com</a>
Company Name:	
Address:	
Regulatory Agency:	
Paco Quote:	
State / Location:	GA

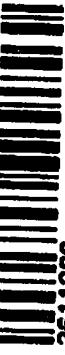
## Section C

### Invoice Information:

Residue/Chlorine (Y/N)	
Requested Analysis/Filtration (Y/N)	

ITEM #	SAMPLE ID	COLLECTED		PRESERVATIVES		# OF CONTAINERS	SAMPLE TEMP AT COLLECTION	MATRIX CODE (See VITC Codes 10 to 16)	SAMPLE TYPE (G=GRAG C=COMP)
		DATE	TIME	DATE	TIME				
	NACM-04	11/18/11	15:57	11/18/11	15:57	1	1	1	G
	NACM-07	11/18/11	15:22	11/18/11	15:22	1	1	1	G
	NACM-09	11/18/11	13:45	11/18/11	13:45	1	1	1	G
	NACM-10	11/18/11	15:22	11/18/11	15:22	1	1	1	G
	NACM-11	11/18/11	15:52	11/18/11	15:52	1	1	1	G
	NACM-15	11/18/11	15:57	11/18/11	15:57	1	1	1	G
	NACM-17	11/18/11	15:26	11/18/11	15:26	1	1	1	G
	END 10/12			11/18/11	15:52	1	1	1	G
	Dug 1			11/18/11	-	1	1	1	G

MO# : 2611266



✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

TEMP IN C	Received on	Date signed:
(Y/N)	(Y/N)	
Customer	Supplier	
Sample	Collector	

PRINT Name of SAMPLER:  
Signature & Sample:

*[Handwritten signatures]*

DATE Signed:

*[Handwritten date]*



## Sample Condition Upon Receipt

Client Name: <u>GAPower</u>		Project #	
Courier: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> UPS <input type="checkbox"/> USPS <input type="checkbox"/> Client Tracking #: <u>783635751051</u>		<b>WO# : 2611266</b>	
Custody Seal on Cooler/Box Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Seals intact: <input checked="" type="checkbox"/> Yes	
Packing Material: <input type="checkbox"/> Bubble Wrap <input type="checkbox"/> Bubble Bags <input checked="" type="checkbox"/> None <input type="checkbox"/> Other			
Thermometer Used <u>83</u>		Type of Ice: <u>Wet</u> Blue None	
Cooler Temperature <u>0.5</u>		Biological Tissue is Frozen: Yes No	
Temp should be above freezing to 6°C		Comments:	
Chain of Custody Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		1.	
Chain of Custody Filled Out: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		2. <i>Matrix Code, Sample type missing</i>	
Chain of Custody Relinquished: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		3.	
Sampler Name & Signature on COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		4.	
Samples Arrived within Hold Time: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		5.	
Short Hold Time Analysis (<72hr): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		6.	
Rush Turn Around Time Requested: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		7.	
Sufficient Volume: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		8.	
Correct Containers Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		9.	
-Pace Containers Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Containers Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		10.	
Filtered volume received for Dissolved tests <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		11.	
Sample Labels match COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		12. <i>W</i>	
-Includes date/time/ID/Analysis Matrix:			
All containers needing preservation have been checked. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		13.	
All containers needing preservation are found to be in compliance with EPA recommendation. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A			
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Initial when completed	Lot # of added preservative
Samples checked for dechlorination: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		14.	
Headspace in VOA Vials (>6mm): <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		15.	
Trip Blank Present: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		16.	
Trip Blank Custody Seals Present <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Pace Trip Blank Lot # (if purchased): _____			
Client Notification/ Resolution:		Field Data Required? Y / N	
Person Contacted: _____ Date/Time: _____			
Comments/ Resolution: _____			
Project Manager Review: _____		Date: _____	
Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)			
Page 24 of 24 F-ALLC003rev.3, 11 September 2006			

December 07, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 2611267

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on November 07, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
 Pace Project No.: 2611267

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611267

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2611267001	MCM-04	Water	11/06/18 15:45	11/07/18 09:25
2611267002	MCM-07	Water	11/06/18 15:20	11/07/18 09:25
2611267003	MCM-09	Water	11/06/18 13:45	11/07/18 09:25
2611267004	MCM-10	Water	11/06/18 14:22	11/07/18 09:25
2611267005	MCM-11	Water	11/06/18 11:32	11/07/18 09:25
2611267006	MCM-14	Water	11/06/18 14:38	11/07/18 09:25
2611267007	MCM-17	Water	11/06/18 11:14	11/07/18 09:25
2611267008	FBL 110618	Water	11/06/18 15:26	11/07/18 09:25
2611267009	EQBL 110618	Water	11/06/18 15:32	11/07/18 09:25
2611267010	Dup-1	Water	11/06/18 00:00	11/07/18 09:25

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611267

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2611267001	MCM-04	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611267002	MCM-07	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611267003	MCM-09	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611267004	MCM-10	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611267005	MCM-11	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611267006	MCM-14	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611267007	MCM-17	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611267008	FBL 110618	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611267009	EQBL 110618	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611267010	Dup-1	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

**Sample: MCM-04**      Lab ID: **2611267001**      Collected: 11/06/18 15:45      Received: 11/07/18 09:25      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>6.28 ± 1.24 (0.371)</b> C:91% T:NA	pCi/L	11/29/18 08:41	13982-63-3	
Radium-228	EPA 9320	<b>4.75 ± 1.06 (0.725)</b> C:79% T:80%	pCi/L	11/27/18 15:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>11.0 ± 2.30 (1.10)</b>	pCi/L	12/05/18 11:51	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611267

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**Sample: MCM-07**      Lab ID: **2611267002**      Collected: 11/06/18 15:20      Received: 11/07/18 09:25      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>3.74 ± 0.833 (0.311)</b> C:100% T:NA	pCi/L	11/29/18 08:41	13982-63-3	
Radium-228	EPA 9320	<b>2.36 ± 0.627 (0.607)</b> C:77% T:84%	pCi/L	11/27/18 15:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>6.10 ± 1.46 (0.918)</b>	pCi/L	12/05/18 11:51	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

**Sample: MCM-09**      Lab ID: **2611267003**      Collected: 11/06/18 13:45      Received: 11/07/18 09:25      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.91 ± 0.528 (0.326)</b> C:97% T:NA	pCi/L	11/29/18 08:41	13982-63-3	
Radium-228	EPA 9320	<b>1.24 ± 0.433 (0.575)</b> C:74% T:87%	pCi/L	11/27/18 15:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.15 ± 0.961 (0.901)</b>	pCi/L	12/05/18 11:51	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

**Sample: MCM-10**      Lab ID: **2611267004**      Collected: 11/06/18 14:22      Received: 11/07/18 09:25      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.22 ± 0.430 (0.440)</b> C:94% T:NA	pCi/L	11/29/18 08:41	13982-63-3	
Radium-228	EPA 9320	<b>0.519 ± 0.316 (0.584)</b> C:78% T:95%	pCi/L	11/27/18 15:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.74 ± 0.746 (1.02)</b>	pCi/L	12/05/18 11:51	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611267

**Sample: MCM-11**      Lab ID: **2611267005**      Collected: 11/06/18 11:32      Received: 11/07/18 09:25      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.636 ± 0.305 (0.371)</b> C:93% T:NA	pCi/L	11/29/18 08:41	13982-63-3	
Radium-228	EPA 9320	<b>0.466 ± 0.321 (0.609)</b> C:80% T:81%	pCi/L	11/27/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.10 ± 0.626 (0.980)</b>	pCi/L	12/05/18 11:51	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

**Sample: MCM-14**      Lab ID: **2611267006**      Collected: 11/06/18 14:38      Received: 11/07/18 09:25      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>2.51 ± 0.638 (0.331)</b> C:97% T:NA	pCi/L	11/29/18 08:41	13982-63-3	
Radium-228	EPA 9320	<b>2.87 ± 0.709 (0.548)</b> C:77% T:83%	pCi/L	11/27/18 15:07	15262-20-1	
Total Radium	Total Radium Calculation	<b>5.38 ± 1.35 (0.879)</b>	pCi/L	12/05/18 11:51	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

**Sample: MCM-17**      Lab ID: **2611267007**      Collected: 11/06/18 11:14      Received: 11/07/18 09:25      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.60 ± 0.355 (0.195)</b> C:93% T:NA	pCi/L	11/28/18 19:50	13982-63-3	
Radium-228	EPA 9320	<b>1.35 ± 0.639 (1.03)</b> C:75% T:47%	pCi/L	11/27/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.95 ± 0.994 (1.23)</b>	pCi/L	12/05/18 13:38	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

**Sample: FBL 110618**      Lab ID: **2611267008**      Collected: 11/06/18 15:26      Received: 11/07/18 09:25      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.277 ± 0.133 (0.187)</b> C:96% T:NA	pCi/L	11/28/18 19:49	13982-63-3	
Radium-228	EPA 9320	<b>0.443 ± 0.315 (0.602)</b> C:79% T:85%	pCi/L	11/27/18 15:08	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.720 ± 0.448 (0.789)</b>	pCi/L	12/05/18 13:38	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

**Sample:** EQBL 110618      **Lab ID:** 2611267009      Collected: 11/06/18 15:32      Received: 11/07/18 09:25      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.288 ± 0.169 (0.245)</b> C:88% T:NA	pCi/L	12/03/18 08:58	13982-63-3	
Radium-228	EPA 9320	<b>0.363 ± 0.402 (0.842)</b> C:75% T:79%	pCi/L	12/04/18 12:59	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.651 ± 0.571 (1.09)</b>	pCi/L	12/05/18 13:38	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

**Sample:** Dup-1      **Lab ID:** 2611267010      **Collected:** 11/06/18 00:00      **Received:** 11/07/18 09:25      **Matrix:** Water

**PWS:**      **Site ID:**      **Sample Type:**

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.275 ± 0.175 (0.279)</b> C:93% T:NA	pCi/L	12/03/18 08:58	13982-63-3	
Radium-228	EPA 9320	<b>0.448 ± 0.328 (0.641)</b> C:76% T:96%	pCi/L	12/04/18 12:59	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.723 ± 0.503 (0.920)</b>	pCi/L	12/05/18 13:38	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

---

QC Batch: 320566 Analysis Method: EPA 9315

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

Associated Lab Samples: 2611267001, 2611267002, 2611267003, 2611267004, 2611267005, 2611267006, 2611267007, 2611267008

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METHOD BLANK: 1563548 Matrix: Water

Associated Lab Samples: 2611267001, 2611267002, 2611267003, 2611267004, 2611267005, 2611267006, 2611267007, 2611267008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.196 ± 0.119 (0.189) C:97% T:NA	pCi/L	11/28/18 21:08	

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

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

---

QC Batch: 320739

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 2611267009, 2611267010

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METHOD BLANK: 1564308

Matrix: Water

Associated Lab Samples: 2611267009, 2611267010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.402 ± 0.356 (0.722) C:83% T:79%	pCi/L	12/04/18 13:19	

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

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

---

QC Batch: 321124

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 2611267009, 2611267010

---

METHOD BLANK: 1566261 Matrix: Water

Associated Lab Samples: 2611267009, 2611267010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.323 ± 0.164 (0.201) C:101% T:NA	pCi/L	12/03/18 08:58	

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

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

---

QC Batch: 320542 Analysis Method: EPA 9320

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

Associated Lab Samples: 2611267001, 2611267002, 2611267003, 2611267004, 2611267005, 2611267006, 2611267007, 2611267008

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METHOD BLANK: 1563498 Matrix: Water

Associated Lab Samples: 2611267001, 2611267002, 2611267003, 2611267004, 2611267005, 2611267006, 2611267007, 2611267008

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Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.727 ± 0.361 (0.610) C:86% T:77%	pCi/L	11/27/18 11:48	

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

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 2611267

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611267

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2611267001	MCM-04	EPA 9315	320566		
2611267002	MCM-07	EPA 9315	320566		
2611267003	MCM-09	EPA 9315	320566		
2611267004	MCM-10	EPA 9315	320566		
2611267005	MCM-11	EPA 9315	320566		
2611267006	MCM-14	EPA 9315	320566		
2611267007	MCM-17	EPA 9315	320566		
2611267008	FBL 110618	EPA 9315	320566		
2611267009	EQBL 110618	EPA 9315	321124		
2611267010	Dup-1	EPA 9315	321124		
2611267001	MCM-04	EPA 9320	320542		
2611267002	MCM-07	EPA 9320	320542		
2611267003	MCM-09	EPA 9320	320542		
2611267004	MCM-10	EPA 9320	320542		
2611267005	MCM-11	EPA 9320	320542		
2611267006	MCM-14	EPA 9320	320542		
2611267007	MCM-17	EPA 9320	320542		
2611267008	FBL 110618	EPA 9320	320542		
2611267009	EQBL 110618	EPA 9320	320739		
2611267010	Dup-1	EPA 9320	320739		
2611267001	MCM-04	Total Radium Calculation	322875		
2611267002	MCM-07	Total Radium Calculation	322875		
2611267003	MCM-09	Total Radium Calculation	322875		
2611267004	MCM-10	Total Radium Calculation	322875		
2611267005	MCM-11	Total Radium Calculation	322875		
2611267006	MCM-14	Total Radium Calculation	322875		
2611267007	MCM-17	Total Radium Calculation	322908		
2611267008	FBL 110618	Total Radium Calculation	322908		
2611267009	EQBL 110618	Total Radium Calculation	322908		
2611267010	Dup-1	Total Radium Calculation	322908		

## REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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

# Sample Condition Upon Receipt

*Pace Analytical*

Client Name: GIA Power

Project #

**WO# : 2611267**

PM: BM

Due Date:

12/07/18

CLIENT: GIA Power-CCR

Courier:  FedEx  UPS  USPS  Client

Tracking #: 783635751051

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used 83 Type of Ice: Wet Blue None

Cooler Temperature 0.5

Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 11/07/18 JP

Comments:

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

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

Project Manager Review:

Date:

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

November 15, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on November 08, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

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### Atlanta Certification IDs

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

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Texas Certification #: T104704397-08-TX  
Virginia Certification #: 460204

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
 Pace Project No.: 2611330

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2611330001	MCM-01	Water	11/07/18 13:16	11/08/18 09:20
2611330002	MCM-02	Water	11/07/18 16:03	11/08/18 09:20
2611330003	MCM-05	Water	11/07/18 10:50	11/08/18 09:20
2611330004	MCM-06	Water	11/07/18 09:40	11/08/18 09:20
2611330005	MCM-12	Water	11/07/18 10:33	11/08/18 09:20
2611330006	MCM-15	Water	11/07/18 15:56	11/08/18 09:20
2611330007	MCM-16	Water	11/07/18 14:48	11/08/18 09:20
2611330008	Dup-2	Water	11/07/18 00:00	11/08/18 09:20

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2611330001	MCM-01	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611330002	MCM-02	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611330003	MCM-05	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611330004	MCM-06	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611330005	MCM-12	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611330006	MCM-15	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611330007	MCM-16	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611330008	Dup-2	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

Sample: MCM-01	Lab ID: 2611330001	Collected: 11/07/18 13:16	Received: 11/08/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	11/12/18 14:18	11/13/18 17:39	7440-36-0	
Arsenic	<b>0.0069</b>	mg/L	0.0050	0.00057	1	11/12/18 14:18	11/13/18 17:39	7440-38-2	
Barium	<b>0.071</b>	mg/L	0.010	0.00078	1	11/12/18 14:18	11/13/18 17:39	7440-39-3	
Beryllium	<b>0.00010J</b>	mg/L	0.0030	0.000050	1	11/12/18 14:18	11/13/18 17:39	7440-41-7	
Boron	<b>0.037J</b>	mg/L	0.040	0.0039	1	11/12/18 14:18	11/13/18 17:39	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/12/18 14:18	11/13/18 17:39	7440-43-9	
Calcium	<b>11.9</b>	mg/L	2.5	0.069	5	11/12/18 14:18	11/14/18 18:39	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/12/18 14:18	11/13/18 17:39	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/12/18 14:18	11/13/18 17:39	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/12/18 14:18	11/13/18 17:39	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	11/12/18 14:18	11/13/18 17:39	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/12/18 14:18	11/13/18 17:39	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	11/12/18 14:18	11/13/18 17:39	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/12/18 14:18	11/13/18 17:39	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	11/12/18 10:45	11/12/18 16:50	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>121</b>	mg/L	25.0	10.0	1		11/12/18 10:10		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>21.8</b>	mg/L	0.25	0.024	1		11/13/18 18:21	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		11/13/18 18:21	16984-48-8	
Sulfate	<b>45.6</b>	mg/L	1.0	0.017	1		11/13/18 18:21	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

Sample: MCM-02	Lab ID: 2611330002	Collected: 11/07/18 16:03	Received: 11/08/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	11/12/18 14:18	11/13/18 17:50	7440-36-0	
Arsenic	<b>0.00059J</b>	mg/L	0.0050	0.00057	1	11/12/18 14:18	11/13/18 17:50	7440-38-2	
Barium	<b>0.097</b>	mg/L	0.010	0.00078	1	11/12/18 14:18	11/13/18 17:50	7440-39-3	
Beryllium	<b>0.00015J</b>	mg/L	0.0030	0.000050	1	11/12/18 14:18	11/13/18 17:50	7440-41-7	
Boron	<b>0.10</b>	mg/L	0.040	0.0039	1	11/12/18 14:18	11/13/18 17:50	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/12/18 14:18	11/13/18 17:50	7440-43-9	
Calcium	<b>4.6</b>	mg/L	0.50	0.014	1	11/12/18 14:18	11/13/18 17:50	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/12/18 14:18	11/13/18 17:50	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/12/18 14:18	11/13/18 17:50	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/12/18 14:18	11/13/18 17:50	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	11/12/18 14:18	11/13/18 17:50	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/12/18 14:18	11/13/18 17:50	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	11/12/18 14:18	11/13/18 17:50	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/12/18 14:18	11/13/18 17:50	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	11/12/18 10:45	11/12/18 16:57	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>134</b>	mg/L	25.0	10.0	1		11/12/18 10:10		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>30.7</b>	mg/L	0.25	0.024	1		11/13/18 18:42	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		11/13/18 18:42	16984-48-8	
Sulfate	<b>35.8</b>	mg/L	1.0	0.017	1		11/13/18 18:42	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

Sample: MCM-05	Lab ID: 2611330003	Collected: 11/07/18 10:50	Received: 11/08/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	11/12/18 14:18	11/13/18 18:13	7440-36-0	
Arsenic	<b>0.0020J</b>	mg/L	0.0050	0.00057	1	11/12/18 14:18	11/13/18 18:13	7440-38-2	
Barium	<b>0.0085J</b>	mg/L	0.010	0.00078	1	11/12/18 14:18	11/13/18 18:13	7440-39-3	
Beryllium	<b>0.000054J</b>	mg/L	0.0030	0.000050	1	11/12/18 14:18	11/13/18 18:13	7440-41-7	
Boron	<b>0.51</b>	mg/L	0.040	0.0039	1	11/12/18 14:18	11/13/18 18:13	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/12/18 14:18	11/13/18 18:13	7440-43-9	
Calcium	<b>41.8</b>	mg/L	25.0	0.69	50	11/12/18 14:18	11/13/18 18:19	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/12/18 14:18	11/13/18 18:13	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/12/18 14:18	11/13/18 18:13	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/12/18 14:18	11/13/18 18:13	7439-92-1	
Lithium	<b>0.022J</b>	mg/L	0.050	0.00097	1	11/12/18 14:18	11/13/18 18:13	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/12/18 14:18	11/13/18 18:13	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	11/12/18 14:18	11/13/18 18:13	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/12/18 14:18	11/13/18 18:13	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	11/12/18 10:45	11/12/18 16:59	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>2230</b>	mg/L	25.0	10.0	1			11/12/18 10:10	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>1180</b>	mg/L	25.0	2.4	100			11/14/18 05:23	16887-00-6
Fluoride	<b>0.35</b>	mg/L	0.30	0.029	1			11/13/18 19:03	16984-48-8
Sulfate	<b>41.3J</b>	mg/L	100	1.7	100			11/14/18 05:23	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

Sample: MCM-06		Lab ID: 2611330004		Collected: 11/07/18 09:40		Received: 11/08/18 09:20		Matrix: Water					
Parameters	Results	Units	Report Limit MDL DF Prepared Analyzed CAS No. Qual										
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A												
Antimony	ND	mg/L	0.0030	0.00078	1	11/12/18 14:18	11/13/18 18:25	7440-36-0					
Arsenic	<b>0.50</b>	mg/L	0.0050	0.00057	1	11/12/18 14:18	11/13/18 18:25	7440-38-2					
Barium	<b>0.19</b>	mg/L	0.010	0.00078	1	11/12/18 14:18	11/13/18 18:25	7440-39-3					
Beryllium	ND	mg/L	0.0030	0.000050	1	11/12/18 14:18	11/13/18 18:25	7440-41-7					
Boron	<b>0.86</b>	mg/L	0.040	0.0039	1	11/12/18 14:18	11/13/18 18:25	7440-42-8					
Cadmium	ND	mg/L	0.0010	0.000093	1	11/12/18 14:18	11/13/18 18:25	7440-43-9					
Calcium	<b>364</b>	mg/L	25.0	0.69	50	11/12/18 14:18	11/13/18 18:31	7440-70-2					
Calcium	<b>411</b>	mg/L	50.0	1.4	100	11/12/18 14:18	11/15/18 14:36	7440-70-2					
Chromium	ND	mg/L	0.010	0.0016	1	11/12/18 14:18	11/13/18 18:25	7440-47-3					
Cobalt	ND	mg/L	0.010	0.00052	1	11/12/18 14:18	11/13/18 18:25	7440-48-4					
Lead	ND	mg/L	0.0050	0.00027	1	11/12/18 14:18	11/13/18 18:25	7439-92-1					
Lithium	<b>0.11</b>	mg/L	0.050	0.00097	1	11/12/18 14:18	11/13/18 18:25	7439-93-2					
Molybdenum	<b>0.0024J</b>	mg/L	0.010	0.0019	1	11/12/18 14:18	11/13/18 18:25	7439-98-7					
Selenium	<b>0.0075J</b>	mg/L	0.010	0.0014	1	11/12/18 14:18	11/13/18 18:25	7782-49-2					
Thallium	ND	mg/L	0.0010	0.00014	1	11/12/18 14:18	11/13/18 18:25	7440-28-0					
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A												
Mercury	ND	mg/L	0.00050	0.000036	1	11/12/18 10:45	11/12/18 17:02	7439-97-6					
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C												
Total Dissolved Solids	<b>15100</b>	mg/L	25.0	10.0	1			11/12/18 10:10					
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0												
Chloride	<b>8860</b>	mg/L	50.0	4.8	200			11/14/18 05:43	16887-00-6				
Fluoride	<b>10.3</b>	mg/L	0.30	0.029	1			11/13/18 19:23	16984-48-8				
Sulfate	<b>734</b>	mg/L	200	3.4	200			11/14/18 05:43	14808-79-8				

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

Sample: MCM-12	Lab ID: 2611330005	Collected: 11/07/18 10:33	Received: 11/08/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.015	0.0039	5	11/12/18 14:18	11/13/18 18:36	7440-36-0	D3
Arsenic	ND	mg/L	0.050	0.0057	10	11/12/18 14:18	11/14/18 18:50	7440-38-2	D3
Barium	0.11	mg/L	0.050	0.0039	5	11/12/18 14:18	11/13/18 18:36	7440-39-3	
Beryllium	0.00058J	mg/L	0.030	0.00050	10	11/12/18 14:18	11/14/18 18:50	7440-41-7	D3
Boron	1.4	mg/L	0.40	0.039	10	11/12/18 14:18	11/14/18 18:50	7440-42-8	
Cadmium	ND	mg/L	0.010	0.00093	10	11/12/18 14:18	11/14/18 18:50	7440-43-9	D3
Calcium	8.5	mg/L	5.0	0.14	10	11/12/18 14:18	11/14/18 18:50	7440-70-2	
Chromium	ND	mg/L	0.10	0.016	10	11/12/18 14:18	11/14/18 18:50	7440-47-3	D3
Cobalt	ND	mg/L	0.10	0.0052	10	11/12/18 14:18	11/14/18 18:50	7440-48-4	D3
Lead	ND	mg/L	0.025	0.0014	5	11/12/18 14:18	11/13/18 18:36	7439-92-1	D3
Lithium	0.013J	mg/L	0.50	0.0097	10	11/12/18 14:18	11/14/18 18:50	7439-93-2	D3
Molybdenum	ND	mg/L	0.050	0.0097	5	11/12/18 14:18	11/13/18 18:36	7439-98-7	D3
Selenium	ND	mg/L	0.10	0.014	10	11/12/18 14:18	11/14/18 18:50	7782-49-2	D3
Thallium	ND	mg/L	0.0050	0.00071	5	11/12/18 14:18	11/13/18 18:36	7440-28-0	D3
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	11/12/18 10:45	11/12/18 17:04	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	1800	mg/L	25.0	10.0	1			11/12/18 10:10	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	665	mg/L	25.0	2.4	100			11/14/18 06:04	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			11/13/18 19:44	16984-48-8
Sulfate	0.41J	mg/L	1.0	0.017	1			11/13/18 19:44	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

Sample: MCM-15		Lab ID: 2611330006		Collected: 11/07/18 15:56		Received: 11/08/18 09:20		Matrix: Water	
Parameters	Results	Units	Report Limit		DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b> Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Antimony	ND	mg/L	0.0030	0.00078	1	11/12/18 14:18	11/13/18 18:48	7440-36-0	
Arsenic	ND	mg/L	0.025	0.0028	5	11/12/18 14:18	11/14/18 18:56	7440-38-2	
Barium	<b>0.050</b>	mg/L	0.010	0.00078	1	11/12/18 14:18	11/13/18 18:48	7440-39-3	
Beryllium	<b>0.00041J</b>	mg/L	0.015	0.00025	5	11/12/18 14:18	11/14/18 18:56	7440-41-7	
Boron	<b>0.062J</b>	mg/L	0.20	0.020	5	11/12/18 14:18	11/14/18 18:56	7440-42-8	
Cadmium	ND	mg/L	0.0050	0.00046	5	11/12/18 14:18	11/14/18 18:56	7440-43-9	
Calcium	<b>9.8</b>	mg/L	2.5	0.069	5	11/12/18 14:18	11/14/18 18:56	7440-70-2	
Chromium	ND	mg/L	0.050	0.0078	5	11/12/18 14:18	11/14/18 18:56	7440-47-3	
Cobalt	ND	mg/L	0.050	0.0026	5	11/12/18 14:18	11/14/18 18:56	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/12/18 14:18	11/13/18 18:48	7439-92-1	
Lithium	ND	mg/L	0.25	0.0049	5	11/12/18 14:18	11/14/18 18:56	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/12/18 14:18	11/13/18 18:48	7439-98-7	
Selenium	ND	mg/L	0.050	0.0068	5	11/12/18 14:18	11/14/18 18:56	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/12/18 14:18	11/13/18 18:48	7440-28-0	
<b>7470 Mercury</b> Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00050	0.000036	1	11/12/18 10:45	11/12/18 17:06	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	<b>125</b>	mg/L	25.0	10.0	1			11/12/18 10:10	
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Chloride	<b>20.2</b>	mg/L	0.25	0.024	1			11/13/18 20:05	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			11/13/18 20:05	16984-48-8
Sulfate	<b>22.2</b>	mg/L	1.0	0.017	1			11/13/18 20:05	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

Sample: MCM-16	Lab ID: 2611330007	Collected: 11/07/18 14:48	Received: 11/08/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	11/12/18 14:18	11/13/18 18:59	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	11/12/18 14:18	11/13/18 18:59	7440-38-2	
Barium	<b>0.12</b>	mg/L	0.010	0.00078	1	11/12/18 14:18	11/13/18 18:59	7440-39-3	
Beryllium	<b>0.00019J</b>	mg/L	0.0030	0.000050	1	11/12/18 14:18	11/13/18 18:59	7440-41-7	
Boron	<b>0.074</b>	mg/L	0.040	0.0039	1	11/12/18 14:18	11/13/18 18:59	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/12/18 14:18	11/13/18 18:59	7440-43-9	
Calcium	<b>5.3</b>	mg/L	0.50	0.014	1	11/12/18 14:18	11/14/18 19:01	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/12/18 14:18	11/14/18 19:01	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/12/18 14:18	11/14/18 19:01	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/12/18 14:18	11/13/18 18:59	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	11/12/18 14:18	11/13/18 18:59	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/12/18 14:18	11/13/18 18:59	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	11/12/18 14:18	11/13/18 18:59	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/12/18 14:18	11/13/18 18:59	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	11/12/18 10:45	11/12/18 17:09	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	<b>120</b>	mg/L	25.0	10.0	1			11/12/18 10:10	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>25.1</b>	mg/L	0.25	0.024	1			11/13/18 22:09	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			11/13/18 22:09	16984-48-8
Sulfate	<b>35.0</b>	mg/L	1.0	0.017	1			11/13/18 22:09	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

Sample: Dup-2	Lab ID: 2611330008	Collected: 11/07/18 00:00	Received: 11/08/18 09:20	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.0030	0.00078	1	11/12/18 14:18	11/13/18 19:22	7440-36-0	
Arsenic	<b>0.0064</b>	mg/L	0.0050	0.00057	1	11/12/18 14:18	11/13/18 19:22	7440-38-2	
Barium	<b>0.072</b>	mg/L	0.010	0.00078	1	11/12/18 14:18	11/13/18 19:22	7440-39-3	
Beryllium	<b>0.000097J</b>	mg/L	0.0030	0.000050	1	11/12/18 14:18	11/13/18 19:22	7440-41-7	
Boron	<b>0.038J</b>	mg/L	0.040	0.0039	1	11/12/18 14:18	11/13/18 19:22	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/12/18 14:18	11/13/18 19:22	7440-43-9	
Calcium	<b>11.3</b>	mg/L	2.5	0.069	5	11/12/18 14:18	11/14/18 19:13	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/12/18 14:18	11/13/18 19:22	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/12/18 14:18	11/13/18 19:22	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/12/18 14:18	11/13/18 19:22	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	11/12/18 14:18	11/13/18 19:22	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/12/18 14:18	11/13/18 19:22	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	11/12/18 14:18	11/13/18 19:22	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/12/18 14:18	11/13/18 19:22	7440-28-0	
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	11/12/18 10:45	11/12/18 17:11	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>125</b>	mg/L	25.0	10.0	1		11/12/18 10:10		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>21.9</b>	mg/L	0.25	0.024	1		11/13/18 22:29	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		11/13/18 22:29	16984-48-8	
Sulfate	<b>45.3</b>	mg/L	1.0	0.017	1		11/13/18 22:29	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

QC Batch:	16833	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
Associated Lab Samples: 2611330001, 2611330002, 2611330003, 2611330004, 2611330005, 2611330006, 2611330007, 2611330008			

METHOD BLANK: 75562		Matrix: Water				
Associated Lab Samples:		2611330001, 2611330002, 2611330003, 2611330004, 2611330005, 2611330006, 2611330007, 2611330008				
Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	11/12/18 16:19	

LABORATORY CONTROL SAMPLE: 75563						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 75564		75565										
Parameter	Units	2611272001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
Mercury	mg/L	ND	.0025	.0025	0.0022	0.0025	90	101	75-125	11	20	

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 2611330

QC Batch: 16990 Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A Analysis Description: 6020B MET

Associated Lab Samples: 2611330001, 2611330002, 2611330003, 2611330004, 2611330005, 2611330006, 2611330007, 2611330008

METHOD BLANK: 76661 Matrix: Water

Associated Lab Samples: 2611330001, 2611330002, 2611330003, 2611330004, 2611330005, 2611330006, 2611330007, 2611330008

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Antimony	mg/L	ND	0.0030	0.00078	11/13/18 17:05	
Arsenic	mg/L	ND	0.0050	0.00057	11/13/18 17:05	
Barium	mg/L	ND	0.010	0.00078	11/13/18 17:05	
Beryllium	mg/L	ND	0.0030	0.000050	11/13/18 17:05	
Boron	mg/L	ND	0.040	0.0039	11/13/18 17:05	
Cadmium	mg/L	ND	0.0010	0.000093	11/13/18 17:05	
Calcium	mg/L	ND	0.50	0.014	11/13/18 17:05	
Chromium	mg/L	ND	0.010	0.0016	11/13/18 17:05	
Cobalt	mg/L	ND	0.010	0.00052	11/13/18 17:05	
Lead	mg/L	ND	0.0050	0.00027	11/13/18 17:05	
Lithium	mg/L	ND	0.050	0.00097	11/13/18 17:05	
Molybdenum	mg/L	ND	0.010	0.0019	11/13/18 17:05	
Selenium	mg/L	ND	0.010	0.0014	11/13/18 17:05	
Thallium	mg/L	ND	0.0010	0.00014	11/13/18 17:05	

LABORATORY CONTROL SAMPLE: 76662

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Antimony	mg/L	.1	0.099	99	80-120	
Arsenic	mg/L	.1	0.10	102	80-120	
Barium	mg/L	.1	0.098	98	80-120	
Beryllium	mg/L	.1	0.10	101	80-120	
Boron	mg/L	1	0.99	99	80-120	
Cadmium	mg/L	.1	0.098	98	80-120	
Calcium	mg/L	1	0.99	99	80-120	
Chromium	mg/L	.1	0.10	100	80-120	
Cobalt	mg/L	.1	0.10	100	80-120	
Lead	mg/L	.1	0.099	99	80-120	
Lithium	mg/L	.1	0.10	102	80-120	
Molybdenum	mg/L	.1	0.10	101	80-120	
Selenium	mg/L	.1	0.10	104	80-120	
Thallium	mg/L	.1	0.099	99	80-120	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 76663 76664

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max	
		2611389006	Spike								
Parameter	Units	Result	Conc.	Spike	Conc.	Result	Result	% Rec	Result	RPD	RPD
Antimony	mg/L	ND	.1	.1	.099	0.10	99	100	75-125	1	20

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 2611330

Parameter	Units	2611389006		MS		MSD		76664		Max		
		Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD		Qual
										RPD	RPD	
Arsenic	mg/L	0.0012J	.1	.1	0.10	0.11	100	104	75-125	4	20	
Barium	mg/L	0.024	.1	.1	0.12	0.12	95	96	75-125	1	20	
Beryllium	mg/L	0.0020J	.1	.1	0.10	0.10	100	100	75-125	1	20	
Boron	mg/L	2.6	1	1	3.2	3.1	56	51	75-125	2	20	M1
Cadmium	mg/L	0.00031J	.1	.1	0.096	0.097	95	97	75-125	1	20	
Calcium	mg/L	81.7	1	1	83.3	79.1	159	-263	75-125	5	20	M6
Chromium	mg/L	0.0028J	.1	.1	0.10	0.10	97	97	75-125	0	20	
Cobalt	mg/L	0.048	.1	.1	0.14	0.14	96	95	75-125	0	20	
Lead	mg/L	ND	.1	.1	0.094	0.093	94	93	75-125	0	20	
Lithium	mg/L	0.0034J	.1	.1	0.10	0.10	99	100	75-125	1	20	
Molybdenum	mg/L	ND	.1	.1	0.098	0.099	98	99	75-125	2	20	
Selenium	mg/L	0.0068J	.1	.1	0.11	0.12	103	109	75-125	5	20	
Thallium	mg/L	0.00052J	.1	.1	0.093	0.095	92	94	75-125	2	20	

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611330

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QC Batch:	16943	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	2611330001, 2611330002, 2611330003, 2611330004, 2611330005, 2611330006, 2611330007, 2611330008		

---

LABORATORY CONTROL SAMPLE: 76546

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	405	101	84-108	

---

SAMPLE DUPLICATE: 76547

Parameter	Units	2611269010 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	23.0J	18.0J	24	10	D6

---

SAMPLE DUPLICATE: 76548

Parameter	Units	2611389001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	504	495	2	10	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 2611330

QC Batch: 17032 Analysis Method: EPA 300.0

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

Associated Lab Samples: 2611330001, 2611330002, 2611330003, 2611330004, 2611330005, 2611330006, 2611330007, 2611330008

METHOD BLANK: 76760 Matrix: Water

Associated Lab Samples: 2611330001, 2611330002, 2611330003, 2611330004, 2611330005, 2611330006, 2611330007, 2611330008

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Chloride	mg/L	0.12J	0.25	0.024	11/13/18 16:17	
Fluoride	mg/L	ND	0.30	0.029	11/13/18 16:17	
Sulfate	mg/L	ND	1.0	0.017	11/13/18 16:17	

LABORATORY CONTROL SAMPLE: 76761

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

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 76762

76763

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	RPD	RPD	Max
		2611272001	Spike	Spike	Result	Result	% Rec	% Rec	Limits	Qual	Qual	Qual
Chloride	mg/L	2.3	10	10	12.4	12.5	101	102	90-110	0	15	
Fluoride	mg/L	ND	10	10	10.3	10.3	103	103	90-110	0	15	
Sulfate	mg/L	0.12J	10	10	10.4	10.8	103	107	90-110	4	15	

MATRIX SPIKE SAMPLE: 76764

Parameter	Units	2611272002		Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.	Conc.	Result	% Rec	Limits	
Chloride	mg/L	2.6	10	10	13.0	105	90-110	
Fluoride	mg/L	ND	10	10	10.2	102	90-110	
Sulfate	mg/L	7.3	10	10	17.7	104	90-110	

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## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 2611330

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

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

D6      The precision between the sample and sample duplicate exceeded laboratory control limits.

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

M6      Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: Plant McManus Ash Ponds

Pace Project No.: 2611330

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2611330001	MCM-01	EPA 3005A	16990	EPA 6020B	17017
2611330002	MCM-02	EPA 3005A	16990	EPA 6020B	17017
2611330003	MCM-05	EPA 3005A	16990	EPA 6020B	17017
2611330004	MCM-06	EPA 3005A	16990	EPA 6020B	17017
2611330005	MCM-12	EPA 3005A	16990	EPA 6020B	17017
2611330006	MCM-15	EPA 3005A	16990	EPA 6020B	17017
2611330007	MCM-16	EPA 3005A	16990	EPA 6020B	17017
2611330008	Dup-2	EPA 3005A	16990	EPA 6020B	17017
2611330001	MCM-01	EPA 7470A	16833	EPA 7470A	17021
2611330002	MCM-02	EPA 7470A	16833	EPA 7470A	17021
2611330003	MCM-05	EPA 7470A	16833	EPA 7470A	17021
2611330004	MCM-06	EPA 7470A	16833	EPA 7470A	17021
2611330005	MCM-12	EPA 7470A	16833	EPA 7470A	17021
2611330006	MCM-15	EPA 7470A	16833	EPA 7470A	17021
2611330007	MCM-16	EPA 7470A	16833	EPA 7470A	17021
2611330008	Dup-2	EPA 7470A	16833	EPA 7470A	17021
2611330001	MCM-01	SM 2540C	16943		
2611330002	MCM-02	SM 2540C	16943		
2611330003	MCM-05	SM 2540C	16943		
2611330004	MCM-06	SM 2540C	16943		
2611330005	MCM-12	SM 2540C	16943		
2611330006	MCM-15	SM 2540C	16943		
2611330007	MCM-16	SM 2540C	16943		
2611330008	Dup-2	SM 2540C	16943		
2611330001	MCM-01	EPA 300.0	17032		
2611330002	MCM-02	EPA 300.0	17032		
2611330003	MCM-05	EPA 300.0	17032		
2611330004	MCM-06	EPA 300.0	17032		
2611330005	MCM-12	EPA 300.0	17032		
2611330006	MCM-15	EPA 300.0	17032		
2611330007	MCM-16	EPA 300.0	17032		
2611330008	Dup-2	EPA 300.0	17032		

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CHAIN-OF-CUSTODY / Analytical Request Document

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



## Sample Condition Upon Receipt

Client Name:

GAPower

Project #

WO# : 2611330

Courier:  Fed Ex  UPS  USPS  Client  
Tracking #: 783656271437 Commercial  Pace OtherCustody Seal on Cooler/Box Present:  yes no Seals intact:  yesPacking Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used

83

Type of Ice:  Wet  Blue  None

Cooler Temperature

0.8

Biological Tissue is Frozen: Yes  No 

Temp should be above freezing to 6°C

PM: BM

Due Date: 11/15/18

CLIENT: GAPower-CCR

 Samples on ice, cooling process has begun

Date and Initials of person examining contents: 11/08/18 MR

Comments:

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

Client Notification/ Resolution:

Field Data Required? Y / N

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

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

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

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

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

December 10, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 2611332

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on November 08, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
 Pace Project No.: 2611332

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### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
 Pace Project No.: 2611332

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2611332001	MCM-01	Water	11/07/18 13:16	11/08/18 09:20
2611332002	MCM-02	Water	11/07/18 16:03	11/08/18 09:20
2611332003	MCM-05	Water	11/07/18 10:50	11/08/18 09:20
2611332004	MCM-06	Water	11/07/18 09:40	11/08/18 09:20
2611332005	MCM-12	Water	11/07/18 10:33	11/08/18 09:20
2611332006	MCM-15	Water	11/07/18 15:56	11/08/18 09:20
2611332007	MCM-16	Water	11/07/18 14:48	11/08/18 09:20
2611332008	Dup-2	Water	11/07/18 00:00	11/08/18 09:20

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611332

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2611332001	MCM-01	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611332002	MCM-02	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611332003	MCM-05	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611332004	MCM-06	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611332005	MCM-12	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611332006	MCM-15	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611332007	MCM-16	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611332008	Dup-2	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611332

**Sample: MCM-01**      Lab ID: **2611332001**      Collected: 11/07/18 13:16      Received: 11/08/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.589 ± 0.235 (0.248)</b> C:90% T:NA	pCi/L	12/03/18 11:33	13982-63-3	
Radium-228	EPA 9320	<b>0.0266 ± 0.412 (0.939)</b> C:80% T:91%	pCi/L	12/05/18 16:12	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.616 ± 0.647 (1.19)</b>	pCi/L	12/06/18 14:28	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611332

**Sample: MCM-02**      Lab ID: **2611332002**      Collected: 11/07/18 16:03      Received: 11/08/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.429 ± 0.188 (0.183)</b> C:94% T:NA	pCi/L	12/03/18 11:33	13982-63-3	
Radium-228	EPA 9320	<b>-0.0615 ± 0.531 (1.22)</b> C:80% T:76%	pCi/L	12/05/18 16:12	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.429 ± 0.719 (1.40)</b>	pCi/L	12/06/18 14:28	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611332

**Sample: MCM-05**      Lab ID: **2611332003**      Collected: 11/07/18 10:50      Received: 11/08/18 09:20      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.507 ± 0.225 (0.268)</b> C:86% T:NA	pCi/L	12/03/18 11:33	13982-63-3	
Radium-228	EPA 9320	<b>0.902 ± 0.855 (1.78)</b> C:82% T:84%	pCi/L	12/05/18 20:52	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.41 ± 1.08 (2.05)</b>	pCi/L	12/06/18 14:28	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611332

**Sample: MCM-06**      Lab ID: **2611332004**      Collected: 11/07/18 09:40      Received: 11/08/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>5.85 ± 1.06 (0.169)</b> C:98% T:NA	pCi/L	12/03/18 10:32	13982-63-3	
Radium-228	EPA 9320	<b>2.73 ± 0.999 (1.54)</b> C:77% T:86%	pCi/L	12/05/18 20:52	15262-20-1	
Total Radium	Total Radium Calculation	<b>8.58 ± 2.06 (1.71)</b>	pCi/L	12/06/18 14:28	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611332

**Sample: MCM-12**      Lab ID: **2611332005**      Collected: 11/07/18 10:33      Received: 11/08/18 09:20      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.38 ± 0.387 (0.345)</b> C:95% T:NA	pCi/L	12/03/18 10:32	13982-63-3	
Radium-228	EPA 9320	<b>0.760 ± 0.667 (1.36)</b> C:81% T:90%	pCi/L	12/05/18 20:52	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.14 ± 1.05 (1.71)</b>	pCi/L	12/06/18 14:28	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611332

**Sample: MCM-15**      Lab ID: **2611332006**      Collected: 11/07/18 15:56      Received: 11/08/18 09:20      Matrix: Water  
PWS:                      Site ID:                      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.894 ± 0.283 (0.216)</b> C:98% T:NA	pCi/L	12/03/18 10:32	13982-63-3	
Radium-228	EPA 9320	<b>-0.516 ± 0.750 (1.80)</b> C:76% T:84%	pCi/L	12/05/18 20:52	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.894 ± 1.03 (2.02)</b>	pCi/L	12/06/18 14:28	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611332

**Sample: MCM-16**      **Lab ID: 2611332007**      Collected: 11/07/18 14:48      Received: 11/08/18 09:20      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.651 ± 0.246 (0.259)</b> C:93% T:NA	pCi/L	12/03/18 10:32	13982-63-3	
Radium-228	EPA 9320	<b>-0.637 ± 0.840 (2.01)</b> C:77% T:81%	pCi/L	12/05/18 20:52	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.651 ± 1.09 (2.27)</b>	pCi/L	12/06/18 14:28	7440-14-4	

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611332

**Sample:** Dup-2      **Lab ID:** 2611332008      Collected: 11/07/18 00:00      Received: 11/08/18 09:20      Matrix: Water

**PWS:**      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.817 ± 0.277 (0.266)</b> C:96% T:NA	pCi/L	12/03/18 10:32	13982-63-3	
Radium-228	EPA 9320	<b>0.258 ± 0.605 (1.35)</b> C:77% T:78%	pCi/L	12/05/18 19:49	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.08 ± 0.882 (1.62)</b>	pCi/L	12/06/18 14:35	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611332

QC Batch: 321126 Analysis Method: EPA 9315

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

Associated Lab Samples: 2611332001, 2611332002, 2611332003, 2611332004, 2611332005, 2611332006, 2611332007, 2611332008

METHOD BLANK: 1566262 Matrix: Water

Associated Lab Samples: 2611332001, 2611332002, 2611332003, 2611332004, 2611332005, 2611332006, 2611332007, 2611332008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.177 ± 0.121 (0.173) C:101% T:NA	pCi/L	12/03/18 09:20	

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

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611332

QC Batch: 320740 Analysis Method: EPA 9320

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

Associated Lab Samples: 2611332001, 2611332002, 2611332003, 2611332004, 2611332005, 2611332006, 2611332007, 2611332008

METHOD BLANK: 1564310 Matrix: Water

Associated Lab Samples: 2611332001, 2611332002, 2611332003, 2611332004, 2611332005, 2611332006, 2611332007, 2611332008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.621 ± 0.363 (0.669) C:84% T:82%	pCi/L	12/05/18 12:56	

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

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 2611332

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
 Pace Project No.: 2611332

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2611332001	MCM-01	EPA 9315	321126		
2611332002	MCM-02	EPA 9315	321126		
2611332003	MCM-05	EPA 9315	321126		
2611332004	MCM-06	EPA 9315	321126		
2611332005	MCM-12	EPA 9315	321126		
2611332006	MCM-15	EPA 9315	321126		
2611332007	MCM-16	EPA 9315	321126		
2611332008	Dup-2	EPA 9315	321126		
2611332001	MCM-01	EPA 9320	320740		
2611332002	MCM-02	EPA 9320	320740		
2611332003	MCM-05	EPA 9320	320740		
2611332004	MCM-06	EPA 9320	320740		
2611332005	MCM-12	EPA 9320	320740		
2611332006	MCM-15	EPA 9320	320740		
2611332007	MCM-16	EPA 9320	320740		
2611332008	Dup-2	EPA 9320	320740		
2611332001	MCM-01	Total Radium Calculation	323090		
2611332002	MCM-02	Total Radium Calculation	323090		
2611332003	MCM-05	Total Radium Calculation	323090		
2611332004	MCM-06	Total Radium Calculation	323090		
2611332005	MCM-12	Total Radium Calculation	323090		
2611332006	MCM-15	Total Radium Calculation	323090		
2611332007	MCM-16	Total Radium Calculation	323090		
2611332008	Dup-2	Total Radium Calculation	323093		

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**CHAIN-OF-CUSTODY / Analytical Request Document**

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

Section A Required Client Information:																																																																																								
Company Georgia Power Address 2480 Maner Road Atlanta, GA 30339 Email jacobham@southerncco.com Phone (404) 506-7239 Requested Due Date			Report To Jacob Abraham / Lauren Petty Copy To Resolute Purchase Order # SCS 0348606 Project Name Georgia Power - Plant McManus CCR Scope Project # 334																																																																																					
Section B Required Project Information:																																																																																								
Attention: SCSinfo@southerncco.com Company Name Address Phone Quote Pace Project Manager Pace Profile #			Regulatory Agency State / Location GA																																																																																					
Section C Invoice Information:																																																																																								
Residence Change (Y/N)																																																																																								
<table border="1"> <thead> <tr> <th rowspan="2">SAMPLE ID One Character per box. (A-Z, 0-9 / -) Sample Ids must be unique</th> <th rowspan="2">ITEM #</th> <th colspan="2">COLLECTED</th> <th colspan="2">Preservatives</th> </tr> <tr> <th>START</th> <th>END</th> <th># OF CONTAINERS</th> <th>ANALYSES TEST Y/N</th> <th>REQUESTED ANALYSIS FILTERED (Y/N)</th> </tr> </thead> <tbody> <tr><td>MCM-01</td><td>1</td><td>11/13/11</td><td>11/13/11</td><td>6</td><td>X</td></tr> <tr><td>MCM-02</td><td>2</td><td>11/13/11</td><td>11/13/11</td><td>4</td><td>X</td></tr> <tr><td>MCM-05</td><td>3</td><td>11/13/11</td><td>10/30</td><td>4</td><td>X</td></tr> <tr><td>MCM-0C</td><td>4</td><td>11/13/11</td><td>09/40</td><td>4</td><td>X</td></tr> <tr><td>MCM-12</td><td>5</td><td>11/13/11</td><td>10/31</td><td>4</td><td>X</td></tr> <tr><td>MCM-1S</td><td>6</td><td>11/13/11</td><td>15/56</td><td>4</td><td>X</td></tr> <tr><td>MCM-1G</td><td>7</td><td>11/13/11</td><td>14/48</td><td>4</td><td>X</td></tr> <tr><td>DUP-2</td><td>8</td><td>11/13/11</td><td>—</td><td>4</td><td>X</td></tr> <tr><td></td><td>9</td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td>10</td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td>11</td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td>12</td><td></td><td></td><td></td><td></td></tr> </tbody> </table>						SAMPLE ID One Character per box. (A-Z, 0-9 / -) Sample Ids must be unique	ITEM #	COLLECTED		Preservatives		START	END	# OF CONTAINERS	ANALYSES TEST Y/N	REQUESTED ANALYSIS FILTERED (Y/N)	MCM-01	1	11/13/11	11/13/11	6	X	MCM-02	2	11/13/11	11/13/11	4	X	MCM-05	3	11/13/11	10/30	4	X	MCM-0C	4	11/13/11	09/40	4	X	MCM-12	5	11/13/11	10/31	4	X	MCM-1S	6	11/13/11	15/56	4	X	MCM-1G	7	11/13/11	14/48	4	X	DUP-2	8	11/13/11	—	4	X		9						10						11						12				
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MCM-05	3	11/13/11	10/30	4	X																																																																																			
MCM-0C	4	11/13/11	09/40	4	X																																																																																			
MCM-12	5	11/13/11	10/31	4	X																																																																																			
MCM-1S	6	11/13/11	15/56	4	X																																																																																			
MCM-1G	7	11/13/11	14/48	4	X																																																																																			
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<p align="center"><b>SAMPLE CONDITIONS</b></p> <p align="center">TEMP nC</p>																																																																																								
<p align="center"><b>RECEIVED ON</b></p> <p align="center">(Y/N)</p> <p align="center">Custody Control Samples (Y/N)</p>																																																																																								
<p align="center"><b>SAMPLE NAME AND SIGNATURE</b></p> <p align="center">PRINT Name of SAMPLER: <b>Veronica Fay</b></p> <p align="center">SIGNATURE of SAMPLER: <b>Robert Mull</b></p>																																																																																								
<p align="center"><b>DATE Signed:</b> <b>11/17/10</b></p>																																																																																								



Page Analytical

### **Sample Condition Upon Receipt**

**Client Name:**

## Gra Power

### Project #

WO# : 2611332

PM : BM

Due Date: 12/10/18

CLIENT: GAE user=CCP

Courier:  Fed Ex  UPS  USPS  Client     Commercial  Pace  Other  
Tracking #: 783656271437

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

**Thermometer Used** 84

Type of Ice: Wet      Blue      None

Samples on ice, cooling process has begun

Cooler Temperature

**Biological Tissue is Frozen:** Yes

Temp should be above freezing to 6°C

**Comments:**

Date and Initials of person examining  
contents: 11/08/18 MR

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

**Client Notification/ Resolution:**

Field Data Required? X / N

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

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

## **Project Manager Review:**

Date:

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

November 16, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 2611417

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on November 09, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611417

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### Atlanta Certification IDs

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

North Carolina Certification #: 381  
South Carolina Certification #: 98011001  
Texas Certification #: T104704397-08-TX  
Virginia Certification #: 460204

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611417

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
2611417001	MCM-08	Water	11/08/18 11:12	11/09/18 09:25
2611417002	FBL 110818	Water	11/08/18 12:00	11/09/18 09:25
2611417003	EQBL 110818	Water	11/08/18 12:07	11/09/18 09:25

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611417

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2611417001	<b>MCM-08</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611417002	<b>FBL 110818</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3
2611417003	<b>EQBL 110818</b>	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	JPT	1
		EPA 300.0	RLC	3

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds

Pace Project No.: 2611417

Sample: MCM-08		Lab ID: 2611417001		Collected: 11/08/18 11:12		Received: 11/09/18 09:25		Matrix: Water	
Parameters	Results	Units	Report Limit		DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Antimony	ND	mg/L	0.015	0.0039	5	11/13/18 13:10	11/15/18 20:24	7440-36-0	D3
Arsenic	<b>0.022J</b>	mg/L	0.025	0.0028	5	11/13/18 13:10	11/15/18 20:24	7440-38-2	D3
Barium	<b>0.57</b>	mg/L	0.050	0.0039	5	11/13/18 13:10	11/15/18 20:24	7440-39-3	
Beryllium	<b>0.00027J</b>	mg/L	0.015	0.00025	5	11/13/18 13:10	11/15/18 20:24	7440-41-7	D3
Boron	<b>0.37</b>	mg/L	0.20	0.020	5	11/13/18 13:10	11/15/18 20:24	7440-42-8	
Cadmium	ND	mg/L	0.0050	0.00046	5	11/13/18 13:10	11/15/18 20:24	7440-43-9	D3
Calcium	<b>41.4</b>	mg/L	2.5	0.069	5	11/13/18 13:10	11/15/18 20:24	7440-70-2	
Chromium	<b>0.0080J</b>	mg/L	0.050	0.0078	5	11/13/18 13:10	11/15/18 20:24	7440-47-3	D3
Cobalt	<b>0.0052J</b>	mg/L	0.050	0.0026	5	11/13/18 13:10	11/15/18 20:24	7440-48-4	D3
Lead	ND	mg/L	0.025	0.0014	5	11/13/18 13:10	11/15/18 20:24	7439-92-1	D3
Lithium	ND	mg/L	0.25	0.0049	5	11/13/18 13:10	11/15/18 20:24	7439-93-2	D3
Molybdenum	ND	mg/L	0.050	0.0097	5	11/13/18 13:10	11/15/18 20:24	7439-98-7	D3
Selenium	ND	mg/L	0.050	0.0068	5	11/13/18 13:10	11/15/18 20:24	7782-49-2	D3
Thallium	ND	mg/L	0.0050	0.00071	5	11/13/18 13:10	11/15/18 20:24	7440-28-0	D3
<b>7470 Mercury</b>	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
Mercury	ND	mg/L	0.00050	0.000036	1	11/12/18 10:45	11/12/18 17:13	7439-97-6	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>3630</b>	mg/L	25.0	10.0	1			11/13/18 15:48	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>2050</b>	mg/L	12.5	1.2	50			11/15/18 13:22	16887-00-6
Fluoride	<b>0.040J</b>	mg/L	0.30	0.029	1			11/15/18 14:24	16984-48-8
Sulfate	<b>498</b>	mg/L	50.0	0.85	50			11/15/18 13:22	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds

Pace Project No.: 2611417

Sample: FBL 110818		Lab ID: 2611417002		Collected: 11/08/18 12:00		Received: 11/09/18 09:25		Matrix: Water	
Parameters	Results	Units	Report				Analyzed	CAS No.	Qual
			Limit	MDL	DF	Prepared			
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	11/13/18 13:10	11/15/18 20:52	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	11/13/18 13:10	11/15/18 20:52	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	11/13/18 13:10	11/15/18 20:52	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	11/13/18 13:10	11/15/18 20:52	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	11/13/18 13:10	11/15/18 20:52	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/13/18 13:10	11/15/18 20:52	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	11/13/18 13:10	11/15/18 20:52	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/13/18 13:10	11/15/18 20:52	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/13/18 13:10	11/15/18 20:52	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/13/18 13:10	11/15/18 20:52	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	11/13/18 13:10	11/15/18 20:52	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/13/18 13:10	11/15/18 20:52	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	11/13/18 13:10	11/15/18 20:52	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/13/18 13:10	11/15/18 20:52	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	11/12/18 10:45	11/12/18 17:18	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	25.0	10.0	1			11/13/18 15:48	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>0.082J</b>	mg/L	0.25	0.024	1			11/16/18 02:51	16887-00-6
Fluoride	ND	mg/L	0.30	0.029	1			11/16/18 02:51	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			11/16/18 02:51	14808-79-8

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds

Pace Project No.: 2611417

Sample: EQBL 110818		Lab ID: 2611417003		Collected: 11/08/18 12:07		Received: 11/09/18 09:25		Matrix: Water	
Parameters	Results	Units	Report				Analyzed	CAS No.	Qual
			Limit	MDL	DF	Prepared			
<b>6020B MET ICPMS</b>		Analytical Method: EPA 6020B Preparation Method: EPA 3005A							
Antimony	ND	mg/L	0.0030	0.00078	1	11/13/18 13:10	11/15/18 20:58	7440-36-0	
Arsenic	ND	mg/L	0.0050	0.00057	1	11/13/18 13:10	11/15/18 20:58	7440-38-2	
Barium	ND	mg/L	0.010	0.00078	1	11/13/18 13:10	11/15/18 20:58	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	11/13/18 13:10	11/15/18 20:58	7440-41-7	
Boron	ND	mg/L	0.040	0.0039	1	11/13/18 13:10	11/15/18 20:58	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	11/13/18 13:10	11/15/18 20:58	7440-43-9	
Calcium	ND	mg/L	0.50	0.014	1	11/13/18 13:10	11/15/18 20:58	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	11/13/18 13:10	11/15/18 20:58	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	11/13/18 13:10	11/15/18 20:58	7440-48-4	
Lead	ND	mg/L	0.0050	0.00027	1	11/13/18 13:10	11/15/18 20:58	7439-92-1	
Lithium	ND	mg/L	0.050	0.00097	1	11/13/18 13:10	11/15/18 20:58	7439-93-2	
Molybdenum	ND	mg/L	0.010	0.0019	1	11/13/18 13:10	11/15/18 20:58	7439-98-7	
Selenium	ND	mg/L	0.010	0.0014	1	11/13/18 13:10	11/15/18 20:58	7782-49-2	
Thallium	ND	mg/L	0.0010	0.00014	1	11/13/18 13:10	11/15/18 20:58	7440-28-0	
<b>7470 Mercury</b>		Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	mg/L	0.00050	0.000036	1	11/12/18 10:45	11/12/18 17:25	7439-97-6	
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	25.0	10.0	1			11/13/18 15:48	
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0							
Chloride	<b>0.073J</b>	mg/L	0.25	0.024	1			11/16/18 04:04	16887-00-6 B
Fluoride	ND	mg/L	0.30	0.029	1			11/16/18 04:04	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			11/16/18 04:04	14808-79-8

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## **QUALITY CONTROL DATA**

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611417

QC Batch: 16833 Analysis Method: EPA 7470A  
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury  
Associated Lab Samples: 2611417001, 2611417002, 2611417003

METHOD BLANK: 75562 Matrix: Water

Associated Lab Samples: 2611417001, 2611417002, 2611417003

Parameter	Units	Blank	Reporting		Analyzed	Qualifiers
		Result	Limit	MDL		
Mercury	mg/L	ND	0.00050	0.000036	11/12/18 16:19	

LABORATORY CONTROL SAMPLE: 75563

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.0025	0.0025	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 75564 75565

Parameter	Units	2611272001		MS	MSD	MS % Rec	MSD % Rec	% Rec	Max RPD		
		Result	Spike Conc.	Spike Conc.	Result						
Mercury	mg/L	ND	.0025	.0025	0.0022	0.0025	90	101	75-125	11	20

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## **REPORT OF LABORATORY ANALYSIS**

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## **QUALITY CONTROL DATA**

**Project:** Plant McManus Ash Ponds

Pace Project No.: 2611417

QC Batch: 17097 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020B MET  
Associated Lab Samples: 2611417001, 2611417002, 2611417003

METHOD BLANK: 76972 Matrix: Water

Associated Lab Samples: 2611417001, 2611417002, 2611417003

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Antimony	mg/L	ND	0.0030	0.00078	11/15/18 16:12	
Arsenic	mg/L	ND	0.0050	0.00057	11/15/18 16:12	
Barium	mg/L	ND	0.010	0.00078	11/15/18 16:12	
Beryllium	mg/L	ND	0.0030	0.000050	11/15/18 16:12	
Boron	mg/L	ND	0.040	0.0039	11/15/18 16:12	
Cadmium	mg/L	ND	0.0010	0.000093	11/15/18 16:12	
Calcium	mg/L	ND	0.50	0.014	11/15/18 16:12	
Chromium	mg/L	ND	0.010	0.0016	11/15/18 16:12	
Cobalt	mg/L	ND	0.010	0.00052	11/15/18 16:12	
Lead	mg/L	ND	0.0050	0.00027	11/15/18 16:12	
Lithium	mg/L	ND	0.050	0.00097	11/15/18 16:12	
Molybdenum	mg/L	ND	0.010	0.0019	11/15/18 16:12	
Selenium	mg/L	ND	0.010	0.0014	11/15/18 16:12	
Thallium	mg/L	ND	0.0010	0.00014	11/15/18 16:12	

LABORATORY CONTROL SAMPLE: 76973

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	.1	0.11	112	80-120	
Arsenic	mg/L	.1	0.10	104	80-120	
Barium	mg/L	.1	0.11	107	80-120	
Beryllium	mg/L	.1	0.099	99	80-120	
Boron	mg/L	1	1.0	100	80-120	
Cadmium	mg/L	.1	0.10	102	80-120	
Calcium	mg/L	1	0.99	99	80-120	
Chromium	mg/L	.1	0.10	102	80-120	
Cobalt	mg/L	.1	0.10	102	80-120	
Lead	mg/L	.1	0.10	100	80-120	
Lithium	mg/L	.1	0.10	100	80-120	
Molybdenum	mg/L	.1	0.10	104	80-120	
Selenium	mg/L	.1	0.11	108	80-120	
Thallium	mg/L	.1	0.10	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 76974 76975

Parameter	Units	2611389011	MS		MSD		% Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	MS Result	MSD Result						
Antimony	mg/L	ND	.1	.1	0.11	0.10	113	104	75-125	8	20	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 2611417

Parameter	Units	2611389011		MSD		76975		% Rec	Limits	Max	
		Result	Spike Conc.	Spike Conc.	MS Result	MSD	% Rec			RPD	RPD
Arsenic	mg/L	0.0022J	.1	.1	0.11	0.10	107	100	75-125	6	20
Barium	mg/L	0.020	.1	.1	0.12	0.12	104	95	75-125	7	20
Beryllium	mg/L	0.014	.1	.1	0.12	0.11	103	96	75-125	6	20
Boron	mg/L	0.30	1	1	1.3	1.2	98	90	75-125	7	20
Cadmium	mg/L	0.0016	.1	.1	0.11	0.097	104	95	75-125	9	20
Calcium	mg/L	38.6	1	1	38.1	35.8	-53	-276	75-125	6	20 M6
Chromium	mg/L	ND	.1	.1	0.10	0.093	102	92	75-125	10	20
Cobalt	mg/L	0.35	.1	.1	0.43	0.40	75	51	75-125	6	20 M1
Lead	mg/L	0.00091J	.1	.1	0.10	0.093	99	92	75-125	8	20
Lithium	mg/L	0.082	.1	.1	0.18	0.17	97	88	75-125	5	20
Molybdenum	mg/L	ND	.1	.1	0.10	0.096	103	96	75-125	7	20
Selenium	mg/L	0.0045J	.1	.1	0.11	0.10	109	98	75-125	10	20
Thallium	mg/L	0.00032J	.1	.1	0.10	0.093	100	92	75-125	8	20

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611417

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QC Batch:	17114	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	2611417001, 2611417002, 2611417003		

---

LABORATORY CONTROL SAMPLE: 77047

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	402	100	84-108	

---

SAMPLE DUPLICATE: 77048

Parameter	Units	2611393010 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	ND		10	

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## **QUALITY CONTROL DATA**

Project: Plant McManus Ash Ponds

Pace Project No.: 2611417

QC Batch: 17167 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 2611417001

METHOD BLANK: 77239 Matrix: Water

Associated Lab Samples: 2611417001

Parameter	Units	Blank	Reporting		Analyzed	Qualifiers
		Result	Limit	MDL		
Chloride	mg/L	0.081J	0.25	0.024	11/15/18 03:18	
Fluoride	mg/L	ND	0.30	0.029	11/15/18 03:18	
Sulfate	mg/L	ND	1.0	0.017	11/15/18 03:18	

LABORATORY CONTROL SAMPLE: 77240

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.2	102	90-110	
Fluoride	mg/L	10	10.0	100	90-110	
Sulfate	mg/L	10	10.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 77241

77242

Parameter	Units	Result	MS		MSD		MS		MSD		% Rec		Max					
			Spike	Conc.	Spike	Conc.	MS	Result	MSD	Result	MS	% Rec	MSD	% Rec	% Rec	Limits	RPD	RPD
Chloride	mg/L	25.8	10	10	33.0	32.8	72		70	90-110	0	15	M1					
Fluoride	mg/L	ND	10	10	9.7	9.5	97		95	90-110	2	15						
Sulfate	mg/L	320	10	10	190	190	-1300		-1290	90-110	0	15	E,M1					

MATRIX SPIKE SAMPLE: 77243

Parameter	Units	2611389010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	28.6	10	35.7	72	90-110	M1
Fluoride	mg/L	ND	10	10.1	101	90-110	
Sulfate	mg/L	439	10	226	-2140	90-110	E,M1

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

## **REPORT OF LABORATORY ANALYSIS**

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## **QUALITY CONTROL DATA**

**Project:** Plant McManus Ash Ponds

Pace Project No.: 2611417

QC Batch: 17317 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 2611417002, 2611417003

METHOD BLANK: 77814 Matrix: Water

Associated Lab Samples: 2611417002, 2611417003

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Chloride	mg/L	0.095J	0.25	0.024	11/16/18 02:03	
Fluoride	mg/L	ND	0.30	0.029	11/16/18 02:03	
Sulfate	mg/L	ND	1.0	0.017	11/16/18 02:03	

LABORATORY CONTROL SAMPLE: 77815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.2	102	90-110	
Sulfate	mg/L	10	10.5	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 77816

77817

Parameter	Units	MS		MSD		MS		MSD		% Rec		Max RPD	
		2611417002	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	MSD % Rec	Limits	RPD	Qual		
Chloride	mg/L	0.082J	10	10	10.3	10.3	102	102	90-110	0	15		
Fluoride	mg/L	ND	10	10	10.4	10.3	104	103	90-110	2	15		
Sulfate	mg/L	ND	10	10	11.0	10.8	110	108	90-110	1	15		

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

## **REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 2611417

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
 Pace Project No.: 2611417

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2611417001	MCM-08	EPA 3005A	17097	EPA 6020B	17226
2611417002	FBL 110818	EPA 3005A	17097	EPA 6020B	17226
2611417003	EQBL 110818	EPA 3005A	17097	EPA 6020B	17226
2611417001	MCM-08	EPA 7470A	16833	EPA 7470A	17021
2611417002	FBL 110818	EPA 7470A	16833	EPA 7470A	17021
2611417003	EQBL 110818	EPA 7470A	16833	EPA 7470A	17021
2611417001	MCM-08	SM 2540C	17114		
2611417002	FBL 110818	SM 2540C	17114		
2611417003	EQBL 110818	SM 2540C	17114		
2611417001	MCM-08	EPA 300.0	17167		
2611417002	FBL 110818	EPA 300.0	17317		
2611417003	EQBL 110818	EPA 300.0	17317		

## REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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



December 11, 2018

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 2611418

Dear Joju Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on November 09, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Maria Padilla, Georgia Power  
Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
 Pace Project No.: 2611418

---

### Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601	Missouri Certification #: 235
ANAB DOD-ELAP Rad Accreditation #: L2417	Montana Certification #: Cert0082
Alabama Certification #: 41590	Nebraska Certification #: NE-OS-29-14
Arizona Certification #: AZ0734	Nevada Certification #: PA014572018-1
Arkansas Certification	New Hampshire/TNI Certification #: 297617
California Certification #: 04222CA	New Jersey/TNI Certification #: PA051
Colorado Certification #: PA01547	New Mexico Certification #: PA01457
Connecticut Certification #: PH-0694	New York/TNI Certification #: 10888
Delaware Certification	North Carolina Certification #: 42706
EPA Region 4 DW Rad	North Dakota Certification #: R-190
Florida/TNI Certification #: E87683	Ohio EPA Rad Approval: #41249
Georgia Certification #: C040	Oregon/TNI Certification #: PA200002-010
Guam Certification	Pennsylvania/TNI Certification #: 65-00282
Hawaii Certification	Puerto Rico Certification #: PA01457
Idaho Certification	Rhode Island Certification #: 65-00282
Illinois Certification	South Dakota Certification
Indiana Certification	Tennessee Certification #: 02867
Iowa Certification #: 391	Texas/TNI Certification #: T104704188-17-3
Kansas/TNI Certification #: E-10358	Utah/TNI Certification #: PA014572017-9
Kentucky Certification #: KY90133	USDA Soil Permit #: P330-17-00091
KY WW Permit #: KY0098221	Vermont Dept. of Health: ID# VT-0282
KY WW Permit #: KY0000221	Virgin Island/PADEP Certification
Louisiana DHH/TNI Certification #: LA180012	Virginia/VELAP Certification #: 9526
Louisiana DEQ/TNI Certification #: 4086	Washington Certification #: C868
Maine Certification #: 2017020	West Virginia DEP Certification #: 143
Maryland Certification #: 308	West Virginia DHHR Certification #: 9964C
Massachusetts Certification #: M-PA1457	Wisconsin Approve List for Rad
Michigan/PADEP Certification #: 9991	Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611418

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2611418001	MCM-08	Water	11/08/18 11:12	11/09/18 09:25
2611418002	FBL 110818	Water	11/08/18 12:00	11/09/18 09:25
2611418003	EQBL 110818	Water	11/08/18 12:07	11/09/18 09:25

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 2611418

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2611418001	MCM-08	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611418002	FBL 110818	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
2611418003	EQBL 110818	EPA 9315	LAL	1	PASI-PA
		EPA 9320	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611418

**Sample: MCM-08**      Lab ID: **2611418001**      Collected: 11/08/18 11:12      Received: 11/09/18 09:25      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>12.6 ± 2.08 (0.310)</b> C:95% T:NA	pCi/L	12/03/18 10:33	13982-63-3	
Radium-228	EPA 9320	<b>3.65 ± 1.04 (1.19)</b> C:75% T:87%	pCi/L	12/05/18 20:01	15262-20-1	
Total Radium	Total Radium Calculation	<b>16.3 ± 3.12 (1.50)</b>	pCi/L	12/06/18 14:35	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611418

**Sample: FBL 110818**      Lab ID: **2611418002**      Collected: 11/08/18 12:00      Received: 11/09/18 09:25      Matrix: Water

PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.288 ± 0.165 (0.241)</b> C:96% T:NA	pCi/L	12/03/18 10:33	13982-63-3	
Radium-228	EPA 9320	<b>0.746 ± 0.534 (1.02)</b> C:79% T:85%	pCi/L	12/05/18 20:01	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.03 ± 0.699 (1.26)</b>	pCi/L	12/06/18 14:35	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611418

**Sample:** EQBL 110818      **Lab ID:** 2611418003      Collected: 11/08/18 12:07      Received: 11/09/18 09:25      Matrix: Water

**PWS:**      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.255 ± 0.157 (0.239)</b> C:99% T:NA	pCi/L	12/03/18 10:33	13982-63-3	
Radium-228	EPA 9320	<b>0.191 ± 0.484 (1.08)</b> C:83% T:88%	pCi/L	12/05/18 20:01	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.446 ± 0.641 (1.32)</b>	pCi/L	12/06/18 14:35	7440-14-4	

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611418

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QC Batch: 321126 Analysis Method: EPA 9315  
QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
Associated Lab Samples: 2611418001, 2611418002, 2611418003

---

METHOD BLANK: 1566262 Matrix: Water

Associated Lab Samples: 2611418001, 2611418002, 2611418003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.177 ± 0.121 (0.173) C:101% T:NA	pCi/L	12/03/18 09:20	

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

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## QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant McManus Ash Ponds

Pace Project No.: 2611418

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QC Batch: 320740 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 2611418001, 2611418002, 2611418003

---

METHOD BLANK: 1564310 Matrix: Water

Associated Lab Samples: 2611418001, 2611418002, 2611418003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.621 ± 0.363 (0.669) C:84% T:82%	pCi/L	12/05/18 12:56	

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

## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 2611418

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Act - Activity

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

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
 Pace Project No.: 2611418

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2611418001	MCM-08	EPA 9315	321126		
2611418002	FBL 110818	EPA 9315	321126		
2611418003	EQBL 110818	EPA 9315	321126		
2611418001	MCM-08	EPA 9320	320740		
2611418002	FBL 110818	EPA 9320	320740		
2611418003	EQBL 110818	EPA 9320	320740		
2611418001	MCM-08	Total Radium Calculation	323093		
2611418002	FBL 110818	Total Radium Calculation	323093		
2611418003	EQBL 110818	Total Radium Calculation	323093		

## REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

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



## Sample Condition Upon Receipt

Client Name:

GIA Powers

Project #

WO# : 2611418

PM: BM

Due Date: 12/11/18

CLIENT: GIA Powers-CCR

Courier:  Fed Ex  UPS  USPS  Client

Tracking #: 783669654056

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yesPacking Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used: 83

Type of Ice:  Wet  Blue  None

Cooler Temperature: 1.3

Biological Tissue is Frozen: Yes  No

Temp should be above freezing to 6°C

Comments:

 Samples on ice, cooling process has begunDate and Initials of person examining  
contents: 11/09/18 MRChain of Custody Present:  Yes  No  N/A 1.Chain of Custody Filled Out:  Yes  No  N/A 2.Chain of Custody Relinquished:  Yes  No  N/A 3.Sampler Name & Signature on COC:  Yes  No  N/A 4.Samples Arrived within Hold Time:  Yes  No  N/A 5.Short Hold Time Analysis (<72hr):  Yes  No  N/A 6.Rush Turn Around Time Requested:  Yes  No  N/A 7.Sufficient Volume:  Yes  No  N/A 8.Correct Containers Used:  Yes  No  N/A 9.-Pace Containers Used:  Yes  No  N/AContainers Intact:  Yes  No  N/A 10.Filtered volume received for Dissolved tests  Yes  No  N/A 11.Sample Labels match COC:  Yes  No  N/A 12.

-Includes date/time/ID/Analysis Matrix: CW

All containers needing preservation have been checked.  Yes  No  N/A 13.All containers needing preservation are found to be in compliance with EPA recommendation.  Yes  No  N/Aexceptions: VOA, coliform, TOC, O&G, WI-DRO (water)  Yes  No  N/A Initial when completed Lot # of added preservativeSamples checked for dechlorination:  Yes  No  N/A 14.Headspace in VOA Vials (>6mm):  Yes  No  N/A 15.Trip Blank Present:  Yes  No  N/A 16.Trip Blank Custody Seals Present  Yes  No  N/A

Pace Trip Blank Lot # (if purchased):

## Client Notification/ Resolution:

Field Data Required? Y / N

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

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

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

March 20, 2019

Lauren Petty  
Southern Company Services, Inc.  
42 Inverness Center Parkway  
Birmingham, AL 35242

RE: Project: McManus Performance Monitoring  
Pace Project No.: 2615740

Dear Lauren Petty:

Enclosed are the analytical results for sample(s) received by the laboratory on March 07, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,



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

Enclosures

cc: Kevin Stephenson, Resolute Environmental & Water Resources Consulting, LLC  
Stephen Wilson, Resolute Environmental & Water Resources Consulting, LLC



#### REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: McManus Performance Monitoring  
Pace Project No.: 2615740

---

### Atlanta Certification IDs

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

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

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: McManus Performance Monitoring  
Pace Project No.: 2615740

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2615740001	MCM-06	Water	03/06/19 13:56	03/07/19 08:43

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: McManus Performance Monitoring  
Pace Project No.: 2615740

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2615740001	MCM-06	EPA 6020B	CSW	14
		EPA 7470A	DRB	1
		SM 2540C	RLC	1
		EPA 9056A	RLC	3

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: McManus Performance Monitoring  
Pace Project No.: 2615740

Sample: MCM-06		Lab ID: 2615740001		Collected: 03/06/19 13:56		Received: 03/07/19 08:43		Matrix: Water	
Parameters	Results	Units	Report Limit		DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b> Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Antimony	ND	mg/L	0.015	0.0039	5	03/08/19 12:18	03/11/19 16:24	7440-36-0	D3
Arsenic	<b>0.49</b>	mg/L	0.0050	0.00057	1	03/08/19 12:18	03/08/19 21:09	7440-38-2	
Barium	<b>0.16</b>	mg/L	0.050	0.0039	5	03/08/19 12:18	03/11/19 16:24	7440-39-3	
Beryllium	ND	mg/L	0.0030	0.000050	1	03/08/19 12:18	03/08/19 21:09	7440-41-7	
Boron	<b>1.5</b>	mg/L	0.040	0.0039	1	03/08/19 12:18	03/08/19 21:09	7440-42-8	
Cadmium	ND	mg/L	0.0010	0.000093	1	03/08/19 12:18	03/08/19 21:09	7440-43-9	
Calcium	<b>341</b>	mg/L	25.0	0.69	50	03/08/19 12:18	03/08/19 21:15	7440-70-2	
Chromium	ND	mg/L	0.010	0.0016	1	03/08/19 12:18	03/08/19 21:09	7440-47-3	
Cobalt	ND	mg/L	0.010	0.00052	1	03/08/19 12:18	03/08/19 21:09	7440-48-4	
Lead	ND	mg/L	0.025	0.0014	5	03/08/19 12:18	03/11/19 16:24	7439-92-1	D3
Lithium	<b>0.12</b>	mg/L	0.050	0.00097	1	03/08/19 12:18	03/08/19 21:09	7439-93-2	
Molybdenum	ND	mg/L	0.050	0.0097	5	03/08/19 12:18	03/11/19 16:24	7439-98-7	D3
Selenium	<b>0.0024J</b>	mg/L	0.010	0.0014	1	03/08/19 12:18	03/08/19 21:09	7782-49-2	
Thallium	ND	mg/L	0.0050	0.00071	5	03/08/19 12:18	03/11/19 16:24	7440-28-0	D3
<b>7470 Mercury</b> Analytical Method: EPA 7470A Preparation Method: EPA 7470A									
Mercury	ND	mg/L	0.00050	0.000036	1	03/13/19 08:25	03/13/19 12:07	7439-97-6	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	<b>19000</b>	mg/L	25.0	10.0	1			03/13/19 19:23	
<b>9056 IC Anions</b> Analytical Method: EPA 9056A									
Chloride	<b>11700</b>	mg/L	250	6.0	250			03/14/19 10:54	16887-00-6
Fluoride	ND	mg/L	25.0	7.2	250			03/14/19 10:54	16984-48-8
Sulfate	<b>1220J</b>	mg/L	1250	4.2	250			03/14/19 10:54	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: McManus Performance Monitoring  
Pace Project No.: 2615740

QC Batch:	24123	Analysis Method:	EPA 7470A
QC Batch Method:	EPA 7470A	Analysis Description:	7470 Mercury
Associated Lab Samples:	2615740001		

METHOD BLANK: 108124 Matrix: Water

Associated Lab Samples: 2615740001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00050	0.000036	03/13/19 11:53	

LABORATORY CONTROL SAMPLE: 108125

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0025	0.0026	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 108126 108127

Parameter	Units	2615876001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0025	0.0025	0.0028	0.0026	111	103	75-125	8	20	

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: McManus Performance Monitoring  
Pace Project No.: 2615740

QC Batch:	23903	Analysis Method:	EPA 6020B
QC Batch Method:	EPA 3005A	Analysis Description:	6020B MET
Associated Lab Samples:	2615740001		

METHOD BLANK: 107116                                  Matrix: Water

Associated Lab Samples: 2615740001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0030	0.00078	03/08/19 18:35	
Arsenic	mg/L	ND	0.0050	0.00057	03/08/19 18:35	
Barium	mg/L	ND	0.010	0.00078	03/08/19 18:35	
Beryllium	mg/L	ND	0.0030	0.000050	03/08/19 18:35	
Boron	mg/L	ND	0.040	0.0039	03/08/19 18:35	
Cadmium	mg/L	ND	0.0010	0.000093	03/08/19 18:35	
Calcium	mg/L	ND	0.50	0.014	03/08/19 18:35	
Chromium	mg/L	ND	0.010	0.0016	03/08/19 18:35	
Cobalt	mg/L	ND	0.010	0.00052	03/08/19 18:35	
Lead	mg/L	ND	0.0050	0.00027	03/08/19 18:35	
Lithium	mg/L	ND	0.050	0.00097	03/08/19 18:35	
Molybdenum	mg/L	ND	0.010	0.0019	03/08/19 18:35	
Selenium	mg/L	ND	0.010	0.0014	03/08/19 18:35	
Thallium	mg/L	ND	0.0010	0.00014	03/08/19 18:35	

LABORATORY CONTROL SAMPLE: 107117

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.1	0.098	98	80-120	
Arsenic	mg/L	0.1	0.095	95	80-120	
Barium	mg/L	0.1	0.097	97	80-120	
Beryllium	mg/L	0.1	0.099	99	80-120	
Boron	mg/L	1	1.0	101	80-120	
Cadmium	mg/L	0.1	0.099	99	80-120	
Calcium	mg/L	1	0.98	98	80-120	
Chromium	mg/L	0.1	0.097	97	80-120	
Cobalt	mg/L	0.1	0.095	95	80-120	
Lead	mg/L	0.1	0.092	92	80-120	
Lithium	mg/L	0.1	0.10	100	80-120	
Molybdenum	mg/L	0.1	0.095	95	80-120	
Selenium	mg/L	0.1	0.10	100	80-120	
Thallium	mg/L	0.1	0.091	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 107118                                  107119

Parameter	Units	MS Result	MS Spike Conc.	MS Result	MS % Rec	MS Result	MS % Rec	% Rec Limits	RPD	Max RPD	Max Qual
Antimony	mg/L	ND	0.1	0.1	10.0	0.10	103	102	75-125	2	20

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## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: McManus Performance Monitoring

Pace Project No.: 2615740

Parameter	Units	2615736011		MSD		107119		% Rec	Limits	Max	
		MS	Spike	Spike	MS	MSD	MS			RPD	RPD
		Result	Conc.	Conc.	Result	Result	% Rec			Qual	
Arsenic	mg/L	0.0022J	0.1	0.1	0.10	0.10	101	100	75-125	1	20
Barium	mg/L	0.012	0.1	0.1	0.11	0.11	99	97	75-125	2	20
Beryllium	mg/L	0.023	0.1	0.1	0.11	0.11	84	82	75-125	2	20
Boron	mg/L	11.4	1	1	12.1	12.1	72	71	75-125	0	20 M1
Cadmium	mg/L	0.0030	0.1	0.1	0.10	0.10	97	98	75-125	1	20
Calcium	mg/L	135	1	1	129	131	-519	-375	75-125	1	20
Chromium	mg/L	ND	0.1	0.1	0.098	0.097	97	96	75-125	0	20
Cobalt	mg/L	0.028	0.1	0.1	0.12	0.12	91	94	75-125	2	20
Lead	mg/L	0.0012J	0.1	0.1	0.080	0.081	79	79	75-125	1	20
Lithium	mg/L	0.033J	0.1	0.1	0.12	0.12	87	86	75-125	1	20
Molybdenum	mg/L	ND	0.1	0.1	0.10	0.10	103	102	75-125	1	20
Selenium	mg/L	0.013	0.1	0.1	0.12	0.11	103	102	75-125	0	20
Thallium	mg/L	0.00016J	0.1	0.1	0.081	0.080	81	80	75-125	1	20

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## QUALITY CONTROL DATA

Project: McManus Performance Monitoring  
Pace Project No.: 2615740

QC Batch:	24220	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	2615740001		

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LABORATORY CONTROL SAMPLE: 108435

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	401	100	84-108	

---

SAMPLE DUPLICATE: 108436

Parameter	Units	2615740001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	19000	18800	1	10	

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## QUALITY CONTROL DATA

Project: McManus Performance Monitoring

Pace Project No.: 2615740

QC Batch:	24136	Analysis Method:	EPA 9056A
QC Batch Method:	EPA 9056A	Analysis Description:	9056 IC Anions
Associated Lab Samples:	2615740001		

METHOD BLANK: 108164 Matrix: Water

Associated Lab Samples: 2615740001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.36J	1.0	0.024	03/13/19 06:32	
Fluoride	mg/L	ND	0.10	0.029	03/13/19 06:32	
Sulfate	mg/L	ND	5.0	0.017	03/13/19 06:32	

LABORATORY CONTROL SAMPLE: 108165

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.3	103	90-110	
Fluoride	mg/L	10	10.6	106	90-110	
Sulfate	mg/L	10	11.0	110	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 108166 108167

Parameter	Units	2615601001		MSD		MS Result	MS % Rec	MSD Result	MSD % Rec	% Rec Limits	RPD	RPD	Max Qual
		MS Result	Spiked Conc.	MSD Spike Conc.	MSD Result								
Chloride	mg/L	ND	2000	2000	2040	2050	98	99	90-110	0	15		
Fluoride	mg/L	42.8	2000	2000	2060	2060	101	101	90-110	0	15		
Sulfate	mg/L	ND	2000	2000	2190	2190	109	110	90-110	0	15		

MATRIX SPIKE SAMPLE: 108168

Parameter	Units	2615740001		Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
		Result	Conc.					
Chloride	mg/L	11700	10	1170	-105000	90-110	M1	
Fluoride	mg/L	ND	10	0.51	5	90-110	M1	
Sulfate	mg/L	1220J	10	244	-9730	90-110	M1	

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## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: McManus Performance Monitoring  
Pace Project No.: 2615740

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

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

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

## REPORT OF LABORATORY ANALYSIS

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### **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: McManus Performance Monitoring  
 Pace Project No.: 2615740

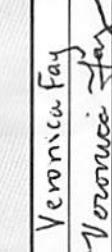
Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2615740001	MCM-06	EPA 3005A	23903	EPA 6020B	23932
2615740001	MCM-06	EPA 7470A	24123	EPA 7470A	24183
2615740001	MCM-06	SM 2540C	24220		
2615740001	MCM-06	EPA 9056A	24136		

### **REPORT OF LABORATORY ANALYSIS**

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# CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Georgia Power - HSRA Address: 42 Inverness Center Parkway Birmingham, AL 35242 Email To: lm.petty@soalternatives.com Phone: 334-265-5614 Fax: Requested Due Date/TAT:		Report To: Lauren Petty Copy To: Resolute Purchase Order No.: SC S 103 43608 Project Name: Plant Manus Performance M, Project Number: 10211		Attention: scsinvoicing@southernco.com Company Name: Address: Pace Quote Reference: Pace Project Manager: bartsu-mechanical@pacelabs.com Pace Profile #: 10211	
				REGULATORY AGENCY <input type="checkbox"/> NPDES <input checked="" type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RORA <input type="checkbox"/> OTHER	
				Site Location: Brunswick STATE: GA	
				Residual Chlorine (Y/N)	
				Requested Analysis Filtered (Y/N)	
				ANALYSTS TEST ↑ <input type="checkbox"/> Preservatives	
				SAMPLE TEMP AT COLLECTION # OF CONTAINERS UPRESERVED	
		Matrix Codes MATRIX / CODE		COLLECTED COMPOSITE START   COMPOSITE END/GRAB	
		SAMPLE TYPE (G=GRAB C=COMP) MATRIX CODE (see valid codes to left)		PRESERVATIVES TDS, Cl, F, SO <sub>4</sub> Me+Cl's NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> HCl HNO <sub>3</sub> H <sub>2</sub> SO <sub>4</sub> Other	
				Pace Project No./Lab I.D.	
<b>Section D Required Client Information</b>		<b>MATERIAL INFORMATION</b>		<b>ANALYSTS TEST ↑ Preservatives</b>	
SAMPLE ID (AZ, 0.9 / -) Sample IDs MUST BE UNIQUE ITEM #		DATE   TIME   DATE   TIME 3/6/19 1356		DATE   TIME   DATE   TIME 2   1   1	
1 MCM-06					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION	
				DATE   TIME   DATE   TIME 3/7/19 0843   3/7/19 0843	
				SAMPLE CONDITIONS SAMPLE CONDITIONS	
				Temp in °C Received on _____ Sealed Container (Y/N) Samples intact (Y/N)	
				PRINT NAME OF SAMPLER: Veronica Fay SIGNATURE OF SAMPLER:  DATE Signed (MM/DD/YY): 3/7/19	
				Terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days. F-ALL-Q-020rev.07, 15-May-2007	

WO# : 2615740





## Sample Condition Upon Receipt

WO# : 2615740

Client Name: GAPower

PM: BM

Due Date: 03/14/19

CLIENT: GAPower

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace OtherTracking #: ✓Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Proj. Due Date:

Proj. Name:

Packing Material:  Bubble Wrap  Bubble Bags  None  OtherThermometer Used 082Type of Ice: Wet Blue None Samples on ice, cooling process has begunCooler Temperature 3.3°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 3/7/09 CG

Temp should be above freezing to 6°C

Comments:

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

## Client Notification/ Resolution:

Field Data Required? Y / N

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

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

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

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

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

April 07, 2019

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Dear Joju Abraham:

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

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

Sincerely,



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

Enclosures

cc: Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

---

### Atlanta Certification IDs

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

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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds  
 Pace Project No.: 2616648

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616648001	MCM-05	Water	03/24/19 14:20	03/27/19 09:35
2616648002	MCM-06	Water	03/24/19 13:21	03/27/19 09:35
2616648003	MCM-07	Water	03/24/19 12:28	03/27/19 09:35
2616648004	MCM-09	Water	03/24/19 10:30	03/27/19 09:35
2616648005	MCM-10	Water	03/24/19 10:46	03/27/19 09:35
2616648006	MCM-12	Water	03/24/19 18:08	03/27/19 09:35
2616648007	MCM-14	Water	03/24/19 16:40	03/27/19 09:35
2616648008	MCM-17	Water	03/24/19 15:24	03/27/19 09:35
2616648009	Dup-1	Water	03/24/19 00:00	03/27/19 09:35
2616648010	FBL032419	Water	03/24/19 18:36	03/27/19 09:35
2616648011	EQBL032419	Water	03/24/19 18:40	03/27/19 09:35

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616648001	MCM-05	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616648002	MCM-06	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616648003	MCM-07	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616648004	MCM-09	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616648005	MCM-10	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616648006	MCM-12	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616648007	MCM-14	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616648008	MCM-17	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616648009	Dup-1	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616648010	FBL032419	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616648011	EQBL032419	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Sample: MCM-05	Lab ID: 2616648001	Collected: 03/24/19 14:20	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.44</b>	mg/L	0.040	0.0039	1	03/31/19 12:23	04/01/19 22:06	7440-42-8	
Calcium	<b>20.9J</b>	mg/L	25.0	0.69	50	03/31/19 12:23	04/01/19 22:11	7440-70-2	D3
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>1450</b>	mg/L	25.0	10.0	1		03/29/19 17:32		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>717</b>	mg/L	25.0	2.4	100		04/03/19 13:20	16887-00-6	M1
Fluoride	<b>0.32</b>	mg/L	0.30	0.029	1		04/03/19 12:57	16984-48-8	
Sulfate	<b>131</b>	mg/L	100	1.7	100		04/03/19 13:20	14808-79-8	M1

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Sample: MCM-06	Lab ID: 2616648002	Collected: 03/24/19 13:21	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	1.1	mg/L	0.040	0.0039	1	03/31/19 12:23	04/01/19 22:29	7440-42-8	
Calcium	277	mg/L	25.0	0.69	50	03/31/19 12:23	04/01/19 22:34	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	13700	mg/L	25.0	10.0	1		03/29/19 17:35		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	6470	mg/L	62.5	6.0	250		04/06/19 14:48	16887-00-6	M1
Fluoride	0.19J	mg/L	0.30	0.029	1		04/03/19 14:29	16984-48-8	M1
Sulfate	ND	mg/L	100	1.7	100		04/03/19 14:53	14808-79-8	M1

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Sample: MCM-07	Lab ID: 2616648003		Collected: 03/24/19 12:28	Received: 03/27/19 09:35	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	1.2	mg/L	0.040	0.0039	1	03/31/19 12:23	04/01/19 22:40	7440-42-8	
Calcium	243	mg/L	25.0	0.69	50	03/31/19 12:23	04/01/19 22:46	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	13700	mg/L	25.0	10.0	1		03/29/19 17:36		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	8720	mg/L	125	12.0	500		04/03/19 15:39	16887-00-6	
Fluoride	0.14J	mg/L	0.30	0.029	1		04/03/19 15:16	16984-48-8	
Sulfate	1070	mg/L	50.0	0.85	50		04/03/19 16:02	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Sample: MCM-09	Lab ID: 2616648004		Collected: 03/24/19 10:30	Received: 03/27/19 09:35	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.085</b>	mg/L	0.040	0.0039	1	03/31/19 12:23	04/01/19 22:51	7440-42-8	
Calcium	<b>271</b>	mg/L	25.0	0.69	50	03/31/19 12:23	04/01/19 22:57	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>3470</b>	mg/L	25.0	10.0	1		03/29/19 17:36		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>1810</b>	mg/L	12.5	1.2	50		04/03/19 18:21	16887-00-6	
Fluoride	ND	mg/L	15.0	1.4	50		04/03/19 18:21	16984-48-8	
Sulfate	<b>1000</b>	mg/L	50.0	0.85	50		04/03/19 18:21	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Sample: MCM-10	Lab ID: 2616648005	Collected: 03/24/19 10:46	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.15</b>	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 19:09	7440-42-8	
Calcium	<b>77.6</b>	mg/L	25.0	0.69	50	04/01/19 15:25	04/02/19 19:15	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>3470</b>	mg/L	25.0	10.0	1		03/29/19 17:36		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>765</b>	mg/L	12.5	1.2	50		04/03/19 19:08	16887-00-6	
Fluoride	<b>1.2</b>	mg/L	0.30	0.029	1		04/03/19 18:44	16984-48-8	
Sulfate	<b>1920</b>	mg/L	250	4.2	250		04/06/19 15:10	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Sample: MCM-12	Lab ID: 2616648006	Collected: 03/24/19 18:08	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	1.0	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 19:21	7440-42-8	
Calcium	7.4	mg/L	0.50	0.014	1	04/01/19 15:25	04/02/19 19:21	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	1770	mg/L	25.0	10.0	1		03/29/19 17:37		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	744	mg/L	25.0	2.4	100		04/03/19 19:54	16887-00-6	
Fluoride	0.99	mg/L	0.30	0.029	1		04/03/19 19:31	16984-48-8	
Sulfate	1.5	mg/L	1.0	0.017	1		04/03/19 19:31	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Sample: MCM-14	Lab ID: 2616648007		Collected: 03/24/19 16:40	Received: 03/27/19 09:35	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.95</b>	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 19:32	7440-42-8	
Calcium	<b>338</b>	mg/L	25.0	0.69	50	04/01/19 15:25	04/02/19 19:38	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>14200</b>	mg/L	25.0	10.0	1		03/29/19 17:37		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>7400</b>	mg/L	50.0	4.8	200		04/03/19 20:40	16887-00-6	
Fluoride	<b>0.14J</b>	mg/L	0.30	0.029	1		04/03/19 20:17	16984-48-8	
Sulfate	<b>1170</b>	mg/L	50.0	0.85	50		04/03/19 21:04	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Sample: MCM-17	Lab ID: 2616648008	Collected: 03/24/19 15:24	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	1.4	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 19:44	7440-42-8	
Calcium	136	mg/L	25.0	0.69	50	04/01/19 15:25	04/02/19 19:49	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	6840	mg/L	25.0	10.0	1		03/29/19 17:37		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	3960	mg/L	25.0	2.4	100		04/03/19 21:50	16887-00-6	
Fluoride	0.31	mg/L	0.30	0.029	1		04/03/19 21:27	16984-48-8	
Sulfate	413	mg/L	100	1.7	100		04/03/19 21:50	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Sample: Dup-1	Lab ID: 2616648009		Collected: 03/24/19 00:00	Received: 03/27/19 09:35	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.083</b>	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 20:07	7440-42-8	
Calcium	<b>279</b>	mg/L	25.0	0.69	50	04/01/19 15:25	04/02/19 20:12	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>3470</b>	mg/L	25.0	10.0	1		03/29/19 17:38		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>1590</b>	mg/L	12.5	1.2	50		04/06/19 15:33	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/03/19 23:46	16984-48-8	
Sulfate	<b>835</b>	mg/L	20.0	0.34	20		04/04/19 00:09	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Sample: FBL032419	Lab ID: 2616648010	Collected: 03/24/19 18:36	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	ND	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 20:18	7440-42-8	
Calcium	ND	mg/L	0.50	0.014	1	04/01/19 15:25	04/02/19 20:18	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	25.0	10.0	1		03/29/19 17:38		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>0.53</b>	mg/L	0.25	0.024	1		04/04/19 00:32	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/04/19 00:32	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		04/04/19 00:32	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Sample: EQBL032419	Lab ID: 2616648011	Collected: 03/24/19 18:40	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	ND	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 20:24	7440-42-8	
Calcium	ND	mg/L	0.50	0.014	1	04/01/19 15:25	04/02/19 20:24	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>62.0</b>	mg/L	25.0	10.0	1		03/29/19 17:39		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>0.12J</b>	mg/L	0.25	0.024	1		04/04/19 01:19	16887-00-6	
Fluoride	ND	mg/L	0.30	0.029	1		04/04/19 01:19	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		04/04/19 01:19	14808-79-8	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 2616648

QC Batch: 25446 Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A Analysis Description: 6020B MET

Associated Lab Samples: 2616648001, 2616648002, 2616648003, 2616648004

METHOD BLANK: 114744 Matrix: Water

Associated Lab Samples: 2616648001, 2616648002, 2616648003, 2616648004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.040	0.0039	04/01/19 17:59	
Calcium	mg/L	ND	0.50	0.014	04/01/19 17:59	

LABORATORY CONTROL SAMPLE: 114745

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.94	94	80-120	
Calcium	mg/L	1	0.94	94	80-120	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 114746 114747

Parameter	Units	2616602001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Max Qual
Boron	mg/L	ND	1	1	0.97	0.98	96	98	75-125	1	20	
Calcium	mg/L	35.6	1	1	37.5	35.0	185	-62	75-125	7	20	M6

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 2616648

QC Batch: 25533 Analysis Method: EPA 6020B

QC Batch Method: EPA 3005A Analysis Description: 6020B MET

Associated Lab Samples: 2616648005, 2616648006, 2616648007, 2616648008, 2616648009, 2616648010, 2616648011

METHOD BLANK: 115216 Matrix: Water

Associated Lab Samples: 2616648005, 2616648006, 2616648007, 2616648008, 2616648009, 2616648010, 2616648011

Parameter	Units	Blank	Reporting	MDL	Analyzed	Qualifiers
		Result	Limit			
Boron	mg/L	ND	0.040	0.0039	04/02/19 18:58	
Calcium	mg/L	ND	0.50	0.014	04/02/19 18:58	

LABORATORY CONTROL SAMPLE: 115217

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Boron	mg/L	1	0.94	94	80-120	
Calcium	mg/L	1	0.97	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 115218 115219

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max	RPD	RPD	Qual
		2616650004	Spike										
Boron	mg/L	0.030J	1	1	0.92	0.93	89	90	75-125	1	20		
Calcium	mg/L	2.5	1	1	3.4	3.4	86	91	75-125	2	20		

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

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QC Batch:	25407	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	2616648001, 2616648002, 2616648003, 2616648004, 2616648005, 2616648006, 2616648007, 2616648008, 2616648009, 2616648010, 2616648011		

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LABORATORY CONTROL SAMPLE: 114535

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	421	105	84-108	

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SAMPLE DUPLICATE: 114536

Parameter	Units	2616648001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1450	1450	0	10	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 2616648

QC Batch: 25646 Analysis Method: EPA 300.0

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

Associated Lab Samples: 2616648001, 2616648002, 2616648003, 2616648004, 2616648005, 2616648006, 2616648007, 2616648008, 2616648009, 2616648010, 2616648011

METHOD BLANK: 115682 Matrix: Water

Associated Lab Samples: 2616648001, 2616648002, 2616648003, 2616648004, 2616648005, 2616648006, 2616648007, 2616648008, 2616648009, 2616648010, 2616648011

Parameter	Units	Blank	Reporting		Analyzed	Qualifiers
		Result	Limit	MDL		
Chloride	mg/L	ND	0.25	0.024	04/03/19 12:12	
Fluoride	mg/L	ND	0.30	0.029	04/03/19 12:12	
Sulfate	mg/L	ND	1.0	0.017	04/03/19 12:12	

LABORATORY CONTROL SAMPLE: 115683

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Chloride	mg/L	10	10.4	104	90-110	
Fluoride	mg/L	10	10.3	103	90-110	
Sulfate	mg/L	10	10.1	101	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 115684 115685

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	RPD	RPD	Max
		2616648001	Spike	Spike	Result	Result	Result	% Rec	% Rec	RPD	RPD	Qual
Chloride	mg/L	717	10	10	309	309	-4080	-4080	90-110	0	15	E,M1
Fluoride	mg/L	0.32	10	10	11.0	11.1	107	107	90-110	0	15	
Sulfate	mg/L	131	10	10	106	106	-248	-248	90-110	0	15	E,M1

MATRIX SPIKE SAMPLE: 115686

Parameter	Units	2616648002	Spike	MS	MS	% Rec	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits	RPD	
Chloride	mg/L	6470	10	1180	-53000	90-110	E,M1	
Fluoride	mg/L	0.19J	10	1.9	17	90-110	M1	
Sulfate	mg/L	ND	10	326	3260	90-110	E,M1	

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 2616648

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

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

E      Analyte concentration exceeded the calibration range. The reported result is estimated.

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

M6      Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616648

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616648001	MCM-05	EPA 3005A	25446	EPA 6020B	25472
2616648002	MCM-06	EPA 3005A	25446	EPA 6020B	25472
2616648003	MCM-07	EPA 3005A	25446	EPA 6020B	25472
2616648004	MCM-09	EPA 3005A	25446	EPA 6020B	25472
2616648005	MCM-10	EPA 3005A	25533	EPA 6020B	25546
2616648006	MCM-12	EPA 3005A	25533	EPA 6020B	25546
2616648007	MCM-14	EPA 3005A	25533	EPA 6020B	25546
2616648008	MCM-17	EPA 3005A	25533	EPA 6020B	25546
2616648009	Dup-1	EPA 3005A	25533	EPA 6020B	25546
2616648010	FBL032419	EPA 3005A	25533	EPA 6020B	25546
2616648011	EQBL032419	EPA 3005A	25533	EPA 6020B	25546
2616648001	MCM-05	SM 2540C	25407		
2616648002	MCM-06	SM 2540C	25407		
2616648003	MCM-07	SM 2540C	25407		
2616648004	MCM-09	SM 2540C	25407		
2616648005	MCM-10	SM 2540C	25407		
2616648006	MCM-12	SM 2540C	25407		
2616648007	MCM-14	SM 2540C	25407		
2616648008	MCM-17	SM 2540C	25407		
2616648009	Dup-1	SM 2540C	25407		
2616648010	FBL032419	SM 2540C	25407		
2616648011	EQBL032419	SM 2540C	25407		
2616648001	MCM-05	EPA 300.0	25646		
2616648002	MCM-06	EPA 300.0	25646		
2616648003	MCM-07	EPA 300.0	25646		
2616648004	MCM-09	EPA 300.0	25646		
2616648005	MCM-10	EPA 300.0	25646		
2616648006	MCM-12	EPA 300.0	25646		
2616648007	MCM-14	EPA 300.0	25646		
2616648008	MCM-17	EPA 300.0	25646		
2616648009	Dup-1	EPA 300.0	25646		
2616648010	FBL032419	EPA 300.0	25646		
2616648011	EQBL032419	EPA 300.0	25646		

### REPORT OF LABORATORY ANALYSIS

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**CHAIN-OF-CUSTODY / Analytical Request Document**

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



## Sample Condition Upon Receipt

Client Name: GIA Power

Project #

WO# : 2616648

PM: BM

Due Date: 04/03/19

CLIENT: GIA Power-CCR

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace OtherTracking #: 7862 6922 6259Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yesPacking Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used

83Type of Ice:  Wet  Blue  None

Cooler Temperature

0.2Biological Tissue is Frozen: Yes  No

Temp should be above freezing to 6°C

Comments:

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

## Client Notification/ Resolution:

Field Data Required? Y / N

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

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

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April 06, 2019

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

RE: Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Dear Joju Abraham:

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

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

Sincerely,



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

Enclosures

cc: Lauren Petty, Southern Company Services, Inc.  
Kevin Stephenson, Resolute Environmental & Water  
Resources Consulting, LLC  
Rebecca Thornton, Pace Analytical Atlanta  
Stephen Wilson, Resolute Environmental & Water  
Resources Consulting, LLC



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

---

### Atlanta Certification IDs

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

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

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant McManus Ash Ponds

Pace Project No.: 2616650

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2616650001	MCM-01	Water	03/25/19 12:04	03/27/19 09:35
2616650002	MCM-02	Water	03/25/19 14:06	03/27/19 09:35
2616650003	MCM-08	Water	03/25/19 17:42	03/27/19 09:35
2616650004	MCM-11	Water	03/25/19 10:20	03/27/19 09:35
2616650005	MCM-15	Water	03/25/19 11:52	03/27/19 09:35
2616650006	MCM-16	Water	03/25/19 16:18	03/27/19 09:35
2616650007	MCM-04	Water	03/25/19 18:58	03/27/19 09:35
2616650008	Dup-2	Water	03/25/19 00:00	03/27/19 09:35
2616650009	FBL032519	Water	03/25/19 17:06	03/27/19 09:35
2616650010	EQBL032519	Water	03/25/19 17:10	03/27/19 09:35

## REPORT OF LABORATORY ANALYSIS

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## SAMPLE ANALYTE COUNT

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Lab ID	Sample ID	Method	Analysts	Analytes Reported
2616650001	MCM-01	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616650002	MCM-02	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616650003	MCM-08	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616650004	MCM-11	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616650005	MCM-15	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616650006	MCM-16	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616650007	MCM-04	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616650008	Dup-2	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616650009	FBL032519	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3
2616650010	EQBL032519	EPA 6020B	CSW	2
		SM 2540C	RLC	1
		EPA 300.0	RLC	3

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Sample: MCM-01	Lab ID: 2616650001	Collected: 03/25/19 12:04	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.038J</b>	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 20:30	7440-42-8	
Calcium	<b>12.6J</b>	mg/L	25.0	0.69	50	04/01/19 15:25	04/02/19 20:35	7440-70-2	D3
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>116</b>	mg/L	25.0	10.0	1		04/01/19 20:06		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>19.4</b>	mg/L	0.25	0.024	1		04/03/19 15:12	16887-00-6	M1
Fluoride	<b>0.038J</b>	mg/L	0.30	0.029	1		04/03/19 15:12	16984-48-8	
Sulfate	<b>43.0</b>	mg/L	1.0	0.017	1		04/03/19 15:12	14808-79-8	M1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Sample: MCM-02	Lab ID: 2616650002	Collected: 03/25/19 14:06	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.091</b>	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 20:41	7440-42-8	
Calcium	<b>4.7</b>	mg/L	0.50	0.014	1	04/01/19 15:25	04/02/19 20:41	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>111</b>	mg/L	25.0	10.0	1		04/01/19 20:06		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>33.5</b>	mg/L	0.25	0.024	1		04/03/19 16:44	16887-00-6	M1
Fluoride	<b>0.039J</b>	mg/L	0.30	0.029	1		04/03/19 16:44	16984-48-8	
Sulfate	<b>34.2</b>	mg/L	1.0	0.017	1		04/03/19 16:44	14808-79-8	M1

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Sample: MCM-08	Lab ID: 2616650003		Collected: 03/25/19 17:42	Received: 03/27/19 09:35	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.34</b>	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 20:52	7440-42-8	
Calcium	<b>50.3</b>	mg/L	25.0	0.69	50	04/01/19 15:25	04/02/19 20:58	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>4020</b>	mg/L	25.0	10.0	1		04/01/19 20:06		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>2340</b>	mg/L	12.5	1.2	50		04/03/19 17:53	16887-00-6	
Fluoride	<b>0.12J</b>	mg/L	0.30	0.029	1		04/03/19 17:30	16984-48-8	
Sulfate	<b>467</b>	mg/L	50.0	0.85	50		04/03/19 17:53	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Sample: MCM-11	Lab ID: 2616650004	Collected: 03/25/19 10:20	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.030J</b>	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 21:15	7440-42-8	
Calcium	<b>2.5</b>	mg/L	0.50	0.014	1	04/01/19 15:25	04/02/19 21:15	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>74.0</b>	mg/L	25.0	10.0	1		04/01/19 20:06		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>12.9</b>	mg/L	0.25	0.024	1		04/03/19 18:15	16887-00-6	
Fluoride	<b>0.12J</b>	mg/L	0.30	0.029	1		04/03/19 18:15	16984-48-8	
Sulfate	<b>24.9</b>	mg/L	1.0	0.017	1		04/03/19 18:15	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Sample: MCM-15	Lab ID: 2616650005	Collected: 03/25/19 11:52	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.057</b>	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 21:55	7440-42-8	
Calcium	<b>7.8</b>	mg/L	0.50	0.014	1	04/01/19 15:25	04/02/19 21:55	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>98.0</b>	mg/L	25.0	10.0	1		04/01/19 20:06		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>19.7</b>	mg/L	0.25	0.024	1		04/03/19 20:33	16887-00-6	
Fluoride	<b>0.036J</b>	mg/L	0.30	0.029	1		04/03/19 20:33	16984-48-8	
Sulfate	<b>22.4</b>	mg/L	1.0	0.017	1		04/03/19 20:33	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Sample: MCM-16	Lab ID: 2616650006	Collected: 03/25/19 16:18	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.067</b>	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 22:18	7440-42-8	
Calcium	<b>5.7</b>	mg/L	0.50	0.014	1	04/01/19 15:25	04/02/19 22:18	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>101</b>	mg/L	25.0	10.0	1		04/01/19 20:07		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>21.8</b>	mg/L	0.25	0.024	1		04/03/19 20:55	16887-00-6	
Fluoride	<b>0.041J</b>	mg/L	0.30	0.029	1		04/03/19 20:55	16984-48-8	
Sulfate	<b>40.1</b>	mg/L	1.0	0.017	1		04/03/19 20:55	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Sample: MCM-04	Lab ID: 2616650007	Collected: 03/25/19 18:58	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.058</b>	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 22:30	7440-42-8	
Calcium	<b>20.8J</b>	mg/L	25.0	0.69	50	04/01/19 15:25	04/02/19 22:36	7440-70-2	D3
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>327</b>	mg/L	25.0	10.0	1		04/01/19 20:07		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>78.5</b>	mg/L	2.5	0.24	10		04/03/19 21:41	16887-00-6	
Fluoride	<b>0.055J</b>	mg/L	0.30	0.029	1		04/03/19 21:18	16984-48-8	
Sulfate	<b>137</b>	mg/L	10.0	0.17	10		04/03/19 21:41	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds

Pace Project No.: 2616650

Sample: Dup-2	Lab ID: 2616650008		Collected: 03/25/19 00:00	Received: 03/27/19 09:35	Matrix: Water				
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	<b>0.055</b>	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 22:41	7440-42-8	
Calcium	<b>8.0</b>	mg/L	0.50	0.014	1	04/01/19 15:25	04/02/19 22:41	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>143</b>	mg/L	25.0	10.0	1		04/01/19 20:07		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>19.9</b>	mg/L	0.25	0.024	1		04/03/19 22:04	16887-00-6	
Fluoride	<b>0.035J</b>	mg/L	0.30	0.029	1		04/03/19 22:04	16984-48-8	
Sulfate	<b>22.6</b>	mg/L	1.0	0.017	1		04/03/19 22:04	14808-79-8	

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Sample: FBL032519		Lab ID: 2616650009		Collected: 03/25/19 17:06		Received: 03/27/19 09:35		Matrix: Water	
Parameters	Results	Units	Report Limit		DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b> Analytical Method: EPA 6020B Preparation Method: EPA 3005A									
Boron	ND	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 22:53	7440-42-8	
Calcium	ND	mg/L	0.50	0.014	1	04/01/19 15:25	04/02/19 22:53	7440-70-2	
<b>2540C Total Dissolved Solids</b> Analytical Method: SM 2540C									
Total Dissolved Solids	ND	mg/L	25.0	10.0	1			04/01/19 20:07	
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Chloride	<b>0.32</b>	mg/L	0.25	0.024	1			04/03/19 22:27	16887-00-6 B
Fluoride	ND	mg/L	0.30	0.029	1			04/03/19 22:27	16984-48-8
Sulfate	ND	mg/L	1.0	0.017	1			04/03/19 22:27	14808-79-8

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Sample: EQBL032519	Lab ID: 2616650010	Collected: 03/25/19 17:10	Received: 03/27/19 09:35	Matrix: Water					
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>	Analytical Method: EPA 6020B Preparation Method: EPA 3005A								
Boron	ND	mg/L	0.040	0.0039	1	04/01/19 15:25	04/02/19 22:58	7440-42-8	
Calcium	ND	mg/L	0.50	0.014	1	04/01/19 15:25	04/02/19 22:58	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	25.0	10.0	1		04/01/19 20:07		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	0.33	mg/L	0.25	0.024	1		04/03/19 22:50	16887-00-6	B
Fluoride	ND	mg/L	0.30	0.029	1		04/03/19 22:50	16984-48-8	
Sulfate	ND	mg/L	1.0	0.017	1		04/03/19 22:50	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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## **QUALITY CONTROL DATA**

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

QC Batch: 25533 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3005A Analysis Description: 6020B MET  
Associated Lab Samples: 2616650001, 2616650002, 2616650003, 2616650004, 2616650005, 2616650006, 2616650007, 2616650008,  
2616650009, 2616650010

METHOD BLANK: 115216 Matrix: Water  
Associated Lab Samples: 2616650001, 2616650002, 2616650003, 2616650004, 2616650005, 2616650006, 2616650007, 2616650008,  
2616650009, 2616650010

Parameter	Units	Blank	Reporting		MDL	Analyzed	Qualifiers
		Result	Limit				
Boron	mg/L	ND	0.040	0.0039	04/02/19 18:58		
Calcium	mg/L	ND	0.50	0.014	04/02/19 18:58		

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LABORATORY CONTROL SAMPLE: 115217

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.94	94	80-120	
Calcium	mg/L	1	0.97	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 115218 115219

Parameter	Units	MS		MSD		MS		MSD		% Rec		Max	
		2616650004	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	mg/L	0.030J	1	1	0.92	0.93	89	90	75-125	1	20		
Calcium	mg/L	2.5	1	1	3.4	3.4	86	91	75-125	2	20		

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

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds  
 Pace Project No.: 2616650

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QC Batch:	25522	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	2616650001, 2616650002, 2616650003, 2616650004, 2616650005, 2616650006, 2616650007, 2616650008, 2616650009, 2616650010		

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LABORATORY CONTROL SAMPLE: 115183

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	400	418	104	84-108	

---

SAMPLE DUPLICATE: 115184

Parameter	Units	2616550001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	294	292	1	10	

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## QUALITY CONTROL DATA

Project: Plant McManus Ash Ponds

Pace Project No.: 2616650

QC Batch: 25647 Analysis Method: EPA 300.0

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

Associated Lab Samples: 2616650001, 2616650002, 2616650003, 2616650004, 2616650005, 2616650006, 2616650007, 2616650008, 2616650009, 2616650010

METHOD BLANK: 115687 Matrix: Water

Associated Lab Samples: 2616650001, 2616650002, 2616650003, 2616650004, 2616650005, 2616650006, 2616650007, 2616650008, 2616650009, 2616650010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.31	0.25	0.024	04/03/19 14:27	
Fluoride	mg/L	ND	0.30	0.029	04/03/19 14:27	
Sulfate	mg/L	ND	1.0	0.017	04/03/19 14:27	

LABORATORY CONTROL SAMPLE: 115688

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	10	10.2	102	90-110	
Fluoride	mg/L	10	10.4	104	90-110	
Sulfate	mg/L	10	10.8	108	90-110	

MATRIX SPIKE &amp; MATRIX SPIKE DUPLICATE: 115689 115690

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	RPD	RPD	Max Qual
		2616650001 Result	Spike Conc.									
Chloride	mg/L	19.4	10	10	28.4	28.3	89	89	90-110	0	15	M1
Fluoride	mg/L	0.038J	10	10	10.4	10.3	103	103	90-110	1	15	
Sulfate	mg/L	43.0	10	10	49.1	49.1	61	61	90-110	0	15	M1

MATRIX SPIKE SAMPLE: 115691

Parameter	Units	2616650002	Spike	MS	MS	% Rec	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits		
Chloride	mg/L	33.5	10	40.2	68	90-110	M1	
Fluoride	mg/L	0.039J	10	9.8	97	90-110		
Sulfate	mg/L	34.2	10	41.2	70	90-110	M1	

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## REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant McManus Ash Ponds

Pace Project No.: 2616650

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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

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

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Plant McManus Ash Ponds  
Pace Project No.: 2616650

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2616650001	MCM-01	EPA 3005A	25533	EPA 6020B	25546
2616650002	MCM-02	EPA 3005A	25533	EPA 6020B	25546
2616650003	MCM-08	EPA 3005A	25533	EPA 6020B	25546
2616650004	MCM-11	EPA 3005A	25533	EPA 6020B	25546
2616650005	MCM-15	EPA 3005A	25533	EPA 6020B	25546
2616650006	MCM-16	EPA 3005A	25533	EPA 6020B	25546
2616650007	MCM-04	EPA 3005A	25533	EPA 6020B	25546
2616650008	Dup-2	EPA 3005A	25533	EPA 6020B	25546
2616650009	FBL032519	EPA 3005A	25533	EPA 6020B	25546
2616650010	EQBL032519	EPA 3005A	25533	EPA 6020B	25546
2616650001	MCM-01	SM 2540C	25522		
2616650002	MCM-02	SM 2540C	25522		
2616650003	MCM-08	SM 2540C	25522		
2616650004	MCM-11	SM 2540C	25522		
2616650005	MCM-15	SM 2540C	25522		
2616650006	MCM-16	SM 2540C	25522		
2616650007	MCM-04	SM 2540C	25522		
2616650008	Dup-2	SM 2540C	25522		
2616650009	FBL032519	SM 2540C	25522		
2616650010	EQBL032519	SM 2540C	25522		
2616650001	MCM-01	EPA 300.0	25647		
2616650002	MCM-02	EPA 300.0	25647		
2616650003	MCM-08	EPA 300.0	25647		
2616650004	MCM-11	EPA 300.0	25647		
2616650005	MCM-15	EPA 300.0	25647		
2616650006	MCM-16	EPA 300.0	25647		
2616650007	MCM-04	EPA 300.0	25647		
2616650008	Dup-2	EPA 300.0	25647		
2616650009	FBL032519	EPA 300.0	25647		
2616650010	EQBL032519	EPA 300.0	25647		

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**CHAIN-OF-CUSTODY / Analytical Request Document**

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

## Sample Condition Upon Receipt

Pace Analytical

Client Name:

GIA Powerte

Project #

WOT# : 2616650

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace Other

Tracking #: 7862 69226259

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yesPacking Material:  Bubble Wrap  Bubble Bags  None  OtherThermometer Used: 83 Type of Ice:  Wet  Blue  None

Cooler Temperature: 0.2

Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Comments:

 Samples on ice, cooling process has begunDate and Initials of person examining  
contents: 3/27/19 MZ

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

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted:

Date/Time:

Comments/ Resolution:

Project Manager Review:

Date:

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



Setting the Standards for Innovative Environmental Solutions

**Stage 2A Data Verification Report  
Georgia Power  
McManus Fossil Plant  
Site Ash Pond  
Coal Combustion Residuals Project  
Groundwater Samples**

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of the 120 groundwater samples collected as part of the eight rounds of 2016-2018 baseline monitoring, at the Georgia Power McManus Fossil Plant facility. These samples were collectively analyzed by Pace Analytical Services, Inc. (Pace) of Peachtree Corners, Georgia, or Asheville, North Carolina, for total and dissolved metals by SW-846 Method 6020B; for total and dissolved mercury by SW-846 Method 7470A; for total dissolved solids (TDS) by Standard Methods (SM) 2540C; and for anions (specifically, chloride, fluoride, and sulfate) by US EPA Method 300.0. In addition, these samples were collectively analyzed by Pace of Greensburg, Pennsylvania for total and dissolved radium-226 by SW-846 Method 9315, for total and dissolved radium-228 by SW-846 Method 9320, and for combined radium-226+228 by calculation.

This review was performed with guidance from the US EPA Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (November 2001); the US EPA Region IV Data Validation Standard Operating Procedures (SOPs; US EPA Region IV, September 2011); and the applied analytical methods. These validation guidance documents, with the exception of the analytical methods, specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the SW-846, US EPA, and SM methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the SW-846, US EPA, and SM methods utilized by the laboratory.

## **Summary**

The analytical results and associated laboratory quality control (QC) samples were reviewed to determine the integrity of the reported analytical results and to verify that the data met the established data quality objectives.

The following sampling events were evaluated as part of this QA review: Event 1, collected 8/30/2016 through 6/2/2017; Event 2, collected 11/30/2016 through 8/2/2017; Event 3, collected 2/16/2017 and 8/17/2017; Event 4, collected 5/31/2017 through 6/2/2017; Event 5, collected 8/15/2017 through 8/17/2017; Event 6, collected 6/19/2018 through 6/28/2018; Event 7, collected 9/25/2018 through 9/27/2018; Event 8, collected 11/6/2018 through 11/27/2018; and two Catch-up Events collected 4/4/2018, 4/5/2018, 5/8/2018, and 5/9/2018.

The following samples were evaluated as part of this QA review: MCM-01, MCM-02, MCM-04, MCM-05, MCM-06, MCM-07, MCM-08, MCM-09, MCM-10, MCM-11, MCM-12, MCM-14, MCM-15, MCM-16, MCM-17, and MCM-17 Filtered.

The following Pace inorganic SDGs were evaluated as part of this QA review: AZH0947, AZI0015, AZJ0743, AZL0033, AAB0672, AAF0003, AAF0065, AAF0132, AAH0134, AAH0564, AAH0613, 266416, 266698, 269692, 269813, 269817, 263684, 263686, 264852, 2611266, 2611330, 2611417, and 2611952.

The following Pace radiological SDGs were evaluated as part of this QA review: 30194838, 30195006, 30200748, 30204292, 30211403, 30220542, 30220649, 30220778, 30226434, 30227596, 30227761, 266417, 266699, 269693, 269815, 269818, 263684, 263686, 264853, 2611267, 2611332, and 2611418.

All data are considered usable as reported, or usable after integration of data validation qualifications.

## **Inorganic and Radiological Data Review**

Data validation was performed for these samples based on the sample results, summary QC data, and raw data provided by the laboratory. The findings offered in this report for the inorganic analyses are based upon a review of the following QC measures:

- Sample condition upon laboratory receipt
- Chain-of-Custody (COC) Records
- Chemical yield
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries and precision
- Field duplicate precision
- Sample holding times
- Blank analysis results
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries and precision
- Laboratory duplicate precision
- Total vs. dissolved results (where applicable)

The above QC measures were evaluated against the analytical method requirements and QC acceptance criteria. The data were validated based on guidance from the US EPA Region IV Data Validation SOPs, the referenced procedures, and were qualified as appropriate as described in the sections below.

## **Comments and Exceptions**

1. In the metals fraction, the laboratory did not report a set number of significant figures for results < 0.1 mg/L. All results that were < 0.1 mg/L were reported to four decimal places. As a result, reported sample results ranged from one to three significant figures. In addition, the anions results < 1 mg/L were reported to two decimal places, which led to sample results with one to two significant figures.
2. The data validator applied qualification to combined radium-226+228 based upon the QC samples associated with the analyses of the individual isotopes, radium-226 and radium-228. The electronic data deliverable (EDD) and the database only include the laboratory results for the combined radium-226+228; therefore, qualification of the individual isotopes is not addressed in this QA review.
3. SW-846 Method 9315 includes all alpha-emitting isotopes of radium. In order to analyze for only radium-226, a 21-day ingrowth period must be used. The radium-226 reported by the laboratory did not undergo a 21-day ingrowth; therefore, the results reported as radium-226 potentially contain additional alpha-emitting radium isotopes and could be high biased.
4. Combined radium-226+228 was reported as the summation of the calculated activities for radium-226 and radium-228. As consistent with routine radiological reporting conventions, negative activities were reported for the radium-226 and radium-228 analyses; however, all negative activities were entered as zero in the calculation of combined radium-226+228 activity.

5. The combined radium-226+228 sample-specific minimum detectable concentration (MDC) was reported as the summation of the MDCs for radium-226 and radium-228. Consequently, there may be instances where a detection was observed in one of the individual isotopes but the combined radium-226+228 result was reported as "not-detected" due to the laboratory's reporting convention for combined radium-226+228.
6. The combined radium-226+228 result uncertainty was reported as the summation of the calculated uncertainties for radium-226 and radium-228. If routine statistical uncertainty reporting conventions were followed, the result uncertainty would have been reported as the root sum square (RSS; the square root of the sum of the squared individual uncertainties).
7. The laboratory did not flag results < the MDC as "not-detected" in the data package provided. The data validator qualified these samples as "U" on the data tables.
8. The sample identification format was modified between Event 1 and Event 2. The sample identification format for Event 1 was "MCM-single digit." The sample identification format for Event 2 was changed per client request to "MCM-##." The radiological fraction of Event 2 SDG AZL0033 retained the original sample identification model. All subsequent SDGs used the "MCM-##" format.
9. In several SDGs, the laboratory did not provide the subcontracted COC record or the Sample Login Receipt Checklist from Pace Pittsburgh. As these items were not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
10. In several SDGs, Pace Atlanta did not relinquish the samples to Pace Pittsburgh on the subcontracted COC record. As these items were not needed to complete the data validation, the laboratory had not been requested to provide this information. Qualification of data due to this issue was not warranted.
11. In SDG 266416 and 266417, the field team did not document relinquishment of the samples by signing the appropriate field on the COC record prior to sample shipment to Pace Atlanta. As this item was not needed to complete the data validation, Southern Company had not been requested to provide this information. Qualification of data due to this issue was not warranted.
12. In SDGs 2611266, 2611267, 2611330, and 2611332, the field team did not complete the "Matrix Code" and "Sample Type" fields on the COC record. As this information was not needed to complete the data validation, Southern Company had not been requested to update the COC record. Qualification of data due to this issue was not warranted.
13. In SDG AAH0613, the laboratory indicated that sample volume had been received for sample MCM-03; however, all tests for this sample were cancelled per client instruction. Further information regarding the cancellation was not provided. The sample had also not been analyzed in the data package containing the associated radiological data, SDG 30227761, despite the cancelation not being noted in a Case Narrative or on the Sample Condition Upon Receipt form.

14. The following field duplicate pairs (see table) were submitted and analyzed for inorganic and radiological parameters with this data set. Acceptable precision and sample representativeness (the relative percent difference [RPD] between results was  $\leq 20\%$  when both results were  $\geq 5\times$  the reporting limit [RL], the difference between results was  $\leq$  the RL when at least one result was  $< 5\times$  the RL, or replicate error ratio [RER]  $< 3$ ) were demonstrated by the reported results in the field duplicate pair evaluation with the exception of the parameters indicated in the Overall Assessment of Data Section below.

<u>Laboratory SDG(s)</u>	<u>Sample</u>	<u>Field Duplicate</u>
AZI0015 30195006	MCM-6	Dup-1
AZL0033 30204292	MCM-12	Dup-1
AAB0672 30211403	MCM-09	Dup-1
AAF0003 30220542	MCM-14	Dup-1
AAF0132 30220778	MCM-5	Dup-2
AAH0134 30226434	MCM-4	Dup-1
AAH0564 30227596	MCM-11	Dup-1
AAH0564 30227596	MCM-01	Dup-2
266416 266417	MCM-12	Dup-1
266416 266417	MCM-16	Dup-2
269692 269693	MCM-09	Dup-1
269817 269818	MCM-16	Dup-2
2611266 2611267	MCM-11	Dup-1
2611330 2611332	MCM-01	Dup-2
263684	MCM-11	Dup-1
264852 264853	MCM-15	Dup-1

### Overall Assessment of Data

Based on a review of the data, qualification of data was warranted as noted below.

<u>Laboratory SDG(s)</u>	<u>Event</u>	<u>Sample(s)</u>	<u>Analyte(s)</u>	<u>Qualifier(s)</u>	<u>Reason(s) for Qualification</u>
AZL0033	2	MCM-17 and MCM-09	beryllium	U*	BL – Method blank contamination
AZL0033	2	MCM-01, MCM-09, and MCM-17	arsenic	U*	BF – Field blank contamination
AZL0033	2	MCM-05 and MCM-16	lead	U*	BF – Field blank contamination
AAH0134	2	MCM-15	chloride	U*	BF – Field blank contamination
AAH0134	2	MCM-02, MCM-08, and MCM-15	fluoride	U*	BF – Field blank contamination
AAH0134	2	MCM-04 and MCM-15	chromium	U*	BF – Field blank contamination
AZL0033	2	MCM-01	boron	U*	BE – Equipment blank contamination
AAF0003	4	MCM-12, MCM-14, and MCM-17	arsenic	U*	BF – Field blank contamination BE – Equipment blank contamination
AAF0132	4	MCM-05	mercury	U*	BF – Field blank contamination BE – Equipment blank contamination
266416	6	MCM-12, MCM-09, MCM-17, MCM-15, MCM-02, and MCM-16	arsenic	U*	BF – Field blank contamination
266417	6	MCM-10 and MCM-01	combined radium-226+228	U*	BF – Field blank contamination BE – Equipment blank contamination
2611266	8	MCM-07, MCM-11, MCM-14, and MCM-17	beryllium	U*	BL – Method blank contamination
2611266	8	MCM-04, MCM-07, and MCM-14	selenium	U*	BF – Field blank contamination
2611266	8	all samples	mercury	U*	BF – Field blank contamination BE – Equipment blank contamination

<u>Laboratory SDG(s)</u>	<u>Event</u>	<u>Sample(s)</u>	<u>Analyte(s)</u>	<u>Qualifier(s)</u>	<u>Reason(s) for Qualification</u>
2611267	8	MCM-11	combined radium-226+228	U*	BF – Field blank contamination BE – Equipment blank contamination
263684	catch up	MCM-11	combined radium-226+228	U*	BL – Method blank contamination
30195006	1	MCM-6 and MCM-5	combined radium-226+228	J	BL – Method blank contamination BF – Field blank contamination BE – Equipment blank contamination
30220649	1	MCM-04	combined radium-226+228	J	BL – Method blank contamination L+ – High LCS recovery
30220542	4	MCM-14	combined radium-226+228	J	BL – Method blank contamination L+ – High LCS recovery
30220778	4	MCM-06	combined radium-226+228	J	BL – Method blank contamination L+ – High LCS recovery
30227761	5	MCM-16	combined radium-226+228	J	BL – Method blank contamination L+ – High LCS recovery
266417	6	MCM-12, MCM-09, MCM-16, MCM-05, and MCM-06	combined radium-226+228	J	BF – Field blank contamination BE – Equipment blank contamination L+ – High LCS recovery
266417	6	MCM-04	combined radium-226+228	J	BE – Equipment blank contamination L+ – High LCS recovery
2611267	8	MCM-09 and MCM-17	combined radium-226+228	J	BL – Method blank contamination BF – Field blank contamination

<u>Laboratory SDG(s)</u>	<u>Event</u>	<u>Sample(s)</u>	<u>Analyte(s)</u>	<u>Qualifier(s)</u>	<u>Reason(s) for Qualification</u>
263684	catch up	MCM-10	combined radium-226+228	J	BL – Method blank contamination L – Low LCS recovery
30200748	1	MCM-17	combined radium-226+228	J	L+ – High LCS recovery
30220649	1	MCM-08	combined radium-226+228	J	L+ – High LCS recovery
30220778	4	MCM-07 and MCM-09	combined radium-226+228	J	L+ – High LCS recovery
30227761	5	MCM-04, MCM-07, MCM-05, and MCM-06	combined radium-226+228	J	L+ – High LCS recovery
266417	6	MCM-14, MCM-08, and MCM-07	combined radium-226+228	J	L+ – High LCS recovery
30220542	1	MCM-02, MCM-10, and MCM-11	combined radium-226+228	J/UJ	L- – Low LCS recovery
30220542	4	MCM-17 and MCM-12	combined radium-226+228	J/UJ	L- – Low LCS recovery
269693	7	MCM-14, MCM-09, MCM-11, and MCM-12	combined radium-226+228	J/UJ	L- – Low LCS recovery
269815	7	all samples	combined radium-226+228	J/UJ	L- – Low LCS/LCSD recoveries
269818	7	all samples	combined radium-226+228	J/UJ	L- – Low LCS/LCSD recoveries
2611267	8	all samples	combined radium-226+228	J (unless previously flagged "U")	L- – Low LCS/LCSD recoveries
2611332	8	all samples	combined radium-226+228	J/UJ	L- – Low LCSD recovery
2611418	8	MCM-08	combined radium-226+228	J	L- – Low LCSD recovery LP – LCS/LCSD imprecision
263684	catch up	MCM-11, MCM-04, MCM-15	combined radium-226+228	J (unless previously flagged "U")	L- – Low LCS recovery
263686	catch up	MCM-08 and MCM-02	combined radium-226+228	J/UJ	L- – Low LCS recovery

<u>Laboratory SDG(s)</u>	<u>Event</u>	<u>Sample(s)</u>	<u>Analyte(s)</u>	<u>Qualifier(s)</u>	<u>Reason(s) for Qualification</u>
2611332	8	MCM-06	combined radium-226+228	J	LP – LCS/LCSD imprecision
30204292	2	MCM-12, MCM-01, MCM-16, and MCM-05	combined radium-226+228	J/UJ	LD – Laboratory duplicate imprecision
AZI0015	1	MCM-6, MCM-9, MCM-5, and MCM-7	boron and selenium	J	M – Low MS/MSD recoveries
AZI0015	1	MCM-5 and MCM-7	beryllium	UJ	M – Low MS/MSD recoveries
AAH0613	5	all samples	sulfate	J	M – Low MS/MSD recoveries
269813	7	MCM-07 and MCM-10	fluoride	J	M – Low MS recovery
269813	7	MCM-06, MCM-07, and MCM-10	sulfate	J	M – Low MS/MSD recoveries
2611266	8	MCM-07, MCM-09, MCM-10, MCM-11, MCM-14, and MCM-17	fluoride	J/UJ	M – Low MS recovery
263684	catch up	all samples	sulfate	J	M – Low MS/MSD recoveries
AAF0003	4	all samples	barium	J	M+ – High MS/MSD recoveries
AAF0065	4	all samples	calcium	J	M+ – High MS/MSD recoveries
AAH0134	5	all samples	fluoride	J (unless previously flagged "U")	M+ – High MSD recovery
269817	7	MCM-16, MCM-8, MCM-2, and MCM-17	barium	J	M+ – High MS/MSD recoveries
266698	6	MCM-08	chloride	J	MP – MS/MSD imprecision
AZL0033	2	MCM-12	sulfate	J	FD – Field duplicate imprecision
30204292	2	MCM-12	combined radium-226+228	J	FD – Field duplicate imprecision
AAH0564	5	MCM-01	chloride and TDS	J	FD – Field duplicate imprecision
269817	7	MCM-17 and MCM-17 Filtered	boron	J	FG – Total vs dissolved imprecision

- All inorganic positive results reported between the method detection limit (MDL) and RL have been flagged "J."
- All radiological results reported below the MDC have been flagged "U."

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Report prepared by:

Allison Felix, Quality Assurance Chemist

Report reviewed by:

Alyssa M. Reed, Senior Quality Assurance Chemist/Project Manager

Report approved by:

David I. Thal, CEAC, CQA, Principal Chemist

Date:

3/18/19

## **INORGANIC AND RADIOLOGICAL DATA QUALIFIERS**

- U - The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit.
- U\* - This analyte should be considered "not-detected" because it was detected in an associated blank at a similar level.
- UJ - The analyte was analyzed for, but was not detected above the level of the reported sample reporting/method detection limit. The reported method detection limit is approximate and may be inaccurate or imprecise.
- J - The analyte was positively identified but the result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R - The data are unusable. The sample results are rejected due to serious analytical deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.
- UR - The analyte was analyzed for, but was not detected above the level of the reported sample reporting or method detection; however, the data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The analyte may or may not be present in the sample.

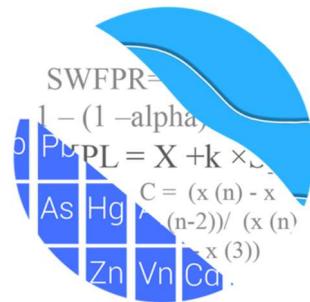
### Reason Codes and Explanations

<b>Reason Code</b>	<b>Explanation</b>
BE	Equipment blank contamination. The result should be considered "not-detected."
BF	Field blank contamination. The result should be considered "not-detected."
BL	Laboratory blank contamination. The result should be considered "not-detected."
BN	Negative laboratory blank contamination.
C	Initial and/or continuing calibration issue, indeterminate bias.
C+	Initial and/or continuing calibration issue. The result may be biased high.
C-	Initial and/or continuing calibration issue. The result may be biased low.
FD	Field duplicate imprecision.
FG	Total versus dissolved imprecision.
H	Holding time exceeded.
I	Internal standard recovery outside of acceptance limits.
L	LCS and LCSD recoveries outside of acceptance limits, indeterminate bias.
L+	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased high.
L-	LCS and/or LCSD recoveries outside of acceptance limits. The result may be biased low.
LD	Laboratory duplicate imprecision.
LP	LCS/LCSD imprecision.
M	MS and MSD recoveries outside of acceptance limits, indeterminate bias.
M+	MS and/or MSD recoveries outside of acceptance limits. The result may be biased high.
M-	MS and/or MSD recoveries outside of acceptance limits. The result may be biased low.
MP	MS/MSD imprecision.
P	Post-digestion spike recoveries outside of acceptance limits, indeterminate bias.
P+	Post-digestion spike recovery outside of acceptance limits. The result may be biased high.
P-	Post-digestion spike recovery outside of acceptance limits. The result may be biased low.
Q	Chemical preservation issue.
R	RL standards outside of acceptance limits, indeterminate bias.
R+	RL standard(s) outside of acceptance limits. The result may be biased high.
R-	RL standard(s) outside of acceptance limits. The result may be biased low.
T	Temperature preservation issue.
SD	Serial dilution imprecision.
Y	Chemical yields outside of acceptance limits, indeterminate bias.
Y+	Chemical yield(s) outside of acceptance limits. The result may be biased high.
Y-	Chemical yield(s) outside of acceptance limits. The result may be biased low.
ZZ	Other

## Appendix B

### Statistical Analyses

GROUNDWATER STATS  
CONSULTING



May 10, 2019

Resolute Environmental & Water Resources Consulting  
Attn: Mr. Stephen Wilson  
1003 Weatherstone Parkway, Ste. 320  
Woodstock, GA 30188

Dear Mr. Wilson,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the statistical analysis of the April 2019 Detection Monitoring Event for Georgia Power Company's Plant McManus Ash Pond. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015), the Georgia Environmental Protection Division Rules for Solid Waste Management Chapter 391-3-4-.10, and follows the USEPA Unified Guidance (2009).

The groundwater monitoring well network consists of the following:

- Upgradient Wells: MCM-01, MCM-02, MCM-15, MCM-16, MCM-08, MCM-11
- Downgradient Wells: MCM-04, MCM-05, MCM-06, MCM-07, MCM-12, MCM-14, MCM-17

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting.

The statistical analysis provided in this report was performed according to the background screening conducted by MacStat Consulting in April 2019. Interwell prediction limits, combined with a 1-of-2 resample plan, for Appendix III parameters were recommended as the primary statistical method in Detection Monitoring. The following parameters were evaluated: boron, calcium, chloride, fluoride, pH, sulfate and total dissolved solids (TDS).

Data from each well are plotted on time series plots for the constituents of interest to monitor concentration levels over time. Additionally, box and whisker plots are provided for visual comparison across all wells, of upgradient to downgradient water quality, and other spatial patterns across the site.

When concentrations exist higher in downgradient wells relative to observations reported upgradient of the facility, as seen in the majority of the Appendix III parameters, this may be reflective of natural variation or a result of practices at the facility. A separate study and hydrogeological investigation would be required to fully understand the geochemical conditions and expected groundwater quality for the region. That study and assessment is beyond the scope of services provided by Groundwater Stats Consulting.

For regulatory comparison of current observations against statistical limits, the annual site-wide false positive rate is based on the USEPA Unified Guidance (2009) recommendation of 10% (5% for each semi-annual sample event). The screening evaluation performed by MacStat Consulting demonstrated that interwell limits combined with a 1-of-2 resample plan provided sufficient power to detect a change at any of the downgradient wells, which complies with the USEPA Unified Guidance recommendation. The EPA suggests that the selected statistical method should provide at least 55% power at 3 standard deviations or at least 80% power at 4 standard deviations.

### **Summary of Statistical Methods:**

Interwell prediction limits, combined with a 1-of-2 resample plan for the above constituents are used to statistically evaluate the April 2019 samples.

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are nondetects, a nonparametric test is utilized. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits.

- No statistical analyses are required on wells and analytes containing 100% nondetects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% nondetects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for nondetects is the practical quantification limit (PQL) as reported by the laboratory.

- When data contain between 15-50% nondetects, the Kaplan-Meier nondetect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% nondetects.

## **Background Screening**

### Outlier Evaluation & Trend Testing

All proposed background data were screened for outliers by MacStat Consulting. No values were flagged as outliers in upgradient wells, but all concentrations will continue to be monitored. When values are flagged as outliers in the computer database, they are deselected prior to construction of statistical limits. This step results in a lower statistical limit that will rapidly identify any changes in compliance data at a given well. A summary of all flagged values will be included in the analyses if future observations are flagged.

Proposed background data from upgradient wells were evaluated to determine whether concentrations are significantly increasing or decreasing over time. This step serves to eliminate the trend and, thus, reduce variation in background. When statistically significant trends are present, earlier data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and are deselected as necessary. While both increasing and decreasing trends were identified during the screening, trend magnitudes were not large, and no adjustments were required to upgradient well data at this time.

### Prediction Limits

Interwell prediction limits are constructed from carefully screened background data, pooled across all upgradient wells. Interwell prediction limits will rapidly identify downgradient concentrations that exceed upgradient background limits.

All available upgradient well data that were screened through November 2018 by MacStat Consulting were used to establish interwell background limits for the above constituents based on a 1-of-2 resample plan.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits will be necessary to

accommodate these types of changes. In the interwell case, upgradient well data will be evaluated annually to determine whether more recent data may be included as background to represent present-day groundwater quality.

In the event of an initial exceedance of prediction limits by compliance well data, the 1-of-2 verification resample plan allows for collection of an additional sample to determine whether the initial exceedance is confirmed. When the resample confirms the initial exceedance, a statistically significant increase (SSI) is identified and further research would be required to identify the cause of the exceedance (i.e. natural variation, an off-site source, practices at the site).

If the resample falls within the statistical limit, the initial exceedance is considered to be a false positive result and, therefore, requires no further action. Note that the reporting limit for fluoride in downgradient well MCM-06 was elevated at <25 mg/L over historical reporting limits of <0.3 mg/L during the March 6, 2019 event, and was followed by a reported trace value of 0.19 mg/L. Therefore, this value was flagged as an outlier in the database.

When the April 2019 samples were compared to their respective interwell prediction limits, several initial statistically significant increases over background were noted. A summary table of these prediction limits and results of comparisons follow this letter.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Plant McManus Ash Pond. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,

A handwritten signature in black ink that reads "Kristina Rayner". The signature is fluid and cursive, with "Kristina" on top and "Rayner" below it, both starting with a capital letter.

Kristina L. Rayner  
Groundwater Statistician

# Prediction Limits

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# Interwell Prediction Limit Summary - Significant Results

Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 5/10/2019, 4:29 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim</u>	<u>Date</u>	<u>Observ.Sig.</u>	<u>Bg N</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (mg/L)	MCM-05	0.398	n/a	3/24/2019	0.44	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-06	0.398	n/a	3/24/2019	1.1	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-07	0.398	n/a	3/24/2019	1.2	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-12	0.398	n/a	3/24/2019	1	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-14	0.398	n/a	3/24/2019	0.95	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-17	0.398	n/a	3/24/2019	1.4	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-06	48.25	n/a	3/24/2019	277	Yes	56	2.205	0.8665	1.786	None	In(x)	0.001075 Param Inter 1 of 2
Calcium (mg/L)	MCM-07	48.25	n/a	3/24/2019	243	Yes	56	2.205	0.8665	1.786	None	In(x)	0.001075 Param Inter 1 of 2
Calcium (mg/L)	MCM-14	48.25	n/a	3/24/2019	338	Yes	56	2.205	0.8665	1.786	None	In(x)	0.001075 Param Inter 1 of 2
Calcium (mg/L)	MCM-17	48.25	n/a	3/24/2019	136	Yes	56	2.205	0.8665	1.786	None	In(x)	0.001075 Param Inter 1 of 2
Chloride (mg/L)	MCM-06	2340	n/a	3/24/2019	6470	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-07	2340	n/a	3/24/2019	8720	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-14	2340	n/a	3/24/2019	7400	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-17	2340	n/a	3/24/2019	3960	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-12	0.85	n/a	3/24/2019	0.99	Yes	55	n/a	n/a	34.55	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
pH (S.U.)	MCM-05	5.714	4.757	3/24/2019	6.1	Yes	54	5.236	0.2475	0	None	No	0.0005373 Param Inter 1 of 2
pH (S.U.)	MCM-06	5.714	4.757	3/24/2019	6.98	Yes	54	5.236	0.2475	0	None	No	0.0005373 Param Inter 1 of 2
pH (S.U.)	MCM-07	5.714	4.757	3/24/2019	6.38	Yes	54	5.236	0.2475	0	None	No	0.0005373 Param Inter 1 of 2
pH (S.U.)	MCM-12	5.714	4.757	3/24/2019	6.4	Yes	54	5.236	0.2475	0	None	No	0.0005373 Param Inter 1 of 2
pH (S.U.)	MCM-14	5.714	4.757	3/24/2019	6.59	Yes	54	5.236	0.2475	0	None	No	0.0005373 Param Inter 1 of 2
pH (S.U.)	MCM-17	5.714	4.757	3/24/2019	6.62	Yes	54	5.236	0.2475	0	None	No	0.0005373 Param Inter 1 of 2
Sulfate (mg/L)	MCM-07	498	n/a	3/24/2019	1070	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-14	498	n/a	3/24/2019	1170	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
TDS (mg/L)	MCM-06	4020	n/a	3/24/2019	13700	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
TDS (mg/L)	MCM-07	4020	n/a	3/24/2019	13700	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
TDS (mg/L)	MCM-14	4020	n/a	3/24/2019	14200	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2
TDS (mg/L)	MCM-17	4020	n/a	3/24/2019	6840	Yes	55	n/a	n/a	0	n/a	n/a	0.0006289 NP Inter (normality) 1 of 2

# Interwell Prediction Limit Summary - All Results

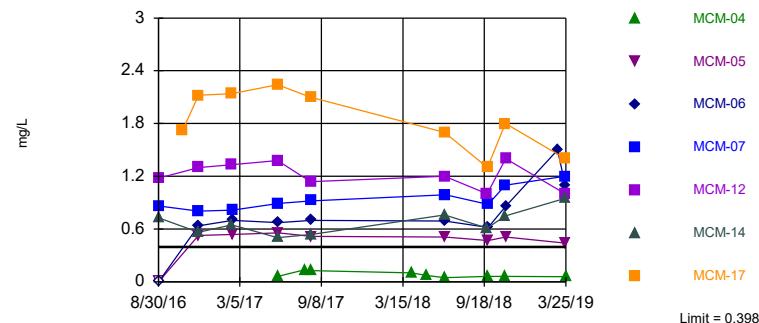
Plant McManus Client: Southern Company Data: McManus Ash Pond Printed 5/10/2019, 4:29 PM

Constituent	Well	Upper Lim.	Lower Lim	Date	Observ.Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	TransformAlpha	Method
Boron (mg/L)	MCM-04	0.398	n/a	3/25/2019	0.058	No	55	n/a	n/a	0	n/a	n/a
Boron (mg/L)	<b>MCM-05</b>	<b>0.398</b>	n/a	3/24/2019	<b>0.44</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
Boron (mg/L)	<b>MCM-06</b>	<b>0.398</b>	n/a	3/24/2019	<b>1.1</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-07	0.398	n/a	3/24/2019	1.2	Yes	55	n/a	n/a	0	n/a	0.0006289 NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-12	0.398	n/a	3/24/2019	1	Yes	55	n/a	n/a	0	n/a	0.0006289 NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-14	0.398	n/a	3/24/2019	0.95	Yes	55	n/a	n/a	0	n/a	0.0006289 NP Inter (normality) 1 of 2
Boron (mg/L)	MCM-17	<b>0.398</b>	n/a	3/24/2019	<b>1.4</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
Calcium (mg/L)	MCM-04	48.25	n/a	3/25/2019	20.8	No	56	2.205	0.8665	1.786	None	ln(x)
Calcium (mg/L)	MCM-05	48.25	n/a	3/24/2019	20.9	No	56	2.205	0.8665	1.786	None	ln(x)
<b>Calcium (mg/L)</b>	<b>MCM-06</b>	<b>48.25</b>	n/a	3/24/2019	<b>277</b>	Yes	<b>56</b>	<b>2.205</b>	<b>0.8665</b>	<b>1.786</b>	None	<b>0.001075</b> Param Inter 1 of 2
Calcium (mg/L)	MCM-07	<b>48.25</b>	n/a	3/24/2019	<b>243</b>	Yes	<b>56</b>	<b>2.205</b>	<b>0.8665</b>	<b>1.786</b>	None	ln(x)
Calcium (mg/L)	MCM-12	48.25	n/a	3/24/2019	7.4	No	56	2.205	0.8665	1.786	None	ln(x)
Calcium (mg/L)	MCM-14	<b>48.25</b>	n/a	3/24/2019	<b>338</b>	Yes	<b>56</b>	<b>2.205</b>	<b>0.8665</b>	<b>1.786</b>	None	ln(x)
Calcium (mg/L)	MCM-17	<b>48.25</b>	n/a	3/24/2019	<b>136</b>	Yes	<b>56</b>	<b>2.205</b>	<b>0.8665</b>	<b>1.786</b>	None	ln(x)
Chloride (mg/L)	MCM-04	2340	n/a	3/25/2019	78.5	No	55	n/a	n/a	0	n/a	n/a
Chloride (mg/L)	MCM-05	2340	n/a	3/24/2019	717	No	55	n/a	n/a	0	n/a	n/a
<b>Chloride (mg/L)</b>	<b>MCM-06</b>	<b>2340</b>	n/a	3/24/2019	<b>6470</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-07	<b>2340</b>	n/a	3/24/2019	<b>8720</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-12	2340	n/a	3/24/2019	744	No	55	n/a	n/a	0	n/a	n/a
Chloride (mg/L)	MCM-14	<b>2340</b>	n/a	3/24/2019	<b>7400</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
Chloride (mg/L)	MCM-17	<b>2340</b>	n/a	3/24/2019	<b>3960</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-04	0.85	n/a	3/25/2019	0.055	No	55	n/a	n/a	34.55	n/a	n/a
Fluoride (mg/L)	MCM-05	0.85	n/a	3/24/2019	0.32	No	55	n/a	n/a	34.55	n/a	n/a
Fluoride (mg/L)	MCM-06	0.85	n/a	3/24/2019	0.19	No	55	n/a	n/a	34.55	n/a	n/a
Fluoride (mg/L)	MCM-07	0.85	n/a	3/24/2019	0.14	No	55	n/a	n/a	34.55	n/a	n/a
<b>Fluoride (mg/L)</b>	<b>MCM-12</b>	<b>0.85</b>	n/a	3/24/2019	<b>0.99</b>	Yes	<b>55</b>	n/a	n/a	<b>34.55</b>	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
Fluoride (mg/L)	MCM-14	0.85	n/a	3/24/2019	0.14	No	55	n/a	n/a	34.55	n/a	n/a
Fluoride (mg/L)	MCM-17	0.85	n/a	3/24/2019	0.31	No	55	n/a	n/a	34.55	n/a	n/a
pH (S.U.)	MCM-04	5.714	4.757	3/25/2019	4.93	No	54	5.236	0.2475	0	None	No
pH (S.U.)	<b>MCM-05</b>	<b>5.714</b>	<b>4.757</b>	3/24/2019	<b>6.1</b>	Yes	<b>54</b>	<b>5.236</b>	<b>0.2475</b>	<b>0</b>	None	No
pH (S.U.)	<b>MCM-06</b>	<b>5.714</b>	<b>4.757</b>	3/24/2019	<b>6.98</b>	Yes	<b>54</b>	<b>5.236</b>	<b>0.2475</b>	<b>0</b>	None	No
pH (S.U.)	<b>MCM-07</b>	<b>5.714</b>	<b>4.757</b>	3/24/2019	<b>6.38</b>	Yes	<b>54</b>	<b>5.236</b>	<b>0.2475</b>	<b>0</b>	None	No
pH (S.U.)	<b>MCM-12</b>	<b>5.714</b>	<b>4.757</b>	3/24/2019	<b>6.4</b>	Yes	<b>54</b>	<b>5.236</b>	<b>0.2475</b>	<b>0</b>	None	No
pH (S.U.)	<b>MCM-14</b>	<b>5.714</b>	<b>4.757</b>	3/24/2019	<b>6.59</b>	Yes	<b>54</b>	<b>5.236</b>	<b>0.2475</b>	<b>0</b>	None	No
pH (S.U.)	<b>MCM-17</b>	<b>5.714</b>	<b>4.757</b>	3/24/2019	<b>6.62</b>	Yes	<b>54</b>	<b>5.236</b>	<b>0.2475</b>	<b>0</b>	None	No
Sulfate (mg/L)	MCM-04	498	n/a	3/25/2019	137	No	55	n/a	n/a	0	n/a	n/a
Sulfate (mg/L)	MCM-05	498	n/a	3/24/2019	131	No	55	n/a	n/a	0	n/a	n/a
Sulfate (mg/L)	MCM-06	498	n/a	3/24/2019	100ND	No	55	n/a	n/a	0	n/a	n/a
<b>Sulfate (mg/L)</b>	<b>MCM-07</b>	<b>498</b>	n/a	3/24/2019	<b>1070</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-12	498	n/a	3/24/2019	1.5	No	55	n/a	n/a	0	n/a	n/a
<b>Sulfate (mg/L)</b>	<b>MCM-14</b>	<b>498</b>	n/a	3/24/2019	<b>1170</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
Sulfate (mg/L)	MCM-17	498	n/a	3/24/2019	413	No	55	n/a	n/a	0	n/a	n/a
TDS (mg/L)	MCM-04	4020	n/a	3/25/2019	327	No	55	n/a	n/a	0	n/a	n/a
TDS (mg/L)	MCM-05	4020	n/a	3/24/2019	1450	No	55	n/a	n/a	0	n/a	n/a
<b>TDS (mg/L)</b>	<b>MCM-06</b>	<b>4020</b>	n/a	3/24/2019	<b>13700</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
TDS (mg/L)	<b>MCM-07</b>	<b>4020</b>	n/a	3/24/2019	<b>13700</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	n/a
TDS (mg/L)	MCM-12	4020	n/a	3/24/2019	1770	No	55	n/a	n/a	0	n/a	n/a
<b>TDS (mg/L)</b>	<b>MCM-14</b>	<b>4020</b>	n/a	3/24/2019	<b>14200</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2
TDS (mg/L)	<b>MCM-17</b>	<b>4020</b>	n/a	3/24/2019	<b>6840</b>	Yes	<b>55</b>	n/a	n/a	0	n/a	<b>0.0006289</b> NP Inter (normality) 1 of 2

Sanitas™ v.9.6.12h Sanitas software utilized by Groundwater Stats Consulting, UG  
Hollow symbols indicate censored values.

Exceeds Limit: MCM-05, MCM-06, MCM-07, MCM-12, MCM-14, MCM-17

Prediction Limit  
Interwell Non-parametric

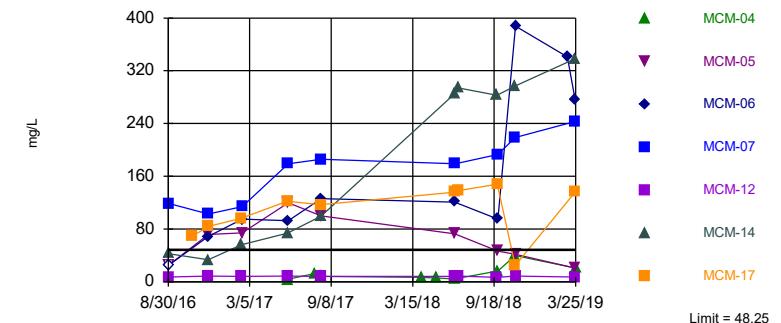


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 55 background values. Annual per-constituent alpha = 0.008769. Individual comparison alpha = 0.0006289 (1 of 2). Comparing 7 points to limit.

Sanitas™ v.9.6.12h Sanitas software utilized by Groundwater Stats Consulting, UG  
Hollow symbols indicate censored values.

Exceeds Limit: MCM-06, MCM-07, MCM-14, MCM-17

Prediction Limit  
Interwell Parametric



Background Data Summary (based on natural log transformation): Mean=2.205, Std. Dev.=0.8665, n=56, 1.786% NDs. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9491, critical = 0.942. Kappa = 1.928 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.001075. Comparing 7 points to limit.

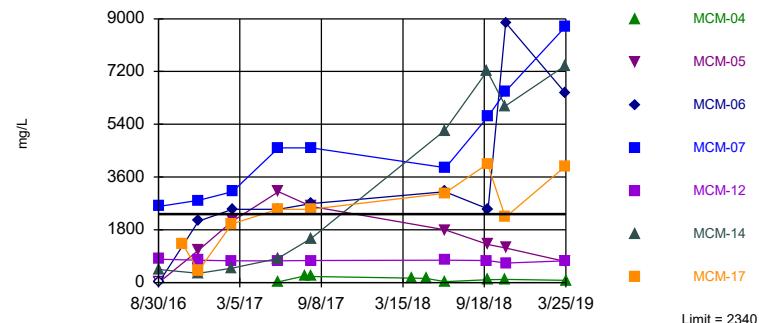
Constituent: Boron Analysis Run 5/10/2019 4:27 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

Constituent: Calcium Analysis Run 5/10/2019 4:27 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sanitas™ v.9.6.12h Sanitas software utilized by Groundwater Stats Consulting, UG  
Hollow symbols indicate censored values.

Exceeds Limit: MCM-06, MCM-07, MCM-14, MCM-17

Prediction Limit  
Interwell Non-parametric

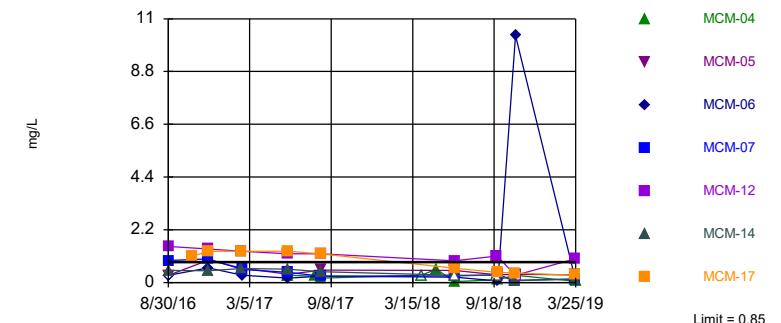


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 55 background values. Annual per-constituent alpha = 0.008769. Individual comparison alpha = 0.0006289 (1 of 2). Comparing 7 points to limit.

Sanitas™ v.9.6.12h Sanitas software utilized by Groundwater Stats Consulting, UG  
Hollow symbols indicate censored values.

Exceeds Limit: MCM-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 55 background values. 34.55% NDs. Annual per-constituent alpha = 0.008769. Individual comparison alpha = 0.0006289 (1 of 2). Comparing 7 points to limit.

Constituent: Chloride Analysis Run 5/10/2019 4:27 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

Constituent: Fluoride Analysis Run 5/10/2019 4:27 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Prediction Limit

Constituent: Boron (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell

Plant McManus Client: Southern Company Data: McManus Ash Pond

# Prediction Limit

Page 2

Constituent: Boron (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-02 (bg)	MCM-04	MCM-08 (bg)	MCM-15 (bg)
8/30/2016				
8/31/2016				
10/25/2016				
11/30/2016				
2/15/2017				
2/16/2017				
5/31/2017	0.161			
6/1/2017		0.0608	0.336	
6/2/2017				0.0495
8/2/2017	0.158	0.137	0.318	0.0333 (J)
8/15/2017			0.338	
8/16/2017	0.148			
8/17/2017		0.128		0.0593
4/4/2018		0.1		0.065
4/5/2018	0.13		0.39	
5/8/2018		0.074		0.062
5/9/2018	0.12		0.35	
6/19/2018	0.13		0.38	0.064
6/20/2018		0.045		
6/21/2018				
6/28/2018			0.38	
9/25/2018				
9/26/2018	0.1		0.32	0.06
9/27/2018		0.06		
11/6/2018		0.06		
11/7/2018	0.1			0.062 (J)
11/8/2018			0.37	
3/6/2019				
3/24/2019				
3/25/2019	0.091	0.058	0.34	0.057

## Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-14	MCM-16 (bg)	MCM-12	MCM-07	MCM-06	MCM-05	MCM-17	MCM-11 (bg)
8/30/2016	7.3	42.8	4.02	7.05					
8/31/2016					119	<25	<25		
10/25/2016									69.4
11/30/2016	10.8	33.2	4.87	8.69	103	68.7	71.7	83.9	
2/15/2017	14.3	56.1	6.61	8.34					96.3
2/16/2017					114	94.8	74		
5/31/2017		73.6		8.85				122	18.6
6/1/2017	12.7 (J)		6.42						
6/2/2017					179	92.5	120		
8/2/2017									18.5
8/15/2017				8.05				117	4.09
8/16/2017	8.7	99.6							
8/17/2017			5.62		186	126	100		
4/4/2018									<25
4/5/2018									
5/8/2018									18.4 (J)
5/9/2018									
6/19/2018	11.6 (J)	285		8.3				136	4.3
6/20/2018			5.7			121	72.8		
6/21/2018					179				
6/28/2018	13	294		8.9				138	
9/25/2018		283		6.8					6.2
9/26/2018	12.8 (J)		5.3					148	
9/27/2018					193	95.1	46.6		
11/6/2018		297			219			24.7	1.8
11/7/2018	11.9		5.3	8.5		387.5 (D)	41.8		
11/8/2018									
3/6/2019						341			
3/24/2019		338		7.4	243	277	20.9 (J)	136	
3/25/2019	12.6 (J)		5.7						2.5 (D)

# Prediction Limit

Page 2

Constituent: Calcium (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-02 (bg)	MCM-04	MCM-08 (bg)	MCM-15 (bg)
8/30/2016				
8/31/2016				
10/25/2016				
11/30/2016				
2/15/2017				
2/16/2017				
5/31/2017	5.9			
6/1/2017		3.65	27.3	
6/2/2017				2.77
8/2/2017	4.69	12.4	32.7	1.27
8/15/2017			27.7	
8/16/2017	5.25			
8/17/2017		8.17		5.53
4/4/2018		6.8		6.5
4/5/2018	5		39.4	
5/8/2018		5.7		6.7
5/9/2018	4.7		37	
6/19/2018	4.8		39.8	7.4
6/20/2018		4.3		
6/21/2018				
6/28/2018			42.9	
9/25/2018				
9/26/2018	4.6		42.6	8.5 (J)
9/27/2018		16.4 (J)		
11/6/2018		39.5		
11/7/2018	4.6			9.8
11/8/2018			41.4	
3/6/2019				
3/24/2019				
3/25/2019	4.7	20.8 (J)	50.3	7.8

## Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-12	MCM-14	MCM-05	MCM-06	MCM-07	MCM-17	MCM-11 (bg)
8/30/2016	9.7	26	800	450	<0.01	<0.01	2600		
8/31/2016								1300	
10/25/2016									
11/30/2016	19	27	760	310	1100	2100	2800	400	
2/15/2017	21	30	740	490		2100	2500	2000	
2/16/2017							3100		
5/31/2017			740	820				2500	98
6/1/2017	12	27			3100	2500	4600		
6/2/2017									57
8/2/2017									
8/15/2017			750					2500	15
8/16/2017	14			1500					
8/17/2017		32			2600	2700	4600		
4/4/2018									69
4/5/2018									
5/8/2018									72.3
5/9/2018									
6/19/2018	24.4		760	5180				3050	17.3
6/20/2018		30			1800	3100			
6/21/2018							3920		
6/28/2018									
9/25/2018			752	7220					31.3
9/26/2018	23.4	28.4							4050
9/27/2018					1300	2510 (D)	5660 (D)		
11/6/2018				6020			6520	2230	9.8
11/7/2018	21.8	25.1	665		1180	8860			
11/8/2018									
3/24/2019			744	7400	717	6470	8720	3960	
3/25/2019	19.4	21.8							12.9

# Prediction Limit

Page 2

Constituent: Chloride (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-02 (bg)	MCM-04	MCM-08 (bg)	MCM-15 (bg)
8/30/2016				
8/31/2016				
10/25/2016				
11/30/2016				
2/15/2017				
2/16/2017				
5/31/2017	39			
6/1/2017		22	1400	
6/2/2017				11
8/2/2017	42	230	1600	3.2
8/15/2017			1700	
8/16/2017	41			
8/17/2017		210		12
4/4/2018		156		13.4
4/5/2018	40.2		1900	
5/8/2018		140		13.2
5/9/2018	40.6		1870	
6/19/2018	37.7		1890	13.7
6/20/2018		27.5		
6/21/2018				
6/28/2018			1910	
9/25/2018				
9/26/2018	33.4		2040	18.5
9/27/2018		101		
11/6/2018		107		
11/7/2018	30.7			20.2
11/8/2018			2050	
3/24/2019				
3/25/2019	33.5	78.5	2340	19.7

## Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell

Plant McManus Client: Southern Company Data: McManus Ash Pond

# Prediction Limit

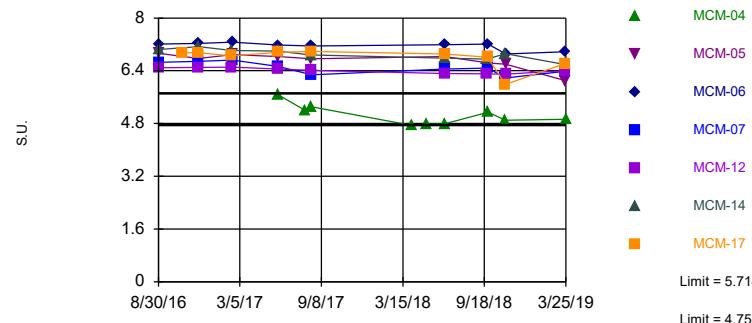
Page 2

Constituent: Fluoride (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-02 (bg)	MCM-04	MCM-08 (bg)	MCM-15 (bg)
8/30/2016				
8/31/2016				
10/25/2016				
11/30/2016				
2/15/2017				
2/16/2017				
5/31/2017	0.01 (J)			
6/1/2017		<0.3	<0.3	
6/2/2017				<0.3
8/2/2017	0.14 (J)	0.27 (J)	0.16 (J)	0.05 (J)
8/15/2017			0.21 (J)	
8/16/2017	0.13 (J)			
8/17/2017		0.18 (J)		<0.3
4/4/2018		<0.3		<0.3
4/5/2018	<0.3		<0.3	
5/8/2018		0.56		<0.3
5/9/2018	<0.3		0.23 (J)	
6/19/2018	0.065 (J)		0.043 (J)	0.057 (J)
6/20/2018		0.033 (J)		
6/21/2018				
6/28/2018			0.12 (J)	
9/25/2018				
9/26/2018	<0.3		<0.3	<0.3
9/27/2018		0.12 (J)		
11/6/2018		<0.3		
11/7/2018	<0.3			<0.3
11/8/2018			0.04 (J)	
3/6/2019				
3/24/2019				
3/25/2019	0.039 (J)	0.055 (J)	0.12 (J)	0.036 (J)

Exceeds Limits: MCM-05, MCM-06, MCM-07, MCM-12, MCM-14, MCM-17

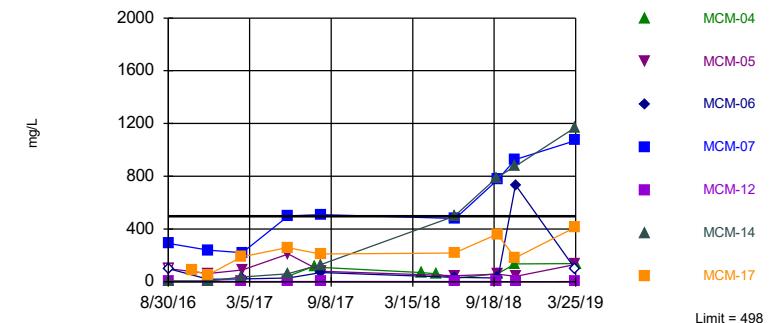
### Prediction Limit Interwell Parametric



Background Data Summary: Mean=5.236, Std. Dev.=0.2475, n=54. Normality test: Shapiro Francia @alpha = 0.01, calculated = 0.9838, critical = 0.939. Kappa = 1.933 (c=7, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0005373. Comparing 7 points to limit.

Exceeds Limit: MCM-07, MCM-14

### Prediction Limit Interwell Non-parametric



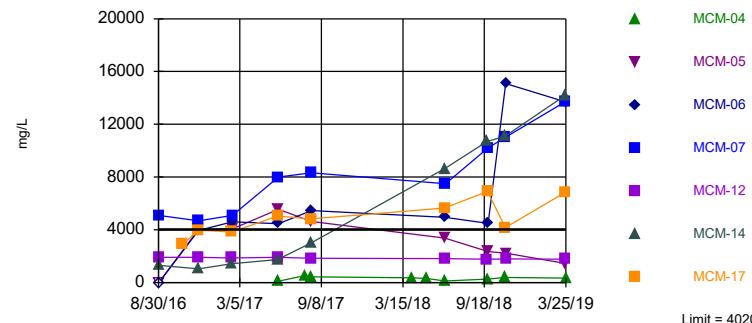
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 55 background values. Annual per-constituent alpha = 0.008769. Individual comparison alpha = 0.0006289 (1 of 2). Comparing 7 points to limit.

Constituent: pH Analysis Run 5/10/2019 4:27 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

Constituent: Sulfate Analysis Run 5/10/2019 4:27 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

Exceeds Limit: MCM-06, MCM-07, MCM-14, MCM-17

### Prediction Limit Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Francia normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 55 background values. Annual per-constituent alpha = 0.008769. Individual comparison alpha = 0.0006289 (1 of 2). Comparing 7 points to limit.

Constituent: TDS Analysis Run 5/10/2019 4:27 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Prediction Limit

Constituent: pH (S.U.) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-12	MCM-14	MCM-05	MCM-06	MCM-07	MCM-17	MCM-11 (bg)
8/30/2016	5.66	5.18	6.49	7.04					
8/31/2016					6.93	7.21	6.66		
10/25/2016								6.95	
11/30/2016	5.36	4.96	6.5	7.13	6.77	7.23	6.69	6.95	
2/15/2017	5.25	5.13	6.51	7.02				6.85	
2/16/2017					6.89	7.27	6.72		
5/31/2017			6.45	7				6.96	5.29
6/1/2017	5.59	4.99			6.83	7.18	6.53		
6/2/2017									5.19
8/2/2017									5.19
8/15/2017			6.41					6.99	5.19
8/16/2017	5.58			6.88					
8/17/2017		4.68			6.76	7.15	6.28		
4/4/2018									5.19
4/5/2018									
5/8/2018									5.3
5/9/2018									
6/19/2018	5.51		6.32	6.78				6.91	5.15
6/20/2018		4.77			6.83	7.19			
6/21/2018							6.45		
9/25/2018			6.31	6.75					5.13
9/26/2018	5.32	4.65						6.81	
9/27/2018					6.64	7.21	6.48		
11/6/2018				6.92			6.18	5.99	5.08
11/7/2018	5.72	4.99	6.3		6.6	6.91			
11/8/2018									
3/24/2019			6.4	6.59	6.1	6.98	6.38	6.62	
3/25/2019	5.75	5.13							5.05

# Prediction Limit

Page 2

Constituent: pH (S.U.) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-02 (bg)	MCM-04	MCM-08 (bg)	MCM-15 (bg)
8/30/2016				
8/31/2016				
10/25/2016				
11/30/2016				
2/15/2017				
2/16/2017				
5/31/2017	5.06			
6/1/2017		5.68	5.41	
6/2/2017				5.31
8/2/2017	5	5.2	5.31	5.05
8/15/2017			5.4	
8/16/2017	4.98			
8/17/2017		5.31		5.52
4/4/2018		4.74		5.45
4/5/2018	5.02		5.38	
5/8/2018		4.78		5.54
5/9/2018	4.96		5.38	
6/19/2018	5.02		5.32	5.6
6/20/2018		4.79		
6/21/2018				
9/25/2018				
9/26/2018	5.06		5.31	5.17
9/27/2018		5.14		
11/6/2018		4.9		
11/7/2018	5.03			5.47
11/8/2018			5.37	
3/24/2019				5.4
3/25/2019	5.08	4.93	5.34	

## Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-12	MCM-14	MCM-05	MCM-06	MCM-07	MCM-17	MCM-11 (bg)
8/30/2016	17	24	4.3	6.4					
8/31/2016					<100	<100	290		
10/25/2016								84	
11/30/2016	33	26	7.6	4.5	63	19	240	52	
2/15/2017	83	30	3	37		90	22	190	
2/16/2017							220		
5/31/2017			2.5	61				260	40
6/1/2017	51	24				210	28	500	
6/2/2017									34
8/2/2017			3.2					210	24
8/15/2017				130					
8/16/2017	36				80	69	510		
8/17/2017		26							33.9
4/4/2018									35.7
4/5/2018									
5/8/2018									
5/9/2018									
6/19/2018	50.3		1.6	498				218	23.7
6/20/2018		31.2			46 (J)	33			
6/21/2018							481		
6/28/2018									
9/25/2018			1	790					25.6
9/26/2018	54.1	36.8						360	
9/27/2018					58.5 (J)	29.4 (D)	777 (D)		
11/6/2018				875			926	182	25.2
11/7/2018	45.6	35	0.41 (J)		41.3 (J)	734			
11/8/2018									
3/24/2019			1.5	1170	131	<100	1070	413	
3/25/2019	43	40.1							24.9

# Prediction Limit

Page 2

Constituent: Sulfate (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-02 (bg)	MCM-04	MCM-08 (bg)	MCM-15 (bg)
8/30/2016				
8/31/2016				
10/25/2016				
11/30/2016				
2/15/2017				
2/16/2017				
5/31/2017	46			
6/1/2017		42	250	
6/2/2017				13
8/2/2017	43	120	290	14
8/15/2017			360	
8/16/2017	41			
8/17/2017		110		14
4/4/2018		70.6		13.4
4/5/2018	33.4		350	
5/8/2018		61.4		14.8
5/9/2018	36		353	
6/19/2018	35.5		359	15.5
6/20/2018		25.3		
6/21/2018				
6/28/2018			352	
9/25/2018				
9/26/2018	39.6		423	23
9/27/2018		63.4		
11/6/2018		136		
11/7/2018	35.8			22.2
11/8/2018			498	
3/24/2019				
3/25/2019	34.2	137	467	22.4

## Prediction Limit

Constituent: TDS (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-16 (bg)	MCM-12	MCM-14	MCM-05	MCM-06	MCM-07	MCM-17	MCM-11 (bg)
8/30/2016	86	99	1910	1310	<0.0005	<0.0005	5100		
8/31/2016								2900	
10/25/2016									
11/30/2016	131	111	1910	1050	4030	3950	4680	3970	
2/15/2017	212	170	1870	1440		4080	4600	3820	
2/16/2017									
5/31/2017			1920	1740				5050	257
6/1/2017	103	98			5560	4470	8000		
6/2/2017									183
8/2/2017									
8/15/2017			1840					4820	90
8/16/2017	65			3010					
8/17/2017		84			4620	5450	8320		
4/4/2018									197
4/5/2018									
5/8/2018									225
5/9/2018									
6/19/2018	142		1820	8630				5640	112
6/20/2018		123			3370	4940			
6/21/2018							7500		
6/28/2018									
9/25/2018			1760	10700					137
9/26/2018	133	117							6920
9/27/2018					2360	4480	10200		
11/6/2018				11100			11000	4160	89
11/7/2018	121	120	1800		2230	15100			
11/8/2018									
3/24/2019			1770	14200	1450	13700	13700	6840	
3/25/2019	116	101							74

# Prediction Limit

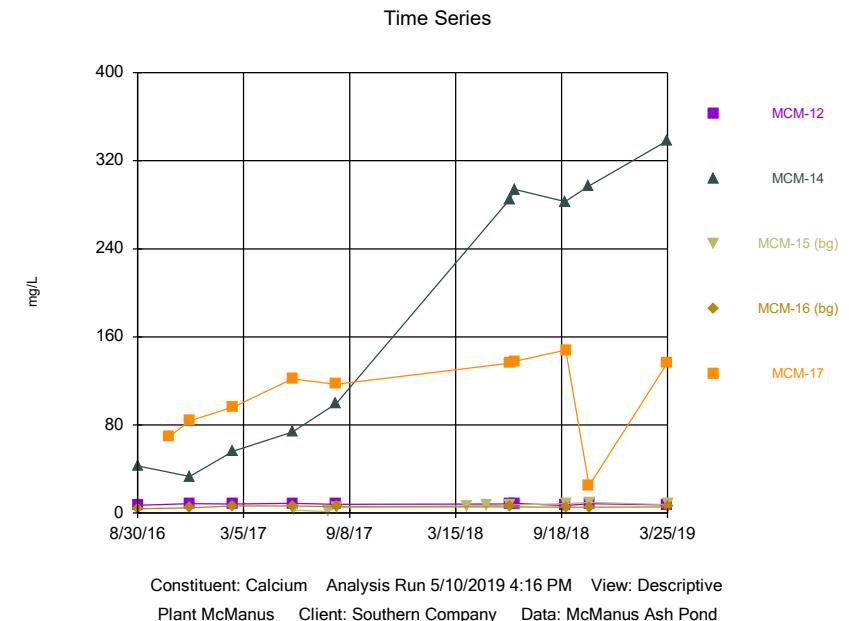
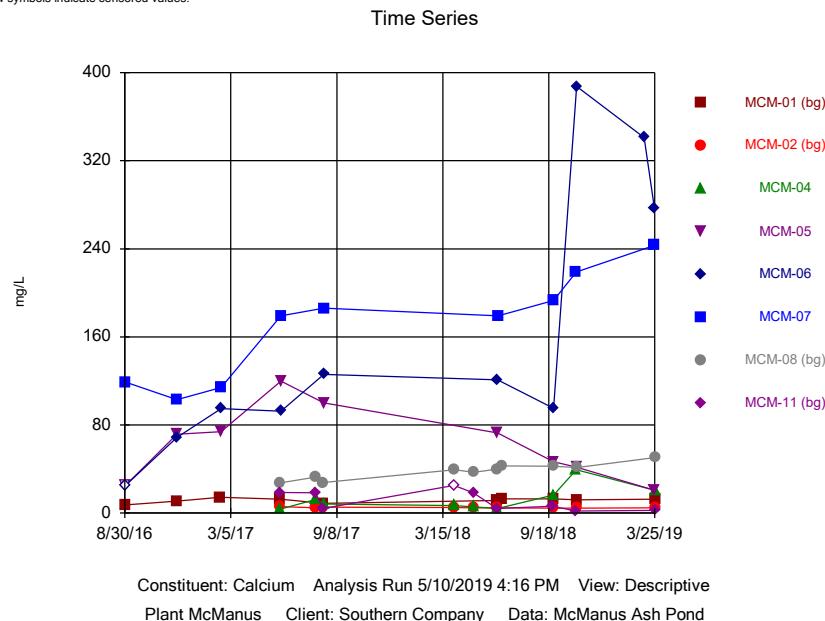
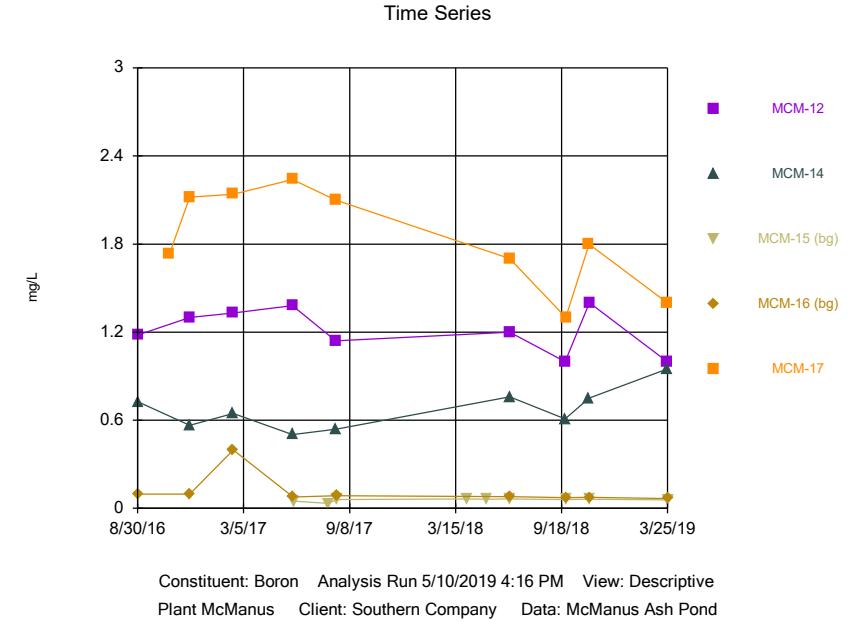
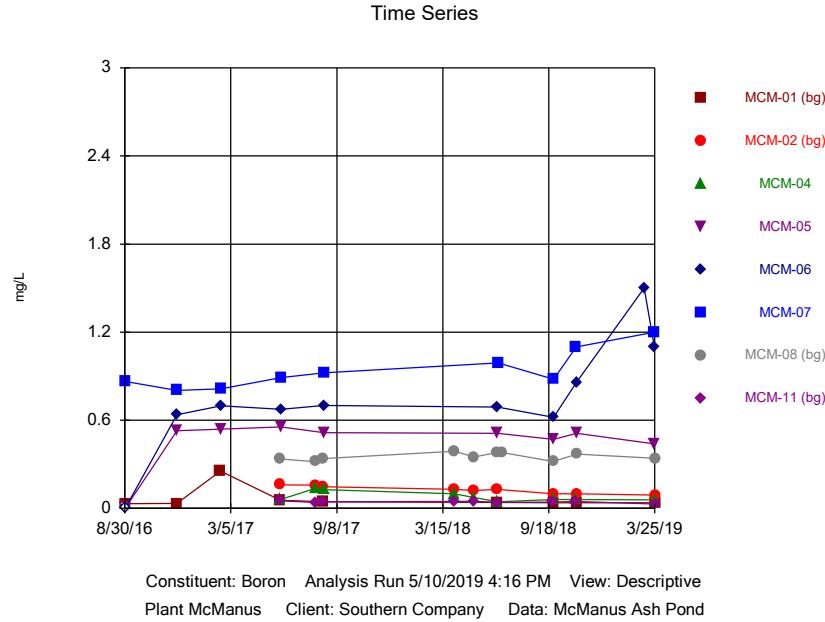
Page 2

Constituent: TDS (mg/L) Analysis Run 5/10/2019 4:29 PM View: PL's - Interwell  
Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-02 (bg)	MCM-04	MCM-08 (bg)	MCM-15 (bg)
8/30/2016				
8/31/2016				
10/25/2016				
11/30/2016				
2/15/2017				
2/16/2017				
5/31/2017	123			
6/1/2017		97	2970	
6/2/2017				69
8/2/2017	136	538	3100	35
8/15/2017			3160	
8/16/2017	124			
8/17/2017		445		51
4/4/2018		365		90
4/5/2018	128		3460	
5/8/2018		304		89
5/9/2018	127		3680	
6/19/2018	143		3600	110
6/20/2018		114		
6/21/2018				
6/28/2018			3440	
9/25/2018				
9/26/2018	132		3610	124
9/27/2018		255		
11/6/2018		388		
11/7/2018	134			125
11/8/2018			3630	
3/24/2019				
3/25/2019	111	327	4020	98

# Time Series

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## Time Series

Constituent: Boron (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-08 (bg)	MCM-11 (bg)
8/30/2016	0.0325 (J)							
8/31/2016				<0.003	<0.003	0.863		
11/30/2016	0.0334 (J)			0.529	0.637	0.804		
2/15/2017	0.254							
2/16/2017				0.539	0.698	0.815		
5/31/2017		0.161					0.0521	
6/1/2017	0.0564			0.0608			0.336	
6/2/2017					0.555	0.674	0.891	
8/2/2017		0.158		0.137			0.318	0.0392 (J)
8/15/2017							0.338	0.0448
8/16/2017	0.0435	0.148						
8/17/2017				0.128	0.516	0.7	0.922	
4/4/2018				0.1				0.046
4/5/2018		0.13					0.39	
5/8/2018				0.074				0.048
5/9/2018		0.12					0.35	
6/19/2018	0.04 (J)	0.13					0.38	0.04
6/20/2018				0.045	0.51	0.69		
6/21/2018						0.99		
6/28/2018							0.38	
9/25/2018								0.043
9/26/2018	0.038 (J)	0.1					0.32	
9/27/2018				0.06	0.47	0.62	0.88	
11/6/2018				0.06			1.1	0.046
11/7/2018	0.037 (J)	0.1			0.51	0.86		
11/8/2018							0.37	
3/6/2019					1.5			
3/24/2019				0.44	1.1	1.2		
3/25/2019	0.038 (J)	0.091		0.058			0.34	0.03 (JD)

## Time Series

Constituent: Boron (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive  
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-12	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17
8/30/2016	1.18	0.726		0.0972 (J)	
10/25/2016					1.73
11/30/2016	1.3	0.565		0.0964	2.12
2/15/2017	1.33	0.647		0.398	2.14
5/31/2017	1.38	0.503			2.24
6/1/2017			0.0776		
6/2/2017			0.0495		
8/2/2017			0.0333 (J)		
8/15/2017	1.14				2.1
8/16/2017		0.539			
8/17/2017			0.0593	0.0853	
4/4/2018			0.065		
5/8/2018			0.062		
6/19/2018	1.2	0.76	0.064		1.7
6/20/2018				0.079	
9/25/2018	1	0.61			
9/26/2018			0.06	0.072	1.3
11/6/2018		0.75			1.8
11/7/2018	1.4		0.062 (J)	0.074	
3/24/2019	1	0.95			1.4
3/25/2019			0.057	0.067	

## Time Series

Constituent: Calcium (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-08 (bg)	MCM-11 (bg)
8/30/2016	7.3							
8/31/2016				<25	<25	119		
11/30/2016	10.8			71.7	68.7	103		
2/15/2017	14.3							
2/16/2017				74	94.8	114		
5/31/2017		5.9						18.6
6/1/2017	12.7 (J)		3.65				27.3	
6/2/2017				120	92.5	179		
8/2/2017		4.69	12.4				32.7	18.5
8/15/2017							27.7	4.09
8/16/2017	8.7	5.25						
8/17/2017			8.17	100	126	186		
4/4/2018			6.8					<25
4/5/2018		5					39.4	
5/8/2018			5.7					18.4 (J)
5/9/2018		4.7					37	
6/19/2018	11.6 (J)	4.8					39.8	4.3
6/20/2018			4.3	72.8	121			
6/21/2018						179		
6/28/2018	13						42.9	
9/25/2018								6.2
9/26/2018	12.8 (J)	4.6					42.6	
9/27/2018			16.4 (J)	46.6	95.1	193		
11/6/2018			39.5			219		1.8
11/7/2018	11.9	4.6		41.8	387.5 (D)			
11/8/2018							41.4	
3/6/2019					341			
3/24/2019				20.9 (J)	277	243		
3/25/2019	12.6 (J)	4.7	20.8 (J)				50.3	2.5 (D)

## Time Series

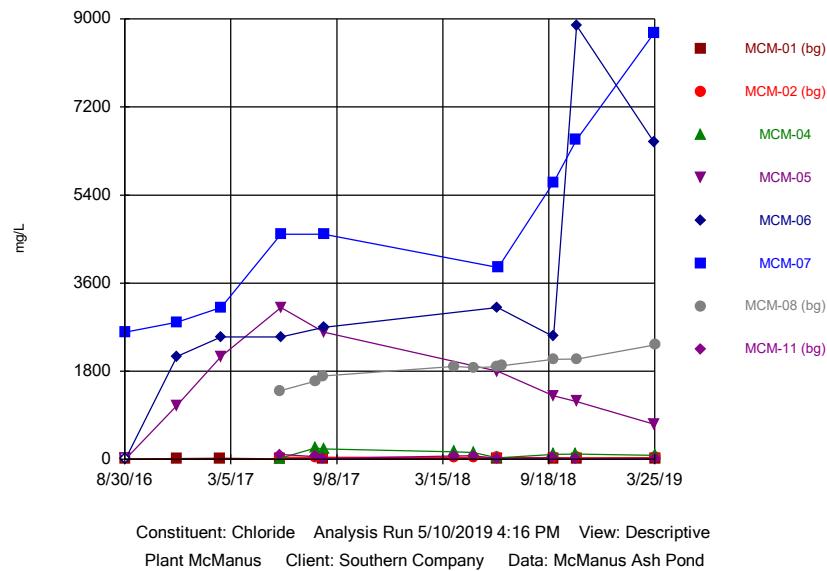
Constituent: Calcium (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-12	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17
8/30/2016	7.05	42.8		4.02	
10/25/2016					69.4
11/30/2016	8.69	33.2		4.87	83.9
2/15/2017	8.34	56.1		6.61	96.3
5/31/2017	8.85	73.6			122
6/1/2017			6.42		
6/2/2017			2.77		
8/2/2017			1.27		
8/15/2017	8.05			117	
8/16/2017		99.6			
8/17/2017			5.53	5.62	
4/4/2018			6.5		
5/8/2018			6.7		
6/19/2018	8.3	285	7.4		136
6/20/2018				5.7	
6/28/2018	8.9	294			138
9/25/2018	6.8	283			
9/26/2018			8.5 (J)	5.3	148
11/6/2018		297			24.7
11/7/2018	8.5		9.8	5.3	
3/24/2019	7.4	338			136
3/25/2019			7.8	5.7	

Sanitas™ v.9.6.12h Sanitas software utilized by Groundwater Stats Consulting, UG  
Hollow symbols indicate censored values.

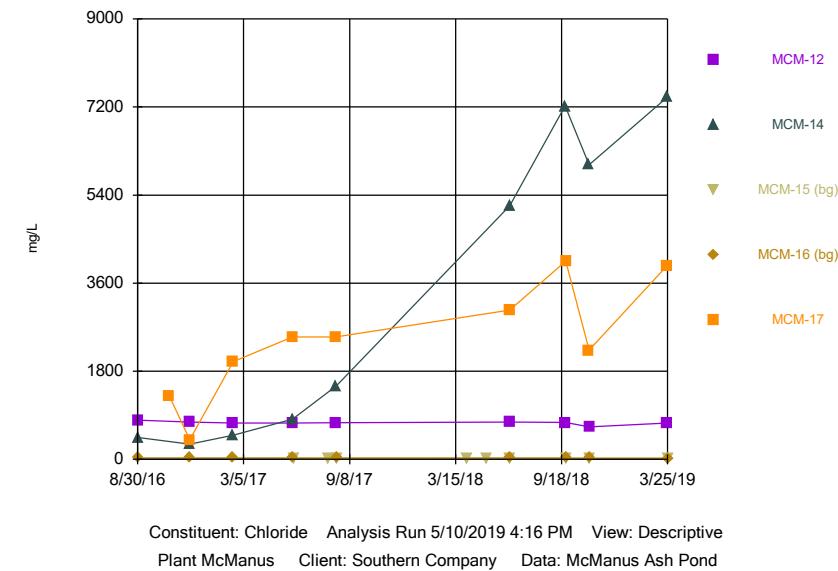
### Time Series



Constituent: Chloride Analysis Run 5/10/2019 4:16 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sanitas™ v.9.6.12h Sanitas software utilized by Groundwater Stats Consulting, UG

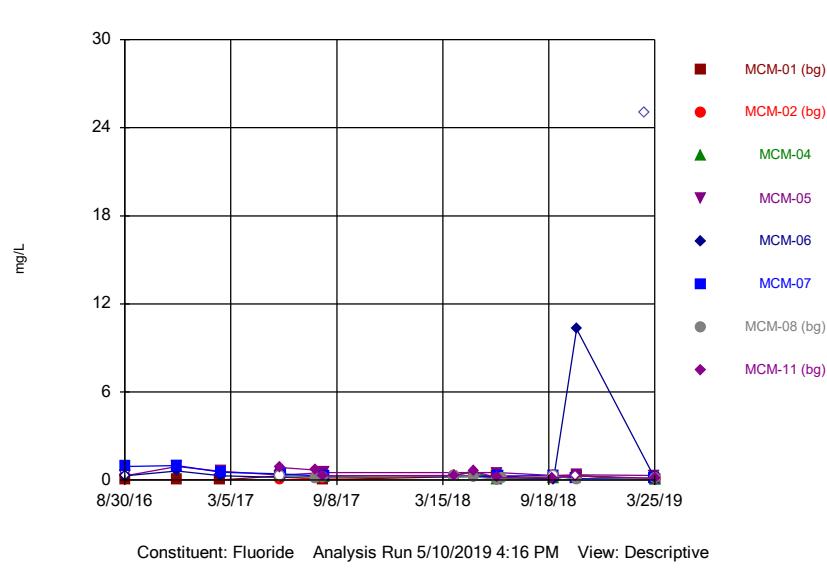
### Time Series



Constituent: Chloride Analysis Run 5/10/2019 4:16 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sanitas™ v.9.6.12h Sanitas software utilized by Groundwater Stats Consulting, UG  
Hollow symbols indicate censored values.

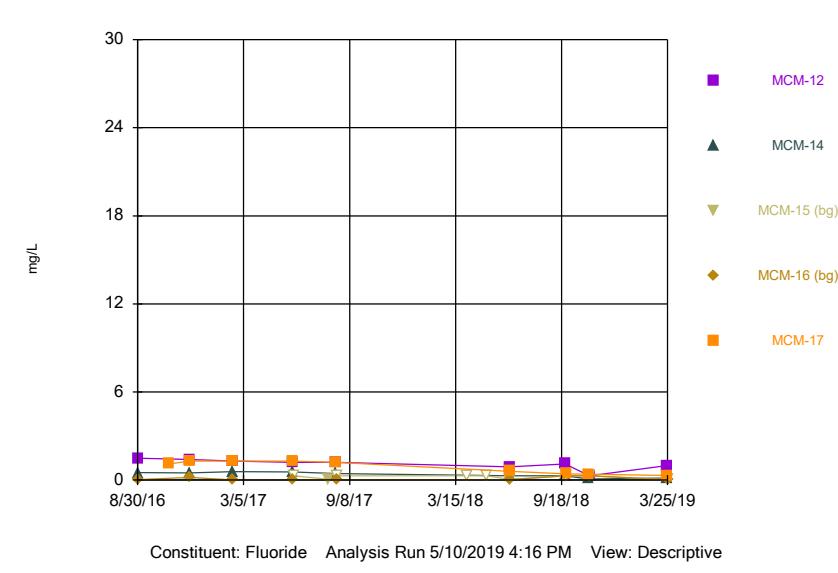
### Time Series



Constituent: Fluoride Analysis Run 5/10/2019 4:16 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

Sanitas™ v.9.6.12h Sanitas software utilized by Groundwater Stats Consulting, UG

### Time Series



Constituent: Fluoride Analysis Run 5/10/2019 4:16 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Time Series

Constituent: Chloride (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-08 (bg)	MCM-11 (bg)
8/30/2016	9.7							
8/31/2016				<0.01	<0.01	2600		
11/30/2016	19			1100	2100	2800		
2/15/2017	21							
2/16/2017				2100	2500	3100		
5/31/2017		39						98
6/1/2017	12		22				1400	
6/2/2017				3100	2500	4600		
8/2/2017		42	230				1600	57
8/15/2017							1700	15
8/16/2017	14	41						
8/17/2017			210	2600	2700	4600		
4/4/2018			156					69
4/5/2018		40.2					1900	
5/8/2018			140					72.3
5/9/2018		40.6					1870	
6/19/2018	24.4	37.7					1890	17.3
6/20/2018			27.5	1800	3100			
6/21/2018						3920		
6/28/2018							1910	
9/25/2018								31.3
9/26/2018	23.4	33.4					2040	
9/27/2018			101	1300	2510 (D)	5660 (D)		
11/6/2018			107			6520		9.8
11/7/2018	21.8	30.7		1180	8860			
11/8/2018							2050	
3/24/2019				717	6470	8720		
3/25/2019	19.4	33.5	78.5				2340	12.9

## Time Series

Constituent: Chloride (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-12	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17
8/30/2016	800	450		26	
10/25/2016					1300
11/30/2016	760	310		27	400
2/15/2017	740	490		30	2000
5/31/2017	740	820			2500
6/1/2017			27		
6/2/2017			11		
8/2/2017			3.2		
8/15/2017	750				2500
8/16/2017		1500			
8/17/2017			12	32	
4/4/2018			13.4		
5/8/2018			13.2		
6/19/2018	760	5180	13.7		3050
6/20/2018				30	
9/25/2018	752	7220			
9/26/2018			18.5	28.4	4050
11/6/2018		6020			2230
11/7/2018	665		20.2	25.1	
3/24/2019	744	7400			3960
3/25/2019			19.7	21.8	

## Time Series

Constituent: Fluoride (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive

Plant McManus Client: Southern Company Data: McManus Ash Pond

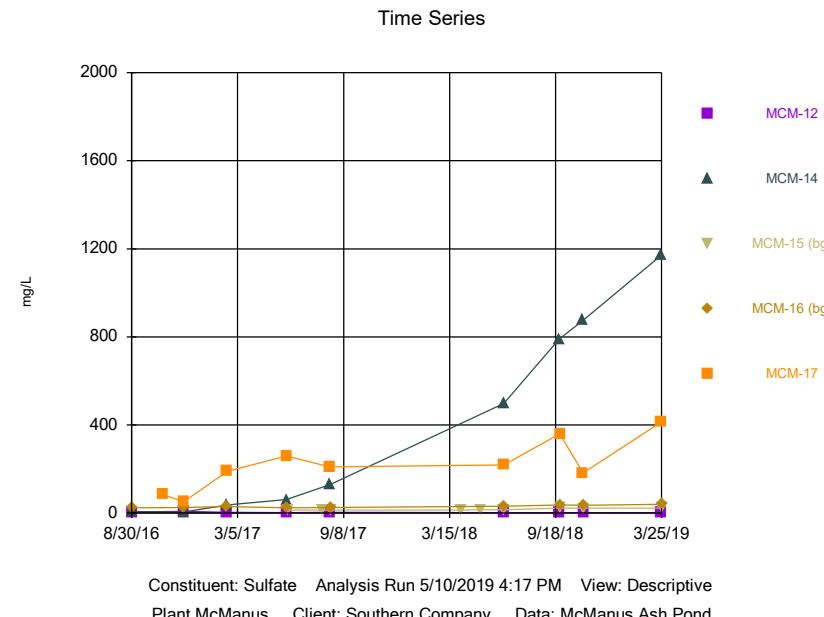
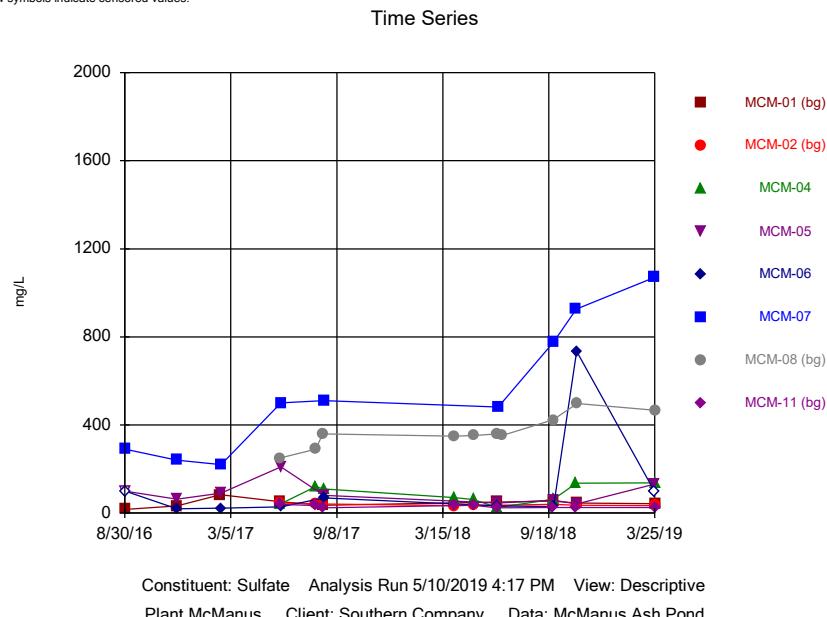
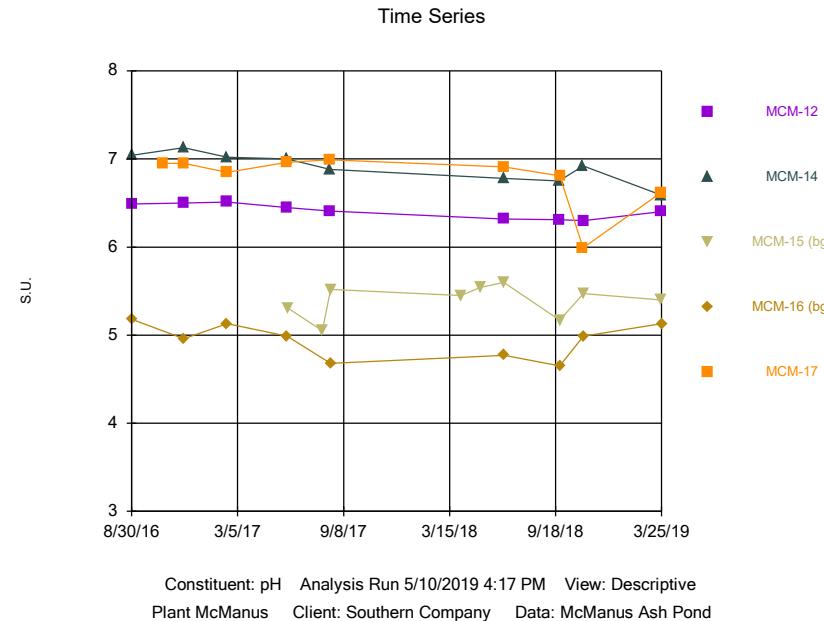
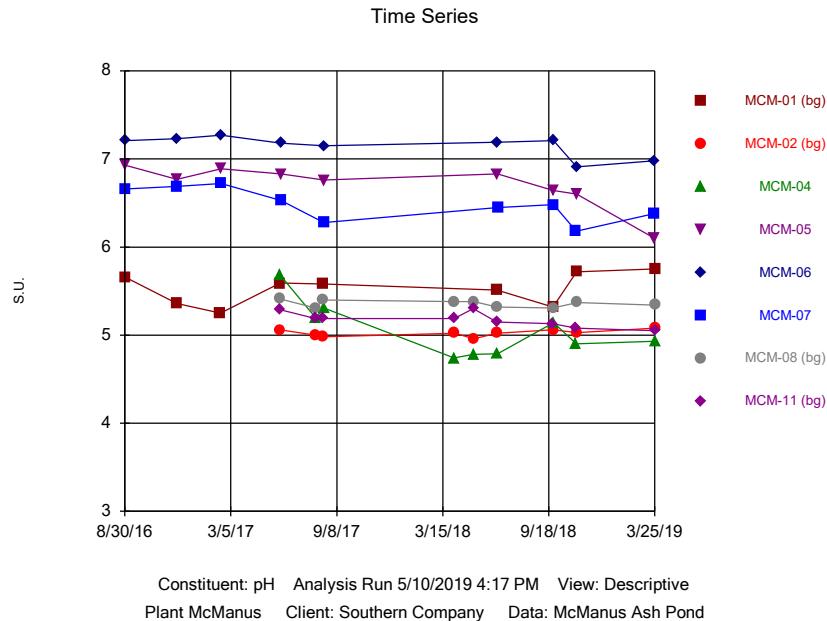
	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-08 (bg)	MCM-11 (bg)
8/30/2016	0.03 (J)							
8/31/2016				<0.3	<0.3	0.92		
11/30/2016	0.04 (J)			0.93	0.61	0.99		
2/15/2017	0.007 (J)							
2/16/2017				0.6	0.3 (J)	0.54		
5/31/2017		0.01 (J)					0.85	
6/1/2017	<0.3		<0.3				<0.3	
6/2/2017				0.34	0.19 (J)	0.42		
8/2/2017		0.14 (J)	0.27 (J)				0.16 (J)	0.69
8/15/2017							0.21 (J)	0.29 (J)
8/16/2017	0.03 (J)	0.13 (J)						
8/17/2017			0.18 (J)	0.52	0.26 (J)	0.27 (J)		
4/4/2018			<0.3					0.32
4/5/2018		<0.3					<0.3	
5/8/2018			0.56					0.63
5/9/2018		<0.3					0.23 (J)	
6/19/2018	<0.3	0.065 (J)					0.043 (J)	0.17 (J)
6/20/2018			0.033 (J)	0.5	0.22 (J)			
6/21/2018					0.28 (J)			
6/28/2018							0.12 (J)	
9/25/2018								0.15 (J)
9/26/2018	0.12 (J)	<0.3					<0.3	
9/27/2018			0.12 (J)	0.32	0.068 (JD)	0.32 (D)		
11/6/2018			<0.3			0.086 (J)		<0.3
11/7/2018	<0.3	<0.3		0.35	10.3			
11/8/2018							0.04 (J)	
3/6/2019					<25 (o)			
3/24/2019				0.32	0.19 (J)	0.14 (J)		
3/25/2019	0.038 (J)	0.039 (J)	0.055 (J)				0.12 (J)	0.12 (J)

## Time Series

Constituent: Fluoride (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-12	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17
8/30/2016	1.5	0.5		0.04 (J)	
10/25/2016					1.1
11/30/2016	1.4	0.49		0.18 (J)	1.3
2/15/2017	1.3	0.58		0.02 (J)	1.3
5/31/2017	1.2	0.56			1.3
6/1/2017			0.005 (J)		
6/2/2017			<0.3		
8/2/2017			0.05 (J)		
8/15/2017	1.2				1.2
8/16/2017		0.45			
8/17/2017			<0.3	0.04 (J)	
4/4/2018			<0.3		
5/8/2018			<0.3		
6/19/2018	0.91	<0.3	0.057 (J)		0.6
6/20/2018				0.038 (J)	
9/25/2018	1.1	<0.3			
9/26/2018			<0.3	<0.3	0.42
11/6/2018		0.084 (J)			0.4
11/7/2018	<0.3		<0.3	<0.3	
3/24/2019	0.99	0.14 (J)			0.31
3/25/2019			0.036 (J)	0.041 (J)	



## Time Series

Constituent: pH (S.U.) Analysis Run 5/10/2019 4:20 PM View: Descriptive  
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-08 (bg)	MCM-11 (bg)
8/30/2016	5.66							
8/31/2016				6.93	7.21	6.66		
11/30/2016	5.36			6.77	7.23	6.69		
2/15/2017	5.25							
2/16/2017				6.89	7.27	6.72		
5/31/2017		5.06						5.29
6/1/2017	5.59		5.68				5.41	
6/2/2017				6.83	7.18	6.53		
8/2/2017		5	5.2				5.31	5.19
8/15/2017							5.4	5.19
8/16/2017	5.58	4.98						
8/17/2017			5.31	6.76	7.15	6.28		
4/4/2018			4.74					5.19
4/5/2018		5.02					5.38	
5/8/2018			4.78					5.3
5/9/2018		4.96					5.38	
6/19/2018	5.51	5.02					5.32	5.15
6/20/2018			4.79	6.83	7.19			
6/21/2018						6.45		
9/25/2018								5.13
9/26/2018	5.32	5.06					5.31	
9/27/2018			5.14	6.64	7.21	6.48		
11/6/2018			4.9			6.18		5.08
11/7/2018	5.72	5.03		6.6	6.91			
11/8/2018							5.37	
3/24/2019				6.1	6.98	6.38		
3/25/2019	5.75	5.08	4.93				5.34	5.05

## Time Series

Constituent: pH (S.U.) Analysis Run 5/10/2019 4:20 PM View: Descriptive  
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-12	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17
8/30/2016	6.49	7.04		5.18	
10/25/2016					6.95
11/30/2016	6.5	7.13		4.96	6.95
2/15/2017	6.51	7.02		5.13	6.85
5/31/2017	6.45	7			6.96
6/1/2017			4.99		
6/2/2017			5.31		
8/2/2017			5.05		
8/15/2017	6.41			6.99	
8/16/2017		6.88			
8/17/2017			5.52	4.68	
4/4/2018			5.45		
5/8/2018			5.54		
6/19/2018	6.32	6.78	5.6		6.91
6/20/2018				4.77	
9/25/2018	6.31	6.75			
9/26/2018			5.17	4.65	6.81
11/6/2018		6.92			5.99
11/7/2018	6.3		5.47	4.99	
3/24/2019	6.4	6.59	5.4		6.62
3/25/2019				5.13	

## Time Series

Constituent: Sulfate (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive

Plant McManus Client: Southern Company Data: McManus Ash Pond

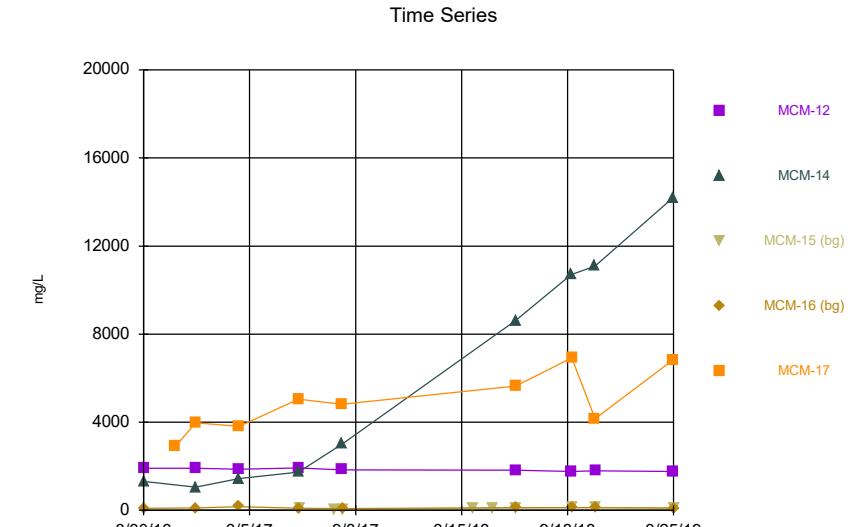
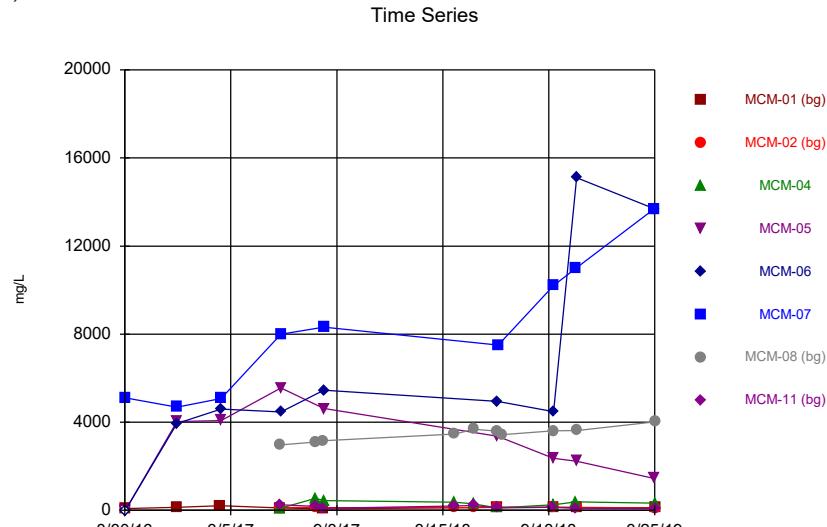
	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-08 (bg)	MCM-11 (bg)
8/30/2016	17							
8/31/2016				<100	<100	290		
11/30/2016	33			63	19	240		
2/15/2017	83							
2/16/2017				90	22	220		
5/31/2017		46					40	
6/1/2017	51		42				250	
6/2/2017				210	28	500		
8/2/2017		43	120				290	34
8/15/2017							360	24
8/16/2017	36	41						
8/17/2017			110	80	69	510		
4/4/2018			70.6					33.9
4/5/2018		33.4					350	
5/8/2018			61.4					35.7
5/9/2018		36					353	
6/19/2018	50.3	35.5					359	23.7
6/20/2018			25.3	46 (J)	33			
6/21/2018						481		
6/28/2018							352	
9/25/2018								25.6
9/26/2018	54.1	39.6					423	
9/27/2018			63.4	58.5 (J)	29.4 (D)	777 (D)		
11/6/2018			136			926		25.2
11/7/2018	45.6	35.8		41.3 (J)	734			
11/8/2018							498	
3/24/2019				131	<100	1070		
3/25/2019	43	34.2	137				467	24.9

## Time Series

Constituent: Sulfate (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive

Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-12	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17
8/30/2016	4.3	6.4		24	
10/25/2016					84
11/30/2016	7.6	4.5		26	52
2/15/2017	3	37		30	190
5/31/2017	2.5	61			260
6/1/2017			24		
6/2/2017			13		
8/2/2017			14		
8/15/2017	3.2			210	
8/16/2017		130			
8/17/2017			14	26	
4/4/2018			13.4		
5/8/2018			14.8		
6/19/2018	1.6	498	15.5		218
6/20/2018				31.2	
9/25/2018	1	790			
9/26/2018			23	36.8	360
11/6/2018		875			182
11/7/2018	0.41 (J)		22.2	35	
3/24/2019	1.5	1170			413
3/25/2019			22.4	40.1	



## Time Series

Constituent: TDS (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive  
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-01 (bg)	MCM-02 (bg)	MCM-04	MCM-05	MCM-06	MCM-07	MCM-08 (bg)	MCM-11 (bg)
8/30/2016	86							
8/31/2016				<0.0005	<0.0005	5100		
11/30/2016	131			4030	3950	4680		
2/15/2017	212							
2/16/2017				4080	4600	5080		
5/31/2017		123						257
6/1/2017	103		97				2970	
6/2/2017				5560	4470	8000		
8/2/2017		136	538				3100	183
8/15/2017							3160	90
8/16/2017	65	124						
8/17/2017			445	4620	5450	8320		
4/4/2018			365					197
4/5/2018		128					3460	
5/8/2018			304					225
5/9/2018		127					3680	
6/19/2018	142	143					3600	112
6/20/2018			114	3370	4940			
6/21/2018						7500		
6/28/2018							3440	
9/25/2018								137
9/26/2018	133	132					3610	
9/27/2018			255	2360	4480	10200		
11/6/2018			388			11000		89
11/7/2018	121	134		2230	15100			
11/8/2018							3630	
3/24/2019				1450	13700	13700		
3/25/2019	116	111	327				4020	74

## Time Series

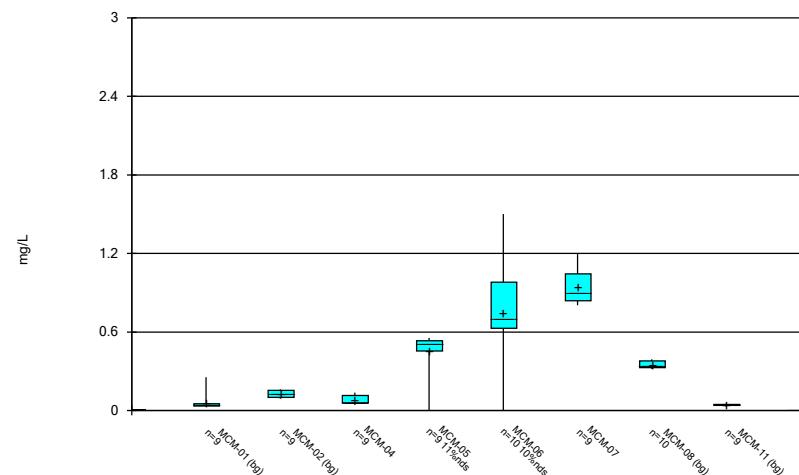
Constituent: TDS (mg/L) Analysis Run 5/10/2019 4:20 PM View: Descriptive  
 Plant McManus Client: Southern Company Data: McManus Ash Pond

	MCM-12	MCM-14	MCM-15 (bg)	MCM-16 (bg)	MCM-17
8/30/2016	1910	1310		99	
10/25/2016					2900
11/30/2016	1910	1050		111	3970
2/15/2017	1870	1440		170	3820
5/31/2017	1920	1740			5050
6/1/2017			98		
6/2/2017			69		
8/2/2017			35		
8/15/2017	1840				4820
8/16/2017		3010			
8/17/2017			51	84	
4/4/2018			90		
5/8/2018			89		
6/19/2018	1820	8630	110		5640
6/20/2018				123	
9/25/2018	1760	10700			
9/26/2018			124	117	6920
11/6/2018		11100			4160
11/7/2018	1800		125	120	
3/24/2019	1770	14200			6840
3/25/2019			98	101	

# **Box Plots**

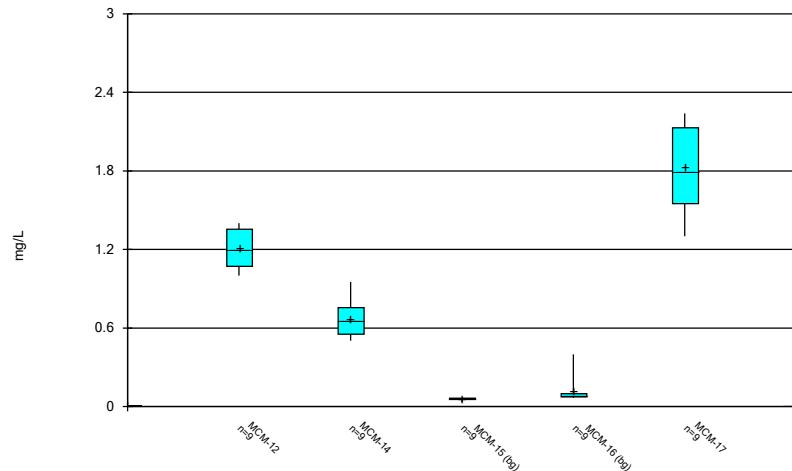
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## Box &amp; Whiskers Plot



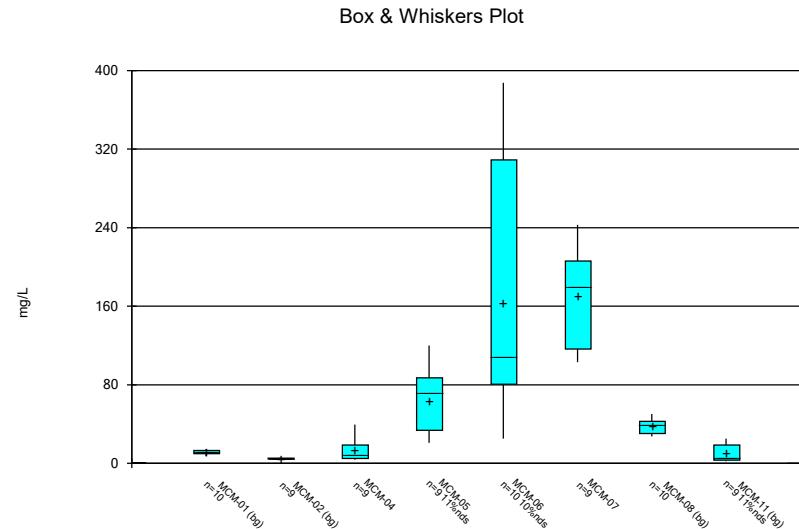
Constituent: Boron Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Box &amp; Whiskers Plot



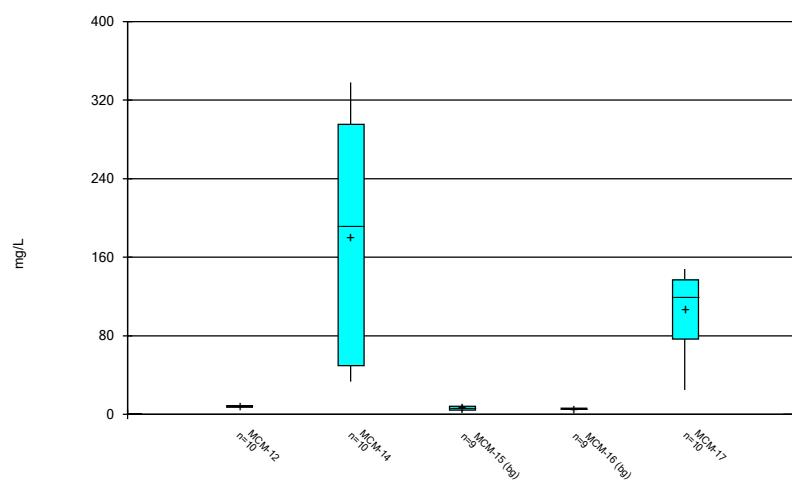
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Plant McManus Client: Southern Company Data: McManus Ash Pond

## Box &amp; Whiskers Plot



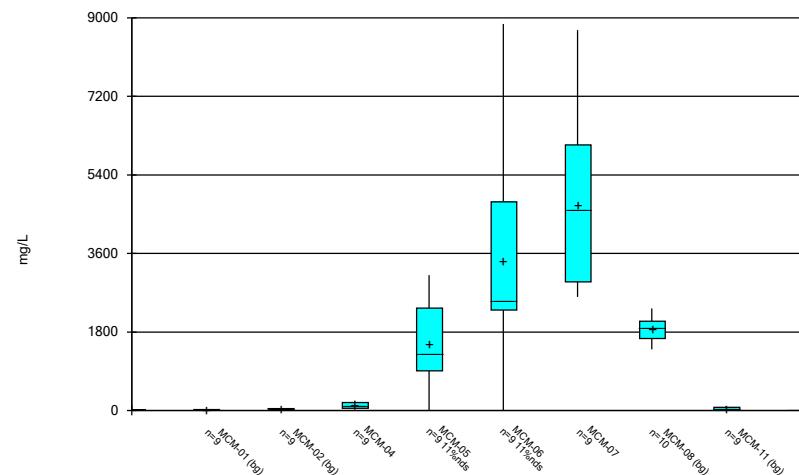
Constituent: Calcium Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Box &amp; Whiskers Plot



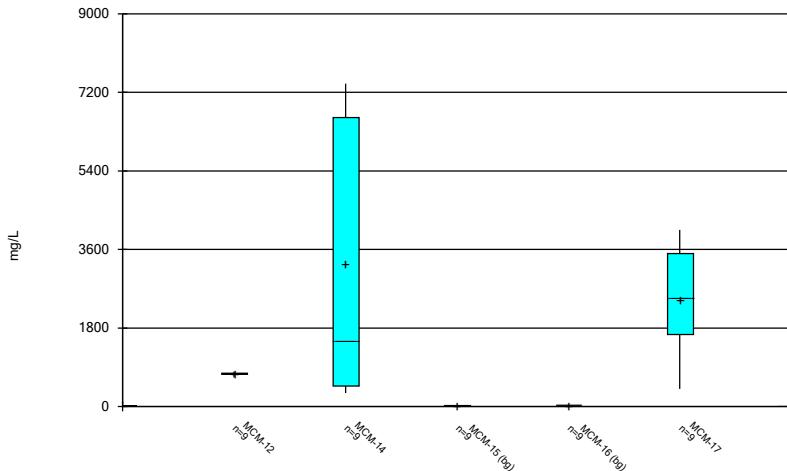
Constituent: Calcium Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Box &amp; Whiskers Plot



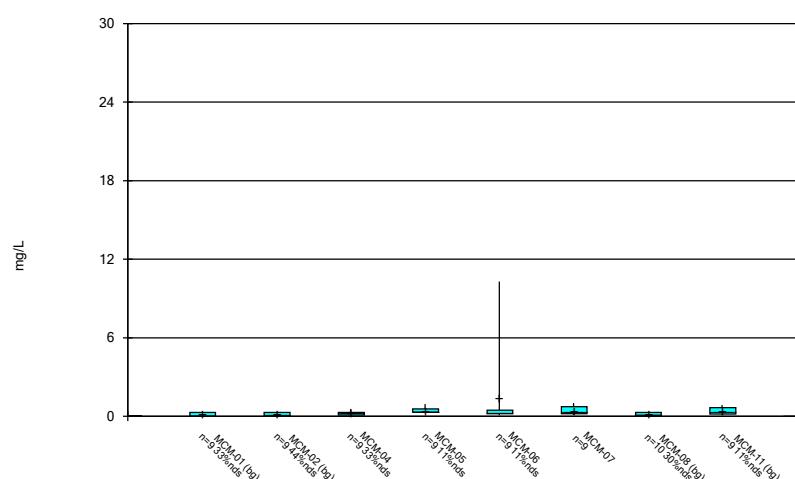
Constituent: Chloride Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Box &amp; Whiskers Plot



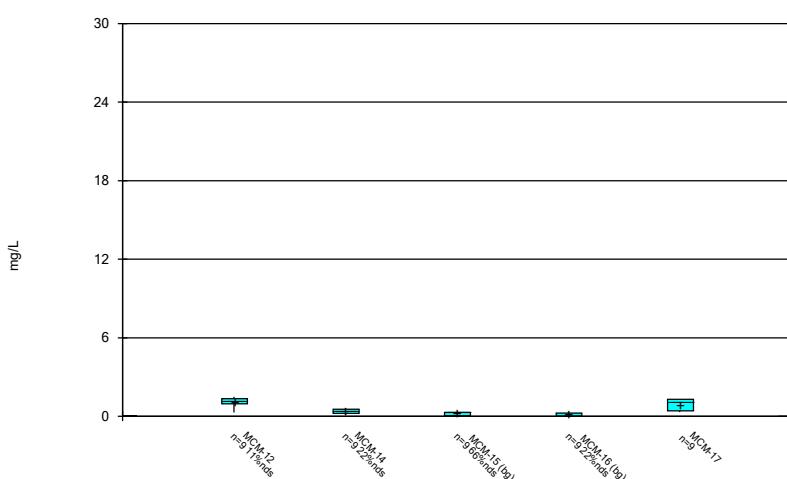
Constituent: Chloride Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Box &amp; Whiskers Plot



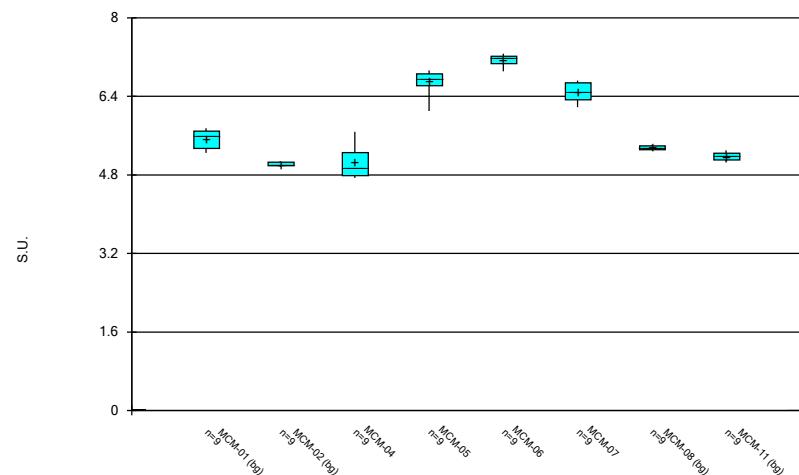
Constituent: Fluoride Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Box &amp; Whiskers Plot



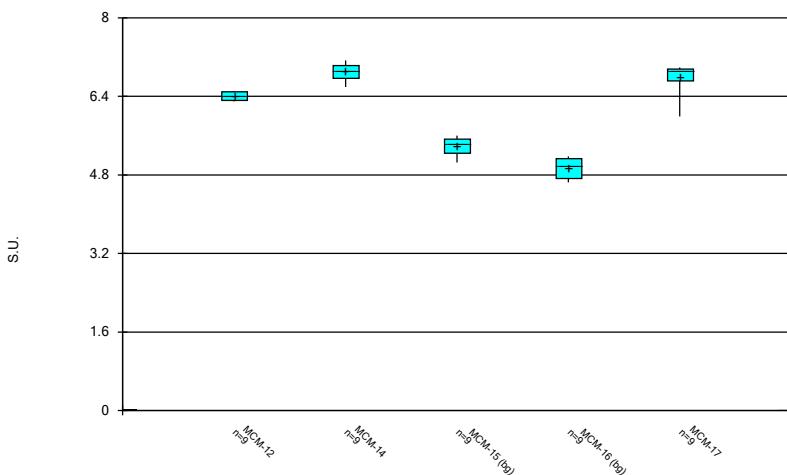
Constituent: Fluoride Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Box &amp; Whiskers Plot



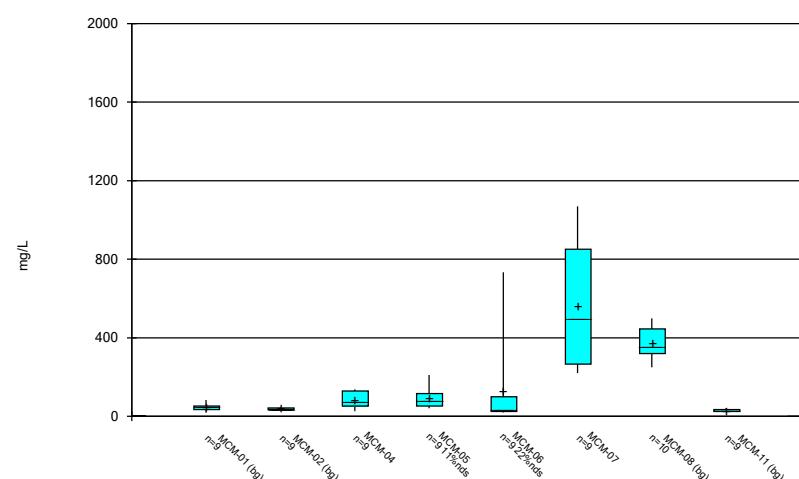
Constituent: pH Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Box &amp; Whiskers Plot



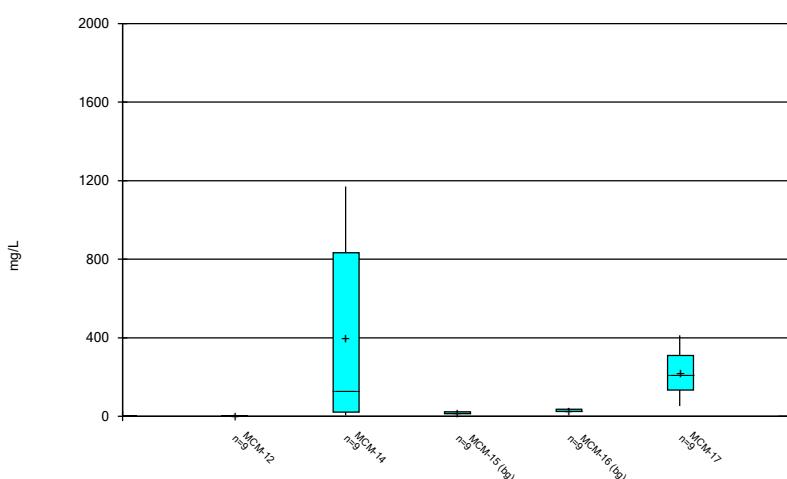
Constituent: pH Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Box &amp; Whiskers Plot



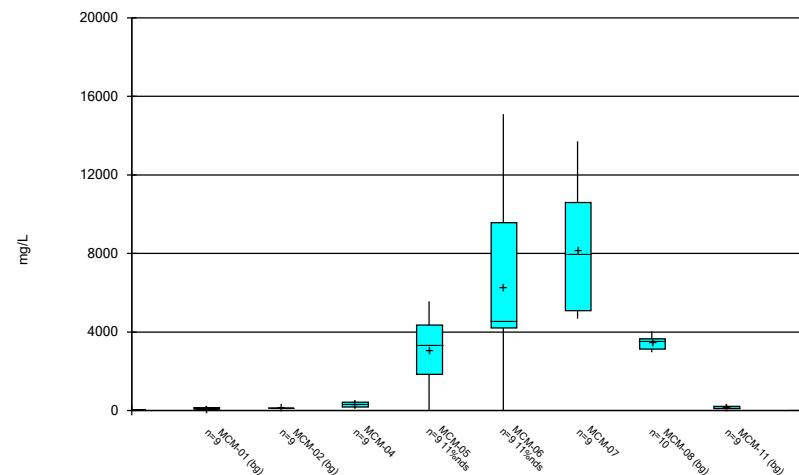
Constituent: Sulfate Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

## Box &amp; Whiskers Plot



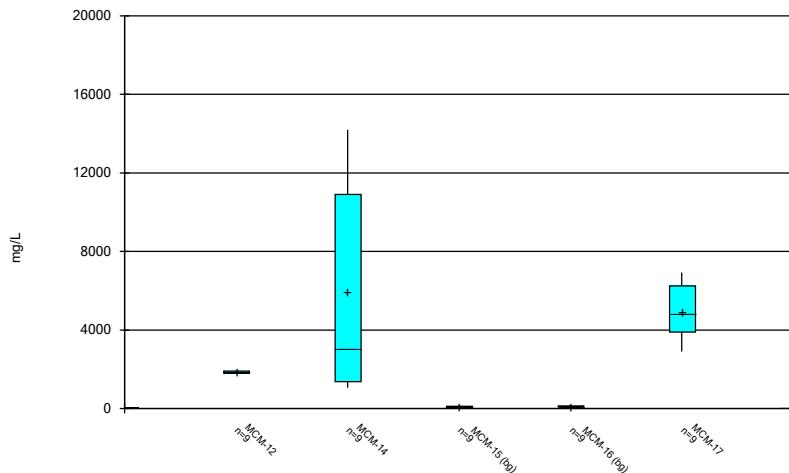
Constituent: Sulfate Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box &amp; Whiskers Plot



Constituent: TDS Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond

Box &amp; Whiskers Plot



Constituent: TDS Analysis Run 5/10/2019 4:20 PM View: Descriptive  
Plant McManus Client: Southern Company Data: McManus Ash Pond