



January 31, 2018  
Georgia Power Company Plant Bowen



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# 2017 Annual Groundwater Monitoring and Corrective Action Report Plant Bowen Ash Pond (AP-1)

Prepared for Georgia Power Company

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## CERTIFICATION STATEMENT

This 2017 Annual Groundwater Monitoring and Corrective Action Report has been prepared for Georgia Power Company's Plant Bowen Ash Pond (AP-1) to comply with the U.S. Environmental Protection Agency's coal combustion residuals rule (40 Code of Federal Regulations 257 Subpart D, 2017; published in 80 Federal Register 21302 through 21501 on April 17, 2015) under the direction of a licensed professional engineer with Anchor QEA, LLC.

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## ABBREVIATIONS

AP-1	Ash Pond 1
CCR	coal combustion residual
DO	dissolved oxygen
GPC	Georgia Power Company
mg/L	milligrams per liter
NELAP	National Environmental Laboratory Accreditation Program
NTU	Nephelometric Turbidity Units
Pace	Pace Analytical Services, LLC
PE	professional engineer
QA/QC	quality assurance/quality control
SSI	statistically significant increase
TAL	Test America, Inc.
TDS	total dissolved solids
USEPA	U.S. Environmental Protection Agency



# 1 Introduction

In accordance with the U.S. Environmental Protection Agency's (USEPA's) coal combustion residuals (CCR) rule (40 Code of Federal Regulations 257 Subpart D; published in 80 Federal Register 21302 through 21501 on April 17, 2015), the 2017 Annual Groundwater Monitoring and Corrective Action Report has been prepared to document 2017 groundwater monitoring activities conducted at Georgia Power Company's (GPC's) Plant Bowen Ash Pond 1 (AP-1) and satisfy the requirements of §257.90(e). Groundwater monitoring and reporting for Plant Bowen is performed in accordance with USEPA monitoring requirements in §257.90 through §257.98.

The 2017 Annual Groundwater Monitoring and Corrective Action Report documents the activities completed to establish the groundwater monitoring program and actions through the 2017 calendar year.

## 1.1 Site Location and Description

Plant Bowen is located at 317 Covered Bridge Road, approximately 10 miles southwest of Cartersville, Georgia, mapped at latitude 34.123 and longitude -84.921 in Euharlee, Georgia. The property encompasses nearly 2,000 acres and is bordered on the north by the Etowah River. An aerial photograph of Plant Bowen and the surrounding area is included as Figure 1.

During Plant Bowen operations, CCR storage has been managed within the surface impoundment AP-1 and on-site landfills to the east of the plant. The 2017 Annual Groundwater Monitoring and Corrective Action Report is for AP-1, which covers approximately 257 acres of surface area and is located west and northwest of the plant area.

## 1.2 Regional Geology and Hydrogeologic Setting

### 1.2.1 Regional Geology

Plant Bowen is located in the Appalachian Valley and Ridge Province. The Appalachian Valley and Ridge Province is bounded by the Cartersville Fault immediately south of Plant Bowen, a thrust fault that juxtaposes metamorphic rocks of the Piedmont Province on sedimentary rocks of the Appalachian Valley and Ridge Province. Rocks in the Appalachian Valley and Ridge Province are Paleozoic in age and folded and faulted. The Paleozoic rocks of Bartow County consist primarily of dolomite, limestone, sandstone, and shale. Dolomites and limestones of the Cambro-Ordovician Knox Group underlie Plant Bowen (Croft 1963).

Croft (1963) notes that the Knox dolomites are overlain by a thick residuum of cherty soil, while the residuum of the Newala Limestone (a formation near the top of the Knox) tends to be a thick clay. The Knox Group is considered a karst formation due to the dissolution of the dolomite and limestone and the presence of dolines (sinkholes).

## 1.2.2 *Site Geology*

Croft (1963) maps the Knox Group undifferentiated under most of AP-1, and the Newala Limestone under the southern 10 to 20% of AP-1. Though mapped as Newala Limestone, Newala in the vicinity of Plant Bowen can be interbedded limestone and dolomite (Chowns 2002). Based on extensive drilling in the AP-1 area, both dolomite and limestone are present, though the rock is predominately dolomite.

## 1.2.3 *Site Hydrogeology and Uppermost Aquifer*

A reddish clayey, silty, and sometimes cherty residuum of relatively low permeability overlies the dolomites and limestones at AP-1. This residuum forms the surficial aquitard and can range up to approximately 77 feet in thickness.

Groundwater occurs in solution-widened joints, fractures, zones of fracture concentration, and bedding planes beneath the top of rock at Plant Bowen.

The uppermost aquifer at Plant Bowen is the epikarst (solutioned dolomite and limestone below the top of rock). This zone can extend tens of feet into rock along often near-vertical, solution-widened fractures and other discontinuities.

The uppermost aquifer at Plant Bowen is very anisotropic and heterogeneous. Water is present where the solution-widened features occur, and absent elsewhere. If a boring does not intersect permeable features, then the hole may be dry.

Groundwater flow direction in the uppermost aquifer underlying AP-1 generally trends from southeast to northwest. However, due to the presence of solution features and preferential groundwater flow paths, the local direction of groundwater flow can vary.

## 1.3 **Groundwater Monitoring System**

Pursuant to §257.91, GPC installed a groundwater monitoring system within the uppermost aquifer at 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 upgradient or downgradient monitoring points based on groundwater flow direction (Table 1).

**Table 1**  
**Monitoring Well Network, Georgia Power – Plant Bowen AP-1**

Well ID	Hydraulic Location	Coordinates (NAD83 WZ)		Top of Casing Elevation	Total Depth	Top of Screen	Bottom of Screen	Screen Length (feet)
		Northing	Easting	(feet NAVD88)	(feet bgs)	(feet NAVD88)	(feet NAVD88)	
BGWA-2	Upgradient	1499375.65	2068599.23	729.81	86.5	650.9	640.9	10
BGWA-6**	Upgradient*	1499260.85	2065797.45	716.98	60.3	664.5	654.5	10
BGWA-26**	Upgradient*	1498696.48	2064190.20	728.66	73.0	663.4	653.4	10
BGWA-27**	Upgradient*	1498718.03	2064387.85	735.29	91.0	651.9	641.9	10
BGWA-28**	Upgradient*	1498748.11	2064577.77	737.49	84.0	661.2	651.2	10
BGWA-29	Upgradient*	1498283.38	2066363.43	721.39	96.5	632.7	622.7	10
BGWC-7	Downgradient	1504713.10	2066801.85	705.60	87.5	625.5	615.5	10
BGWC-8	Downgradient	1504672.07	2066928.29	706.65	77.0	637.2	627.2	10
BGWC-9	Downgradient	1504910.51	2066144.11	692.11	61.0	638.7	628.7	10
BGWC-10	Downgradient	1505032.56	2066080.17	686.26	59.7	634.2	624.2	10
BGWC-12	Downgradient	1505280.77	2065909.74	694.60	75.6	626.6	616.6	10
BGWC-14	Downgradient	1505406.14	2065043.82	718.77	86.1	640.2	630.2	10
BGWC-16	Downgradient	1504656.54	2064248.97	674.34	46.2	635.8	625.8	10
BGWC-17	Downgradient	1504432.14	2064260.75	673.71	66.0	615.6	605.6	10
BGWC-18	Downgradient	1504118.94	2064258.25	672.89	35.4	645.2	635.2	10
BGWC-19	Downgradient	1503742.31	2064245.92	673.65	52.0	629.4	619.4	10
BGWC-20	Downgradient	1503367.84	2064260.88	675.17	46.9	635.7	625.7	10
BGWC-21	Downgradient	1501627.60	2064348.78	691.41	50.3	648.7	638.7	10
BGWC-22	Downgradient	1501324.02	2064359.44	695.49	40.2	662.7	652.7	10
BGWC-23	Downgradient	1501000.87	2064351.45	695.57	48.6	654.9	644.9	10
BGWC-24	Downgradient	1500620.18	2065032.39	702.30	63.3	646.5	636.5	10
BGWC-25	Downgradient	1502292.88	2064244.72	680.51	55.0	632.9	622.9	10

Well ID	Hydraulic Location	Coordinates (NAD83 WZ)		Top of Casing Elevation	Total Depth	Top of Screen	Bottom of Screen	Screen Length (feet)
		Northing	Easting	(feet NAVD88)	(feet bgs)	(feet NAVD88)	(feet NAVD88)	
BGWC-30	Downgradient	1499816.75	2066394.31	701.18	57.3	651.5	641.5	10
BGWA-1**	Water Level	1499099.83	2067205.55	720.95	56.4	672.3	662.3	10
BGWA-3**	Water Level	1499419.93	2065186.44	724.33	86.5	645.7	635.7	10
BGWA-4**	Water Level	1499484.76	2064697.83	728.70	76.0	660.4	650.4	10
BGWA-5**	Water Level	1499435.96	2065421.03	720.94	66.7	662.1	652.1	10
BGWC-11**	Water Level	1504998.34	2066092.86	686.69	74.6	619.8	609.8	10
BGWC-13**	Water Level	1505436.84	2065250.98	717.54	70.8	654.4	644.4	10
BGWC-15**	Water Level	1505279.56	2064731.57	717.98	70.7	655.1	645.1	10

Notes:

\* Wells designated as upgradient south of AP-1 will continue to be evaluated for their appropriateness for use in the monitoring network.

\*\* Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modification to proposed well network.

bgs: below ground surface

NAD83 WZ: North American Datum of 1983

NAVD88: North American Vertical Datum of 1988



## 2 Groundwater Monitoring Activities

As required by §257.90(e), the following describes monitoring-related activities performed during the preceding year. This first annual groundwater monitoring report for AP-1 also describes activities performed prior to 2017 to assist with establishing the groundwater monitoring program. All groundwater sampling was performed in accordance with §257.93. Samples were collected from each well in the monitoring system shown on Figure 2.

Pursuant to §257.90(e)(3), Table 2 presents a summary of groundwater sampling events completed at Plant Bowen's AP-1.

**Table 2**  
**Monitoring Network Status Summary**

Well ID	Hydraulic Location	Summary of Sampling Events																	Status of Monitoring Well	
		June 3–10, 2016	August 9–22, 2016	October 3–10, 2016	November 29–December 8, 2016	January 10, 2017	January 23, 2017	February 7, 2017	February 13–21, 2017	March 27, 2017	April 13–21, 2017	May 25–June 6, 2017	June 5, 2017	July 10, 2017	June 15–July 18, 2017	July 13–19, 2017	August 10, 2017	August 23–25, 2017		October 9–12, 2017
Purpose of Sampling Event		Background																	Detection	
BGWA-1**	Upgradient*	BG01	BG02	BG03	BG04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Water Level
BGWA-3**	Upgradient*	BG01	BG02	BG03	BG04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Water Level
BGWA-4**	Upgradient*	BG01	BG02	BG03	BG04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Water Level
BGWA-5**	Upgradient*	BG01	BG02	BG03	BG04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Water Level
BGWA-6**	Upgradient*	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Water Level
BGWC-11**	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	--	Water Level
BGWC-13**	Downgradient	BG01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Water Level
BGWC-15**	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	--	Water Level
BGWA-26**	Upgradient*	--	BG01	BG02	BG03	BG04	--	--	BG05	--	BG06	BG07	--	BG08	--	--	--	--	D01	Water Level
BGWA-27**	Upgradient*	--	BG01	BG02	BG03	BG04	--	--	BG05	--	BG06	BG07	--	BG08	--	--	--	--	D01	Water Level
BGWA-28**	Upgradient*	--	BG01	BG02	BG03	BG04	--	--	BG05	--	BG06	BG07	--	BG08	--	--	--	--	D01	Water Level
BGWA-2	Upgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-7	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-8	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-9	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-10	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection

Well ID	Hydraulic Location	Summary of Sampling Events																		Status of Monitoring Well
		June 3-10, 2016	August 9-22, 2016	October 3-10, 2016	November 29-December 8, 2016	January 10, 2017	January 23, 2017	February 7, 2017	February 13-21, 2017	March 27, 2017	April 13-21, 2017	May 25-June 6, 2017	June 5, 2017	July 10, 2017	June 15-July 18, 2017	July 13-19, 2017	August 10, 2017	August 23-25, 2017	October 9-12, 2017	
Purpose of Sampling Event		Background																	Detection	
BGWC-12	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-14	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG06*/BG07	--	--	BG08	BG09	BG07*	BG08*	D01	Detection
BGWC-16	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-17	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-18	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-19	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-20	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-21	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-22	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-23	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-24	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWC-25	Downgradient	BG01	BG02	BG03	BG04	--	--	--	BG05	--	BG06	BG07	--	--	BG08	--	--	--	D01	Detection
BGWA-29	Upgradient	--	BG01	BG02	BG03	BG04	--	--	BG05	--	BG06	BG07	--	BG08	--	--	--	--	D01	Detection
BGWC-30	Downgradient	--	--	--	--	--	BG01	BG02	--	BG03	BG04	BG05	BG06	--	BG07	--	--	BG08	D01	Detection

Notes:

\* Wells designated as upgradient south of AP-1 will continue to be evaluated for their appropriateness for use in the monitoring network.

\*\* Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modification to proposed well network.

BG: Background Event

D: Detection Event

BG01: Background Event and Number D01 - Detection Event Number

BG06\*, BG07\* and BW08\*: Only radium samples collected

V: Verification Event

## 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). 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). In summary, monitoring well-related activities included the following:

- Installing a groundwater monitoring system consisting of 30 wells for AP-1 during the period of October 2015 through January 2017
- Installing dedicated bladder pumps for groundwater sampling between mid-2016 and early 2017

## 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 round of groundwater samples were 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 October 17, 2017. Pursuant to §257.90(e)(3), a summary of the background data is provided in Appendix A, Background Events Summary, and data reports for the background sampling events are included in Appendix B, Analytical Data Reports.

### 2.2.2 *Initial Detection Monitoring*

Following background monitoring (and prior to October 17, 2017), 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). Data reports for the initial detection monitoring event are included in Appendix B.



## 3 Sample Methodology and Analyses

Section 3 describes the methods used to complete groundwater monitoring at AP-1.

### 3.1 Groundwater Elevation Measurement

Prior to each sampling event, groundwater elevations were recorded from piezometers and each well in the network at AP-1. Groundwater elevations recorded during the background and detection monitoring events are summarized in Table 3. Groundwater elevation data were used to develop a generalized potentiometric surface elevation contour map (Figure 3). Based on this potentiometric surface map, groundwater flow direction in the uppermost aquifer underlying AP-1 is generally from south to north or northwest (Figure 3), with a component of flow to the southwest at the southern end of AP-1. However, due to the presence of solution features and preferential groundwater flow paths, the local direction of groundwater flow can vary. The groundwater flow pattern observed during the October 2017 detection monitoring event is consistent with recordings made during the background monitoring period.

Recharge from the recycle pond may be influencing the relatively high groundwater elevations in BGWC-24 and BGWC-30 and the apparent component of groundwater flow to the southwest in that area. The recycle pond is part of the ash pond that has been disconnected from the facility's wastewater system and no longer serves an operational purpose. Georgia Power plans to dewater the recycle pond in 2018 (Plant Bowen National Pollutant Discharge Elimination System Permit No. GA0001449, Ash Pond Dewatering Plan, December 2017). Wells originally designated as background south of AP-1 will continue to be evaluated for their appropriateness for use in the monitoring network.

**Table 3  
Summary of Groundwater Elevations**

Well ID	Top of Casing Elevation (feet/NAVD88)	Groundwater Elevations								
		6/2/2016	7/5/2016	9/6/2016	10/24/2016	1/4/2017	3/13/2017	5/15/2017	7/6/2017	10/19/2017
BGWA-1	720.95	661.8	681.3	680.1	678.7	688.0	689.1	688.7	691.7	689.4
BGWA-2	729.81	639.6	679.8	678.5	676.9	686.6*	686.6	686.0	688.6	685.6
BGWA-26	728.66	NA	669.5	669.1	668.0	669.2	672.1	671.7	673.4	671.3
BGWA-27	735.29	NA	669.6	669.2	668.1	669.3	672.3	671.8	673.6	671.5
BGWA-28	737.49	NA	669.9	669.6	668.4	669.4	672.6	672.2	673.9	671.8
BGWA-29	721.39	NA	679.0	678.4	677.0	682.2	685.7	685.4	687.5	685.1
BGWA-3	724.33	634.7	677.0	676.1	675.0	677.5	681.9	681.5	683.1	681.2
BGWA-4	728.70	649.4	677.0	676.1	675.0	678.0	682.1	681.7	683.2	681.5
BGWA-5	720.94	651.7	677.8	676.9	675.6	679.4	683.3	683.0	684.7	682.8
BGWA-6	716.98	653.3	680.3	679.1	677.7	681.3	686.4	685.5	688.0	685.2
BGWC-10	686.26	623.8	654.4	653.7	653.0	655.5	655.3	655.0	657.7	654.4
BGWC-11	686.69	609.4	658.7	657.9	657.0	659.1	659.5	659.0	661.3	658.4
BGWC-12	694.60	615.1	652.6	652.1	651.6	654.0	653.4	643.2	655.7	652.9
BGWC-13	717.54	643.8	647.8	644.9	644.9	BTP	BTP	BTP	BTP	BTP
BGWC-14	718.77	629.8	639.7	636.6	636.4	638.9	639.1	BTP	BTP	636.2
BGWC-15	717.98	643.0	648.5	646.6	646.0	BTP	648.0	647.5	648.1	647.4
BGWC-16	674.34	625.0	656.9	656.8	657.2	658.9	658.2	656.9	659.3	657.4
BGWC-17	673.71	604.0	658.9	657.4	657.0	659.8	659.0	657.6	660.0	658.0
BGWC-18	672.89	633.9	657.9	657.8	657.4	660.8	659.8	658.1	660.9	658.0
BGWC-19	673.65	618.7	656.7	656.6	656.4	660.2	658.7	657.0	660.7	658.7
BGWC-20	675.17	625.3	659.2	659.2	659.0	661.3	660.3	659.4	661.4	659.5
BGWC-21	691.41	657.9	668.5	668.4	667.5	671.8	670.3	669.4	673.2	669.4
BGWC-22	695.49	652.3	667.7	667.6	667.4	668.6	668.4	668.4	669.4	668.0

Well ID	Top of Casing Elevation (feet/NAVD88)	Groundwater Elevations								
		6/2/2016	7/5/2016	9/6/2016	10/24/2016	1/4/2017	3/13/2017	5/15/2017	7/6/2017	10/19/2017
BGWC-23	695.57	644.3	664.3	664.2	664.2	664.6	664.5	664.7	665.1	664.5
BGWC-24	702.30	636.0	690.6	691.3	690.9	693.4	691.2	692.2	694.1	692.2
BGWC-25	680.51	622.0	661.7	662.1	661.3	662.8	663.1	662.5	663.9	662.3
BGWC-30	701.18	NA	NA	NA	NA	NA	696.1	697.5	698.8	698.5
BGWC-7	705.60	615.2	657.1	656.7	655.4	657.8	657.8	657.8	659.8	657.2
BGWC-8	706.65	626.4	656.8	656.4	655.0	658.7	657.9	657.6	659.9	657.1
BGWC-9	692.11	628.0	658.4	657.7	657.0	658.8	659.1	658.7	660.9	658.1

Notes:

\* Water reading from 2/07/2017 was used due to an error in the measurement recorded in January.

BTP: Water level was below the pump.

NA: Well was not installed at this time. However, eight background rounds of water level measurements were collected and are available.

## 3.2 Groundwater Flow Velocity

The uppermost aquifer at AP-1 is the epikarst (solutioned dolomite and limestone occurring below the top of rock). This zone can extend tens of feet into rock along often near-vertical, solution-widened fractures and other discontinuities. Hydrogeologic characteristics of these features typically produce preferential groundwater flow paths, so groundwater velocity is much more variable than in uniform porous media such as sand. During monitoring well installation, multiple techniques were used to successfully intercept groundwater flow paths with the monitoring wells located around AP-1. These flow paths are believed to be solution-widened features such as fractures, zones of fracture concentration, bedding planes, and other discontinuities in the dolomite and limestone rock. Because the geology at the AP-1 site is not homogeneous or isotropic with respect to groundwater flow, groundwater velocity calculations using derivations of Darcy's Law are not applicable to the AP-1 site. Therefore, groundwater flow velocity at the AP-1 site cannot be accurately quantified using existing site data.

Groundwater flow velocities at the AP-1 site are expected to be impeded by the widespread clay and mud in the subsurface. A relatively thick zone of relatively low-permeability clay overlies the weathered rock at the AP-1 site. Similarly, based on observations during drilling, many of the solution-widened features in the rock contain clay and mud, which will impede the flow of groundwater.

## 3.3 Groundwater Sampling

Groundwater samples were collected in accordance with §257.93(a). Each of the monitoring wells at the CCR unit is equipped with a dedicated QED Environmental Systems bladder pump. Monitoring wells were purged and sampled using low-flow sampling procedures. An in-situ smarTroll was used to monitor and record field water quality parameters (pH, conductivity, and dissolved oxygen [DO]) during well purging to verify stabilization prior to sampling. Groundwater samples were collected when the following stabilization criteria were met:

- 0.1 standard unit for pH
- 5% for specific conductance
- 0.2 milligrams per liter (mg/L) or 10% for DO greater than 0.5 mg/L (whichever is greater)
  - For DO less than 0.5 mg/L, record only; no stabilization criterion
- Turbidity measurements less than 5 Nephelometric Turbidity Units (NTUs)

Where sample turbidity was greater than 5 NTUs and all other stabilization criteria were met, samplers continued purging for 3 additional hours in order to reduce the turbidity to 5 NTUs or less. If a monitoring well was purged dry when pumped at a rate of 100 mL per minute or less, it was



allowed to recover before collecting samples. Where wells purge dry, field parameter stabilization requirements did not apply. When a well purges dry, the following took place:

- Document the date and time for both well evacuation and sample collection
- Evacuate the well until it yields little or no water
- Record the total volume of water removed
- Allow the well to recover for no more than 24 hours before collecting samples
- Record the water level again before sampling to document the amount of recovery in the well

Once stabilization was achieved, samples were collected directly into appropriately preserved, laboratory-supplied sample containers. Sample bottles were placed in ice-packed coolers and submitted to 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 October 2017 for detection monitoring were analyzed for Appendix III monitoring parameters only. Analytical methods used for groundwater sample analysis are listed in the analytical laboratory reports included in Appendix B.

Laboratory analyses for background event 1 were performed by Test America, Inc. (TAL) of Pensacola, Florida, and St. Louis, Missouri. All subsequent laboratory analyses were performed by Pace Analytical Services, LLC (Pace) of Atlanta, Georgia, and Greensburg, Pennsylvania. Both TAL and Pace are accredited by the National Environmental Laboratory Accreditation Program (NELAP) and maintain NELAP certification for all parameters analyzed. In addition, TAL and Pace are certified to perform analysis by the State of Georgia. Groundwater data and chain-of-custody records for the detection event are presented in Appendix B.

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

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

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, post-digestion spikes, laboratory and field duplicate relative percent differences, 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). Flagged data are identified in the statistical analysis reports described in the following section.

## 4 Statistical Analysis

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

### 4.1 Statistical Method

The Sanitas Technologies Statistical Software (Sanitas 2007) was used to perform the analyses. Sanitas' proprietary decision support software package 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. Specific test information is provided below.

The statistical method used to evaluate groundwater monitoring data is the interwell prediction limit method with an optional 1-of-2 resampling strategy. Using this method, a minimum of eight samples from upgradient wells are pooled to establish a background statistical limit. Prediction limits are parametric when data follow a normal or transformed normal distribution and when data sets contain less than 50% non-detects; they are nonparametric when data sets contain greater than 50% non-detects or when data are not normally or transformed-normally distributed. Data from the October 2017 detection monitoring event were compared to the statistical limit to determine whether any concentrations exceed background levels.

The selected statistical method uses a 1-of-2 verification resample plan. If an initial statistically significant increase (SSI) or questionable result occurs, a second sample may be collected to verify the initial result or determine if the result was an outlier. If the initial finding is not verified by resampling, the resampled value will replace the initial finding. When the resample confirms the initial finding, the exceedance will be reported. When resampling is not performed, the initial finding is treated as a verified exceedance.

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

- Statistical analyses are not performed on analytes containing 100% non-detects (Chapter 6 of Unified Guidance, USEPA 2009).
- When data contain less than 15% non-detects in background, simple substitution of half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the laboratory reporting limit as reported by the laboratory.
- When data contain between 15% and 50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing more than 50% non-detects.

## 4.2 Statistical Analyses Results

Analytical data from the initial detection monitoring event at AP-1 in October 2017 were statistically analyzed in accordance with the site's PE-certified statistical methods. The statistical analysis and comparison to prediction limits are included as Appendix C, Statistical Analyses.

Based on the statistical results presented in Appendix C, the following parameters represent SSIs over background:

- Boron: BGWC-7, BGWC-8, BGWC-9, BGWC-10, BGWC-12, BGWC-14, BGWC-16, BGWC-17, BGWC-18, BGWC-19, BGWC-20, BGWC-22, BGWC-23, BGWC-24, BGWC-30
- Calcium: BGWC-7, BGWC-9, BGWC-10, BGWC-12, BGWC-14, BGWC-16, BGWC-17, BGWC-18, BGWC-19, BGWC-20, BGWC-22, BGWC-23, BGWC-24, BGWC-30
- Chloride: BGWC-7, BGWC-9, BGWC-10, BGWC-12, BGWC-14, BGWC-16, BGWC-17, BGWC-18, BGWC-19, BGWC-20, BGWC-21, BGWC-22, BGWC-23, BGWC-24, BGWC-25, BGWC-30
- Fluoride: BGWC-9, BGWC-17, BGWC-22, BGWC-24, BGWC-30
- pH: BGWC-7, BGWC-9, BGWC-10, BGWC-14, BGWC-16, BGWC-17, BGWC-18, BGWC-19, BGWC-20, BGWC-22, BGWC-23, BGWC-24, BGWC-30
- Sulfate: BGWC-7, BGWC-8, BGWC-9, BGWC-10, BGWC-12, BGWC-14, BGWC-16, BGWC-17, BGWC-18, BGWC-19, BGWC-20, BGWC-21, BGWC-22, BGWC-23, BGWC-24, BGWC-25, BGWC-30
- Total Dissolved Solids: BGWC-7, BGWC-9, BGWC-10, BGWC-12, BGWC-14, BGWC-16, BGWC-17, BGWC-18, BGWC-20, BGWC-22, BGWC-23, BGWC-24, BGWC-30

Pursuant to §257.90(e), within 90 days from determining an SSI, GPC will either prepare a demonstration that a source other than AP-1 was the cause, or implement assessment monitoring per §257.95.

## 5 Appendix IV Background Data

Pursuant to §257.95, Appendix IV groundwater quality data are 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 Plant Bowen AP-1. Therefore, statistical analysis of the Appendix IV data has not been performed.

## 6 Monitoring Program Status

Presently, Plant Bowen is in detection monitoring. SSIs of Appendix III parameters have been identified. Pursuant to §257.94(e)(1), Plant Bowen has 90 days from the date of determination to either prepare a demonstration that a source other than AP-1 was the cause, or 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).

## 7 Conclusions and 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), GPC will complete an alternate source demonstration or initiate Assessment Monitoring program within 90 days.

The first 2018 semi-annual detection monitoring event is planned for April 2018.

## 8 References

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## Figures

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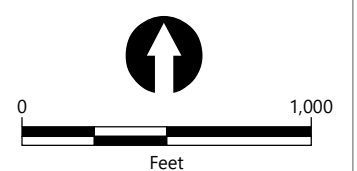
**Figure 1**  
**Plant Bowen Site and Vicinity**  
 2017 Annual Groundwater Monitoring  
 Georgia Power Company Plant Bowen





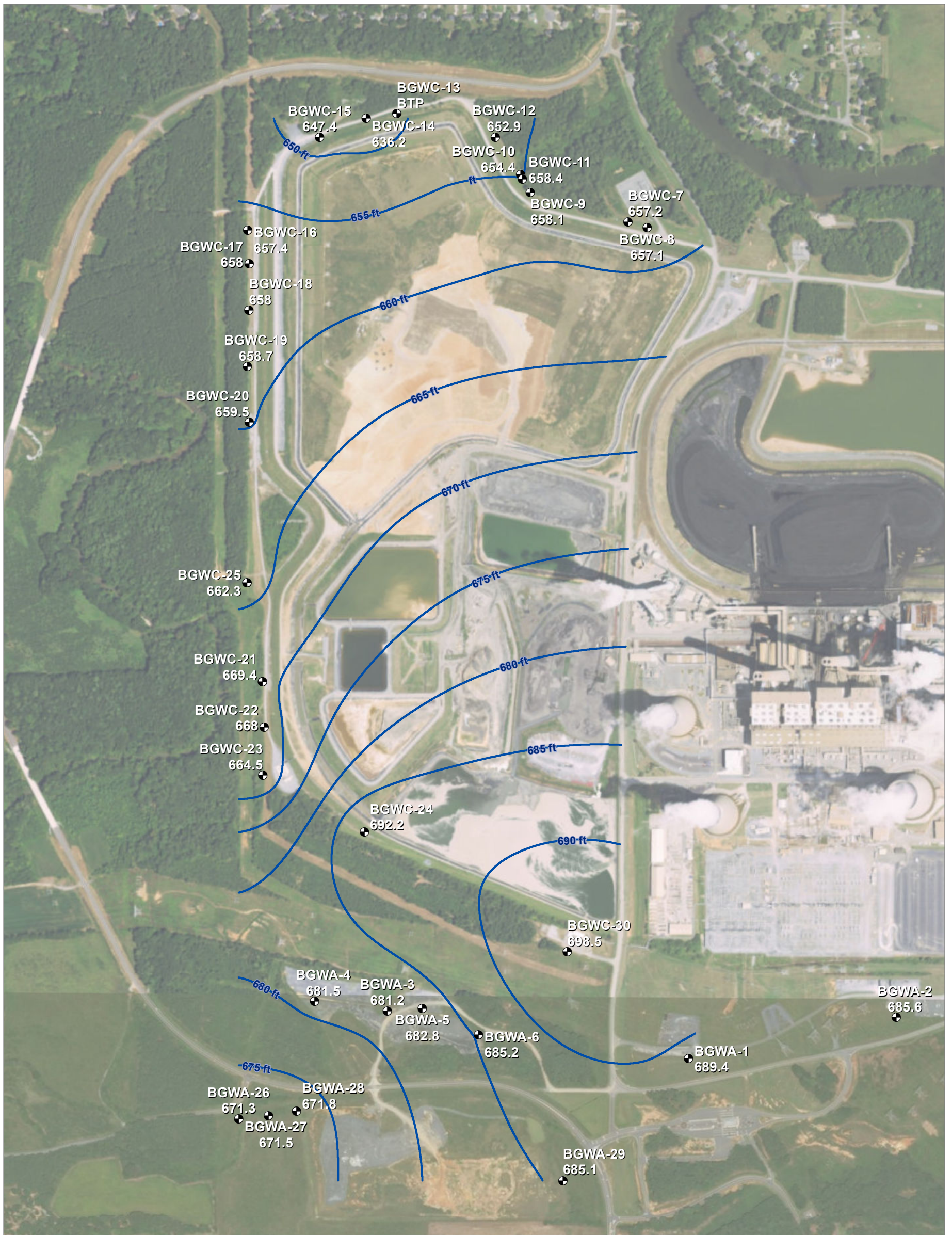
**LEGEND:**

● Monitoring Wells



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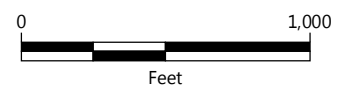


**LEGEND:**

- Wells with Groundwater Measurement for October 19, 2017
- Groundwater Elevation Contours (5-foot interval)

**NOTE:**

1. BTP = Below top of pump.
2. Due to the presence of solution features and preferential groundwater flow paths, the local direction of groundwater flow can vary considerably.





Appendix A  
Background Events Summary

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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWA-1	BGWA-1	BGWA-1	BGWA-1	BGWA-1	BGWA-1	BGWA-1	
			6/6/2016	8/9/2016	10/3/2016	11/29/2016				
APPENDIX III	Boron	N/R	0.33	0.808	1.57	2.83				
	Calcium	N/R	70	80.5	82	112				
	Chloride	(250)	27	56	99	170				
	Fluoride	4	ND (0.12 J)	0.36	ND (0.19 J)	ND (0.12 J)				
	Sulfate	(250)	26	45	68	100				
	TDS	(500)	290	432	565	624				
APPENDIX IV	Antimony	0.006	ND	ND	ND (0.0011 J)	ND				
	Arsenic	0.01	ND	ND	ND	ND				
	Barium	2	0.09	0.103	0.124	0.153				
	Beryllium	0.004	ND	ND	ND	ND	See Note 11			
	Cadmium	0.005	ND	ND	ND	ND				
	Chromium	0.1	ND	ND	ND (0.0010 J)	ND				
	Cobalt	N/R	ND	ND (0.0005 J)	ND	ND				
	Lead	0.015	ND	ND (0.000090 J)	ND	ND				
	Lithium	N/R	ND	ND	ND	ND				
	Mercury	0.002	ND (0.000078 J)	ND	ND	ND				
	Molybdenum	N/R	ND	ND (0.0007 J)	ND	ND				
	Radium	5	0.698	1.92	1.51	1.78				
	Selenium	0.05	0.0013	ND (0.0032 J)	ND (0.0054 J)	ND (0.0056 J)				
	Thallium	0.002	ND	ND (0.0002 J)	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. NS indicates not sampled due to insufficient water volume.
11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.

**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance	MCL/ (SMCL)	Well ID								
		BGWA-2	BGWA-2	BGWA-2	BGWA-2	BGWA-2	BGWA-2	BGWA-2	BGWA-2	BGWA-2
		6/6/2016	8/9/2016	10/3/2016	11/29/2016	2/13/2017	4/13/2017	5/25/2017	7/7/2017	
APPENDIX III	Boron	N/R	ND	ND (0.0336 J)	ND (0.0226 J)	ND (0.0085 J)	ND	ND (0.0084 J)	ND (0.01 J)	ND (0.009 J)
	Calcium	N/R	39	32.2	34.1	29.7	31.2	30.5	33.8	33.1
	Chloride	(250)	2.9	2.5	2.5	2.6	2.1	2.1	2.4	1.9
	Fluoride	4	ND (0.11 J)	ND (0.09 J)	ND (0.11 J)	ND (0.11 J)	ND (0.12 J)	ND (0.1 J)	ND (0.08 J)	ND (0.13 J)
	Sulfate	(250)	8	6.5	5.7	5.2	6.4	4.9	5.7	6.3
	TDS	(500)	170	183	201	109	214	211	173	165
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND (0.0004 J)	ND	ND
	Arsenic	0.01	ND (0.0012 J)	ND	ND	ND (0.0023 J)	ND	ND (0.0017 J)	ND (0.0015 J)	ND (0.001 J)
	Barium	2	0.2	0.188	0.191	0.201	0.218	0.19	0.193	0.148
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND	ND	ND	0.0085	ND	ND	ND	ND
	Chromium	0.1	ND	ND (0.0019 J)	ND	ND	ND	ND (0.0005 J)	ND	ND (0.0008 J)
	Cobalt	N/R	ND	ND (0.0005 J)	ND	ND	ND	ND	ND	ND
	Lead	0.015	0.0024	ND	ND	ND (0.0002 J)	ND	ND	ND (0.0001 J)	ND
	Lithium	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Mercury	0.002	ND (0.000077 J)	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND (0.0015 J)	ND (0.0016 J)	ND	ND (0.0022 J)	ND (0.002 J)	ND (0.0025 J)	ND (0.0020 J)	ND (0.0017 J)
	Radium	5	0.838	1.18	0.815 U	0.887 U	0.869 U	1.21 U	1.54	1.45
	Selenium	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	0.002	ND	ND (0.0001 J)	ND	ND	ND	ND (0.00009 J)	ND (0.0001 J)	ND (0.00009 J)	

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. NS indicates not sampled due to insufficient water volume.
11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.

**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID										
			BGWA-3	BGWA-3	BGWA-3	BGWA-3	BGWA-3	BGWA-3	BGWA-3	BGWA-3			
			6/3/2016	8/9/2016	10/3/2016	11/30/2016							
APPENDIX III	Boron	N/R	1	0.677	0.718	0.681							
	Calcium	N/R	81	67.6	62.5	61.8							
	Chloride	(250)	110	61	87	85							
	Fluoride	4	ND	ND (0.07 J)	ND (0.13 J)	ND (0.16 J)							
	Sulfate	(250)	73	41	58	58							
	TDS	(500)	390	476	457	406							
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND							
	Arsenic	0.01	ND	ND	ND	ND							
	Barium	2	0.018	0.0132	0.0138	0.0159							
	Beryllium	0.004	ND	ND	ND	ND							
	Cadmium	0.005	ND	ND	ND	ND							
	Chromium	0.1	ND	ND (0.0024 J)	ND (0.0020 J)	ND (0.001 J)							
	Cobalt	N/R	0.0027	ND (0.0020 J)	ND	ND							
	Lead	0.015	ND	ND	ND	ND							
	Lithium	N/R	ND	ND	ND	ND							
	Mercury	0.002	ND (0.000076 J)	ND	ND	ND							
	Molybdenum	N/R	ND	ND	ND	ND							
	Radium	5	0.268 U	0.687 U	0.306 U	0.993 U							
	Selenium	0.05	0.0056	ND (0.0059 J)	ND (0.0050 J)	ND (0.005 J)							
	Thallium	0.002	ND	ND	ND	ND							

See Note 11

Notes:

- MCL indicates Environmental Protection Agency (EPA) and Georgia Environmental Protection Division (EPD) maximum contaminant level.
- (SMCL) indicates a secondary MCL that is established by EPA as a general guideline only (not enforced).
- Results for substances are reported in milligrams per liter (mg/L). Radium results are reported in picocuries per liter (pCi/L).
- ND (Not Detected) indicates the substance was not detected above the analytical method detection limit (MDL).
- 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.
- 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.
- TDS indicates total dissolved solids.
- 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.
- Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.
- NS indicates not sampled due to insufficient water volume.
- Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.



**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWA-4	BGWA-4	BGWA-4	BGWA-4	BGWA-4	BGWA-4	BGWA-4	BGWA-4
			6/6/2016	8/9/2016	10/3/2016	11/29/2016				
APPENDIX III	Boron	N/R	2.8	2.62	2.72	2.87				
	Calcium	N/R	130	123	114	112				
	Chloride	(250)	220	210	210	230				
	Fluoride	4	ND	1.1	ND	ND (0.09 J)				
	Sulfate	(250)	110	82	75	81				
	TDS	(500)	830	908	904	669				
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND				
	Arsenic	0.01	0.0021	ND (0.0034 J)	ND (0.0046 J)	0.0051				
	Barium	2	0.052	0.0545	0.0541	0.0553				
	Beryllium	0.004	ND	ND	ND	ND	See Note 11			
	Cadmium	0.005	ND	ND	ND	ND				
	Chromium	0.1	ND	ND (0.0011 J)	ND	ND				
	Cobalt	N/R	ND (0.00091 J)	ND (0.0009 J)	ND	ND				
	Lead	0.015	ND	ND (0.000090 J)	ND	ND				
	Lithium	N/R	ND	ND (0.0013 J)	ND	ND				
	Mercury	0.002	ND (0.000083 J)	ND	ND	ND				
	Molybdenum	N/R	ND (0.0043 J)	ND (0.0029 J)	ND (0.0023 J)	ND				
	Radium	5	0.892	2.21	1.59	0.923				
	Selenium	0.05	0.0045	ND (0.0074 J)	ND (0.0034 J)	ND (0.0028 J)				
Thallium	0.002	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. NS indicates not sampled due to insufficient water volume.
11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.

**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance	MCL/ (SMCL)	Well ID								
		BGWA-5	BGWA-5	BGWA-5	BGWA-5	BGWA-5	BGWA-5	BGWA-5	BGWA-5	
		6/3/2016	8/10/2016	10/3/2016	11/30/2016					
APPENDIX III	Boron	N/R	2.5	2.86	3.21	3.73				
	Calcium	N/R	110	127	135	131				
	Chloride	(250)	180	160	240	250				
	Fluoride	4	ND	ND (0.05 J)	0.44	ND (0.11 J)				
	Sulfate	(250)	120	110	160	150				
	TDS	(500)	650	938	940	763				
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND				
	Arsenic	0.01	ND	ND	ND	ND				
	Barium	2	0.031	0.0361	0.0426	0.0466				
	Beryllium	0.004	ND	ND	ND	ND				
	Cadmium	0.005	ND	ND	ND	ND				
	Chromium	0.1	ND	ND (0.0037 J)	ND (0.0017 J)	ND				
	Cobalt	N/R	ND	ND (0.0006 J)	ND	ND				
	Lead	0.015	ND	ND	ND	ND				
	Lithium	N/R	ND	ND	ND	ND				
	Mercury	0.002	ND (0.000083 J)	ND	ND	ND				
	Molybdenum	N/R	ND	ND	ND	ND				
	Radium	5	0.803	1.55	1.04 U	1.41				
	Selenium	0.05	0.012	0.0175	0.0140	0.0145				
	Thallium	0.002	ND	ND	ND	ND				

See Note 11

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).
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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.
10. NS indicates not sampled due to insufficient water volume.
11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.

**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWA-6	BGWA-6	BGWA-6	BGWA-6	BGWA-6	BGWA-6	BGWA-6	BGWA-6
			6/6/2016	8/10/2016	10/4/2016	12/1/2016	2/14/2017	4/13/2017	5/25/2017	7/7/2017
APPENDIX III	Boron	N/R	ND	ND (0.0876 J)	ND (0.0145 J)	ND (0.0146 J)	ND (0.0114 J)	ND (0.0195 J)	ND (0.0179 J)	ND (0.019 J)
	Calcium	N/R	59	56.0	51.4	55.9	51.1	53.4	59.8	57.8
	Chloride	(250)	5.6	5.3	5.6	6.2	8.8	10	11	12
	Fluoride	4	ND	ND (0.04 J)	ND (0.06 J)	ND (0.09 J)	ND	ND (0.04 J)	ND (0.02 J)	ND (0.12 J)
	Sulfate	(250)	26	22	20	20	20	21	22	25
	TDS	(500)	220	299	245	269	405	349	283	265
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND	ND	ND	ND	ND	ND (0.0007 J)	ND (0.0013 J)	ND
	Barium	2	0.015	0.0142	0.0137	0.0144	0.0114	0.0115	0.0122	0.0120
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	0.1	ND	ND (0.0044 J)	ND	ND	ND	ND	ND	ND
	Cobalt	N/R	ND	ND (0.0006 J)	ND	ND	ND	ND	ND	ND
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND
	Lithium	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Mercury	0.002	ND (0.000084 J)	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Radium	5	0.239 U	1.19	0.231 U	0.428 U	0.360 U	0.387 U	0.123 U	0.876 U
	Selenium	0.05	ND	ND	ND	ND	ND	ND	ND	ND
	Thallium	0.002	ND	ND (0.000070 J)	ND	ND	ND	ND (0.0001 J)	ND (0.00006 J)	ND (0.00007 J)

Notes:

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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.
10. NS indicates not sampled due to insufficient water volume.
11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.

**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance	MCL/ (SMCL)	Well ID								
		BGWC-7	BGWC-7	BGWC-7	BGWC-7	BGWC-7	BGWC-7	BGWC-7	BGWC-7	BGWC-7
		6/8/2016	8/11/2016	10/6/2016	12/6/2016	2/15/2017	4/18/2017	6/2/2017	7/14/2017	
APPENDIX III	Boron	N/R	1.7	1.95	2.06	2.05	2.01	2.58	2.22	1.85
	Calcium	N/R	140	141	147	146	163	155	156	157
	Chloride	(250)	11	11	11	11	12	12	11	11
	Fluoride	4	0.19 J	ND (0.15 J)	ND (0.17 J)	ND (0.22 J)	ND (0.18 J)	ND (0.11 J)	ND (0.07 J)	ND (0.23 J)
	Sulfate	(250)	410	460	440	470	510	450	470	230
	TDS	(500)	800	852	906	976	968	944	910	887
APPENDIX IV	Antimony	0.006	ND	ND (0.0005 J)	ND (0.0015 J)	ND	ND	ND (0.0003 J)	ND	ND
	Arsenic	0.01	0.0024	ND (0.0024 J)	ND	ND	ND (0.003 J)	ND (0.0029 J)	ND (0.0031 J)	ND (0.0017 J)
	Barium	2	0.048	0.0428	0.0404	0.0385	0.039	0.0392	0.0407	0.0394
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	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 (0.00081 J)	ND (0.0007 J)	ND	ND (0.0009 J)	ND	ND (0.0005 J)	ND (0.0006 J)	ND (0.0006 J)
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND
	Lithium	N/R	0.0079	ND (0.0093 J)	ND (0.0102 J)	ND (0.0094 J)	ND	ND (0.0086 J)	ND (0.0102 J)	ND (0.0092 J)
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND (0.0088 J)	0.0100	0.0117	0.0102	ND (0.0018 J)	0.0103	0.0129	0.0129
	Radium	5	0.854	1.24	2.43	0.958 U	1.18	1.26	1.24 U	1.55
	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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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.
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.
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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID								
			BGWC-8	BGWC-8	BGWC-8	BGWC-8	BGWC-8	BGWC-8	BGWC-8	BGWC-8	
			6/7/2016	8/10/2016	10/4/2016	12/2/2016	2/14/2017	4/14/2017	5/26/2017	7/10/2017	
APPENDIX III	Boron	N/R	0.02	0.117	0.177	0.0668	0.122	0.054	0.0817	0.0534	
	Calcium	N/R	7.9	36.8	39.7	37.8	35.2	37.5	41.7	39.0	
	Chloride	(250)	2	2.1	2.3	2.1	2	1.7	1.6	1.5	
	Fluoride	4	ND	ND (0.07 J)	ND (0.07 J)	ND (0.09 J)	ND (0.02 J)	ND (0.02 J)	ND (0.02 J)	ND (0.02 J)	ND (0.03 J)
	Sulfate	(250)	26	29	40	37	45	27	34	28	
	TDS	(500)	200	228	186	183	367	184	179	211	
APPENDIX IV	Antimony	0.006	ND	ND (0.0004 J)	ND	ND	ND	ND	ND	ND	
	Arsenic	0.01	ND (0.00018 J)	ND	ND	ND	ND	ND (0.0007 J)	ND (0.0008 J)	ND (0.0011 J)	
	Barium	2	0.0051	0.0264	0.0316	0.026	0.0299	0.0275	0.0328	0.0305	
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND	
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND	
	Chromium	0.1	ND	ND (0.0052 J)	ND (0.0015 J)	ND (0.0013 J)	ND	ND (0.0011 J)	ND (0.0008 J)	ND (0.0009 J)	
	Cobalt	N/R	ND (0.00013 J)	ND (0.0003 J)	ND	ND	ND	ND	ND	ND	
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND (0.0003 J)	ND	
	Lithium	N/R	ND	ND	ND	ND	ND	ND	ND	ND	
	Mercury	0.002	ND (0.000097 J)	ND	ND	ND	ND	ND	ND	ND	
	Molybdenum	N/R	ND (0.00063 J)	ND (0.0039 J)	ND (0.0052 J)	ND	ND (0.0044 J)	ND (0.0013 J)	ND (0.0024 J)	ND (0.0013 J)	
	Radium	5	0.0507 U	0.862 U	0.48 U	0.219 U	0.636 U	0.13 U	0.349 U	0.565 U	
	Selenium	0.05	ND (0.000048 J)	ND	ND	ND	ND	ND	ND	ND	
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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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-9	BGWC-9	BGWC-9	BGWC-9	BGWC-9	BGWC-9	BGWC-9	BGWC-9
			6/6/2016	8/11/2016	10/5/2016	12/5/2016	2/15/2017	4/17/2017	5/26/2017	7/11/2017
APPENDIX III	Boron	N/R	0.55	0.612	0.659	0.71	0.707	0.675	0.711	0.633
	Calcium	N/R	66	65.2	66.7	74.6	74.6	65.6	70.4	66.9
	Chloride	(250)	27	30	36	40	38	35	35	33
	Fluoride	4	ND (0.12 J)	ND (0.27 J)	ND (0.12 J)	ND (0.26 J)	0.46	ND (0.14 J)	ND (0.13 J)	ND (0.2 J)
	Sulfate	(250)	100	110	120	130	120	110	110	110
	TDS	(500)	320	361	376	426	452	388	423	387
APPENDIX IV	Antimony	0.006	ND	ND (0.0003 J)	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	0.0022	ND (0.0028 J)	ND (0.0020 J)	ND	ND (0.0033 J)	ND (0.0028 J)	ND (0.0035 J)	ND (0.0033 J)
	Barium	2	0.034	0.0305	0.0289	0.0269	0.0299	0.0318	0.0341	0.0355
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	0.1	ND	ND	ND (0.0020 J)	ND	ND	ND	ND	ND
	Cobalt	N/R	ND	ND (0.0003 J)	ND	ND (0.0006 J)	ND	ND	ND	ND
	Lead	0.015	ND	ND	ND (0.0005 J)	ND (0.0002 J)	ND	ND (0.0001 J)	ND (0.0001 J)	ND
	Lithium	N/R	ND	ND	ND	ND	ND	ND (0.0013 J)	ND (0.0013 J)	ND
	Mercury	0.002	ND (0.00008 J)	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND (0.0028 J)	ND (0.0030 J)	ND (0.0032 J)	ND (0.0033 J)	ND (0.0027 J)	ND (0.0025 J)	ND (0.0029 J)	ND (0.0029 J)
	Radium	5	0.488	0.639 U	0.945 U	2.2	0.740 U	0.764 U	0.245 U	0.502 U
	Selenium	0.05	ND (0.00031 J)	ND (0.0010 J)	ND (0.0017 J)	ND	ND	ND	ND (0.0014 J)	ND
Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance	MCL/ (SMCL)	Well ID								
		BGWC-10	BGWC-10	BGWC-10	BGWC-10	BGWC-10	BGWC-10	BGWC-10	BGWC-10	BGWC-10
		6/7/2016	8/16/2016	10/7/2016	12/6/2016	2/16/2017	4/18/2017	6/2/2017	7/12/2017	
APPENDIX III	Boron	N/R	0.37	0.525	0.492	0.515	0.482	0.515	0.513	0.508
	Calcium	N/R	50	49.2	52.6	55.4	53.2	58	55.8	58.1
	Chloride	(250)	19	20	21	22	22	21	20	23
	Fluoride	4	ND (0.09 J)	ND (0.09 J)	ND (0.17 J)	ND (0.16 J)	0.38	ND (0.12 J)	ND (0.03 J)	ND (0.15 J)
	Sulfate	(250)	99	110	110	110	110	110	110	110
	TDS	(500)	300	286	513	421	433	349	313	255
APPENDIX IV	Antimony	0.006	ND (0.0022 J)	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	0.0039	0.0091	0.0074	ND (0.0044 J)	0.0081	0.0084	0.0080	0.0063
	Barium	2	0.091	0.0667	0.0631	0.0659	0.0621	0.0545	0.0555	0.0572
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	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	N/R	0.0065	ND	ND	ND	ND	ND (0.0011 J)	ND (0.0011 J)	ND
	Mercury	0.002	ND (0.0001 J)	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND (0.0067 J)	ND (0.0032 J)	ND (0.0032 J)	ND (0.0049 J)	ND (0.0039 J)	ND (0.0032 J)	ND (0.0035 J)	ND (0.0037 J)
	Radium	5	0.616	1.08	2.82	0.719 U	0.966 U	1.01 U	1.13 U	1.29
	Selenium	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-11	BGWC-11	BGWC-11	BGWC-11	BGWC-11	BGWC-11	BGWC-11	BGWC-11
			6/6/2016	8/11/2016	10/5/2016	12/2/2016	2/15/2017	4/18/2017	5/26/2017	7/13/2017
APPENDIX III	Boron	N/R	0.17	0.174	0.210	0.229	0.225	0.223	0.228	0.184
	Calcium	N/R	39	34.4	39.6	43.1	45.6	42.4	47.3	44.4
	Chloride	(250)	10	10	9.7	9.8	9.2	9.9	9.9	10
	Fluoride	4	ND (0.11 J)	ND (0.25 J)	ND (0.09 J)	ND (0.15 J)	ND (0.13 J)	ND (0.14 J)	ND (0.03 J)	ND (0.05 J)
	Sulfate	(250)	93	89	85	75	94	84	87	84
	TDS	(500)	250	285	246	258	322	277	291	254
APPENDIX IV	Antimony	0.006	ND	ND (0.0020 J)	ND (0.0014 J)	ND	ND	ND (0.0004 J)	ND	ND
	Arsenic	0.01	0.0023	ND (0.0037 J)	ND (0.0036 J)	ND (0.0039 J)	ND (0.0046 J)	ND (0.0028 J)	ND (0.0034 J)	ND (0.0019 J)
	Barium	2	0.023	0.0222	0.0204	0.0198	0.0217	0.0212	0.0233	0.0228
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	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 (0.00007 J)
	Lithium	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Mercury	0.002	ND (0.000079 J)	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND (0.0042 J)	ND (0.0039 J)	ND (0.0032 J)	ND (0.0029 J)	ND (0.0031 J)	ND (0.0027 J)	ND (0.0033 J)	ND (0.0039 J)
	Radium	5	0.339 U	0.536 U	0.143 U	0.912 U	0.460 U	0.288 U	0.997 U	0.378 U
	Selenium	0.05	ND (0.00036 J)	ND	ND	ND	ND	ND	ND	ND
Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

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11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.



**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-12	BGWC-12	BGWC-12	BGWC-12	BGWC-12	BGWC-12	BGWC-12	BGWC-12
			6/7/2016	8/12/2016	10/6/2016	12/5/2016	2/15/2017	4/18/2017	6/2/2017	7/13/2017
APPENDIX III	Boron	N/R	1.1	0.867	0.863	0.879	0.886	0.941	1.02	0.945
	Calcium	N/R	90	76.6	78.7	80.9	90.7	94.8	108	111
	Chloride	(250)	44	43	41	41	39	39	37	38
	Fluoride	4	ND	ND (0.08 J)	ND (0.06 J)	ND (0.12 J)	0.33	ND (0.006 J)	ND (0.04 J)	ND (0.17 J)
	Sulfate	(250)	190	180	200	130	190	220	250	250
	TDS	(500)	510	476	524	489	562	955	602	617
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND	ND (0.0009 J)	ND	ND	ND	ND (0.0009 J)	ND (0.0015 J)	ND (0.0006 J)
	Barium	2	0.027	0.0260	0.0308	0.0258	0.029	0.0294	0.0354	0.0329
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	0.1	ND	ND	ND	ND	ND	ND	ND (0.0003 J)	ND
	Cobalt	N/R	ND	ND	ND	ND (0.0006 J)	ND	ND	ND	ND (0.0003 J)
	Lead	0.015	ND	ND (0.0001 J)	ND (0.0002 J)	ND (0.0003 J)	ND	ND	ND (0.0001 J)	ND (0.0001 J)
	Lithium	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Mercury	0.002	ND (0.0001 J)	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Radium	5	0.0240 U	0.849	1.57	0.956	0.229 U	0.0114 U	0.375 U	0.636 U
	Selenium	0.05	ND	ND	ND	ND	ND	ND	ND	ND
	Thallium	0.002	ND	ND (0.00009 J)	ND	ND	ND	ND (0.00009 J)	ND	ND (0.00008 J)

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. NS indicates not sampled due to insufficient water volume.
11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.

**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-13 6/9/2016	BGWC-13	BGWC-13	BGWC-13	BGWC-13	BGWC-13	BGWC-13	
APPENDIX III	Boron	N/R	0.34							
	Calcium	N/R	110							
	Chloride	(250)	28							
	Fluoride	4	ND (0.17 J)							
	Sulfate	(250)	210							
	TDS	(500)	690							
APPENDIX IV	Antimony	0.006	ND							
	Arsenic	0.01	ND (0.00047 J)							
	Barium	2	0.19							
	Beryllium	0.004	ND							
	Cadmium	0.005	ND							
	Chromium	0.1	ND							
	Cobalt	N/R	ND							
	Lead	0.015	ND							
	Lithium	N/R	ND							
	Mercury	0.002	ND (0.000083 J)							
	Molybdenum	N/R	0.063							
	Radium	5	NS							
	Selenium	0.05	ND (0.00076 J)							
	Thallium	0.002	ND							

See Note 11

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. NS indicates not sampled due to insufficient water volume.
11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.

**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance	MCL/ (SMCL)	Well ID												
		BGWC-14	BGWC-14	BGWC-14	BGWC-14	BGWC-14	BGWC-14	BGWC-14	BGWC-14	BGWC-14	BGWC-14	BGWC-14	BGWC-14	
		6/10/2016	8/17/2016	10/7/2016	12/8/2016	2/21/2017	4/21/2017	5/26/2017	6/6/2017	6/15/2017	7/19/2017	8/10/2017	8/25/2017	
APPENDIX III	Boron	N/R	0.54	0.787	0.785	0.776	0.809	0.820	--	0.906	0.819	0.872	--	--
	Calcium	N/R	70	75.7	85.7	96.5	102	101	--	108	108	113	--	--
	Chloride	(250)	35	35	37	38	37	37	--	35	--	36	--	--
	Fluoride	4	0.23	ND (0.12 J)	ND (0.13 J)	0.31	0.35	ND (0.04 J)	--	0.36	--	ND (0.18 J)	--	--
	Sulfate	(250)	100	130	180	200	210	220	--	230	--	240	--	--
	TDS	(500)	420	453	716	573	589	620	--	656	--	631	--	--
APPENDIX IV	Antimony	0.006	ND	ND	ND (0.0018 J)	ND	ND (0.0013 J)	ND	--	ND (0.0023 J)	ND (0.0015 J)	ND (0.0008 J)	--	--
	Arsenic	0.01	0.0049	ND (0.0042 J)	ND	ND	ND (0.0039 J)	--	ND (0.001 J)	ND (0.0024 J)	ND (0.0031 J)	--	--	
	Barium	2	0.08	0.0801	0.0764	0.0723	0.0789	0.0871	--	0.0789	0.0822	0.0910	--	--
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	--	--
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	--	--
	Chromium	0.1	ND	ND	ND (0.0014 J)	ND	ND	ND	--	ND	ND	ND	--	--
	Cobalt	N/R	ND	ND	ND	ND	ND	ND	--	ND	ND (0.0003 J)	ND (0.0003 J)	--	--
	Lead	0.015	ND	ND	ND	ND	ND	ND	--	ND	ND (0.00009 J)	ND	--	--
	Lithium	N/R	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	--	--
	Mercury	0.002	ND	ND	ND	ND	ND	ND	--	ND	ND (0.000062 J)	ND	--	--
	Molybdenum	N/R	ND (0.014 J)	ND (0.0085 J)	ND (0.0072 J)	ND (0.0082 J)	ND (0.0076 J)	ND (0.0052 J)	--	ND (0.0079 J)	ND (0.0052 J)	ND (0.0073 J)	--	--
	Radium	5	NS	5.18	NS	NS	5.1	NS	7.14	4.68	5.69	2.92	6.51	7.04
	Selenium	0.05	ND	ND	ND	ND	ND (0.0011 J)	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.
10. NS indicates not sampled due to insufficient water volume.
11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.
12. -- indicates analyte was not analyzed.

**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							BGWC-15
			BGWC-15	BGWC-15	BGWC-15	BGWC-15	BGWC-15	BGWC-15	BGWC-15	
			6/10/2016	12/8/2016	4/21/2017	6/6/2017	7/13/2017	8/10/2017	8/25/2017	
APPENDIX III	Boron	N/R	ND (0.035 J)	0.0789	0.0795	0.0794	0.0762	0.0892	0.11	See Note 11
	Calcium	N/R	130	121	131	140	144	155	142	
	Chloride	(250)	12	11	--	10	9.9	9.7	10	
	Fluoride	4	ND (0.12 J)	0.4	--	ND (0.04 J)	ND (0.18 J)	ND (0.20 J)	ND (0.07 J)	
	Sulfate	(250)	460	420	--	420	410	440	450	
	TDS	(500)	980	980	--	961	937	932	962	
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND (0.0013 J)	ND (0.0014 J)	ND (0.0007 J)	ND	
	Arsenic	0.01	0.0073	ND	ND (0.0024 J)	ND (0.0011 J)	ND (0.0016 J)	ND (0.0017 J)	ND (0.0015 J)	
	Barium	2	0.093	0.107	0.0883	0.0813	0.0947	0.0805	0.0824	
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	
	Chromium	0.1	ND	ND	ND (0.0013 J)	ND (0.0005 J)	ND (0.001 J)	ND (0.0008 J)	ND (0.0007 J)	
	Cobalt	N/R	0.018	ND (0.0035 J)	ND (0.0022 J)	ND (0.0015 J)	ND (0.0029 J)	ND (0.0023 J)	ND (0.0014 J)	
	Lead	0.015	ND	ND	ND	ND	ND (0.0004 J)	ND (0.00009 J)	ND (0.0001 J)	
	Lithium	N/R	ND	ND	ND	ND	ND	ND	ND	
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	
	Molybdenum	N/R	ND (0.009 J)	0.0138	0.0190	0.0215	0.0227	0.0232	0.0198	
	Radium	5	NS	NS	NS	NS	NS	1.89	NS	
	Selenium	0.05	ND	ND	ND	ND	ND	ND	ND	
Thallium	0.002	ND	ND	ND (0.0001 J)	ND (0.0001 J)	ND (0.0001 J)	ND (0.00007 J)	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. NS indicates not sampled due to insufficient water volume.
11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.
12. -- indicates analyte was not analyzed.

**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-16	BGWC-16	BGWC-16	BGWC-16	BGWC-16	BGWC-16	BGWC-16	BGWC-16
			6/7/2016	8/11/2016	10/7/2016	12/6/2016	2/16/2017	4/18/2017	5/30/2017	7/14/2017
APPENDIX III	Boron	N/R	1.7	1.37	1.49	1.65	1.73	1.77	1.52	1.26
	Calcium	N/R	120	111	103	117	124	120	111	109
	Chloride	(250)	37	41	44	48	46	41	38	35
	Fluoride	4	ND	ND (0.12 J)	ND (0.08 J)	ND (0.24 J)	0.31	ND (0.02 J)	0.51	ND (0.14 J)
	Sulfate	(250)	240	250	260	280	380	290	260	260
	TDS	(500)	580	548	617	730	685	621	601	569
APPENDIX IV	Antimony	0.006	ND	ND (0.0004 J)	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND	ND	ND	ND	ND	ND (0.0007 J)	ND (0.0008 J)	ND (0.0008 J)
	Barium	2	0.027	0.0292	0.0295	0.0367	0.0315	0.0272	0.0316	0.0290
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND (0.0011 J)	0.0011	0.0012	0.0012	0.0015	0.0012	0.0011	0.0012
	Chromium	0.1	ND	ND	ND	ND	ND	ND	ND	ND
	Cobalt	N/R	0.0037	ND (0.0039 J)	ND (0.0043 J)	ND (0.005 J)	ND (0.0054 J)	ND (0.0054 J)	ND (0.0045 J)	ND (0.0049 J)
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND (0.0001 J)	ND (0.0002 J)
	Lithium	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Mercury	0.002	ND (0.000098 J)	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Radium	5	0.284 U	1.71	0.485 U	1.22	0.19 U	0.520 U	1.21 U	0.526 U
	Selenium	0.05	ND	ND	ND	ND	ND (0.0012 J)	ND	ND	ND
	Thallium	0.002	ND (0.0002 J)	ND (0.0002 J)	ND (0.0002 J)	ND (0.0003 J)	ND (0.0003 J)	ND (0.0002 J)	ND (0.0002 J)	ND (0.0002 J)

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. NS indicates not sampled due to insufficient water volume.
11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.

**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-17	BGWC-17	BGWC-17	BGWC-17	BGWC-17	BGWC-17	BGWC-17	BGWC-17
			6/7/2016	8/11/2016	10/7/2016	12/6/2016	2/16/2017	4/19/2017	5/30/2017	7/14/2017
APPENDIX III	Boron	N/R	1.5	1.41	1.76	1.79	1.63	1.47	1.70	1.26
	Calcium	N/R	65	61.0	71.0	68.7	65.5	68.9	72.6	70.6
	Chloride	(250)	26	34	38	45	40	38	41	36
	Fluoride	4	ND (0.15 J)	ND (0.30 J)	ND (0.14 J)	ND (0.19 J)	0.51	ND (0.18 J)	ND (0.15 J)	ND (0.16 J)
	Sulfate	(250)	120	110	150	130	120	110	110	110
	TDS	(500)	360	340	533	413	434	415	391	391
APPENDIX IV	Antimony	0.006	ND	ND (0.0002 J)	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND	ND	ND	ND	ND	ND (0.0012 J)	ND (0.0006 J)	ND
	Barium	2	0.017	0.0152	0.0225	0.0171	0.0187	0.0183	0.0179	0.0191
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND	ND (0.0001 J)	ND (0.0002 J)	ND (0.0001 J)	ND (0.0001 J)	ND (0.0001 J)	ND (0.0002 J)	ND (0.0002 J)
	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	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Mercury	0.002	ND (0.00017 J)	ND (0.00019 J)	ND (0.00014 J)	ND (0.00016 J)	ND (0.00017 J)	ND (0.00014 J)	ND (0.00023 J)	ND (0.00016 J)
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Radium	5	0.135 U	0.808	0.874 U	0.131 U	0.471 U	0.650 U	0.650 U	0.592 U
	Selenium	0.05	ND (0.0004 J)	ND	ND	ND	ND	ND	ND	ND
	Thallium	0.002	ND (0.000085 J)	ND (0.00008 J)	ND	ND	ND	ND (0.00008 J)	ND (0.00009 J)	ND (0.00009 J)

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).
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. NS indicates not sampled due to insufficient water volume.
11. Well no longer sampled as part of background monitoring due to well replacement, proximity to closure activities, or modifications to the proposed well network.

**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance	MCL/ (SMCL)	Well ID								
		BGWC-18	BGWC-18	BGWC-18	BGWC-18	BGWC-18	BGWC-18	BGWC-18	BGWC-18	BGWC-18
		6/8/2016	8/12/2016	10/7/2016	12/6/2016	2/16/2017	4/19/2017	6/1/2017	7/14/2017	
APPENDIX III	Boron	N/R	1.2	0.895	1.33	1.50	0.753	0.762	0.663	0.787
	Calcium	N/R	76	61.7	84.7	88.1	53.7	57.1	44.8	60.0
	Chloride	(250)	48	27	72	73	19	13	8.0	11
	Fluoride	4	ND (0.1 J)	0.39	ND (0.16 J)	0.32	0.38	ND (0.08 J)	ND (0.09 J)	ND (0.06 J)
	Sulfate	(250)	120	81	140	160	92	80	73	78
	TDS	(500)	390	310	823	560	364	337	215	281
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND	ND	ND	ND	ND	ND (0.0013 J)	ND (0.0005 J)	ND
	Barium	2	0.039	0.0310	0.0427	0.0398	0.0309	0.0325	0.0331	0.0349
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND (0.00009 J)	ND
	Cadmium	0.005	ND (0.00063 J)	ND (0.0004 J)	ND (0.0008 J)	ND (0.0006 J)	ND (0.0002 J)	ND (0.00009 J)	ND (0.0003 J)	ND (0.0002 J)
	Chromium	0.1	ND	ND	ND (0.0011 J)	ND	ND	ND	ND	ND
	Cobalt	N/R	ND (0.00071 J)	ND (0.0006 J)	ND (0.0005 J)	ND (0.0009 J)	ND	ND	ND	ND
	Lead	0.015	ND	ND (0.0001 J)	ND	ND (0.0001 J)	ND (0.0002 J)	ND (0.0001 J)	ND (0.00009 J)	ND (0.0001 J)
	Lithium	N/R	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	0.406	1.39	0.451 U	0.516 U	0.172 U	0.704 U	0.493 U	0.547 U
	Selenium	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	0.002	ND	ND (0.00006 J)	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).
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9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.
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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-19	BGWC-19	BGWC-19	BGWC-19	BGWC-19	BGWC-19	BGWC-19	BGWC-19
			6/8/2016	8/12/2016	10/7/2016	12/7/2016	2/16/2017	4/19/2017	6/1/2017	7/14/2017
APPENDIX III	Boron	N/R	0.49	0.647	0.868	0.51	0.68	0.701	0.383	0.645
	Calcium	N/R	55	61.2	70.2	48.6	64.7	69.5	50.8	67.0
	Chloride	(250)	23	26	41	23	31	30	13	19
	Fluoride	4	ND	ND (0.20 J)	ND (0.07 J)	ND (0.09 J)	0.6	ND (0.09 J)	ND (0.05 J)	ND (0.08 J)
	Sulfate	(250)	110	110	150	97	130	140	70	110
	TDS	(500)	340	326	621	269	488	396	266	325
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND (0.00046 J)	ND (0.0008 J)	ND	ND	ND	ND (0.0015 J)	ND (0.0008 J)	ND (0.0006 J)
	Barium	2	0.036	0.0412	0.0427	0.0338	0.0407	0.042	0.0341	0.0405
	Beryllium	0.004	ND	ND	ND	ND	ND	ND (0.00008 J)	ND (0.00007 J)	ND
	Cadmium	0.005	ND	ND	ND (0.0001 J)	ND	ND	ND	ND (0.0001 J)	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 (0.0006 J)	ND	ND
	Lithium	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Mercury	0.002	ND	ND	ND	ND (0.00008 J)	ND	ND	ND	ND
	Molybdenum	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Radium	5	0.264 U	1.18	1.97	1.31 U	0.350 U	0.974 U	0.332 U	1.27
	Selenium	0.05	ND (0.00043 J)	ND	ND	ND	ND	ND	ND	ND
	Thallium	0.002	ND (0.000085 J)	ND (0.00008 J)	ND	ND	ND	ND (0.00006 J)	ND (0.00008 J)	ND (0.00008 J)

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9. Appendix III = indicator parameters evaluated during Detection Monitoring; Appendix IV = parameters evaluated during Assessment Monitoring.
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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-20	BGWC-20	BGWC-20	BGWC-20	BGWC-20	BGWC-20	BGWC-20	BGWC-20
			6/8/2016	8/12/2016	10/10/2016	12/7/2016	2/17/2017	4/19/2017	6/1/2017	7/18/2017
APPENDIX III	Boron	N/R	2.6	2.74	3	3.08	3.63	4.68	3.57	3.37
	Calcium	N/R	200	196	198	215	221	240	286	244
	Chloride	(250)	130	130	140	130	140	140	130	140
	Fluoride	4	ND (0.09 J)	ND (0.04 J)	ND (0.06 J)	ND (0.07 J)	ND (0.06 J)	ND (0.005 J)	0.65	0.36
	Sulfate	(250)	530	530	600	580	710	610	550	590
	TDS	(500)	1000	1100	1110	1100	1160	1180	1130	1160
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND (0.0011 J)	ND (0.0017 J)	ND	ND	ND	ND (0.002 J)	ND (0.0017 J)	ND (0.0018 J)
	Barium	2	0.036	0.0283	0.0288	0.0279	0.0316	0.0367	0.0361	0.0346
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND	ND	ND	ND	ND (0.00008 J)	ND	ND	ND
	Chromium	0.1	ND	ND	ND	ND	ND	ND	ND	ND
	Cobalt	N/R	ND	ND	ND	ND (0.0008 J)	ND	ND	ND	ND
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND (0.0001 J)	ND
	Lithium	N/R	0.016	ND (0.0202 J)	ND (0.0194 J)	ND (0.0265 J)	ND (0.0253 J)	ND (0.0233 J)	ND (0.023 J)	ND (0.0207 J)
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND (0.011 J)	0.0127	0.0136	0.0139	0.0148	0.0120	0.0125	0.0155
	Radium	5	0.863 U	1.74	0.944 U	2.29	1.35 U	1.48	1.61	1.626
	Selenium	0.05	ND	ND	ND	ND (0.0037 J)	ND	ND	ND	ND
Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance	MCL/ (SMCL)	Well ID								
		BGWC-21	BGWC-21	BGWC-21	BGWC-21	BGWC-21	BGWC-21	BGWC-21	BGWC-21	BGWC-21
		6/8/2016	8/18/2016	10/10/2016	12/8/2016	2/17/2017	4/19/2017	6/1/2017	7/18/2017	
APPENDIX III	Boron	N/R	0.12	0.191	0.13	0.144	0.0685	0.0743	0.0499	0.0544
	Calcium	N/R	43	38.6	37.5	43.4	41	39.4	42.3	40.9
	Chloride	(250)	7.1	6.9	7.1	6.3	5.6	5.0	4.9	4.2
	Fluoride	4	ND	ND (0.09 J)	ND (0.04 J)	ND (0.08 J)	ND (0.08 J)	ND (0.04 J)	ND (0.03 J)	ND (0.08 J)
	Sulfate	(250)	75	66	57	68	57	52	55	50
	TDS	(500)	260	239	239	255	236	247	185	219
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	0.0015	ND	ND	ND	ND	ND (0.0020 J)	ND (0.0011 J)	ND (0.0015 J)
	Barium	2	0.054	0.0479	0.0433	0.0474	0.0483	0.0486	0.0468	0.0494
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	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 (0.00041 J)	ND	ND	ND (0.0006 J)	ND	ND	ND	ND (0.0004 J)
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND
	Lithium	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND (0.0027 J)	ND (0.0023 J)	ND (0.0025 J)	ND	ND	ND (0.0014 J)	ND (0.0012 J)	ND (0.0013 J)
	Radium	5	0.573	0.440 U	0.933 U	1.02 U	0.193 U	0.488 U	0.837 U	0.498 U
	Selenium	0.05	ND	ND	ND (0.001 J)	ND	ND	ND	ND	ND
Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-22	BGWC-22	BGWC-22	BGWC-22	BGWC-22	BGWC-22	BGWC-22	BGWC-22
			6/8/2016	8/18/2016	10/10/2016	12/8/2016	2/17/2017	4/20/2017	6/5/2017	7/19/2017
APPENDIX III	Boron	N/R	7.6	8.37	9.46	11.1	12.2	13.3	9.19	10.6
	Calcium	N/R	350	370	375	434	434	422	398	461
	Chloride	(250)	440	500	480	540	570	740	530	540
	Fluoride	4	0.43	ND (0.30 J)	0.32	ND (0.26 J)	0.39	0.34	ND (0.29 J)	0.33
	Sulfate	(250)	660	730	650	660	740	990	700	720
	TDS	(500)	2000	1960	2130	2200	2200	2330	2530	2650
APPENDIX IV	Antimony	0.006	ND	ND (0.0023 J)	ND (0.0021 J)	ND	ND	ND	ND	ND
	Arsenic	0.01	ND (0.0012 J)	ND (0.0022 J)	ND (0.002 J)	ND	ND (0.0023 J)	ND (0.0028 J)	ND (0.0035 J)	ND (0.0028 J)
	Barium	2	0.092	0.0953	0.0954	0.0991	0.0927	0.0860	0.0875	0.0877
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND	ND	ND	ND (0.0002 J)	ND	ND	ND	ND
	Chromium	0.1	ND	ND	ND	ND	ND	ND	ND	ND
	Cobalt	N/R	0.0079	0.0109	0.011	0.013	0.0122	0.0116	0.0112	0.0131
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND
	Lithium	N/R	0.012	ND (0.0118 J)	ND (0.0137 J)	ND (0.0154 J)	ND (0.0125 J)	ND (0.0120 J)	ND (0.0114 J)	ND (0.0126 J)
	Mercury	0.002	ND (0.000092 J)	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	0.07	0.0758	0.0712	0.0682	0.066	0.0662	0.0710	0.0703
	Radium	5	1.53	2.47	2.11	2.64	1.34	2.35	1.60	1.76
	Selenium	0.05	ND	ND	ND	0.012	ND	ND	ND (0.0018 J)	ND
	Thallium	0.002	ND (0.00035 J)	ND (0.0005 J)	ND (0.006 J)	ND (0.0005 J)	ND (0.0006 J)	ND (0.0006 J)	ND (0.0006 J)	ND (0.0007 J)

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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-23	BGWC-23	BGWC-23	BGWC-23	BGWC-23	BGWC-23	BGWC-23	BGWC-23
			6/9/2016	8/18/2016	10/10/2016	12/7/2016	2/20/2017	4/19/2017	6/5/2017	7/17/2017
APPENDIX III	Boron	N/R	12	5.20	6.13	5.7	5.7	8.79	6.39	7.06
	Calcium	N/R	300	290	296	271	323	298	310	319
	Chloride	(250)	480	400	390	450	470	420	450	470
	Fluoride	4	ND (0.12 J)	ND (0.08 J)	ND (0.09 J)	ND (0.08 J)	ND (0.09 J)	ND (0.03 J)	ND	ND (0.09 J)
	Sulfate	(250)	510	480	460	490	520	490	480	510
	TDS	(500)	1900	1600	1640	1770	1720	1800	2050	1810
APPENDIX IV	Antimony	0.006	ND	ND (0.0009 J)	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND (0.0012 J)	ND (0.0030 J)	ND (0.0021 J)	ND (0.0023 J)	ND (0.0025 J)	ND (0.0032 J)	ND (0.0043 J)	ND (0.0017 J)
	Barium	2	0.11	0.0893	0.0839	0.0912	0.0813	0.0870	0.0840	0.0809
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	0.1	ND	ND	ND	ND (0.002 J)	ND	ND	ND	ND
	Cobalt	N/R	ND	ND	ND	ND (0.0015 J)	ND	ND	ND	ND
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND
	Lithium	N/R	0.0074	ND (0.0078 J)	ND (0.0093 J)	ND (0.0117 J)	ND (0.011 J)	ND (0.0105 J)	ND (0.0108 J)	ND (0.0095 J)
	Mercury	0.002	ND	ND	ND	ND (0.00005 J)	ND	ND	ND	ND
	Molybdenum	N/R	ND (0.013 J)	0.0136	0.0134	0.0128	0.0122	0.0124	0.0115	0.0131
	Radium	5	0.704	1.88	1.48	2.61	0.884 U	0.948 U	1.33	1.04
	Selenium	0.05	ND	ND	ND	0.0176	ND	ND	ND	ND
Thallium	0.002	ND (0.0001 J)	ND	ND	ND	ND	ND	ND	ND	

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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-24	BGWC-24	BGWC-24	BGWC-24	BGWC-24	BGWC-24	BGWC-24	BGWC-24
			6/9/2016	8/18/2016	10/10/2016	12/7/2016	2/20/2017	4/19/2017	6/5/2017	7/17/2017
APPENDIX III	Boron	N/R	26	22.0	18.1	9.19	31.4	31.4	29.0	33.8
	Calcium	N/R	800	730	680	387	823	ND (893 J)	1080	1120
	Chloride	(250)	1900	1600	1400	970	1900	1900	1900	2100
	Fluoride	4	ND	ND (0.24 J)	0.3	ND (0.05 J)	0.65	ND (0.21 J)	ND (0.05 J)	2.5
	Sulfate	(250)	730	580	520	370	610	600	700	670
	TDS	(500)	5200	4200	3850	2720	4200	4680	5660	5080
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	0.0016	0.0054	0.0079	0.0121	0.0063	0.0051	0.0072	ND (0.0031 J)
	Barium	2	0.14	0.113	0.0888	0.0289	0.0999	0.114	0.135	0.134
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND (0.00052 J)	ND (0.0009 J)	0.0017	ND (0.0004 J)	0.0028	0.0035	0.0035	0.0037
	Chromium	0.1	ND	ND	ND (0.0009 J)	ND	ND	ND	ND	ND
	Cobalt	N/R	0.0026	ND (0.0021 J)	ND (0.0018 J)	ND (0.0018 J)	ND (0.0027 J)	ND (0.0032 J)	ND (0.0034 J)	ND (0.0033 J)
	Lead	0.015	ND (0.00059 J)	ND	ND	ND	ND	ND	ND (0.00007 J)	ND
	Lithium	N/R	0.0057	ND (0.0061 J)	ND (0.006 J)	ND (0.0066 J)	ND (0.0053 J)	ND (0.0055 J)	ND (0.0068 J)	ND
	Mercury	0.002	ND	ND	ND (0.00004 J)	ND (0.00007 J)	ND (0.00005 J)	ND (0.00016 J)	ND (0.00013 J)	ND (0.00013 J)
	Molybdenum	N/R	ND (0.0024 J)	ND (0.0034 J)	ND (0.0047 J)	ND (0.0066 J)	ND (0.0026 J)	ND (0.002 J)	ND (0.0015 J)	ND (0.0013 J)
	Radium	5	2.13	2.67	3.46	1.65	2.68	3.81	2.86	2.87
	Selenium	0.05	ND (0.00099 J)	ND (0.0023 J)	ND (0.004 J)	0.0302	ND (0.0044 J)	ND (0.0046 J)	ND (0.0033 J)	ND (0.0052 J)
	Thallium	0.002	ND (0.00022 J)	ND	ND (0.0003 J)	ND	ND (0.0003 J)	ND (0.0004 J)	ND (0.0004 J)	ND (0.0004 J)

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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.
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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWC-25	BGWC-25	BGWC-25	BGWC-25	BGWC-25	BGWC-25	BGWC-25	BGWC-25
			6/8/2016	8/15/2016	10/10/2016	12/8/2016	2/20/2017	4/20/2017	6/1/2017	7/17/2017
APPENDIX III	Boron	N/R	ND (0.029 J)	ND (0.0228 J)	ND (0.0305 J)	ND (0.0164 J)	ND (0.0154 J)	ND (0.0283 J)	0.0467	ND (0.0171 J)
	Calcium	N/R	32	33.1	41	38.5	40.7	40.7	44.2	41.9
	Chloride	(250)	6.4	4.3	3.5	2.8	4.2	4.1	4.4	5.0
	Fluoride	4	ND (0.14 J)	ND (0.08 J)	ND (0.1 J)	ND (0.06 J)	ND (0.16 J)	ND (0.02 J)	ND (0.04 J)	ND (0.07 J)
	Sulfate	(250)	10	10	10	13	24	26	29	25
	TDS	(500)	170	161	196	209	251	324	177	238
APPENDIX IV	Antimony	0.006	ND	ND (0.0013 J)	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	0.0037	ND (0.0030 J)	ND (0.0026 J)	ND	ND (0.0029 J)	ND (0.0024 J)	ND (0.0025 J)	ND (0.0021 J)
	Barium	2	0.038	0.0321	0.0283	0.0294	0.0275	0.0279	0.0313	0.0251
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	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 (0.0006 J)	ND	ND	ND	ND
	Lead	0.015	ND	ND (0.0005 J)	ND	ND (0.0006 J)	ND (0.0004 J)	ND (0.0002 J)	ND (0.00007 J)	ND
	Lithium	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND (0.0064 J)	ND (0.0039 J)	ND (0.0029 J)	ND	ND (0.0024 J)	ND (0.0019 J)	ND (0.0026 J)	ND (0.0024 J)
	Radium	5	0.314 U	1.20	1.03 U	1.47 U	0.547 U	0.0595 U	0.670 U	1.25 U
	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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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. NS indicates not sampled due to insufficient water volume.
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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWA-26	BGWA-26	BGWA-26	BGWA-26	BGWA-26	BGWA-26	BGWA-26	BGWA-26
			8/19/2016	10/4/2016	12/1/2016	1/10/2017	2/14/2017	4/13/2017	5/26/2017	7/10/2017
<b>APPENDIX III</b>	<b>Boron</b>	<b>N/R</b>	ND (0.0226 J)	ND (0.0150 J)	ND (0.0123 J)	ND (0.0111 J)	ND (0.0091 J)	ND (0.0076 J)	ND (0.0098 J)	ND (0.0085 J)
	<b>Calcium</b>	<b>N/R</b>	28.5	23.0	22	23.5	24.1	35.8	34.5	33.3
	<b>Chloride</b>	<b>(250)</b>	6.8	9.9	9.2	6.7	5.8	5	5.4	5.4
	<b>Fluoride</b>	<b>4</b>	ND (0.12 J)	ND (0.16 J)	ND (0.2 J)	0.34	ND (0.07 J)	ND (0.09 J)	ND (0.09 J)	ND (0.14 J)
	<b>Sulfate</b>	<b>(250)</b>	15	48	57	36	24	17	24	25
	<b>TDS</b>	<b>(500)</b>	180	182	214	186	377	190	195	224
<b>APPENDIX IV</b>	<b>Antimony</b>	<b>0.006</b>	ND	ND (0.0009 J)	ND	ND	ND	ND (0.0003 J)	ND	ND
	<b>Arsenic</b>	<b>0.01</b>	ND	ND (0.0018 J)	ND (0.0022 J)	ND (0.0018 J)	ND	ND (0.0032 J)	ND (0.0018 J)	ND (0.0018 J)
	<b>Barium</b>	<b>2</b>	0.0354	0.0391	0.0402	0.038	0.0421	0.0487	0.0500	0.0482
	<b>Beryllium</b>	<b>0.004</b>	ND	ND	ND	ND	ND	ND	ND	ND
	<b>Cadmium</b>	<b>0.005</b>	ND	ND	ND	ND	ND	ND	ND	ND
	<b>Chromium</b>	<b>0.1</b>	ND	ND (0.0022 J)	ND	ND	ND	ND (0.0004 J)	ND	ND
	<b>Cobalt</b>	<b>N/R</b>	ND	ND	ND	ND	ND	ND	ND	ND
	<b>Lead</b>	<b>0.015</b>	ND	ND	ND	ND	ND	ND (0.0003 J)	ND	ND
	<b>Lithium</b>	<b>N/R</b>	ND	ND (0.0026 J)	ND (0.0029 J)	ND (0.0022 J)	ND (0.0024 J)	ND (0.0023 J)	ND (0.0024 J)	ND (0.0016 J)
	<b>Mercury</b>	<b>0.002</b>	ND	ND	ND	ND	ND	ND	ND	ND
	<b>Molybdenum</b>	<b>N/R</b>	ND (0.0053 J)	ND (0.0080 J)	ND (0.0072 J)	ND (0.0054 J)	ND (0.0043 J)	ND (0.0041 J)	ND (0.0039 J)	ND (0.0043 J)
	<b>Radium</b>	<b>5</b>	0.199 U	0.337 U	0.498 U	0.958 U	1.12	1.04 U	1.05 U	0.401 U
	<b>Selenium</b>	<b>0.05</b>	ND	ND	ND	ND	ND	ND	ND	ND
<b>Thallium</b>	<b>0.002</b>	ND	ND	ND	ND	ND	ND	ND	ND	

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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWA-27	BGWA-27	BGWA-27	BGWA-27	BGWA-27	BGWA-27	BGWA-27	BGWA-27
			8/19/2016	10/4/2016	12/1/2016	1/10/2017	2/14/2017	4/13/2017	5/25/2017	7/10/2017
APPENDIX III	Boron	N/R	ND (0.0175 J)	ND (0.0113 J)	ND (0.0125 J)	ND (0.0123 J)	ND (0.0129 J)	ND (0.0202 J)	ND (0.0255 J)	ND (0.0319 J)
	Calcium	N/R	36.3	41.2	40.7	41.8	39.4	42.7	47.9	46.8
	Chloride	(250)	13	14	15	14	15	15	18	20
	Fluoride	4	ND (0.03 J)	ND (0.03 J)	ND (0.07 J)	ND (0.11 J)	ND	ND	ND	ND
	Sulfate	(250)	7.6	8.2	8.8	8.8	10	10	12	13
	TDS	(500)	206	183	219	218	310	275	230	263
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND	ND	ND	ND	ND	ND (0.0006 J)	ND (0.0009 J)	ND (0.0007 J)
	Barium	2	0.0383	0.0389	0.0413	0.0388	0.0395	0.0396	0.0447	0.0505
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	0.1	ND	ND (0.0010 J)	ND	ND	ND	ND (0.0006 J)	ND (0.0004 J)	ND (0.0007 J)
	Cobalt	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND (0.0011 J)
	Lithium	N/R	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	0.661 U	0.466 U	0.166 U	0.689 U	0.986 U	0.827 U	0.350 U	1.09
	Selenium	0.05	ND	ND (0.0015 J)	ND (0.0012 J)	ND	ND	ND	ND	ND
Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance	MCL/ (SMCL)	Well ID								
		BGWA-28	BGWA-28	BGWA-28	BGWA-28	BGWA-28	BGWA-28	BGWA-28	BGWA-28	BGWA-28
		8/19/2016	10/4/2016	12/1/2016	1/10/2017	2/13/2017	4/13/2017	5/25/2017	7/7/2017	
APPENDIX III	Boron	N/R	ND (0.0690 J)	ND (0.0663 J)	0.064	0.0745	0.0717	0.0922	0.122	0.138
	Calcium	N/R	40.5	45.5	42.4	42.6	45.5	48.7	53.8	49.8
	Chloride	(250)	17	17	18	17	20	22	28	32
	Fluoride	4	ND (0.04 J)	ND (0.05 J)	ND (0.09 J)	ND (0.12 J)	ND	ND (0.03 J)	ND (0.02 J)	ND (0.09 J)
	Sulfate	(250)	15	14	13	12	16	15	19	21
	TDS	(500)	245	213	232	225	263	257	245	278
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND	ND	ND	ND	ND	ND (0.0009 J)	ND (0.0012 J)	ND
	Barium	2	0.0548	0.0906	0.116	0.167	0.138	0.192	0.158	0.176
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND	ND	ND	ND	ND	ND	ND	ND
	Chromium	0.1	ND	ND	ND	ND	ND	ND	ND (0.0004 J)	ND
	Cobalt	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND
	Lithium	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Mercury	0.002	ND	ND	ND	ND	ND	ND	ND	ND
	Molybdenum	N/R	ND (0.0018 J)	ND (0.0019 J)	ND	ND (0.0018 J)	ND	ND (0.0014 J)	ND	ND
	Radium	5	0.752 U	0.264 U	0.204 U	0.786 U	0.563 U	0.818 U	0.635 U	1.54
	Selenium	0.05	ND	ND	ND (0.002 J)	ND (0.0014 J)	ND (0.0016 J)	ND	ND (0.0017 J)	ND (0.0022 J)
Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

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**Plant Bowen Ash Pond  
Analytical Data Summary**

Substance		MCL/ (SMCL)	Well ID							
			BGWA-29	BGWA-29	BGWA-29	BGWA-29	BGWA-29	BGWA-29	BGWA-29	BGWA-29
			8/22/2016	10/4/2016	12/1/2016	1/10/2017	2/14/2017	4/14/2017	5/25/2017	7/10/2017
APPENDIX III	Boron	N/R	ND (0.0132 J)	ND (0.0065 J)	ND	ND	ND	ND	ND	ND
	Calcium	N/R	21.4	20.9	19.8	20.4	20.9	ND (20.7 J)	ND (22.8 J)	22.3
	Chloride	(250)	4.2	2.1	1.8	1.6	1.9	1.5	1.5	1.6
	Fluoride	4	ND (0.04 J)	ND (0.06 J)	ND (0.08 J)	ND (0.03 J)	ND	ND (0.01 J)	ND (0.005 J)	ND (0.06 J)
	Sulfate	(250)	4.2	6.4	7.8	4.5	5.1	4.4	4.2	3.5
	TDS	(500)	121	95	121	115	345	119	109	140
APPENDIX IV	Antimony	0.006	ND	ND	ND	ND	ND	ND	ND	ND
	Arsenic	0.01	ND	ND	ND	ND	ND	ND (0.0006 J)	ND (0.0008 J)	ND (0.0008 J)
	Barium	2	ND (0.0094 J)	0.0188	0.0334	0.0306	0.0247	0.0231	0.0235	0.0207
	Beryllium	0.004	ND	ND	ND	ND	ND	ND	ND	ND
	Cadmium	0.005	ND	ND	ND	ND (0.00009 J)	ND	ND	ND	ND
	Chromium	0.1	ND	ND (0.0013 J)	ND	ND	ND	ND (0.0005 J)	ND (0.0004 J)	ND (0.0005 J)
	Cobalt	N/R	ND	ND	ND	ND	ND	ND	ND	ND
	Lead	0.015	ND	ND	ND	ND	ND	ND	ND	ND
	Lithium	N/R	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	0.356 U	0.0834 U	0.208 U	0.0240 U	0.105 U	0.803 U	0.569 U	0.589 U
	Selenium	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	0.002	ND	ND	ND	ND	ND	ND	ND	ND	

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Analytical Data Summary**

Substance	MCL/ (SMCL)	Well ID								
		BGWC-30	BGWC-30	BGWC-30	BGWC-30	BGWC-30	BGWC-30	BGWC-30	BGWC-30	BGWC-30
		1/23/2017	2/7/2017	3/27/2017	4/17/2017	5/22/2017	6/5/2017	7/11/2017	8/23/2017	
<b>APPENDIX III</b>	<b>Boron</b>	<b>N/R</b>	18.6	20.4	19.1	21.8	26	18.6	25.0	20.2
	<b>Calcium</b>	<b>N/R</b>	372	351	417	415	885	413	449	409
	<b>Chloride</b>	<b>(250)</b>	780	780	790	770	890	870	840	800
	<b>Fluoride</b>	<b>4</b>	ND (0.06 J)	ND (0.09 J)	ND (0.09 J)	0.36	ND (0.05 J)	0.32	ND (0.13 J)	ND (0.17 J)
	<b>Sulfate</b>	<b>(250)</b>	410	410	410	400	460	440	420	390
	<b>TDS</b>	<b>(500)</b>	2060	1860	2440	2180	2470	2780	2580	2400
<b>APPENDIX IV</b>	<b>Antimony</b>	<b>0.006</b>	ND	ND	ND	ND	ND	ND	ND	ND
	<b>Arsenic</b>	<b>0.01</b>	ND	ND	ND (0.0019 J)	ND (0.0017 J)	ND (0.0034 J)	ND (0.0039 J)	ND (0.0016 J)	ND (0.001 J)
	<b>Barium</b>	<b>2</b>	0.237	0.191	0.197	0.192	0.197	0.201	0.179	0.15
	<b>Beryllium</b>	<b>0.004</b>	ND	ND	ND	ND	ND	ND	ND	ND
	<b>Cadmium</b>	<b>0.005</b>	ND (0.0003 J)	ND (0.0006 J)	ND (0.0003 J)	ND (0.0002 J)	ND (0.0003 J)	ND (0.0003 J)	ND (0.0005 J)	ND (0.0004 J)
	<b>Chromium</b>	<b>0.1</b>	ND (0.001 J)	ND	ND	ND	ND (0.0004 J)	ND (0.0004 J)	ND (0.0012 J)	ND (0.0009 J)
	<b>Cobalt</b>	<b>N/R</b>	ND (0.0012 J)	ND (0.0008 J)	ND (0.001 J)	ND (0.0009 J)	ND (0.0008 J)	ND (0.0008 J)	ND (0.0008 J)	ND (0.0006 J)
	<b>Lead</b>	<b>0.015</b>	ND (0.0003 J)	ND (0.0002 J)	ND (0.00008 J)	ND	ND	ND	ND (0.00008 J)	ND
	<b>Lithium</b>	<b>N/R</b>	ND (0.0171 J)	ND (0.0196 J)	ND (0.0192 J)	ND (0.0169 J)	ND (0.0167 J)	ND (0.0177 J)	ND (0.0203 J)	ND (0.0182 J)
	<b>Mercury</b>	<b>0.002</b>	ND (0.00008 J)	ND (0.00011 J)	ND (0.00008 J)	ND (0.00004 J)	ND	ND (0.00006 J)	ND (0.000091 J)	ND (0.00005 J)
	<b>Molybdenum</b>	<b>N/R</b>	0.0125	0.0163	0.0157	0.0178	0.0208	0.0191	0.0218	0.0218
	<b>Radium</b>	<b>5</b>	2.71	3	2.55	2.73	3.15	0.860 U	1.87	3.39
	<b>Selenium</b>	<b>0.05</b>	0.015	0.0114	ND (0.0092 J)	ND (0.0082 J)	ND (0.0094 J)	0.0118	0.0120	ND (0.0097 J)
	<b>Thallium</b>	<b>0.002</b>	ND (0.0008 J)	ND (0.0008 J)	ND (0.0006 J)	ND (0.0007 J)	ND (0.0008 J)	ND (0.0007 J)	ND (0.0007 J)	ND (0.0007 J)

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Appendix B  
Analytical Data Reports

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# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-122626-1

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Plant Bowen

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

6/13/2016 3:36:10 PM

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

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

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# Case Narrative

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

**Job ID: 400-122626-1**

**Laboratory: TestAmerica Pensacola**

## Narrative

### Job Narrative 400-122626-1

#### HPLC/IC

Method(s) 300.0: The following samples were diluted to bring the concentration of target analytes within the calibration range: BGWA-5 (400-122626-1), BGWA-3 (400-122626-2) and DUP-1 (400-122626-3). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The matrix spike (MS) recoveries for analytical batch 309508 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

#### Metals

Method(s) 6020: Due to the high concentration of Boron and Calcium, the matrix spike / matrix spike duplicate / post digestion spike (MS/MSD/PDS) for preparation batch 309124 and analytical batch 309444 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: BGWA-5 (400-122626-1), BGWA-3 (400-122626-2) and DUP-1 (400-122626-3). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The method blank for prep batch 308799 contained Mercury, Dissolved above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction of samples was not performed.

# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

## Client Sample ID: BGWA-5

## Lab Sample ID: 400-122626-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	180		5.0	4.5	mg/L	5		300.0	Total/NA
Sulfate	120		5.0	3.5	mg/L	5		300.0	Total/NA
Barium	0.031		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Selenium	0.012		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	2.5		0.25	0.11	mg/L	25		6020	Total Recoverable
Calcium - DL	110		1.3	0.63	mg/L	25		6020	Total Recoverable
Mercury	0.000083	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	650		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWA-3

## Lab Sample ID: 400-122626-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	110		5.0	4.5	mg/L	5		300.0	Total/NA
Sulfate	73		5.0	3.5	mg/L	5		300.0	Total/NA
Barium	0.018		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	1.0		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.0027		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Selenium	0.0056		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	81		1.3	0.63	mg/L	25		6020	Total Recoverable
Mercury	0.000076	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	390		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: DUP-1

## Lab Sample ID: 400-122626-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	190	F1	5.0	4.5	mg/L	5		300.0	Total/NA
Sulfate	130		5.0	3.5	mg/L	5		300.0	Total/NA
Barium	0.030		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Selenium	0.012		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	2.5		0.25	0.11	mg/L	25		6020	Total Recoverable
Calcium - DL	110		1.3	0.63	mg/L	25		6020	Total Recoverable
Mercury	0.000079	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	680		5.0	3.4	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola



# Method Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN

#### Protocol References:

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

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

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

#### Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

# Sample Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-122626-1	BGWA-5	Water	06/03/16 09:51	06/07/16 10:15
400-122626-2	BGWA-3	Water	06/03/16 10:18	06/07/16 10:15
400-122626-3	DUP-1	Water	06/03/16 00:00	06/07/16 10:15

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

**Client Sample ID: BGWA-5**

**Date Collected: 06/03/16 09:51**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-1**

**Matrix: Water**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>180</b>		5.0	4.5	mg/L			06/09/16 15:22	5
Fluoride	<0.082		0.20	0.082	mg/L			06/09/16 08:08	1
<b>Sulfate</b>	<b>120</b>		5.0	3.5	mg/L			06/09/16 15:22	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/08/16 10:18	06/09/16 15:13	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/08/16 10:18	06/09/16 15:13	5
<b>Barium</b>	<b>0.031</b>		0.0025	0.00049	mg/L		06/08/16 10:18	06/09/16 15:13	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/08/16 10:18	06/09/16 15:13	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/08/16 10:18	06/09/16 15:13	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/08/16 10:18	06/09/16 15:13	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/08/16 10:18	06/09/16 15:13	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/08/16 10:18	06/09/16 15:13	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/08/16 10:18	06/09/16 15:13	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/08/16 10:18	06/09/16 15:13	5
<b>Selenium</b>	<b>0.012</b>		0.0013	0.00024	mg/L		06/08/16 10:18	06/09/16 15:13	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/08/16 10:18	06/09/16 15:13	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>2.5</b>		0.25	0.11	mg/L		06/08/16 10:18	06/09/16 15:18	25
<b>Calcium</b>	<b>110</b>		1.3	0.63	mg/L		06/08/16 10:18	06/09/16 15:18	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.000083</b>	<b>J B</b>	0.00020	0.000070	mg/L		06/07/16 13:46	06/09/16 12:49	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>650</b>		5.0	3.4	mg/L			06/08/16 15:34	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

**Client Sample ID: BGWA-3**

**Date Collected: 06/03/16 10:18**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-2**

**Matrix: Water**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>110</b>		5.0	4.5	mg/L			06/09/16 15:44	5
Fluoride	<0.082		0.20	0.082	mg/L			06/09/16 08:31	1
<b>Sulfate</b>	<b>73</b>		5.0	3.5	mg/L			06/09/16 15:44	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/08/16 10:18	06/09/16 15:54	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/08/16 10:18	06/09/16 15:54	5
<b>Barium</b>	<b>0.018</b>		0.0025	0.00049	mg/L		06/08/16 10:18	06/09/16 15:54	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/08/16 10:18	06/09/16 15:54	5
<b>Boron</b>	<b>1.0</b>		0.050	0.021	mg/L		06/08/16 10:18	06/09/16 15:54	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/08/16 10:18	06/09/16 15:54	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/08/16 10:18	06/09/16 15:54	5
<b>Cobalt</b>	<b>0.0027</b>		0.0025	0.00040	mg/L		06/08/16 10:18	06/09/16 15:54	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/08/16 10:18	06/09/16 15:54	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/08/16 10:18	06/09/16 15:54	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/08/16 10:18	06/09/16 15:54	5
<b>Selenium</b>	<b>0.0056</b>		0.0013	0.00024	mg/L		06/08/16 10:18	06/09/16 15:54	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/08/16 10:18	06/09/16 15:54	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Calcium</b>	<b>81</b>		1.3	0.63	mg/L		06/08/16 10:18	06/10/16 13:54	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.000076</b>	<b>J B</b>	0.00020	0.000070	mg/L		06/07/16 13:46	06/09/16 12:50	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>390</b>		5.0	3.4	mg/L			06/08/16 15:34	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

**Client Sample ID: DUP-1**  
**Date Collected: 06/03/16 00:00**  
**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-3**  
**Matrix: Water**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>190</b>	<b>F1</b>	5.0	4.5	mg/L			06/10/16 13:11	5
Fluoride	<0.082		0.20	0.082	mg/L			06/09/16 08:54	1
<b>Sulfate</b>	<b>130</b>		5.0	3.5	mg/L			06/10/16 13:11	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/08/16 10:18	06/09/16 15:58	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/08/16 10:18	06/09/16 15:58	5
<b>Barium</b>	<b>0.030</b>		0.0025	0.00049	mg/L		06/08/16 10:18	06/09/16 15:58	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/08/16 10:18	06/09/16 15:58	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/08/16 10:18	06/09/16 15:58	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/08/16 10:18	06/09/16 15:58	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/08/16 10:18	06/09/16 15:58	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/08/16 10:18	06/09/16 15:58	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/08/16 10:18	06/09/16 15:58	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/08/16 10:18	06/09/16 15:58	5
<b>Selenium</b>	<b>0.012</b>		0.0013	0.00024	mg/L		06/08/16 10:18	06/09/16 15:58	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/08/16 10:18	06/09/16 15:58	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>2.5</b>		0.25	0.11	mg/L		06/08/16 10:18	06/09/16 17:28	25
<b>Calcium</b>	<b>110</b>		1.3	0.63	mg/L		06/08/16 10:18	06/09/16 17:28	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.000079</b>	<b>J B</b>	0.00020	0.000070	mg/L		06/07/16 13:46	06/09/16 12:51	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>680</b>		5.0	3.4	mg/L			06/08/16 15:34	1

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.

### Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

## Glossary

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

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

**Client Sample ID: BGWA-5**

**Date Collected: 06/03/16 09:51**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309299	06/09/16 08:08	TAJ	TAL PEN
Total/NA	Analysis	300.0		5	309299	06/09/16 15:22	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309124	06/08/16 10:18	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	309444	06/09/16 15:13	GKP	TAL PEN
Total Recoverable	Prep	3005A	DL		309124	06/08/16 10:18	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	25	309444	06/09/16 15:18	GKP	TAL PEN
Total/NA	Prep	7470A			308799	06/07/16 13:46	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309379	06/09/16 12:49	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309184	06/08/16 15:34	CAC	TAL PEN

**Client Sample ID: BGWA-3**

**Date Collected: 06/03/16 10:18**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309299	06/09/16 08:31	TAJ	TAL PEN
Total/NA	Analysis	300.0		5	309299	06/09/16 15:44	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309124	06/08/16 10:18	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	309444	06/09/16 15:54	GKP	TAL PEN
Total Recoverable	Prep	3005A	DL		309124	06/08/16 10:18	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	25	309544	06/10/16 13:54	RJB	TAL PEN
Total/NA	Prep	7470A			308799	06/07/16 13:46	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309379	06/09/16 12:50	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309184	06/08/16 15:34	CAC	TAL PEN

**Client Sample ID: DUP-1**

**Date Collected: 06/03/16 00:00**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309299	06/09/16 08:54	TAJ	TAL PEN
Total/NA	Analysis	300.0		5	309508	06/10/16 13:11	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309124	06/08/16 10:18	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	309444	06/09/16 15:58	GKP	TAL PEN
Total Recoverable	Prep	3005A	DL		309124	06/08/16 10:18	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	25	309444	06/09/16 17:28	GKP	TAL PEN
Total/NA	Prep	7470A			308799	06/07/16 13:46	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309379	06/09/16 12:51	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309184	06/08/16 15:34	CAC	TAL PEN

**Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

## HPLC/IC

### Analysis Batch: 309299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122612-A-4 MS	Matrix Spike	Total/NA	Water	300.0	
400-122626-1	BGWA-5	Total/NA	Water	300.0	
400-122626-1	BGWA-5	Total/NA	Water	300.0	
400-122626-2	BGWA-3	Total/NA	Water	300.0	
400-122626-2	BGWA-3	Total/NA	Water	300.0	
400-122626-3	DUP-1	Total/NA	Water	300.0	
400-122697-A-3 MS	Matrix Spike	Total/NA	Water	300.0	
400-122697-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 400-309299/35	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-309299/36	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-309299/34	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 309508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122626-3	DUP-1	Total/NA	Water	300.0	
400-122626-3 MS	DUP-1	Total/NA	Water	300.0	
400-122626-3 MSD	DUP-1	Total/NA	Water	300.0	
LCS 400-309508/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-309508/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-309508/4	Method Blank	Total/NA	Water	300.0	

## Metals

### Prep Batch: 308799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122549-J-3-C MS	Matrix Spike	Dissolved	Water	7470A	
400-122549-J-3-D MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	
400-122626-1	BGWA-5	Total/NA	Water	7470A	
400-122626-2	BGWA-3	Total/NA	Water	7470A	
400-122626-3	DUP-1	Total/NA	Water	7470A	
LCS 400-308799/15-A	Lab Control Sample	Total/NA	Water	7470A	
MB 400-308799/14-A	Method Blank	Total/NA	Water	7470A	

### Prep Batch: 309124

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122626-1 - DL	BGWA-5	Total Recoverable	Water	3005A	
400-122626-1	BGWA-5	Total Recoverable	Water	3005A	
400-122626-1 MS	BGWA-5	Total Recoverable	Water	3005A	
400-122626-1 MSD	BGWA-5	Total Recoverable	Water	3005A	
400-122626-2 - DL	BGWA-3	Total Recoverable	Water	3005A	
400-122626-2	BGWA-3	Total Recoverable	Water	3005A	
400-122626-3	DUP-1	Total Recoverable	Water	3005A	
400-122626-3 - DL	DUP-1	Total Recoverable	Water	3005A	
LCS 400-309124/2-A ^1	Lab Control Sample	Total Recoverable	Water	3005A	
MB 400-309124/1-A ^5	Method Blank	Total Recoverable	Water	3005A	

### Analysis Batch: 309379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122549-J-3-C MS	Matrix Spike	Dissolved	Water	7470A	308799
400-122549-J-3-D MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	308799

TestAmerica Pensacola



# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

## Metals (Continued)

### Analysis Batch: 309379 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122626-1	BGWA-5	Total/NA	Water	7470A	308799
400-122626-2	BGWA-3	Total/NA	Water	7470A	308799
400-122626-3	DUP-1	Total/NA	Water	7470A	308799
LCS 400-308799/15-A	Lab Control Sample	Total/NA	Water	7470A	308799
MB 400-308799/14-A	Method Blank	Total/NA	Water	7470A	308799

### Analysis Batch: 309444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122626-1	BGWA-5	Total Recoverable	Water	6020	309124
400-122626-1 - DL	BGWA-5	Total Recoverable	Water	6020	309124
400-122626-1 MS	BGWA-5	Total Recoverable	Water	6020	309124
400-122626-1 MSD	BGWA-5	Total Recoverable	Water	6020	309124
400-122626-2	BGWA-3	Total Recoverable	Water	6020	309124
400-122626-3	DUP-1	Total Recoverable	Water	6020	309124
400-122626-3 - DL	DUP-1	Total Recoverable	Water	6020	309124
LCS 400-309124/2-A ^1	Lab Control Sample	Total Recoverable	Water	6020	309124
MB 400-309124/1-A ^5	Method Blank	Total Recoverable	Water	6020	309124

### Analysis Batch: 309544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122626-2 - DL	BGWA-3	Total Recoverable	Water	6020	309124

## General Chemistry

### Analysis Batch: 309184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122549-I-5 DU	Duplicate	Total/NA	Water	SM 2540C	
400-122626-1	BGWA-5	Total/NA	Water	SM 2540C	
400-122626-2	BGWA-3	Total/NA	Water	SM 2540C	
400-122626-3	DUP-1	Total/NA	Water	SM 2540C	
LCS 400-309184/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 400-309184/1	Method Blank	Total/NA	Water	SM 2540C	

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 400-309299/34**  
**Matrix: Water**  
**Analysis Batch: 309299**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/09/16 03:57	1
Fluoride	<0.082		0.20	0.082	mg/L			06/09/16 03:57	1
Sulfate	<0.70		1.0	0.70	mg/L			06/09/16 03:57	1

**Lab Sample ID: LCS 400-309299/35**  
**Matrix: Water**  
**Analysis Batch: 309299**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.23		mg/L		92	90 - 110
Fluoride	10.0	9.45		mg/L		95	90 - 110
Sulfate	10.0	9.84		mg/L		98	90 - 110

**Lab Sample ID: LCSD 400-309299/36**  
**Matrix: Water**  
**Analysis Batch: 309299**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.25		mg/L		92	90 - 110	0	15
Fluoride	10.0	9.53		mg/L		95	90 - 110	1	15
Sulfate	10.0	9.84		mg/L		98	90 - 110	0	15

**Lab Sample ID: 400-122612-A-4 MS**  
**Matrix: Water**  
**Analysis Batch: 309299**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.5		10.0	13.3		mg/L		108	80 - 120
Fluoride	<0.082		10.0	11.2		mg/L		112	80 - 120
Sulfate	1.5		10.0	13.1		mg/L		115	80 - 120

**Lab Sample ID: 400-122697-A-3 MS**  
**Matrix: Water**  
**Analysis Batch: 309299**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.6		10.0	15.9		mg/L		103	80 - 120
Fluoride	<0.082		10.0	10.9		mg/L		109	80 - 120
Sulfate	26	F1	10.0	37.7	F1	mg/L		121	80 - 120

**Lab Sample ID: 400-122697-A-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 309299**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5.6		10.0	15.9		mg/L		103	80 - 120	0	20
Fluoride	<0.082		10.0	10.9		mg/L		109	80 - 120	0	20
Sulfate	26	F1	10.0	37.8	F1	mg/L		122	80 - 120	0	20

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 400-309508/4**  
**Matrix: Water**  
**Analysis Batch: 309508**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/10/16 12:03	1
Fluoride	<0.082		0.20	0.082	mg/L			06/10/16 12:03	1
Sulfate	<0.70		1.0	0.70	mg/L			06/10/16 12:03	1

**Lab Sample ID: LCS 400-309508/5**  
**Matrix: Water**  
**Analysis Batch: 309508**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.37		mg/L		94	90 - 110
Fluoride	10.0	9.81		mg/L		98	90 - 110
Sulfate	10.0	9.52		mg/L		95	90 - 110

**Lab Sample ID: LCSD 400-309508/6**  
**Matrix: Water**  
**Analysis Batch: 309508**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.28		mg/L		93	90 - 110	1	15
Fluoride	10.0	9.68		mg/L		97	90 - 110	1	15
Sulfate	10.0	9.48		mg/L		95	90 - 110	0	15

**Lab Sample ID: 400-122626-3 MS**  
**Matrix: Water**  
**Analysis Batch: 309508**

**Client Sample ID: DUP-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	190	F1	50.0	229	F1	mg/L		79	80 - 120
Fluoride	<0.41		50.0	53.1		mg/L		106	80 - 120
Sulfate	130		50.0	179		mg/L		100	80 - 120

**Lab Sample ID: 400-122626-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 309508**

**Client Sample ID: DUP-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	190	F1	50.0	233		mg/L		86	80 - 120	2	20
Fluoride	<0.41		50.0	53.8		mg/L		108	80 - 120	1	20
Sulfate	130		50.0	182		mg/L		106	80 - 120	2	20

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

**Lab Sample ID: MB 400-309124/1-A ^5**  
**Matrix: Water**  
**Analysis Batch: 309444**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309124**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/08/16 10:18	06/09/16 15:04	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/08/16 10:18	06/09/16 15:04	5

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

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

**Lab Sample ID: MB 400-309124/1-A ^5**  
**Matrix: Water**  
**Analysis Batch: 309444**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309124**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00049		0.0025	0.00049	mg/L		06/08/16 10:18	06/09/16 15:04	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/08/16 10:18	06/09/16 15:04	5
Boron	<0.021		0.050	0.021	mg/L		06/08/16 10:18	06/09/16 15:04	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/08/16 10:18	06/09/16 15:04	5
Calcium	<0.13		0.25	0.13	mg/L		06/08/16 10:18	06/09/16 15:04	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/08/16 10:18	06/09/16 15:04	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/08/16 10:18	06/09/16 15:04	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/08/16 10:18	06/09/16 15:04	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/08/16 10:18	06/09/16 15:04	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/08/16 10:18	06/09/16 15:04	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/08/16 10:18	06/09/16 15:04	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/08/16 10:18	06/09/16 15:04	5

**Lab Sample ID: LCS 400-309124/2-A ^1**  
**Matrix: Water**  
**Analysis Batch: 309444**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309124**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0527		mg/L		105	80 - 120
Arsenic	0.0500	0.0533		mg/L		107	80 - 120
Barium	0.0500	0.0473		mg/L		95	80 - 120
Beryllium	0.0500	0.0482		mg/L		96	80 - 120
Boron	0.100	0.101		mg/L		101	80 - 120
Cadmium	0.0500	0.0507		mg/L		101	80 - 120
Calcium	5.00	5.12		mg/L		102	80 - 120
Chromium	0.0500	0.0517		mg/L		103	80 - 120
Cobalt	0.0500	0.0521		mg/L		104	80 - 120
Lead	0.0500	0.0498		mg/L		100	80 - 120
Lithium	0.0500	0.0504		mg/L		101	80 - 120
Molybdenum	0.0500	0.0526		mg/L		105	80 - 120
Selenium	0.0500	0.0518		mg/L		104	80 - 120
Thallium	0.0100	0.0101		mg/L		101	80 - 120

**Lab Sample ID: 400-122626-1 MS**  
**Matrix: Water**  
**Analysis Batch: 309444**

**Client Sample ID: BGWA-5**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309124**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	<0.0010		0.0500	0.0546		mg/L		109	75 - 125
Arsenic	<0.00046		0.0500	0.0541		mg/L		108	75 - 125
Barium	0.031		0.0500	0.0798		mg/L		98	75 - 125
Beryllium	<0.00034		0.0500	0.0480		mg/L		96	75 - 125
Boron	2.4	E	0.100	2.63	E 4	mg/L		246	75 - 125
Cadmium	<0.00034		0.0500	0.0498		mg/L		100	75 - 125
Calcium	100		5.00	115	4	mg/L		211	75 - 125
Chromium	<0.0011		0.0500	0.0519		mg/L		104	75 - 125
Cobalt	<0.00040		0.0500	0.0506		mg/L		101	75 - 125
Lead	<0.00035		0.0500	0.0482		mg/L		96	75 - 125
Lithium	<0.0032		0.0500	0.0487		mg/L		97	75 - 125

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

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

**Lab Sample ID: 400-122626-1 MS**  
**Matrix: Water**  
**Analysis Batch: 309444**

**Client Sample ID: BGWA-5**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309124**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Molybdenum	<0.00085		0.0500	0.0510		mg/L		102	75 - 125
Selenium	0.012		0.0500	0.0631		mg/L		103	75 - 125
Thallium	<0.000085		0.0100	0.0101		mg/L		101	75 - 125

**Lab Sample ID: 400-122626-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 309444**

**Client Sample ID: BGWA-5**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309124**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	<0.0010		0.0500	0.0543		mg/L		109	75 - 125	1	20
Arsenic	<0.00046		0.0500	0.0551		mg/L		110	75 - 125	2	20
Barium	0.031		0.0500	0.0823		mg/L		103	75 - 125	3	20
Beryllium	<0.00034		0.0500	0.0495		mg/L		99	75 - 125	3	20
Boron	2.4	E	0.100	2.71	E 4	mg/L		330	75 - 125	3	20
Cadmium	<0.00034		0.0500	0.0511		mg/L		102	75 - 125	3	20
Calcium	100		5.00	117	4	mg/L		252	75 - 125	2	20
Chromium	<0.0011		0.0500	0.0527		mg/L		105	75 - 125	1	20
Cobalt	<0.00040		0.0500	0.0510		mg/L		102	75 - 125	1	20
Lead	<0.00035		0.0500	0.0485		mg/L		97	75 - 125	1	20
Lithium	<0.0032		0.0500	0.0503		mg/L		101	75 - 125	3	20
Molybdenum	<0.00085		0.0500	0.0522		mg/L		104	75 - 125	2	20
Selenium	0.012		0.0500	0.0643		mg/L		105	75 - 125	2	20
Thallium	<0.000085		0.0100	0.0104		mg/L		104	75 - 125	3	20

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 400-308799/14-A**  
**Matrix: Water**  
**Analysis Batch: 309379**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 308799**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000784	J	0.00020	0.000070	mg/L		06/06/16 14:47	06/09/16 12:28	1

**Lab Sample ID: LCS 400-308799/15-A**  
**Matrix: Water**  
**Analysis Batch: 309379**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 308799**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.00102		mg/L		101	80 - 120

**Lab Sample ID: 400-122549-J-3-C MS**  
**Matrix: Water**  
**Analysis Batch: 309379**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 308799**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000073	J B	0.00201	0.00198		mg/L		95	80 - 120

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

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

Lab Sample ID: 400-122549-J-3-D MSD  
Matrix: Water  
Analysis Batch: 309379

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Dissolved  
Prep Batch: 308799

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.000073	J B	0.00201	0.00194		mg/L		93	80 - 120	2	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-309184/1  
Matrix: Water  
Analysis Batch: 309184

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			06/08/16 15:34	1

Lab Sample ID: LCS 400-309184/2  
Matrix: Water  
Analysis Batch: 309184

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	256		mg/L		87	78 - 122

Lab Sample ID: 400-122549-I-5 DU  
Matrix: Water  
Analysis Batch: 309184

Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1500		1470		mg/L		1	5

**Georgia Power Environmental Laboratory**

2480 Maner Road, Bin 39110  
 Atlanta, Georgia 30339  
 Phone: (404) 799-2100  
 Company: 8-530-2100

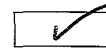
**ANALYSIS REQUEST AND  
 CHAIN OF CUSTODY RECORD**

**LAB  
 USE  
 ONLY**

Work Order No. \_\_\_\_\_

Reviewed By: \_\_\_\_\_

<sup>12</sup> Page 1 of 1



<sup>13</sup> Standard Turnaround Time



# of Business Days (Rush)

(Must be cleared through Env. Lab. prior to shipment)

Company: <sup>1</sup> Southern Company Services

Report To: Joju Abraham

Address: <sup>2</sup> 241 Ralph McGill Blvd SE B10185  
 Atlanta, GA 30308

Phone/Fax: <sup>3</sup> 404-506-7239

Contact: <sup>4</sup> Joju Abraham

Project Location: <sup>5</sup> Plant Bowen

Account Number: <sup>6</sup> \_\_\_\_\_

Special Instructions: <sup>7</sup> CCR Ash Pond

Sample Shipment Date: <sup>8</sup> 6/3/2016

Sampled By: <sup>9</sup> Robert Mull, Forrest Howard

Robert Mull  
 Print Name  
 Signature

Sample Received Date: <sup>10</sup> \_\_\_\_\_

Sample Received By: <sup>11</sup> \_\_\_\_\_

Authorization to subcontract analysis will be assumed acceptable by customer unless stated otherwise.

PRESERVATIVE <sup>21</sup>				
N	I	N		
ANALYSIS REQUESTED <sup>22</sup>				

**Sample Type Key: <sup>23</sup>**  
 G-Grab C-Composite  
 O-Other  
**Matrix Key: <sup>24</sup>**  
 O-Oil SW-Surface Water  
 S-Solid GW-Ground Water  
 SL-Sludge WW-Waste Water  
 W-Wipe DW-Drinking Water  
 LQ-Liquid OW-Other Water

**Preservative Key: <sup>25</sup>**  
 H-Hydrochloric Acid  
 N-Nitric Acid  
 S-Sulfuric Acid  
 SH-Sodium Hydroxide  
 P-Phosphoric Acid  
 ST-Sodium Thiosulfate  
 I-Ice  
 U-Unpreserved  
 O-Other (Specify) \_\_\_\_\_



400-122626 COC

**LAB USE ONLY <sup>26</sup>**  
 Comments: \_\_\_\_\_

LAB USE ONLY <sup>14</sup> LAB ID	Sample Number <sup>15</sup>	Collection <sup>16</sup>		Sample Description <sup>17</sup>	Sample Type <sup>18</sup>	Matrix <sup>19</sup>	No. of Containers <sup>20</sup>	Metals Analysis			Other
		Date	Time					As	Fe	Mn	
	BGWA-5	6/3/16	0951	Groundwater	G	GW	3	X	X	X	
	BGWA-3	6/3/16	1018	Groundwater	G	GW	3	X	X	X	
	Dup-1	6/3/16	—	Groundwater	G	GW	3	X	X	X	

**FOR CHAIN OF CUSTODY USE ONLY <sup>27</sup>**

**LAB USE ONLY: Sample Receipt Information <sup>30</sup>**

Relinquished by: <sup>28</sup> Robert Mull Date/Time 6/3/2016 @ 1130  
 Received by: <sup>29</sup> Joju Abraham Date/Time 6/3/2016 @ 1130  
 Relinquished by: Joju Abraham Date/Time 6/3/2016 @ 1415  
 Received by: Joju Abraham Date/Time 6-3-16 @ 1415

Received: Joju Abraham 6-7-16 10:15am

347156B

Relinquished by: Joju Abraham to Forrest Howard

WHITE, CANARY & PINK—Laboratory

GOLDENROD—Originator

0.0°C IR-5

(See Back For Instructions)



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-122626-1

SDG Number: Ash Pond

**Login Number: 122626**

**List Number: 1**

**Creator: Crawford, Lauren E**

**List Source: TestAmerica Pensacola**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0°C IR-5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-1  
SDG: Ash Pond

## Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-16
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	07-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-17 *
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	06-30-16

\* Certification renewal pending - certification considered valid.



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-122626-2

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Plant Bowen

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

7/11/2016 7:13:55 PM

Cheyenne Whitmire, Project Manager II

(850)474-1001

[cheyenne.whitmire@testamericainc.com](mailto:cheyenne.whitmire@testamericainc.com)

### LINKS

Review your project  
results through

Total Access

Have a Question?



Visit us at:

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

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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# Method Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-2  
SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

**Laboratory References:**

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



# Sample Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-2  
SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-122626-1	BGWA-5	Water	06/03/16 09:51	06/07/16 10:15
400-122626-2	BGWA-3	Water	06/03/16 10:18	06/07/16 10:15
400-122626-3	DUP-1	Water	06/03/16 00:00	06/07/16 10:15

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-2  
SDG: Ash Pond

**Client Sample ID: BGWA-5**

**Date Collected: 06/03/16 09:51**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-1**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.313		0.0811	0.0859	1.00	0.0680	pCi/L	06/13/16 17:57	07/05/16 07:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.3		40 - 110					06/13/16 17:57	07/05/16 07:43	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.490		0.280	0.283	1.00	0.427	pCi/L	06/13/16 18:53	06/27/16 13:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.3		40 - 110					06/13/16 18:53	06/27/16 13:00	1
Y Carrier	91.2		40 - 110					06/13/16 18:53	06/27/16 13:00	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.803		0.291	0.296	5.00	0.427	pCi/L		07/07/16 18:25	1

**Client Sample ID: BGWA-3**

**Date Collected: 06/03/16 10:18**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-2**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.176		0.0752	0.0768	1.00	0.0947	pCi/L	06/13/16 17:57	07/05/16 16:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.9		40 - 110					06/13/16 17:57	07/05/16 16:54	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0919	U	0.213	0.213	1.00	0.366	pCi/L	06/13/16 18:53	06/27/16 13:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.9		40 - 110					06/13/16 18:53	06/27/16 13:00	1
Y Carrier	89.7		40 - 110					06/13/16 18:53	06/27/16 13:00	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-2  
SDG: Ash Pond

**Client Sample ID: BGWA-3**

**Date Collected: 06/03/16 10:18**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-2**

**Matrix: Water**

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.268	U	0.226	0.226	5.00	0.366	pCi/L		07/07/16 18:25	1

**Client Sample ID: DUP-1**

**Date Collected: 06/03/16 00:00**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-3**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>0.233</b>		0.0736	0.0766	1.00	0.0751	pCi/L	06/13/16 17:57	07/05/16 17:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.2		40 - 110					06/13/16 17:57	07/05/16 17:04	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.131	U	0.227	0.227	1.00	0.384	pCi/L	06/13/16 18:53	06/27/16 13:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.2		40 - 110					06/13/16 18:53	06/27/16 13:00	1
Y Carrier	84.5		40 - 110					06/13/16 18:53	06/27/16 13:00	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.364	U	0.238	0.240	5.00	0.384	pCi/L		07/07/16 18:25	1

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-2  
SDG: Ash Pond

## Qualifiers

### Rad

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

## Glossary

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



# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-2  
SDG: Ash Pond

**Client Sample ID: BGWA-5**

**Date Collected: 06/03/16 09:51**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256198	06/13/16 17:57	BME	TAL SL
Total/NA	Analysis	9315		1	259194	07/05/16 07:43	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256205	06/13/16 18:53	BME	TAL SL
Total/NA	Analysis	9320		1	258026	06/27/16 13:00	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259609	07/07/16 18:25	RTM	TAL SL

**Client Sample ID: BGWA-3**

**Date Collected: 06/03/16 10:18**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256198	06/13/16 17:57	BME	TAL SL
Total/NA	Analysis	9315		1	259192	07/05/16 16:54	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256205	06/13/16 18:53	BME	TAL SL
Total/NA	Analysis	9320		1	258026	06/27/16 13:00	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259609	07/07/16 18:25	RTM	TAL SL

**Client Sample ID: DUP-1**

**Date Collected: 06/03/16 00:00**

**Date Received: 06/07/16 10:15**

**Lab Sample ID: 400-122626-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256198	06/13/16 17:57	BME	TAL SL
Total/NA	Analysis	9315		1	259193	07/05/16 17:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256205	06/13/16 18:53	BME	TAL SL
Total/NA	Analysis	9320		1	258026	06/27/16 13:00	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259609	07/07/16 18:25	RTM	TAL SL

**Laboratory References:**

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

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-2  
SDG: Ash Pond

## Rad

### Prep Batch: 256198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122626-1	BGWA-5	Total/NA	Water	PrecSep-21	
400-122626-1 DU	BGWA-5	Total/NA	Water	PrecSep-21	
400-122626-2	BGWA-3	Total/NA	Water	PrecSep-21	
400-122626-3	DUP-1	Total/NA	Water	PrecSep-21	
LCS 160-256198/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
MB 160-256198/1-A	Method Blank	Total/NA	Water	PrecSep-21	

### Prep Batch: 256205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122626-1	BGWA-5	Total/NA	Water	PrecSep_0	
400-122626-1 DU	BGWA-5	Total/NA	Water	PrecSep_0	
400-122626-2	BGWA-3	Total/NA	Water	PrecSep_0	
400-122626-3	DUP-1	Total/NA	Water	PrecSep_0	
LCS 160-256205/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-256205/1-A	Method Blank	Total/NA	Water	PrecSep_0	

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-2  
SDG: Ash Pond

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

**Lab Sample ID: MB 160-256198/1-A**  
**Matrix: Water**  
**Analysis Batch: 259194**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 256198**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.001762	U	0.0387	0.0387	1.00	0.0775	pCi/L	06/13/16 17:57	07/05/16 07:42	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.2		40 - 110					06/13/16 17:57	07/05/16 07:42	1

**Lab Sample ID: LCS 160-256198/2-A**  
**Matrix: Water**  
**Analysis Batch: 259194**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 256198**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.2	14.28		1.38	1.00	0.0787	pCi/L	128	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	93.2		40 - 110						

**Lab Sample ID: 400-122626-1 DU**  
**Matrix: Water**  
**Analysis Batch: 259192**

**Client Sample ID: BGWA-5**  
**Prep Type: Total/NA**  
**Prep Batch: 256198**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.313		0.3076		0.0875	1.00	0.0708	pCi/L	0.03	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	86.6		40 - 110							

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

**Lab Sample ID: MB 160-256205/1-A**  
**Matrix: Water**  
**Analysis Batch: 258190**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 256205**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1317	U	0.186	0.187	1.00	0.364	pCi/L	06/13/16 18:53	06/27/16 12:53	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.2		40 - 110					06/13/16 18:53	06/27/16 12:53	1
Y Carrier	86.0		40 - 110					06/13/16 18:53	06/27/16 12:53	1

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-2  
 SDG: Ash Pond

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

**Lab Sample ID: LCS 160-256205/2-A**  
**Matrix: Water**  
**Analysis Batch: 258190**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 256205**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	15.0	16.22		1.71	1.00	0.360	pCi/L	108	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	93.2		40 - 110
Y Carrier	88.2		40 - 110

**Lab Sample ID: 400-122626-1 DU**  
**Matrix: Water**  
**Analysis Batch: 258026**

**Client Sample ID: BGWA-5**  
**Prep Type: Total/NA**  
**Prep Batch: 256205**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.490		0.2708	U	0.263	1.00	0.423	pCi/L	0.40	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	86.6		40 - 110
Y Carrier	85.2		40 - 110

**Georgia Power Environmental Laboratory**  
 2480 Maner Road, Bin 39110  
 Atlanta, Georgia 30339  
 Phone: (404) 799-2100  
 Company: 8-530-2100

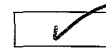
**ANALYSIS REQUEST AND  
 CHAIN OF CUSTODY RECORD**

**LAB  
 USE  
 ONLY**

Work Order No. \_\_\_\_\_

Reviewed By: \_\_\_\_\_

<sup>12</sup> Page 1 of 1



<sup>13</sup> Standard Turnaround Time



# of Business Days (Rush)

(Must be cleared through Env. Lab. prior to shipment)

Company: <sup>1</sup> Southern Company Services

Report To: Joju Abraham

Address: <sup>2</sup> 241 Ralph McGill Blvd SE B1085  
 Atlanta, GA 30308

Phone/Fax: <sup>3</sup> 404-506-7239

Contact: <sup>4</sup> Joju Abraham

Project Location: <sup>5</sup> Plant Bowen

Account Number: <sup>6</sup> \_\_\_\_\_

Special Instructions: <sup>7</sup> CCR Ash Pond

Sample Shipment Date: <sup>8</sup> 6/3/2016

Sampled By: <sup>9</sup> Robert Mull, Forrest Howard

*Robert Mull*  
 Signature

Sample Received Date: <sup>10</sup> \_\_\_\_\_

Sample Received By: <sup>11</sup> \_\_\_\_\_

Authorization to subcontract analysis will be assumed acceptable by customer unless stated otherwise.

PRESERVATIVE <sup>21</sup>				
N	I	N		
ANALYSIS REQUESTED <sup>22</sup>				

**Sample Type Key: <sup>23</sup>**  
 G-Grab C-Composite  
 O-Other  
**Matrix Key: <sup>24</sup>**  
 O-Oil SW-Surface Water  
 S-Solid GW-Ground Water  
 SL-Sludge WW-Waste Water  
 W-Wipe DW-Drinking Water  
 LQ-Liquid OW-Other Water

**Preservative Key: <sup>25</sup>**  
 H-Hydrochloric Acid  
 N-Nitric Acid  
 S-Sulfuric Acid  
 SH-Sodium Hydroxide  
 P-Phosphoric Acid  
 ST-Sodium Thiosulfate  
 I-Ice  
 U-Unpreserved  
 O-Other (Specify) \_\_\_\_\_



400-122626 COC

**LAB USE ONLY <sup>26</sup>**  
 Comments: \_\_\_\_\_

LAB USE ONLY <sup>14</sup> LAB ID	Sample Number <sup>15</sup>	Collection <sup>16</sup>		Sample Description <sup>17</sup>	Sample Type <sup>18</sup>	Matrix <sup>19</sup>	No. of Containers <sup>20</sup>	Metals Analysis			Other
		Date	Time					As	Pb	Cd	
	BGWA-5	6/3/16	0951	Groundwater	G	GW	3	X	X	X	
	BGWA-3	6/3/16	1018	Groundwater	G	GW	3	X	X	X	
	Dup-1	6/3/16	---	Groundwater	G	GW	3	X	X	X	

**FOR CHAIN OF CUSTODY USE ONLY <sup>27</sup>**

**LAB USE ONLY: Sample Receipt Information <sup>30</sup>**

Relinquished by: <sup>28</sup> Robert Mull Date/Time 6/3/2016 @ 1130  
 Received by: <sup>29</sup> Joju Abraham Date/Time 6/3/2016 @ 1130  
 Relinquished by: Joju Abraham Date/Time 6/3/2016 @ 1415  
 Received by: Joju Abraham Date/Time 6-3-16 @ 1415

Received: Joju Abraham 6-7-16 10:15am

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7/11/2016



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-122626-2

SDG Number: Ash Pond

**Login Number: 122626**

**List Number: 1**

**Creator: Crawford, Lauren E**

**List Source: TestAmerica Pensacola**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0°C IR-5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-2  
SDG: Ash Pond

## Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-17
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-17
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	07-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16 *
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-17
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16 *
Michigan	State Program	5	9912	06-30-16 *
New Jersey	NELAP	2	FL006	06-30-17
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16 *
Tennessee	State Program	4	TN02907	06-30-17
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	08-31-16

## Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16 *
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-16 *
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16 *
NRC	NRC		24-24817-01	12-31-22

\* Certification renewal pending - certification considered valid.

# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122626-2  
SDG: Ash Pond

## Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Oklahoma	State Program	6	9997	08-31-16 *
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-16 *
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16 *
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-16 *
West Virginia DEP	State Program	3	381	08-31-16 *

\* Certification renewal pending - certification considered valid.

TestAmerica Pensacola



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-122697-1

TestAmerica Sample Delivery Group: AP

Client Project/Site: CCR Plant Bowen

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

6/13/2016 4:28:11 PM

Cheyenne Whitmire, Project Manager II

(850)474-1001

[cheyenne.whitmire@testamericainc.com](mailto:cheyenne.whitmire@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

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

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

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

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

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# Case Narrative

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

**Job ID: 400-122697-1**

**Laboratory: TestAmerica Pensacola**

## Narrative

### Job Narrative 400-122697-1

#### HPLC/IC

Method(s) 300.0: The following samples were diluted to bring the concentration of target analytes within the calibration range: BGWC-9 (400-122697-4) and BGWC-11 (400-122697-5). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 309299 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

#### Metals

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: BGWA-1 (400-122697-1), BGWA-6 (400-122697-3), BGWC-9 (400-122697-4) and BGWA-4 (400-122697-6). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The method blank for prep batch 308799 contained Mercury, Dissolved above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction of samples was not performed.

# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

## Client Sample ID: BGWA-1

## Lab Sample ID: 400-122697-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	27		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.12	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	26		1.0	0.70	mg/L	1		300.0	Total/NA
Barium	0.090		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.33		0.050	0.021	mg/L	5		6020	Total Recoverable
Selenium	0.0013		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	70		1.3	0.63	mg/L	25		6020	Total Recoverable
Mercury	0.000078	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	290		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWA-2

## Lab Sample ID: 400-122697-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.9		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.11	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	8.0		1.0	0.70	mg/L	1		300.0	Total/NA
Arsenic	0.0012	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.20		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium	39		0.25	0.13	mg/L	5		6020	Total Recoverable
Lead	0.0024		0.0013	0.00035	mg/L	5		6020	Total Recoverable
Molybdenum	0.0015	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Mercury	0.000077	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	170		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWA-6

## Lab Sample ID: 400-122697-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.6		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	26	F1	1.0	0.70	mg/L	1		300.0	Total/NA
Barium	0.015		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Calcium - DL	59		1.3	0.63	mg/L	25		6020	Total Recoverable
Mercury	0.000084	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	220		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-9

## Lab Sample ID: 400-122697-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	27		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.12	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	100		5.0	3.5	mg/L	5		300.0	Total/NA
Arsenic	0.0022		0.0013	0.00046	mg/L	5		6020	Total Recoverable

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

## Client Sample ID: BGWC-9 (Continued)

## Lab Sample ID: 400-122697-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.034		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.55		0.050	0.021	mg/L	5		6020	Total Recoverable
Molybdenum	0.0028	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.00031	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Calcium - DL	66		1.3	0.63	mg/L	25		6020	Total Recoverable
Mercury	0.000080	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	320		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-11

## Lab Sample ID: 400-122697-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	10		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.11	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	93		5.0	3.5	mg/L	5		300.0	Total/NA
Arsenic	0.0023		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.023		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.17		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	39		0.25	0.13	mg/L	5		6020	Total Recoverable
Molybdenum	0.0042	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.00036	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Mercury	0.000079	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	250		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWA-4

## Lab Sample ID: 400-122697-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	220		10	8.9	mg/L	10		300.0	Total/NA
Sulfate	110		10	7.0	mg/L	10		300.0	Total/NA
Arsenic	0.0021		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.052		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.00091	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.0043	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0045		0.0013	0.00024	mg/L	5		6020	Total Recoverable
Boron - DL	2.8		0.25	0.11	mg/L	25		6020	Total Recoverable
Calcium - DL	130		1.3	0.63	mg/L	25		6020	Total Recoverable
Mercury	0.000083	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	830		5.0	3.4	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

# Method Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN

#### Protocol References:

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

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

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

#### Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

# Sample Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-122697-1	BGWA-1	Water	06/06/16 10:42	06/08/16 08:27
400-122697-2	BGWA-2	Water	06/06/16 10:55	06/08/16 08:27
400-122697-3	BGWA-6	Water	06/06/16 10:03	06/08/16 08:27
400-122697-4	BGWC-9	Water	06/06/16 13:35	06/08/16 08:27
400-122697-5	BGWC-11	Water	06/06/16 14:58	06/08/16 08:27
400-122697-6	BGWA-4	Water	06/06/16 16:00	06/08/16 08:27

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

**Client Sample ID: BGWA-1**

**Lab Sample ID: 400-122697-1**

**Date Collected: 06/06/16 10:42**

**Matrix: Water**

**Date Received: 06/08/16 08:27**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27		1.0	0.89	mg/L			06/09/16 03:11	1
Fluoride	0.12	J	0.20	0.082	mg/L			06/09/16 03:11	1
Sulfate	26		1.0	0.70	mg/L			06/09/16 03:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/09/16 09:55	06/09/16 17:01	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/09/16 09:55	06/09/16 17:01	5
Barium	0.090		0.0025	0.00049	mg/L		06/09/16 09:55	06/09/16 17:01	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:01	5
Boron	0.33		0.050	0.021	mg/L		06/09/16 09:55	06/09/16 17:01	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:01	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/09/16 09:55	06/09/16 17:01	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/09/16 09:55	06/09/16 17:01	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/09/16 09:55	06/09/16 17:01	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/09/16 09:55	06/09/16 17:01	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/09/16 09:55	06/09/16 17:01	5
Selenium	0.0013		0.0013	0.00024	mg/L		06/09/16 09:55	06/09/16 17:01	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/09/16 09:55	06/09/16 17:01	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	70		1.3	0.63	mg/L		06/09/16 09:55	06/10/16 13:59	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000078	J B	0.00020	0.000070	mg/L		06/08/16 15:55	06/09/16 12:59	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	290		5.0	3.4	mg/L			06/09/16 13:43	1



# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

**Client Sample ID: BGWA-2**

**Lab Sample ID: 400-122697-2**

**Date Collected: 06/06/16 10:55**

**Matrix: Water**

**Date Received: 06/08/16 08:27**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.9		1.0	0.89	mg/L			06/09/16 03:34	1
Fluoride	0.11	J	0.20	0.082	mg/L			06/09/16 03:34	1
Sulfate	8.0		1.0	0.70	mg/L			06/09/16 03:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/09/16 09:55	06/09/16 17:06	5
Arsenic	0.0012	J	0.0013	0.00046	mg/L		06/09/16 09:55	06/09/16 17:06	5
Barium	0.20		0.0025	0.00049	mg/L		06/09/16 09:55	06/09/16 17:06	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:06	5
Boron	<0.021		0.050	0.021	mg/L		06/09/16 09:55	06/09/16 17:06	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:06	5
Calcium	39		0.25	0.13	mg/L		06/09/16 09:55	06/09/16 17:06	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/09/16 09:55	06/09/16 17:06	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/09/16 09:55	06/09/16 17:06	5
Lead	0.0024		0.0013	0.00035	mg/L		06/09/16 09:55	06/09/16 17:06	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/09/16 09:55	06/09/16 17:06	5
Molybdenum	0.0015	J	0.015	0.00085	mg/L		06/09/16 09:55	06/09/16 17:06	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/09/16 09:55	06/09/16 17:06	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/09/16 09:55	06/09/16 17:06	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000077	J B	0.00020	0.000070	mg/L		06/08/16 15:55	06/09/16 13:00	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	170		5.0	3.4	mg/L			06/09/16 13:43	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

**Client Sample ID: BGWA-6**

**Lab Sample ID: 400-122697-3**

**Date Collected: 06/06/16 10:03**

**Matrix: Water**

**Date Received: 06/08/16 08:27**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>5.6</b>		1.0	0.89	mg/L			06/09/16 05:06	1
Fluoride	<0.082		0.20	0.082	mg/L			06/09/16 05:06	1
<b>Sulfate</b>	<b>26</b>	<b>F1</b>	1.0	0.70	mg/L			06/09/16 05:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/09/16 09:55	06/09/16 17:10	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/09/16 09:55	06/09/16 17:10	5
<b>Barium</b>	<b>0.015</b>		0.0025	0.00049	mg/L		06/09/16 09:55	06/09/16 17:10	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:10	5
Boron	<0.021		0.050	0.021	mg/L		06/09/16 09:55	06/09/16 17:10	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:10	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/09/16 09:55	06/09/16 17:10	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/09/16 09:55	06/09/16 17:10	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/09/16 09:55	06/09/16 17:10	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/09/16 09:55	06/09/16 17:10	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/09/16 09:55	06/09/16 17:10	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/09/16 09:55	06/09/16 17:10	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/09/16 09:55	06/09/16 17:10	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Calcium</b>	<b>59</b>		1.3	0.63	mg/L		06/09/16 09:55	06/10/16 14:04	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.000084</b>	<b>J B</b>	0.00020	0.000070	mg/L		06/08/16 15:55	06/09/16 13:09	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>220</b>		5.0	3.4	mg/L			06/09/16 13:43	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

**Client Sample ID: BGWC-9**

**Lab Sample ID: 400-122697-4**

**Date Collected: 06/06/16 13:35**

**Matrix: Water**

**Date Received: 06/08/16 08:27**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27		1.0	0.89	mg/L			06/09/16 07:00	1
Fluoride	0.12	J	0.20	0.082	mg/L			06/09/16 07:00	1
Sulfate	100		5.0	3.5	mg/L			06/09/16 13:28	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/09/16 09:55	06/09/16 17:15	5
Arsenic	0.0022		0.0013	0.00046	mg/L		06/09/16 09:55	06/09/16 17:15	5
Barium	0.034		0.0025	0.00049	mg/L		06/09/16 09:55	06/09/16 17:15	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:15	5
Boron	0.55		0.050	0.021	mg/L		06/09/16 09:55	06/09/16 17:15	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:15	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/09/16 09:55	06/09/16 17:15	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/09/16 09:55	06/09/16 17:15	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/09/16 09:55	06/09/16 17:15	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/09/16 09:55	06/09/16 17:15	5
Molybdenum	0.0028	J	0.015	0.00085	mg/L		06/09/16 09:55	06/09/16 17:15	5
Selenium	0.00031	J	0.0013	0.00024	mg/L		06/09/16 09:55	06/09/16 17:15	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/09/16 09:55	06/09/16 17:15	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	66		1.3	0.63	mg/L		06/09/16 09:55	06/10/16 14:08	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000080	J B	0.00020	0.000070	mg/L		06/08/16 15:55	06/09/16 13:10	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	320		5.0	3.4	mg/L			06/09/16 13:43	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

**Client Sample ID: BGWC-11**

**Lab Sample ID: 400-122697-5**

**Date Collected: 06/06/16 14:58**

**Matrix: Water**

**Date Received: 06/08/16 08:27**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10		1.0	0.89	mg/L			06/09/16 07:22	1
Fluoride	0.11	J	0.20	0.082	mg/L			06/09/16 07:22	1
Sulfate	93		5.0	3.5	mg/L			06/09/16 13:50	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/09/16 09:55	06/09/16 17:19	5
Arsenic	0.0023		0.0013	0.00046	mg/L		06/09/16 09:55	06/09/16 17:19	5
Barium	0.023		0.0025	0.00049	mg/L		06/09/16 09:55	06/09/16 17:19	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:19	5
Boron	0.17		0.050	0.021	mg/L		06/09/16 09:55	06/09/16 17:19	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:19	5
Calcium	39		0.25	0.13	mg/L		06/09/16 09:55	06/09/16 17:19	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/09/16 09:55	06/09/16 17:19	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/09/16 09:55	06/09/16 17:19	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/09/16 09:55	06/09/16 17:19	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/09/16 09:55	06/09/16 17:19	5
Molybdenum	0.0042	J	0.015	0.00085	mg/L		06/09/16 09:55	06/09/16 17:19	5
Selenium	0.00036	J	0.0013	0.00024	mg/L		06/09/16 09:55	06/09/16 17:19	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/09/16 09:55	06/09/16 17:19	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000079	J B	0.00020	0.000070	mg/L		06/08/16 15:55	06/09/16 13:12	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	250		5.0	3.4	mg/L			06/09/16 13:43	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

**Client Sample ID: BGWA-4**

**Lab Sample ID: 400-122697-6**

**Date Collected: 06/06/16 16:00**

**Matrix: Water**

**Date Received: 06/08/16 08:27**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>220</b>		10	8.9	mg/L			06/09/16 14:13	10
Fluoride	<0.082		0.20	0.082	mg/L			06/09/16 07:45	1
<b>Sulfate</b>	<b>110</b>		10	7.0	mg/L			06/09/16 14:13	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/09/16 09:55	06/09/16 17:24	5
<b>Arsenic</b>	<b>0.0021</b>		0.0013	0.00046	mg/L		06/09/16 09:55	06/09/16 17:24	5
<b>Barium</b>	<b>0.052</b>		0.0025	0.00049	mg/L		06/09/16 09:55	06/09/16 17:24	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:24	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 17:24	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/09/16 09:55	06/09/16 17:24	5
<b>Cobalt</b>	<b>0.00091</b>	<b>J</b>	0.0025	0.00040	mg/L		06/09/16 09:55	06/09/16 17:24	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/09/16 09:55	06/09/16 17:24	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/09/16 09:55	06/09/16 17:24	5
<b>Molybdenum</b>	<b>0.0043</b>	<b>J</b>	0.015	0.00085	mg/L		06/09/16 09:55	06/09/16 17:24	5
<b>Selenium</b>	<b>0.0045</b>		0.0013	0.00024	mg/L		06/09/16 09:55	06/09/16 17:24	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/09/16 09:55	06/09/16 17:24	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>2.8</b>		0.25	0.11	mg/L		06/09/16 09:55	06/10/16 14:15	25
<b>Calcium</b>	<b>130</b>		1.3	0.63	mg/L		06/09/16 09:55	06/10/16 14:15	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.000083</b>	<b>J B</b>	0.00020	0.000070	mg/L		06/08/16 15:55	06/09/16 13:13	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>830</b>		5.0	3.4	mg/L			06/09/16 13:43	1

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

### Metals

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

## Glossary

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

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

**Client Sample ID: BGWA-1**

**Date Collected: 06/06/16 10:42**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309258	06/09/16 03:11	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309219	06/09/16 09:55	GKP	TAL PEN
Total Recoverable	Analysis	6020		5	309444	06/09/16 17:01	GKP	TAL PEN
Total Recoverable	Prep	3005A	DL		309219	06/09/16 09:55	GKP	TAL PEN
Total Recoverable	Analysis	6020	DL	25	309544	06/10/16 13:59	RJB	TAL PEN
Total/NA	Prep	7470A			308799	06/08/16 15:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309379	06/09/16 12:59	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309366	06/09/16 13:43	CAC	TAL PEN

**Client Sample ID: BGWA-2**

**Date Collected: 06/06/16 10:55**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309258	06/09/16 03:34	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309219	06/09/16 09:55	GKP	TAL PEN
Total Recoverable	Analysis	6020		5	309444	06/09/16 17:06	GKP	TAL PEN
Total/NA	Prep	7470A			308799	06/08/16 15:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309379	06/09/16 13:00	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309366	06/09/16 13:43	CAC	TAL PEN

**Client Sample ID: BGWA-6**

**Date Collected: 06/06/16 10:03**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309299	06/09/16 05:06	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309219	06/09/16 09:55	GKP	TAL PEN
Total Recoverable	Analysis	6020		5	309444	06/09/16 17:10	GKP	TAL PEN
Total Recoverable	Prep	3005A	DL		309219	06/09/16 09:55	GKP	TAL PEN
Total Recoverable	Analysis	6020	DL	25	309544	06/10/16 14:04	RJB	TAL PEN
Total/NA	Prep	7470A			308799	06/08/16 15:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309379	06/09/16 13:09	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309366	06/09/16 13:43	CAC	TAL PEN

**Client Sample ID: BGWC-9**

**Date Collected: 06/06/16 13:35**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309299	06/09/16 07:00	TAJ	TAL PEN
Total/NA	Analysis	300.0		5	309299	06/09/16 13:28	TAJ	TAL PEN

TestAmerica Pensacola

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

**Client Sample ID: BGWC-9**

**Lab Sample ID: 400-122697-4**

**Date Collected: 06/06/16 13:35**

**Matrix: Water**

**Date Received: 06/08/16 08:27**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			309219	06/09/16 09:55	GKP	TAL PEN
Total Recoverable	Analysis	6020		5	309444	06/09/16 17:15	GKP	TAL PEN
Total Recoverable	Prep	3005A	DL		309219	06/09/16 09:55	GKP	TAL PEN
Total Recoverable	Analysis	6020	DL	25	309544	06/10/16 14:08	RJB	TAL PEN
Total/NA	Prep	7470A			308799	06/08/16 15:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309379	06/09/16 13:10	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309366	06/09/16 13:43	CAC	TAL PEN

**Client Sample ID: BGWC-11**

**Lab Sample ID: 400-122697-5**

**Date Collected: 06/06/16 14:58**

**Matrix: Water**

**Date Received: 06/08/16 08:27**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309299	06/09/16 07:22	TAJ	TAL PEN
Total/NA	Analysis	300.0		5	309299	06/09/16 13:50	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309219	06/09/16 09:55	GKP	TAL PEN
Total Recoverable	Analysis	6020		5	309444	06/09/16 17:19	GKP	TAL PEN
Total/NA	Prep	7470A			308799	06/08/16 15:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309379	06/09/16 13:12	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309366	06/09/16 13:43	CAC	TAL PEN

**Client Sample ID: BGWA-4**

**Lab Sample ID: 400-122697-6**

**Date Collected: 06/06/16 16:00**

**Matrix: Water**

**Date Received: 06/08/16 08:27**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309299	06/09/16 07:45	TAJ	TAL PEN
Total/NA	Analysis	300.0		10	309299	06/09/16 14:13	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309219	06/09/16 09:55	GKP	TAL PEN
Total Recoverable	Analysis	6020		5	309444	06/09/16 17:24	GKP	TAL PEN
Total Recoverable	Prep	3005A	DL		309219	06/09/16 09:55	GKP	TAL PEN
Total Recoverable	Analysis	6020	DL	25	309544	06/10/16 14:15	RJB	TAL PEN
Total/NA	Prep	7470A			308799	06/08/16 15:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309379	06/09/16 13:13	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309366	06/09/16 13:43	CAC	TAL PEN

**Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001



# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

## HPLC/IC

### Analysis Batch: 309258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122697-1	BGWA-1	Total/NA	Water	300.0	
400-122697-2	BGWA-2	Total/NA	Water	300.0	
460-114812-G-2 MS	Matrix Spike	Total/NA	Water	300.0	
460-114812-G-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 400-309258/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-309258/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-309258/4	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 309299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122697-3	BGWA-6	Total/NA	Water	300.0	
400-122697-3 MS	BGWA-6	Total/NA	Water	300.0	
400-122697-3 MSD	BGWA-6	Total/NA	Water	300.0	
400-122697-4	BGWC-9	Total/NA	Water	300.0	
400-122697-4	BGWC-9	Total/NA	Water	300.0	
400-122697-5	BGWC-11	Total/NA	Water	300.0	
400-122697-5	BGWC-11	Total/NA	Water	300.0	
400-122697-6	BGWA-4	Total/NA	Water	300.0	
400-122697-6	BGWA-4	Total/NA	Water	300.0	
LCS 400-309299/35	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-309299/36	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-309299/34	Method Blank	Total/NA	Water	300.0	

## Metals

### Prep Batch: 308799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122549-J-3-C MS	Matrix Spike	Dissolved	Water	7470A	
400-122549-J-3-D MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	
400-122697-1	BGWA-1	Total/NA	Water	7470A	
400-122697-2	BGWA-2	Total/NA	Water	7470A	
400-122697-3	BGWA-6	Total/NA	Water	7470A	
400-122697-4	BGWC-9	Total/NA	Water	7470A	
400-122697-5	BGWC-11	Total/NA	Water	7470A	
400-122697-6	BGWA-4	Total/NA	Water	7470A	
LCS 400-308799/15-A	Lab Control Sample	Total/NA	Water	7470A	
MB 400-308799/14-A	Method Blank	Total/NA	Water	7470A	

### Prep Batch: 309219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122695-B-1-B MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
400-122695-B-1-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
400-122697-1	BGWA-1	Total Recoverable	Water	3005A	
400-122697-1 - DL	BGWA-1	Total Recoverable	Water	3005A	
400-122697-2	BGWA-2	Total Recoverable	Water	3005A	
400-122697-3	BGWA-6	Total Recoverable	Water	3005A	
400-122697-3 - DL	BGWA-6	Total Recoverable	Water	3005A	
400-122697-4 - DL	BGWC-9	Total Recoverable	Water	3005A	
400-122697-4	BGWC-9	Total Recoverable	Water	3005A	
400-122697-5	BGWC-11	Total Recoverable	Water	3005A	

TestAmerica Pensacola

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

## Metals (Continued)

### Prep Batch: 309219 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122697-6 - DL	BGWA-4	Total Recoverable	Water	3005A	
400-122697-6	BGWA-4	Total Recoverable	Water	3005A	
LCS 400-309219/2-A ^1	Lab Control Sample	Total Recoverable	Water	3005A	
MB 400-309219/1-A ^5	Method Blank	Total Recoverable	Water	3005A	

### Analysis Batch: 309379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122549-J-3-C MS	Matrix Spike	Dissolved	Water	7470A	308799
400-122549-J-3-D MSD	Matrix Spike Duplicate	Dissolved	Water	7470A	308799
400-122697-1	BGWA-1	Total/NA	Water	7470A	308799
400-122697-2	BGWA-2	Total/NA	Water	7470A	308799
400-122697-3	BGWA-6	Total/NA	Water	7470A	308799
400-122697-4	BGWC-9	Total/NA	Water	7470A	308799
400-122697-5	BGWC-11	Total/NA	Water	7470A	308799
400-122697-6	BGWA-4	Total/NA	Water	7470A	308799
LCS 400-308799/15-A	Lab Control Sample	Total/NA	Water	7470A	308799
MB 400-308799/14-A	Method Blank	Total/NA	Water	7470A	308799

### Analysis Batch: 309444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122695-B-1-B MS ^5	Matrix Spike	Total Recoverable	Water	6020	309219
400-122695-B-1-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	6020	309219
400-122697-1	BGWA-1	Total Recoverable	Water	6020	309219
400-122697-2	BGWA-2	Total Recoverable	Water	6020	309219
400-122697-3	BGWA-6	Total Recoverable	Water	6020	309219
400-122697-4	BGWC-9	Total Recoverable	Water	6020	309219
400-122697-5	BGWC-11	Total Recoverable	Water	6020	309219
400-122697-6	BGWA-4	Total Recoverable	Water	6020	309219
LCS 400-309219/2-A ^1	Lab Control Sample	Total Recoverable	Water	6020	309219
MB 400-309219/1-A ^5	Method Blank	Total Recoverable	Water	6020	309219

### Analysis Batch: 309544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122697-1 - DL	BGWA-1	Total Recoverable	Water	6020	309219
400-122697-3 - DL	BGWA-6	Total Recoverable	Water	6020	309219
400-122697-4 - DL	BGWC-9	Total Recoverable	Water	6020	309219
400-122697-6 - DL	BGWA-4	Total Recoverable	Water	6020	309219

## General Chemistry

### Analysis Batch: 309366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122670-A-5 DU	Duplicate	Total/NA	Water	SM 2540C	
400-122697-1	BGWA-1	Total/NA	Water	SM 2540C	
400-122697-2	BGWA-2	Total/NA	Water	SM 2540C	
400-122697-3	BGWA-6	Total/NA	Water	SM 2540C	
400-122697-4	BGWC-9	Total/NA	Water	SM 2540C	
400-122697-5	BGWC-11	Total/NA	Water	SM 2540C	
400-122697-6	BGWA-4	Total/NA	Water	SM 2540C	
LCS 400-309366/2	Lab Control Sample	Total/NA	Water	SM 2540C	

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# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

## General Chemistry (Continued)

### Analysis Batch: 309366 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 400-309366/1	Method Blank	Total/NA	Water	SM 2540C	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 400-309258/4**  
**Matrix: Water**  
**Analysis Batch: 309258**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/08/16 15:37	1
Fluoride	<0.082		0.20	0.082	mg/L			06/08/16 15:37	1
Sulfate	<0.70		1.0	0.70	mg/L			06/08/16 15:37	1

**Lab Sample ID: LCS 400-309258/5**  
**Matrix: Water**  
**Analysis Batch: 309258**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.61		mg/L		96	90 - 110
Fluoride	10.0	9.79		mg/L		98	90 - 110
Sulfate	10.0	10.1		mg/L		101	90 - 110

**Lab Sample ID: LCSD 400-309258/6**  
**Matrix: Water**  
**Analysis Batch: 309258**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.56		mg/L		96	90 - 110	1	15
Fluoride	10.0	9.66		mg/L		97	90 - 110	1	15
Sulfate	10.0	10.2		mg/L		102	90 - 110	1	15

**Lab Sample ID: 460-114812-G-2 MS**  
**Matrix: Water**  
**Analysis Batch: 309258**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	130	E	10.0	134	E 4	mg/L		74	80 - 120
Fluoride	31	F1	10.0	44.0	F1	mg/L		132	80 - 120
Sulfate	21		10.0	31.2		mg/L		105	80 - 120

**Lab Sample ID: 460-114812-G-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 309258**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	130	E	10.0	131	E 4	mg/L		46	80 - 120	2	20
Fluoride	31	F1	10.0	43.0	F1	mg/L		123	80 - 120	2	20
Sulfate	21		10.0	30.6		mg/L		99	80 - 120	2	20

**Lab Sample ID: MB 400-309299/34**  
**Matrix: Water**  
**Analysis Batch: 309299**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/09/16 03:57	1
Fluoride	<0.082		0.20	0.082	mg/L			06/09/16 03:57	1
Sulfate	<0.70		1.0	0.70	mg/L			06/09/16 03:57	1

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# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 400-309299/35**  
**Matrix: Water**  
**Analysis Batch: 309299**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.23		mg/L		92	90 - 110
Fluoride	10.0	9.45		mg/L		95	90 - 110
Sulfate	10.0	9.84		mg/L		98	90 - 110

**Lab Sample ID: LCSD 400-309299/36**  
**Matrix: Water**  
**Analysis Batch: 309299**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.25		mg/L		92	90 - 110	0	15
Fluoride	10.0	9.53		mg/L		95	90 - 110	1	15
Sulfate	10.0	9.84		mg/L		98	90 - 110	0	15

**Lab Sample ID: 400-122697-3 MS**  
**Matrix: Water**  
**Analysis Batch: 309299**

**Client Sample ID: BGWA-6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.6		10.0	15.9		mg/L		103	80 - 120
Fluoride	<0.082		10.0	10.9		mg/L		109	80 - 120
Sulfate	26	F1	10.0	37.7	F1	mg/L		121	80 - 120

**Lab Sample ID: 400-122697-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 309299**

**Client Sample ID: BGWA-6**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5.6		10.0	15.9		mg/L		103	80 - 120	0	20
Fluoride	<0.082		10.0	10.9		mg/L		109	80 - 120	0	20
Sulfate	26	F1	10.0	37.8	F1	mg/L		122	80 - 120	0	20

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

**Lab Sample ID: MB 400-309219/1-A ^5**  
**Matrix: Water**  
**Analysis Batch: 309444**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309219**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/09/16 09:55	06/09/16 16:03	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/09/16 09:55	06/09/16 16:03	5
Barium	<0.00049		0.0025	0.00049	mg/L		06/09/16 09:55	06/09/16 16:03	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 16:03	5
Boron	<0.021		0.050	0.021	mg/L		06/09/16 09:55	06/09/16 16:03	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/09/16 09:55	06/09/16 16:03	5
Calcium	<0.13		0.25	0.13	mg/L		06/09/16 09:55	06/09/16 16:03	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/09/16 09:55	06/09/16 16:03	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/09/16 09:55	06/09/16 16:03	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/09/16 09:55	06/09/16 16:03	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/09/16 09:55	06/09/16 16:03	5

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

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

**Lab Sample ID: MB 400-309219/1-A ^5**  
**Matrix: Water**  
**Analysis Batch: 309444**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309219**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/09/16 09:55	06/09/16 16:03	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/09/16 09:55	06/09/16 16:03	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/09/16 09:55	06/09/16 16:03	5

**Lab Sample ID: LCS 400-309219/2-A ^1**  
**Matrix: Water**  
**Analysis Batch: 309444**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309219**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.0500	0.0540		mg/L		108	80 - 120
Arsenic	0.0500	0.0543		mg/L		109	80 - 120
Barium	0.0500	0.0479		mg/L		96	80 - 120
Beryllium	0.0500	0.0500		mg/L		100	80 - 120
Boron	0.100	0.103		mg/L		103	80 - 120
Cadmium	0.0500	0.0531		mg/L		106	80 - 120
Calcium	5.00	5.32		mg/L		106	80 - 120
Chromium	0.0500	0.0527		mg/L		105	80 - 120
Cobalt	0.0500	0.0522		mg/L		104	80 - 120
Lead	0.0500	0.0502		mg/L		100	80 - 120
Lithium	0.0500	0.0523		mg/L		105	80 - 120
Molybdenum	0.0500	0.0523		mg/L		105	80 - 120
Selenium	0.0500	0.0524		mg/L		105	80 - 120
Thallium	0.0100	0.0102		mg/L		102	80 - 120

**Lab Sample ID: 400-122695-B-1-B MS ^5**  
**Matrix: Water**  
**Analysis Batch: 309444**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309219**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	<0.0010		0.0500	0.0538		mg/L		108	75 - 125
Arsenic	0.00086	J	0.0500	0.0551		mg/L		108	75 - 125
Barium	0.025		0.0500	0.0726		mg/L		96	75 - 125
Beryllium	0.00095	J	0.0500	0.0499		mg/L		98	75 - 125
Boron	0.048	J	0.100	0.154		mg/L		106	75 - 125
Cadmium	<0.00034		0.0500	0.0546		mg/L		109	75 - 125
Calcium	9.7		5.00	14.6		mg/L		98	75 - 125
Chromium	<0.0011		0.0500	0.0531		mg/L		106	75 - 125
Cobalt	<0.00040		0.0500	0.0519		mg/L		104	75 - 125
Lead	<0.00035		0.0500	0.0484		mg/L		97	75 - 125
Lithium	0.0068		0.0500	0.0553		mg/L		97	75 - 125
Molybdenum	<0.00085		0.0500	0.0528		mg/L		106	75 - 125
Selenium	0.0014		0.0500	0.0545		mg/L		106	75 - 125
Thallium	<0.000085		0.0100	0.0100		mg/L		100	75 - 125

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

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

**Lab Sample ID: 400-122695-B-1-C MSD ^5**  
**Matrix: Water**  
**Analysis Batch: 309444**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309219**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
				Result	Qualifier				Limits	RPD		
Antimony	<0.0010		0.0500	0.0517		mg/L		103	75 - 125	4	20	
Arsenic	0.00086	J	0.0500	0.0542		mg/L		107	75 - 125	2	20	
Barium	0.025		0.0500	0.0715		mg/L		94	75 - 125	2	20	
Beryllium	0.00095	J	0.0500	0.0486		mg/L		95	75 - 125	3	20	
Boron	0.048	J	0.100	0.142		mg/L		95	75 - 125	8	20	
Cadmium	<0.00034		0.0500	0.0503		mg/L		101	75 - 125	8	20	
Calcium	9.7		5.00	14.4		mg/L		94	75 - 125	1	20	
Chromium	<0.0011		0.0500	0.0515		mg/L		103	75 - 125	3	20	
Cobalt	<0.00040		0.0500	0.0517		mg/L		103	75 - 125	0	20	
Lead	<0.00035		0.0500	0.0478		mg/L		96	75 - 125	1	20	
Lithium	0.0068		0.0500	0.0556		mg/L		98	75 - 125	1	20	
Molybdenum	<0.00085		0.0500	0.0507		mg/L		101	75 - 125	4	20	
Selenium	0.0014		0.0500	0.0530		mg/L		103	75 - 125	3	20	
Thallium	<0.000085		0.0100	0.0100		mg/L		100	75 - 125	0	20	

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 400-308799/14-A**  
**Matrix: Water**  
**Analysis Batch: 309379**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 308799**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	0.0000784	J	0.00020	0.000070	mg/L		06/06/16 14:47	06/09/16 12:28	1

**Lab Sample ID: LCS 400-308799/15-A**  
**Matrix: Water**  
**Analysis Batch: 309379**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 308799**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Mercury	0.00101	0.00102		mg/L		101	80 - 120

**Lab Sample ID: 400-122549-J-3-C MS**  
**Matrix: Water**  
**Analysis Batch: 309379**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 308799**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	Limits
				Result	Qualifier				
Mercury	0.000073	J B	0.00201	0.00198		mg/L		95	80 - 120

**Lab Sample ID: 400-122549-J-3-D MSD**  
**Matrix: Water**  
**Analysis Batch: 309379**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Dissolved**  
**Prep Batch: 308799**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	Limits	RPD	Limit
				Result	Qualifier						
Mercury	0.000073	J B	0.00201	0.00194		mg/L		93	80 - 120	2	20

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
 SDG: AP

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 400-309366/1**  
**Matrix: Water**  
**Analysis Batch: 309366**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			06/09/16 13:43	1

**Lab Sample ID: LCS 400-309366/2**  
**Matrix: Water**  
**Analysis Batch: 309366**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	293	254		mg/L		87	78 - 122

**Lab Sample ID: 400-122670-A-5 DU**  
**Matrix: Water**  
**Analysis Batch: 309366**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	42		42.0		mg/L		0	5



**Georgia Power Environmental Laboratory**

2480 Maner Road, Bin 39110  
 Atlanta, Georgia 30339  
 Phone: (404) 799-2100  
 Company: 8-530-2100

**ANALYSIS REQUEST AND  
 CHAIN OF CUSTODY RECORD**

**LAB  
 USE  
 ONLY**

Work Order No. \_\_\_\_\_

Reviewed By: \_\_\_\_\_

<sup>12</sup> Page 1 of 1



<sup>13</sup> Standard Turnaround Time

132697



# of Business Days (Rush)

(Must be cleared through Env. Lab. prior to shipment)

Company: <sup>1</sup> Southern Company Services

Report To: Jojo Abraham

Address: <sup>2</sup> 241 Ralph McGill Blvd SE B10185  
 Atlanta, GA 30308

Phone/Fax: <sup>3</sup> 404-506-7239

Contact: <sup>4</sup> Jojo Abraham

Project Location: <sup>5</sup> Plant Bowen

Account Number: <sup>6</sup> \_\_\_\_\_

Special Instructions: <sup>7</sup> CCR Ash Parcel

Sample Shipment Date: <sup>8</sup> 6/7/16

Sampled By: <sup>9</sup> Ernest Howard, Robert Mull, Kevin Stevenson

*[Signature]*  
 Print Name

Signature

Sample Received Date: <sup>10</sup> 6/7/16 @ 7:20

Sample Received By: <sup>11</sup> *[Signature]*

Authorization to subcontract analysis will be assumed acceptable by customer unless stated otherwise.

PRESERVATIVE <sup>21</sup>					
AWG	ICE	AWG			
N	I	N			
ANALYSIS REQUESTED <sup>22</sup>					

- Sample Type Key: <sup>23</sup>**  
 G-Grab C-Composite  
 O-Other
- Matrix Key: <sup>24</sup>**  
 O-Oil SW-Surface Water  
 S-Solid GW-Ground Water  
 SL-Sludge WW-Waste Water  
 W-Wipe DW-Drinking Water  
 LQ-Liquid OW-Other Water
- Preservative Key: <sup>25</sup>**  
 H-Hydrochloric Acid  
 N-Nitric Acid  
 S-Sulfuric Acid  
 SH-Sodium Hydroxide  
 P-Phosphoric Acid  
 ST-Sodium Thiosulfate  
 I-Ice  
 U-Unpreserved  
 O-Other (Specify) \_\_\_\_\_

18	19	20									
Sample Type	Matrix	No. of Containers									
			Metals App. III								
			CPA 60204E817470								
			Cl, F, SO <sub>4</sub> CPA300								
			TPS JM 2540C								
			Residuals SW-846								
			226228B								
			9315 ↓ 9320								

**LAB USE ONLY <sup>26</sup>**  
 Comments



400-122697 COC

LAB USE ONLY <sup>14</sup> LAB ID	Sample Number <sup>15</sup>	Collection <sup>16</sup>		Sample Description <sup>17</sup>	Sample Type	Matrix	No. of Containers									
		Date	Time													
	BGWA-1	6/6/16	1042	Groundwater	G	GW	3	X	X	X						
	BGWA-2	6/6/16	1055	Groundwater	G	GW	3	X	X	X						
	BGWA-6	6/6/16	1003	Groundwater	G	GW	3	X	X	X						
	BGWC-9	6/6/16	1335	Groundwater	G	GW	3	X	X	X						
	BGWC-11	6/6/16	1458	Groundwater	G	GW	3	X	X	X						
	BGWA-4	6/6/16	1600	Groundwater	G	GW	3	X	X	X						

**FOR CHAIN OF CUSTODY USE ONLY <sup>27</sup>**

**LAB USE ONLY: Sample Receipt Information <sup>30</sup>**

Relinquished by: <sup>28</sup> *[Signature]* Date/Time 6/7/16 @ 11:10

3.0C (GPEL-1R-4P), with ice, cooler in good condition, no seal, PHZ

Received by: <sup>29</sup> \_\_\_\_\_ Date/Time \_\_\_\_\_

Hand.

Relinquished by: \_\_\_\_\_ Date/Time \_\_\_\_\_

Received by: Cheryl Date/Time 6/8/16 0827

18.02, 18.5 °C, 5.4 °C, 0.2 °C

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6/13/2016



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-122697-1

SDG Number: AP

**Login Number: 122697**

**List Number: 1**

**Creator: Whitmire, Cheyenne R**

**List Source: TestAmerica Pensacola**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18.0°C, 18.5°C, 5.4°C, 0.2°C IR-6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-1  
SDG: AP

## Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-16
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	07-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-17 *
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	06-30-16

\* Certification renewal pending - certification considered valid.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-122697-2

TestAmerica Sample Delivery Group: AP

Client Project/Site: CCR Plant Bowen

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

7/11/2016 7:14:29 PM

Cheyenne Whitmire, Project Manager II

(850)474-1001

[cheyenne.whitmire@testamericainc.com](mailto:cheyenne.whitmire@testamericainc.com)

### LINKS

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results through

Total Access

Have a Question?



Visit us at:

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

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

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

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# Case Narrative

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

**Job ID: 400-122697-2**

**Laboratory: TestAmerica Pensacola**

## Narrative

### Job Narrative 400-122697-2

#### **RAD**

Method(s) PrecSep\_0: Radium-228 Prep Batch 160-256371: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: BGWA-1 (400-122697-1), BGWA-2 (400-122697-2), BGWA-6 (400-122697-3), BGWC-9 (400-122697-4), BGWC-11 (400-122697-5) and BGWA-4 (400-122697-6). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead.

Method(s) PrecSep-21: Radium-226 Prep Batch 160-256367: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: BGWA-1 (400-122697-1), BGWA-2 (400-122697-2), BGWA-6 (400-122697-3), BGWC-9 (400-122697-4), BGWC-11 (400-122697-5) and BGWA-4 (400-122697-6). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead.



# Method Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

**Laboratory References:**

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



# Sample Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-122697-1	BGWA-1	Water	06/06/16 10:42	06/08/16 08:27
400-122697-2	BGWA-2	Water	06/06/16 10:55	06/08/16 08:27
400-122697-3	BGWA-6	Water	06/06/16 10:03	06/08/16 08:27
400-122697-4	BGWC-9	Water	06/06/16 13:35	06/08/16 08:27
400-122697-5	BGWC-11	Water	06/06/16 14:58	06/08/16 08:27
400-122697-6	BGWA-4	Water	06/06/16 16:00	06/08/16 08:27

- 1
- 2
- 3
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- 5
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- 8
- 9
- 10
- 11
- 12
- 13



# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

**Client Sample ID: BGWA-1**

**Date Collected: 06/06/16 10:42**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-1**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.607		0.127	0.138	1.00	0.116	pCi/L	06/14/16 17:17	07/06/16 07:27	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.6		40 - 110					06/14/16 17:17	07/06/16 07:27	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0907	U	0.224	0.224	1.00	0.386	pCi/L	06/14/16 18:02	06/29/16 17:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.6		40 - 110					06/14/16 18:02	06/29/16 17:20	1
Y Carrier	90.5		40 - 110					06/14/16 18:02	06/29/16 17:20	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.698		0.257	0.263	5.00	0.386	pCi/L		07/08/16 20:20	1

**Client Sample ID: BGWA-2**

**Date Collected: 06/06/16 10:55**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-2**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.585		0.111	0.123	1.00	0.0737	pCi/L	06/14/16 17:17	07/06/16 07:27	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.7		40 - 110					06/14/16 17:17	07/06/16 07:27	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.253	U	0.204	0.205	1.00	0.323	pCi/L	06/14/16 18:02	06/29/16 17:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.7		40 - 110					06/14/16 18:02	06/29/16 17:20	1
Y Carrier	91.6		40 - 110					06/14/16 18:02	06/29/16 17:20	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

**Client Sample ID: BGWA-2**

**Lab Sample ID: 400-122697-2**

Date Collected: 06/06/16 10:55

Matrix: Water

Date Received: 06/08/16 08:27

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.838		0.232	0.239	5.00	0.323	pCi/L		07/08/16 20:20	1

**Client Sample ID: BGWA-6**

**Lab Sample ID: 400-122697-3**

Date Collected: 06/06/16 10:03

Matrix: Water

Date Received: 06/08/16 08:27

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.133		0.0623	0.0634	1.00	0.0745	pCi/L	06/14/16 17:17	07/06/16 07:27	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	84.0		40 - 110					06/14/16 17:17	07/06/16 07:27	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.107	U	0.197	0.198	1.00	0.337	pCi/L	06/14/16 18:02	06/29/16 17:20	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	84.0		40 - 110					06/14/16 18:02	06/29/16 17:20	1
Y Carrier	89.3		40 - 110					06/14/16 18:02	06/29/16 17:20	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.239	U	0.207	0.207	5.00	0.337	pCi/L		07/08/16 20:20	1

**Client Sample ID: BGWC-9**

**Lab Sample ID: 400-122697-4**

Date Collected: 06/06/16 13:35

Matrix: Water

Date Received: 06/08/16 08:27

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.211		0.0788	0.0811	1.00	0.0830	pCi/L	06/14/16 17:17	07/06/16 07:27	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	74.9		40 - 110					06/14/16 17:17	07/06/16 07:27	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

**Client Sample ID: BGWC-9**

**Lab Sample ID: 400-122697-4**

Date Collected: 06/06/16 13:35

Matrix: Water

Date Received: 06/08/16 08:27

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.276	U	0.278	0.279	1.00	0.451	pCi/L	06/14/16 18:02	06/29/16 17:21	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	74.9		40 - 110					06/14/16 18:02	06/29/16 17:21	1
Y Carrier	88.2		40 - 110					06/14/16 18:02	06/29/16 17:21	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.488		0.288	0.290	5.00	0.451	pCi/L		07/08/16 20:20	1

**Client Sample ID: BGWC-11**

**Lab Sample ID: 400-122697-5**

Date Collected: 06/06/16 14:58

Matrix: Water

Date Received: 06/08/16 08:27

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.173		0.0710	0.0727	1.00	0.0796	pCi/L	06/14/16 17:17	07/06/16 07:27	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	80.6		40 - 110					06/14/16 17:17	07/06/16 07:27	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.165	U	0.242	0.242	1.00	0.405	pCi/L	06/14/16 18:02	06/29/16 17:21	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	80.6		40 - 110					06/14/16 18:02	06/29/16 17:21	1
Y Carrier	92.0		40 - 110					06/14/16 18:02	06/29/16 17:21	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.339	U	0.252	0.253	5.00	0.405	pCi/L		07/08/16 20:20	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

**Client Sample ID: BGWA-4**

**Lab Sample ID: 400-122697-6**

Date Collected: 06/06/16 16:00

Matrix: Water

Date Received: 06/08/16 08:27

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.557		0.109	0.120	1.00	0.0749	pCi/L	06/14/16 17:17	07/06/16 07:27	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.0		40 - 110					06/14/16 17:17	07/06/16 07:27	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.335	U	0.225	0.227	1.00	0.348	pCi/L	06/14/16 18:02	06/29/16 17:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.0		40 - 110					06/14/16 18:02	06/29/16 17:21	1
Y Carrier	91.2		40 - 110					06/14/16 18:02	06/29/16 17:21	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.892		0.250	0.257	5.00	0.348	pCi/L		07/08/16 20:20	1

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

## Qualifiers

### Rad

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

## Glossary

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

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

**Client Sample ID: BGWA-1**

**Date Collected: 06/06/16 10:42**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	9315		1	259384	07/06/16 07:27	ALS	TAL SL
Total/NA	Prep	PrecSep_0			256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	258541	06/29/16 17:20	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Client Sample ID: BGWA-2**

**Date Collected: 06/06/16 10:55**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	9315		1	259384	07/06/16 07:27	ALS	TAL SL
Total/NA	Prep	PrecSep_0			256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	258541	06/29/16 17:20	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Client Sample ID: BGWA-6**

**Date Collected: 06/06/16 10:03**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	9315		1	259384	07/06/16 07:27	ALS	TAL SL
Total/NA	Prep	PrecSep_0			256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	258541	06/29/16 17:20	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Client Sample ID: BGWC-9**

**Date Collected: 06/06/16 13:35**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	9315		1	259384	07/06/16 07:27	ALS	TAL SL
Total/NA	Prep	PrecSep_0			256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	258541	06/29/16 17:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

**Client Sample ID: BGWC-11**

**Date Collected: 06/06/16 14:58**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	9315		1	259384	07/06/16 07:27	ALS	TAL SL
Total/NA	Prep	PrecSep_0			256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	258541	06/29/16 17:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Client Sample ID: BGWA-4**

**Date Collected: 06/06/16 16:00**

**Date Received: 06/08/16 08:27**

**Lab Sample ID: 400-122697-6**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256367	06/14/16 17:17	MCJ	TAL SL
Total/NA	Analysis	9315		1	259384	07/06/16 07:27	ALS	TAL SL
Total/NA	Prep	PrecSep_0			256371	06/14/16 18:02	MCJ	TAL SL
Total/NA	Analysis	9320		1	258541	06/29/16 17:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Laboratory References:**

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

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

## Rad

### Prep Batch: 256367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122697-1	BGWA-1	Total/NA	Water	PrecSep-21	
400-122697-2	BGWA-2	Total/NA	Water	PrecSep-21	
400-122697-3	BGWA-6	Total/NA	Water	PrecSep-21	
400-122697-4	BGWC-9	Total/NA	Water	PrecSep-21	
400-122697-5	BGWC-11	Total/NA	Water	PrecSep-21	
400-122697-6	BGWA-4	Total/NA	Water	PrecSep-21	
LCS 160-256367/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-256367/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-256367/1-A	Method Blank	Total/NA	Water	PrecSep-21	

### Prep Batch: 256371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122697-1	BGWA-1	Total/NA	Water	PrecSep_0	
400-122697-2	BGWA-2	Total/NA	Water	PrecSep_0	
400-122697-3	BGWA-6	Total/NA	Water	PrecSep_0	
400-122697-4	BGWC-9	Total/NA	Water	PrecSep_0	
400-122697-5	BGWC-11	Total/NA	Water	PrecSep_0	
400-122697-6	BGWA-4	Total/NA	Water	PrecSep_0	
LCS 160-256371/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-256371/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-256371/1-A	Method Blank	Total/NA	Water	PrecSep_0	



# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

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

**Lab Sample ID: MB 160-256367/1-A**  
**Matrix: Water**  
**Analysis Batch: 259384**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 256367**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.08190		0.0568	0.0573	1.00	0.0819	pCi/L	06/14/16 17:17	07/06/16 07:26	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.9		40 - 110					06/14/16 17:17	07/06/16 07:26	1

**Lab Sample ID: LCS 160-256367/2-A**  
**Matrix: Water**  
**Analysis Batch: 259384**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 256367**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.2	13.56		1.32	1.00	0.0899	pCi/L	121	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	91.5		40 - 110						

**Lab Sample ID: LCSD 160-256367/3-A**  
**Matrix: Water**  
**Analysis Batch: 259384**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 256367**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.2	13.28		1.30	1.00	0.0953	pCi/L	119	68 - 137	0.11	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits								
Ba Carrier	81.8		40 - 110								

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

**Lab Sample ID: MB 160-256371/1-A**  
**Matrix: Water**  
**Analysis Batch: 258541**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 256371**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.07614	U	0.208	0.208	1.00	0.361	pCi/L	06/14/16 18:02	06/29/16 17:19	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.9		40 - 110					06/14/16 18:02	06/29/16 17:19	1
Y Carrier	86.4		40 - 110					06/14/16 18:02	06/29/16 17:19	1

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

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

**Lab Sample ID: LCS 160-256371/2-A**  
**Matrix: Water**  
**Analysis Batch: 258541**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 256371**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	14.9	18.22		1.89	1.00	0.325	pCi/L	122	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	91.5		40 - 110
Y Carrier	87.5		40 - 110

**Lab Sample ID: LCSD 160-256371/3-A**  
**Matrix: Water**  
**Analysis Batch: 258541**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 256371**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	14.9	17.76		1.87	1.00	0.447	pCi/L	119	56 - 140	0.12	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	81.8		40 - 110
Y Carrier	89.0		40 - 110

**Georgia Power Environmental Laboratory**

2480 Maner Road, Bin 39110  
 Atlanta, Georgia 30339  
 Phone: (404) 799-2100  
 Company: 8-530-2100

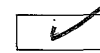
**ANALYSIS REQUEST AND  
 CHAIN OF CUSTODY RECORD**

**LAB  
 USE  
 ONLY**

Work Order No. \_\_\_\_\_

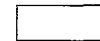
Reviewed By: \_\_\_\_\_

<sup>12</sup> Page 1 of 1



<sup>13</sup> Standard Turnaround Time

132697



# of Business Days (Rush)

(Must be cleared through Env. Lab. prior to shipment)

Company: <sup>1</sup> Southern Company Services

Report To: Jojo Abraham

Address: <sup>2</sup> 241 Ralph McGill Blvd SE B10185  
 Atlanta, GA 30308

Phone/Fax: <sup>3</sup> 404-506-7239

Contact: <sup>4</sup> Jojo Abraham

Project Location: <sup>5</sup> Plant Bowen

Account Number: <sup>6</sup> \_\_\_\_\_

Special Instructions: <sup>7</sup> CCR Ash Parcel

Sample Shipment Date: <sup>8</sup> 6/7/16

Sampled By: <sup>9</sup> Ernest Howard, Robert Mull, Kevin Stevenson

*[Signature]*  
 Print Name

Sample Received Date: <sup>10</sup> 6/7/16 @ 7:20

Sample Received By: <sup>11</sup> *[Signature]*

Authorization to subcontract analysis will be assumed acceptable by customer unless stated otherwise.

PRESERVATIVE <sup>21</sup>				Sample Type Key: <sup>23</sup>	
AWG	ICE	AWG		G-Grab	C-Composite
N	I	N		O-Other	
ANALYSIS REQUESTED <sup>22</sup>					

- Matrix Key: <sup>24</sup>**  
 O-Oil  
 S-Solid  
 SL-Sludge  
 W-Wipe  
 LQ-Liquid  
 SW-Surface Water  
 GW-Ground Water  
 WW-Waste Water  
 DW-Drinking Water  
 OW-Other Water
- Preservative Key: <sup>25</sup>**  
 H-Hydrochloric Acid  
 N-Nitric Acid  
 S-Sulfuric Acid  
 SH-Sodium Hydroxide  
 P-Phosphoric Acid  
 ST-Sodium Thiosulfate  
 I-Ice  
 U-Unpreserved  
 O-Other (Specify) \_\_\_\_\_

LAB USE ONLY <sup>14</sup> LAB ID	Sample Number <sup>15</sup>	Collection <sup>16</sup>		Sample Description <sup>17</sup>	Sample Type <sup>18</sup>	Matrix <sup>19</sup>	No. of Containers <sup>20</sup>	Analysis Requested <sup>22</sup>			LAB USE ONLY <sup>25</sup> Comments
		Date	Time					AWG	ICE	AWG	
	BGWA-1	6/6/16	1042	Groundwater	G	GW	3	X	X	X	
	BGWA-2	6/6/16	1055	Groundwater	G	GW	3	X	X	X	
	BGWA-6	6/6/16	1003	Groundwater	G	GW	3	X	X	X	
	BGWC-9	6/6/16	1335	Groundwater	G	GW	3	X	X	X	
	BGWC-11	6/6/16	1458	Groundwater	G	GW	3	X	X	X	
	BGWA-4	6/6/16	1600	Groundwater	G	GW	3	X	X	X	



400-122697 COC

**FOR CHAIN OF CUSTODY USE ONLY <sup>27</sup>**

**LAB USE ONLY: Sample Receipt Information <sup>30</sup>**

Relinquished by: <sup>28</sup> *[Signature]* Date/Time 6/7/16 @ 11:10

Received by: <sup>29</sup> \_\_\_\_\_ Date/Time \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time \_\_\_\_\_

Received by: Chey... Date/Time 6/8/16 0827

3.0°C (GPEL-1R-4P), with ice, cooler in good condition, no seal, PHZ

Hand.

\_\_\_\_\_

18.0°C, 18.5°C, 5.4°C, 0.2°C

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7/11/2016



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-122697-2

SDG Number: AP

**Login Number: 122697**

**List Number: 1**

**Creator: Whitmire, Cheyenne R**

**List Source: TestAmerica Pensacola**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18.0°C, 18.5°C, 5.4°C, 0.2°C IR-6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

## Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-17
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-17
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	07-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16 *
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-17
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16 *
Michigan	State Program	5	9912	06-30-16 *
New Jersey	NELAP	2	FL006	06-30-17
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16 *
Tennessee	State Program	4	TN02907	06-30-17
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	08-31-16

## Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16 *
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-16 *
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16 *
NRC	NRC		24-24817-01	12-31-22

\* Certification renewal pending - certification considered valid.

TestAmerica Pensacola

# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122697-2  
SDG: AP

## Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Oklahoma	State Program	6	9997	08-31-16 *
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-16 *
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16 *
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-16 *
West Virginia DEP	State Program	3	381	08-31-16 *

\* Certification renewal pending - certification considered valid.

TestAmerica Pensacola



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-122751-1

TestAmerica Sample Delivery Group: AP

Client Project/Site: CCR Plant Bowen

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

6/16/2016 4:36:01 PM

Carolyn Hooper, Project Manager I

(850)474-1001

[carolyn.hooper@testamericainc.com](mailto:carolyn.hooper@testamericainc.com)

Designee for

Cheyenne Whitmire, Project Manager II

(850)474-1001

[cheyenne.whitmire@testamericainc.com](mailto:cheyenne.whitmire@testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

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

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



### LINKS

Review your project  
results through

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Have a Question?



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

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# Case Narrative

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Job ID: 400-122751-1**

**Laboratory: TestAmerica Pensacola**

## Narrative

### Job Narrative 400-122751-1

#### HPLC/IC

Method 300.0: The following samples was diluted to bring the concentration of target analytes within the calibration range: BGWC-16 (400-122751-2), BGWC-12 (400-122751-5), BGWC-10 (400-122751-6), DUP-2 (400-122751-7), BGWC-17 (400-122751-8) and (400-122751-A-6 MS). Elevated reporting limits (RLs) are provided.

#### Metals

Method 6020: The continuing calibration verification (CCV) associated with batch 400-309544 recovered above the upper control limit for Lithium. The sample associated with this CCV was non-detectable for the affected analyte and has been qualified and reported: BGWC-8 (400-122751-1) .

Method 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 400-309439 and analytical batch 400-309544 were outside control limits for Boron, Barium, and Calcium. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 6020: The following samples was diluted to bring the concentration of target analytes within the calibration range: BGWC-16 (400-122751-2), BGWC-12 (400-122751-5), DUP-2 (400-122751-7) and BGWC-17 (400-122751-8). Elevated reporting limits (RLs) are provided.

Method 7470A: The method blank for Prep Batch 309300 contained Mercury above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed.

# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

## Client Sample ID: BGWC-8

## Lab Sample ID: 400-122751-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.0		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	26		1.0	0.70	mg/L	1		300.0	Total/NA
Arsenic	0.00018	J	0.00025	0.000092	mg/L	1		6020	Total Recoverable
Barium	0.0051	F1	0.00050	0.000098	mg/L	1		6020	Total Recoverable
Boron	0.020	F1	0.010	0.0042	mg/L	1		6020	Total Recoverable
Calcium	7.9	F1	0.050	0.025	mg/L	1		6020	Total Recoverable
Cobalt	0.00013	J	0.00050	0.000080	mg/L	1		6020	Total Recoverable
Molybdenum	0.00063	J	0.0030	0.00017	mg/L	1		6020	Total Recoverable
Selenium	0.000048	J	0.00025	0.000048	mg/L	1		6020	Total Recoverable
Mercury	0.000097	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	200		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-16

## Lab Sample ID: 400-122751-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	37		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	240		10	7.0	mg/L	10		300.0	Total/NA
Barium	0.027		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cadmium	0.0011	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Cobalt	0.0037		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Thallium	0.00020	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Boron - DL	1.7		0.25	0.11	mg/L	25		6020	Total Recoverable
Calcium - DL	120		1.3	0.63	mg/L	25		6020	Total Recoverable
Mercury	0.000098	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	580		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: FBL060716

## Lab Sample ID: 400-122751-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.000098	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA

## Client Sample ID: EQBL060716

## Lab Sample ID: 400-122751-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.00010	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	4.0	J	5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-12

## Lab Sample ID: 400-122751-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	44		1.0	0.89	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

## Client Sample ID: BGWC-12 (Continued)

## Lab Sample ID: 400-122751-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	190		10	7.0	mg/L	10		300.0	Total/NA
Barium	0.027		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron - DL	1.1		0.25	0.11	mg/L	25		6020	Total Recoverable
Calcium - DL	90		1.3	0.63	mg/L	25		6020	Total Recoverable
Mercury	0.00010	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	510		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-10

## Lab Sample ID: 400-122751-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	19		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.090	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	99		5.0	3.5	mg/L	5		300.0	Total/NA
Antimony	0.0022	J	0.0025	0.0010	mg/L	5		6020	Total Recoverable
Arsenic	0.0039		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.091		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.37		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	50		0.25	0.13	mg/L	5		6020	Total Recoverable
Lithium	0.0065		0.0050	0.0032	mg/L	5		6020	Total Recoverable
Molybdenum	0.0067	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Mercury	0.00010	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	300		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: DUP-2

## Lab Sample ID: 400-122751-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	38		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	250		10	7.0	mg/L	10		300.0	Total/NA
Barium	0.027		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cadmium	0.0012	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Cobalt	0.0035		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Thallium	0.00019	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Boron - DL	1.3		0.25	0.11	mg/L	25		6020	Total Recoverable
Calcium - DL	110		1.3	0.63	mg/L	25		6020	Total Recoverable
Mercury	0.000099	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	550		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-17

## Lab Sample ID: 400-122751-8

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: BGWC-17 (Continued)**

**Lab Sample ID: 400-122751-8**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	26		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.15	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	120		5.0	3.5	mg/L	5		300.0	Total/NA
Barium	0.017		0.0025	0.00049	mg/L	5		6020	Total
Selenium	0.00040	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Thallium	0.000085	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Boron - DL	1.5		0.25	0.11	mg/L	25		6020	Total Recoverable
Calcium - DL	65		1.3	0.63	mg/L	25		6020	Total Recoverable
Mercury	0.00017	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	360		5.0	3.4	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

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# Method Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN

### Protocol References:

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

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

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

### Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

# Sample Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-122751-1	BGWC-8	Water	06/07/16 09:48	06/09/16 08:51
400-122751-2	BGWC-16	Water	06/07/16 10:20	06/09/16 08:51
400-122751-3	FBL060716	Water	06/07/16 17:35	06/09/16 08:51
400-122751-4	EQBL060716	Water	06/07/16 17:42	06/09/16 08:51
400-122751-5	BGWC-12	Water	06/07/16 17:33	06/09/16 08:51
400-122751-6	BGWC-10	Water	06/07/16 12:30	06/09/16 08:51
400-122751-7	DUP-2	Water	06/07/16 00:00	06/09/16 08:51
400-122751-8	BGWC-17	Water	06/07/16 16:30	06/09/16 08:51

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: BGWC-8**

**Lab Sample ID: 400-122751-1**

**Date Collected: 06/07/16 09:48**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>2.0</b>		1.0	0.89	mg/L			06/10/16 18:21	1
Fluoride	<0.082		0.20	0.082	mg/L			06/10/16 18:21	1
<b>Sulfate</b>	<b>26</b>		1.0	0.70	mg/L			06/10/16 18:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00020		0.00050	0.00020	mg/L		06/10/16 08:45	06/10/16 14:29	1
<b>Arsenic</b>	<b>0.00018</b>	<b>J</b>	0.00025	0.000092	mg/L		06/10/16 08:45	06/10/16 14:29	1
<b>Barium</b>	<b>0.0051</b>	<b>F1</b>	0.00050	0.000098	mg/L		06/10/16 08:45	06/10/16 14:29	1
Beryllium	<0.000068		0.00050	0.000068	mg/L		06/10/16 08:45	06/10/16 14:29	1
<b>Boron</b>	<b>0.020</b>	<b>F1</b>	0.010	0.0042	mg/L		06/10/16 08:45	06/10/16 14:29	1
Cadmium	<0.000068		0.00050	0.000068	mg/L		06/10/16 08:45	06/10/16 14:29	1
<b>Calcium</b>	<b>7.9</b>	<b>F1</b>	0.050	0.025	mg/L		06/10/16 08:45	06/10/16 14:29	1
Chromium	<0.00022		0.00050	0.00022	mg/L		06/10/16 08:45	06/10/16 14:29	1
<b>Cobalt</b>	<b>0.00013</b>	<b>J</b>	0.00050	0.000080	mg/L		06/10/16 08:45	06/10/16 14:29	1
Lead	<0.000070		0.00025	0.000070	mg/L		06/10/16 08:45	06/10/16 14:29	1
Lithium	<0.00064	^	0.0010	0.00064	mg/L		06/10/16 08:45	06/10/16 14:29	1
<b>Molybdenum</b>	<b>0.00063</b>	<b>J</b>	0.0030	0.00017	mg/L		06/10/16 08:45	06/10/16 14:29	1
<b>Selenium</b>	<b>0.000048</b>	<b>J</b>	0.00025	0.000048	mg/L		06/10/16 08:45	06/10/16 14:29	1
Thallium	<0.000017		0.00010	0.000017	mg/L		06/10/16 08:45	06/10/16 14:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.000097</b>	<b>J B</b>	0.00020	0.000070	mg/L		06/09/16 11:55	06/10/16 13:36	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>200</b>		5.0	3.4	mg/L			06/10/16 16:50	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: BGWC-16**

**Lab Sample ID: 400-122751-2**

**Date Collected: 06/07/16 10:20**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>37</b>		1.0	0.89	mg/L			06/10/16 19:30	1
Fluoride	<0.082		0.20	0.082	mg/L			06/10/16 19:30	1
<b>Sulfate</b>	<b>240</b>		10	7.0	mg/L			06/13/16 18:23	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 08:45	06/10/16 15:12	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/10/16 08:45	06/10/16 15:12	5
<b>Barium</b>	<b>0.027</b>		0.0025	0.00049	mg/L		06/10/16 08:45	06/10/16 15:12	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 15:12	5
<b>Cadmium</b>	<b>0.0011</b>	<b>J</b>	0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 15:12	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 08:45	06/10/16 15:12	5
<b>Cobalt</b>	<b>0.0037</b>		0.0025	0.00040	mg/L		06/10/16 08:45	06/10/16 15:12	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 08:45	06/10/16 15:12	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 08:45	06/10/16 15:12	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 08:45	06/10/16 15:12	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 08:45	06/10/16 15:12	5
<b>Thallium</b>	<b>0.00020</b>	<b>J</b>	0.00050	0.000085	mg/L		06/10/16 08:45	06/10/16 15:12	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>1.7</b>		0.25	0.11	mg/L		06/10/16 08:45	06/10/16 17:48	25
<b>Calcium</b>	<b>120</b>		1.3	0.63	mg/L		06/10/16 08:45	06/10/16 17:48	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.000098</b>	<b>J B</b>	0.00020	0.000070	mg/L		06/09/16 11:55	06/10/16 13:37	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>580</b>		5.0	3.4	mg/L			06/10/16 16:50	1



# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: FBL060716**

**Lab Sample ID: 400-122751-3**

**Date Collected: 06/07/16 17:35**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

**Method: 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/10/16 19:52	1
Fluoride	<0.082		0.20	0.082	mg/L			06/10/16 19:52	1
Sulfate	<0.70		1.0	0.70	mg/L			06/10/16 19:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 08:45	06/10/16 15:16	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/10/16 08:45	06/10/16 15:16	5
Barium	<0.00049		0.0025	0.00049	mg/L		06/10/16 08:45	06/10/16 15:16	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 15:16	5
Boron	<0.021		0.050	0.021	mg/L		06/10/16 08:45	06/10/16 15:16	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 15:16	5
Calcium	<0.13		0.25	0.13	mg/L		06/10/16 08:45	06/10/16 15:16	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 08:45	06/10/16 15:16	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 08:45	06/10/16 15:16	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 08:45	06/10/16 15:16	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 08:45	06/10/16 15:16	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 08:45	06/10/16 15:16	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 08:45	06/10/16 15:16	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 08:45	06/10/16 15:16	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000098	J B	0.00020	0.000070	mg/L		06/09/16 11:55	06/10/16 13:38	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			06/10/16 16:50	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: EQBL060716**

**Lab Sample ID: 400-122751-4**

**Date Collected: 06/07/16 17:42**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/10/16 20:15	1
Fluoride	<0.082		0.20	0.082	mg/L			06/10/16 20:15	1
Sulfate	<0.70		1.0	0.70	mg/L			06/10/16 20:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 08:45	06/10/16 15:21	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/10/16 08:45	06/10/16 15:21	5
Barium	<0.00049		0.0025	0.00049	mg/L		06/10/16 08:45	06/10/16 15:21	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 15:21	5
Boron	<0.021		0.050	0.021	mg/L		06/10/16 08:45	06/10/16 15:21	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 15:21	5
Calcium	<0.13		0.25	0.13	mg/L		06/10/16 08:45	06/10/16 15:21	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 08:45	06/10/16 15:21	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 08:45	06/10/16 15:21	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 08:45	06/10/16 15:21	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 08:45	06/10/16 15:21	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 08:45	06/10/16 15:21	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 08:45	06/10/16 15:21	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 08:45	06/10/16 15:21	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00010	J B	0.00020	0.000070	mg/L		06/09/16 11:55	06/10/16 13:40	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4.0	J	5.0	3.4	mg/L			06/10/16 16:50	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: BGWC-12**

**Lab Sample ID: 400-122751-5**

Date Collected: 06/07/16 17:33

Matrix: Water

Date Received: 06/09/16 08:51

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>44</b>		1.0	0.89	mg/L			06/10/16 20:38	1
Fluoride	<0.082		0.20	0.082	mg/L			06/10/16 20:38	1
<b>Sulfate</b>	<b>190</b>		10	7.0	mg/L			06/13/16 18:46	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 08:45	06/10/16 15:25	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/10/16 08:45	06/10/16 15:25	5
<b>Barium</b>	<b>0.027</b>		0.0025	0.00049	mg/L		06/10/16 08:45	06/10/16 15:25	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 15:25	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 15:25	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 08:45	06/10/16 15:25	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 08:45	06/10/16 15:25	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 08:45	06/10/16 15:25	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 08:45	06/10/16 15:25	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 08:45	06/10/16 15:25	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 08:45	06/10/16 15:25	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 08:45	06/10/16 15:25	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>1.1</b>		0.25	0.11	mg/L		06/10/16 08:45	06/10/16 17:52	25
<b>Calcium</b>	<b>90</b>		1.3	0.63	mg/L		06/10/16 08:45	06/10/16 17:52	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.00010</b>	<b>J B</b>	0.00020	0.000070	mg/L		06/09/16 11:55	06/10/16 13:41	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>510</b>		5.0	3.4	mg/L			06/10/16 16:50	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: BGWC-10**

**Date Collected: 06/07/16 12:30**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-6**

**Matrix: Water**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19		1.0	0.89	mg/L			06/10/16 21:01	1
Fluoride	0.090	J	0.20	0.082	mg/L			06/10/16 21:01	1
Sulfate	99		5.0	3.5	mg/L			06/13/16 19:09	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0022	J	0.0025	0.0010	mg/L		06/10/16 08:45	06/10/16 16:31	5
Arsenic	0.0039		0.0013	0.00046	mg/L		06/10/16 08:45	06/10/16 16:31	5
Barium	0.091		0.0025	0.00049	mg/L		06/10/16 08:45	06/10/16 16:31	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 16:31	5
Boron	0.37		0.050	0.021	mg/L		06/10/16 08:45	06/10/16 16:31	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 16:31	5
Calcium	50		0.25	0.13	mg/L		06/10/16 08:45	06/10/16 16:31	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 08:45	06/10/16 16:31	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 08:45	06/10/16 16:31	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 08:45	06/10/16 16:31	5
Lithium	0.0065		0.0050	0.0032	mg/L		06/10/16 08:45	06/10/16 16:31	5
Molybdenum	0.0067	J	0.015	0.00085	mg/L		06/10/16 08:45	06/10/16 16:31	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 08:45	06/10/16 16:31	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 08:45	06/10/16 16:31	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00010	J B	0.00020	0.000070	mg/L		06/09/16 11:55	06/10/16 13:42	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	300		5.0	3.4	mg/L			06/10/16 16:50	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: DUP-2**  
**Date Collected: 06/07/16 00:00**  
**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-7**  
**Matrix: Water**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>38</b>		1.0	0.89	mg/L			06/10/16 21:24	1
Fluoride	<0.082		0.20	0.082	mg/L			06/10/16 21:24	1
<b>Sulfate</b>	<b>250</b>		10	7.0	mg/L			06/13/16 19:54	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 08:45	06/10/16 16:35	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/10/16 08:45	06/10/16 16:35	5
<b>Barium</b>	<b>0.027</b>		0.0025	0.00049	mg/L		06/10/16 08:45	06/10/16 16:35	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 16:35	5
<b>Cadmium</b>	<b>0.0012</b>	<b>J</b>	0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 16:35	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 08:45	06/10/16 16:35	5
<b>Cobalt</b>	<b>0.0035</b>		0.0025	0.00040	mg/L		06/10/16 08:45	06/10/16 16:35	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 08:45	06/10/16 16:35	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 08:45	06/10/16 16:35	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 08:45	06/10/16 16:35	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 08:45	06/10/16 16:35	5
<b>Thallium</b>	<b>0.00019</b>	<b>J</b>	0.00050	0.000085	mg/L		06/10/16 08:45	06/10/16 16:35	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>1.3</b>		0.25	0.11	mg/L		06/10/16 08:45	06/13/16 12:10	25
<b>Calcium</b>	<b>110</b>		1.3	0.63	mg/L		06/10/16 08:45	06/13/16 12:10	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.000099</b>	<b>J B</b>	0.00020	0.000070	mg/L		06/09/16 11:55	06/10/16 13:43	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>550</b>		5.0	3.4	mg/L			06/10/16 16:50	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: BGWC-17**

**Lab Sample ID: 400-122751-8**

Date Collected: 06/07/16 16:30

Matrix: Water

Date Received: 06/09/16 08:51

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26		1.0	0.89	mg/L			06/10/16 22:09	1
Fluoride	0.15	J	0.20	0.082	mg/L			06/10/16 22:09	1
Sulfate	120		5.0	3.5	mg/L			06/13/16 20:17	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 08:45	06/10/16 16:40	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/10/16 08:45	06/10/16 16:40	5
Barium	0.017		0.0025	0.00049	mg/L		06/10/16 08:45	06/10/16 16:40	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 16:40	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 16:40	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 08:45	06/10/16 16:40	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 08:45	06/10/16 16:40	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 08:45	06/10/16 16:40	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 08:45	06/10/16 16:40	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 08:45	06/10/16 16:40	5
Selenium	0.00040	J	0.0013	0.00024	mg/L		06/10/16 08:45	06/10/16 16:40	5
Thallium	0.000085	J	0.00050	0.000085	mg/L		06/10/16 08:45	06/10/16 16:40	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.5		0.25	0.11	mg/L		06/10/16 08:45	06/13/16 12:14	25
Calcium	65		1.3	0.63	mg/L		06/10/16 08:45	06/13/16 12:14	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00017	J B	0.00020	0.000070	mg/L		06/09/16 11:55	06/10/16 13:44	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	360		5.0	3.4	mg/L			06/10/16 16:50	1

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

### Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

### General Chemistry

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

## Glossary

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

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: BGWC-8**

**Date Collected: 06/07/16 09:48**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309508	06/10/16 18:21	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309439	06/10/16 08:45	RJB	TAL PEN
Total Recoverable	Analysis	6020		1	309544	06/10/16 14:29	RJB	TAL PEN
Total/NA	Prep	7470A			309300	06/09/16 11:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309516	06/10/16 13:36	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309570	06/10/16 16:50	CAC	TAL PEN

**Client Sample ID: BGWC-16**

**Date Collected: 06/07/16 10:20**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309508	06/10/16 19:30	TAJ	TAL PEN
Total/NA	Analysis	300.0		10	309830	06/13/16 18:23	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309439	06/10/16 08:45	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	309544	06/10/16 15:12	RJB	TAL PEN
Total Recoverable	Prep	3005A	DL		309439	06/10/16 08:45	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	25	309544	06/10/16 17:48	RJB	TAL PEN
Total/NA	Prep	7470A			309300	06/09/16 11:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309516	06/10/16 13:37	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309570	06/10/16 16:50	CAC	TAL PEN

**Client Sample ID: FBL060716**

**Date Collected: 06/07/16 17:35**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309508	06/10/16 19:52	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309439	06/10/16 08:45	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	309544	06/10/16 15:16	RJB	TAL PEN
Total/NA	Prep	7470A			309300	06/09/16 11:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309516	06/10/16 13:38	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309570	06/10/16 16:50	CAC	TAL PEN

**Client Sample ID: EQBL060716**

**Date Collected: 06/07/16 17:42**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309508	06/10/16 20:15	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309439	06/10/16 08:45	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	309544	06/10/16 15:21	RJB	TAL PEN

TestAmerica Pensacola



# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: EQBL060716**

**Lab Sample ID: 400-122751-4**

**Date Collected: 06/07/16 17:42**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			309300	06/09/16 11:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309516	06/10/16 13:40	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309570	06/10/16 16:50	CAC	TAL PEN

**Client Sample ID: BGWC-12**

**Lab Sample ID: 400-122751-5**

**Date Collected: 06/07/16 17:33**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309508	06/10/16 20:38	TAJ	TAL PEN
Total/NA	Analysis	300.0		10	309830	06/13/16 18:46	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309439	06/10/16 08:45	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	309544	06/10/16 15:25	RJB	TAL PEN
Total Recoverable	Prep	3005A	DL		309439	06/10/16 08:45	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	25	309544	06/10/16 17:52	RJB	TAL PEN
Total/NA	Prep	7470A			309300	06/09/16 11:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309516	06/10/16 13:41	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309570	06/10/16 16:50	CAC	TAL PEN

**Client Sample ID: BGWC-10**

**Lab Sample ID: 400-122751-6**

**Date Collected: 06/07/16 12:30**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309508	06/10/16 21:01	TAJ	TAL PEN
Total/NA	Analysis	300.0		5	309830	06/13/16 19:09	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309439	06/10/16 08:45	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	309544	06/10/16 16:31	RJB	TAL PEN
Total/NA	Prep	7470A			309300	06/09/16 11:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309516	06/10/16 13:42	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309570	06/10/16 16:50	CAC	TAL PEN

**Client Sample ID: DUP-2**

**Lab Sample ID: 400-122751-7**

**Date Collected: 06/07/16 00:00**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309508	06/10/16 21:24	TAJ	TAL PEN
Total/NA	Analysis	300.0		10	309830	06/13/16 19:54	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309439	06/10/16 08:45	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	309544	06/10/16 16:35	RJB	TAL PEN
Total Recoverable	Prep	3005A	DL		309439	06/10/16 08:45	RJB	TAL PEN

TestAmerica Pensacola

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

**Client Sample ID: DUP-2**

**Date Collected: 06/07/16 00:00**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-7**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6020	DL	25	309819	06/13/16 12:10	RJB	TAL PEN
Total/NA	Prep	7470A			309300	06/09/16 11:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309516	06/10/16 13:43	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309570	06/10/16 16:50	CAC	TAL PEN

**Client Sample ID: BGWC-17**

**Date Collected: 06/07/16 16:30**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-8**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309508	06/10/16 22:09	TAJ	TAL PEN
Total/NA	Analysis	300.0		5	309830	06/13/16 20:17	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309439	06/10/16 08:45	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	309544	06/10/16 16:40	RJB	TAL PEN
Total Recoverable	Prep	3005A	DL		309439	06/10/16 08:45	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	25	309819	06/13/16 12:14	RJB	TAL PEN
Total/NA	Prep	7470A			309300	06/09/16 11:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309516	06/10/16 13:44	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309570	06/10/16 16:50	CAC	TAL PEN

**Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

## HPLC/IC

### Analysis Batch: 309508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122626-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
400-122751-1	BGWC-8	Total/NA	Water	300.0	
400-122751-2	BGWC-16	Total/NA	Water	300.0	
400-122751-3	FBL060716	Total/NA	Water	300.0	
400-122751-4	EQBL060716	Total/NA	Water	300.0	
400-122751-5	BGWC-12	Total/NA	Water	300.0	
400-122751-6	BGWC-10	Total/NA	Water	300.0	
400-122751-7	DUP-2	Total/NA	Water	300.0	
400-122751-7 MS	DUP-2	Total/NA	Water	300.0	
400-122751-8	BGWC-17	Total/NA	Water	300.0	
LCS 400-309508/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-309508/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-309508/4	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 309830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122751-2	BGWC-16	Total/NA	Water	300.0	
400-122751-5	BGWC-12	Total/NA	Water	300.0	
400-122751-6	BGWC-10	Total/NA	Water	300.0	
400-122751-6 MS	BGWC-10	Total/NA	Water	300.0	
400-122751-7	DUP-2	Total/NA	Water	300.0	
400-122751-8	BGWC-17	Total/NA	Water	300.0	
400-122850-A-9 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 400-309830/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-309830/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-309830/4	Method Blank	Total/NA	Water	300.0	

## Metals

### Prep Batch: 309300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122714-K-1-B MS	Matrix Spike	Total/NA	Water	7470A	
400-122714-K-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
400-122751-1	BGWC-8	Total/NA	Water	7470A	
400-122751-2	BGWC-16	Total/NA	Water	7470A	
400-122751-3	FBL060716	Total/NA	Water	7470A	
400-122751-4	EQBL060716	Total/NA	Water	7470A	
400-122751-5	BGWC-12	Total/NA	Water	7470A	
400-122751-6	BGWC-10	Total/NA	Water	7470A	
400-122751-7	DUP-2	Total/NA	Water	7470A	
400-122751-8	BGWC-17	Total/NA	Water	7470A	
LCS 400-309300/15-A	Lab Control Sample	Total/NA	Water	7470A	
MB 400-309300/14-A	Method Blank	Total/NA	Water	7470A	

### Prep Batch: 309439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122751-1	BGWC-8	Total Recoverable	Water	3005A	
400-122751-1 MS	BGWC-8	Total Recoverable	Water	3005A	
400-122751-1 MSD	BGWC-8	Total Recoverable	Water	3005A	
400-122751-2 - DL	BGWC-16	Total Recoverable	Water	3005A	

TestAmerica Pensacola

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

## Metals (Continued)

### Prep Batch: 309439 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122751-2	BGWC-16	Total Recoverable	Water	3005A	
400-122751-3	FBL060716	Total Recoverable	Water	3005A	
400-122751-4	EQBL060716	Total Recoverable	Water	3005A	
400-122751-5 - DL	BGWC-12	Total Recoverable	Water	3005A	
400-122751-5	BGWC-12	Total Recoverable	Water	3005A	
400-122751-6	BGWC-10	Total Recoverable	Water	3005A	
400-122751-7	DUP-2	Total Recoverable	Water	3005A	
400-122751-7 - DL	DUP-2	Total Recoverable	Water	3005A	
400-122751-8 - DL	BGWC-17	Total Recoverable	Water	3005A	
400-122751-8	BGWC-17	Total Recoverable	Water	3005A	
LCS 400-309439/2-A ^1	Lab Control Sample	Total Recoverable	Water	3005A	
MB 400-309439/1-A ^5	Method Blank	Total Recoverable	Water	3005A	

### Analysis Batch: 309516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122714-K-1-B MS	Matrix Spike	Total/NA	Water	7470A	309300
400-122714-K-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	309300
400-122751-1	BGWC-8	Total/NA	Water	7470A	309300
400-122751-2	BGWC-16	Total/NA	Water	7470A	309300
400-122751-3	FBL060716	Total/NA	Water	7470A	309300
400-122751-4	EQBL060716	Total/NA	Water	7470A	309300
400-122751-5	BGWC-12	Total/NA	Water	7470A	309300
400-122751-6	BGWC-10	Total/NA	Water	7470A	309300
400-122751-7	DUP-2	Total/NA	Water	7470A	309300
400-122751-8	BGWC-17	Total/NA	Water	7470A	309300
LCS 400-309300/15-A	Lab Control Sample	Total/NA	Water	7470A	309300
MB 400-309300/14-A	Method Blank	Total/NA	Water	7470A	309300

### Analysis Batch: 309544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122751-1	BGWC-8	Total Recoverable	Water	6020	309439
400-122751-1 MS	BGWC-8	Total Recoverable	Water	6020	309439
400-122751-1 MSD	BGWC-8	Total Recoverable	Water	6020	309439
400-122751-2	BGWC-16	Total Recoverable	Water	6020	309439
400-122751-2 - DL	BGWC-16	Total Recoverable	Water	6020	309439
400-122751-3	FBL060716	Total Recoverable	Water	6020	309439
400-122751-4	EQBL060716	Total Recoverable	Water	6020	309439
400-122751-5	BGWC-12	Total Recoverable	Water	6020	309439
400-122751-5 - DL	BGWC-12	Total Recoverable	Water	6020	309439
400-122751-6	BGWC-10	Total Recoverable	Water	6020	309439
400-122751-7	DUP-2	Total Recoverable	Water	6020	309439
400-122751-8	BGWC-17	Total Recoverable	Water	6020	309439
LCS 400-309439/2-A ^1	Lab Control Sample	Total Recoverable	Water	6020	309439
MB 400-309439/1-A ^5	Method Blank	Total Recoverable	Water	6020	309439

### Analysis Batch: 309819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122751-7 - DL	DUP-2	Total Recoverable	Water	6020	309439
400-122751-8 - DL	BGWC-17	Total Recoverable	Water	6020	309439

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

## General Chemistry

### Analysis Batch: 309570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122751-1	BGWC-8	Total/NA	Water	SM 2540C	
400-122751-2	BGWC-16	Total/NA	Water	SM 2540C	
400-122751-2 DU	BGWC-16	Total/NA	Water	SM 2540C	
400-122751-3	FBL060716	Total/NA	Water	SM 2540C	
400-122751-4	EQBL060716	Total/NA	Water	SM 2540C	
400-122751-5	BGWC-12	Total/NA	Water	SM 2540C	
400-122751-6	BGWC-10	Total/NA	Water	SM 2540C	
400-122751-7	DUP-2	Total/NA	Water	SM 2540C	
400-122751-8	BGWC-17	Total/NA	Water	SM 2540C	
LCS 400-309570/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 400-309570/1	Method Blank	Total/NA	Water	SM 2540C	

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 400-309508/4**  
**Matrix: Water**  
**Analysis Batch: 309508**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/10/16 12:03	1
Fluoride	<0.082		0.20	0.082	mg/L			06/10/16 12:03	1
Sulfate	<0.70		1.0	0.70	mg/L			06/10/16 12:03	1

**Lab Sample ID: LCS 400-309508/5**  
**Matrix: Water**  
**Analysis Batch: 309508**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.37		mg/L		94	90 - 110
Fluoride	10.0	9.81		mg/L		98	90 - 110
Sulfate	10.0	9.52		mg/L		95	90 - 110

**Lab Sample ID: LCSD 400-309508/6**  
**Matrix: Water**  
**Analysis Batch: 309508**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.28		mg/L		93	90 - 110	1	15
Fluoride	10.0	9.68		mg/L		97	90 - 110	1	15
Sulfate	10.0	9.48		mg/L		95	90 - 110	0	15

**Lab Sample ID: 400-122626-A-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 309508**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	190	F1	50.0	233		mg/L		86	80 - 120	2	20
Fluoride	<0.41		50.0	53.8		mg/L		108	80 - 120	1	20
Sulfate	130		50.0	182		mg/L		106	80 - 120	2	20

**Lab Sample ID: 400-122751-7 MS**  
**Matrix: Water**  
**Analysis Batch: 309508**

**Client Sample ID: DUP-2**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	38		10.0	46.5		mg/L		89	80 - 120
Fluoride	<0.082		10.0	11.0		mg/L		110	80 - 120
Sulfate	240	E	10.0	245	E 4	mg/L		60	80 - 120

**Lab Sample ID: MB 400-309830/4**  
**Matrix: Water**  
**Analysis Batch: 309830**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/13/16 11:59	1
Fluoride	<0.082		0.20	0.082	mg/L			06/13/16 11:59	1
Sulfate	<0.70		1.0	0.70	mg/L			06/13/16 11:59	1

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 400-309830/5**  
**Matrix: Water**  
**Analysis Batch: 309830**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.91		mg/L		99	90 - 110
Fluoride	10.0	10.2		mg/L		102	90 - 110
Sulfate	10.0	9.37		mg/L		94	90 - 110

**Lab Sample ID: LCSD 400-309830/6**  
**Matrix: Water**  
**Analysis Batch: 309830**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.67		mg/L		97	90 - 110	2	15
Fluoride	10.0	10.1		mg/L		101	90 - 110	1	15
Sulfate	10.0	9.30		mg/L		93	90 - 110	1	15

**Lab Sample ID: 400-122751-6 MS**  
**Matrix: Water**  
**Analysis Batch: 309830**

**Client Sample ID: BGWC-10**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	19		50.0	70.3		mg/L		102	80 - 120
Fluoride	<0.41		50.0	53.4		mg/L		107	80 - 120
Sulfate	99		50.0	154		mg/L		111	80 - 120

**Lab Sample ID: 400-122850-A-9 MSD**  
**Matrix: Water**  
**Analysis Batch: 309830**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	130	E	10.0	139	E 4	mg/L		69	80 - 120	1	20
Fluoride	0.090	J	10.0	11.5		mg/L		114	80 - 120	0	20
Sulfate	530	E	10.0	548	E 4	mg/L		160	80 - 120	0	20

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

**Lab Sample ID: MB 400-309439/1-A ^5**  
**Matrix: Water**  
**Analysis Batch: 309544**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309439**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 08:45	06/10/16 14:20	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/10/16 08:45	06/10/16 14:20	5
Barium	<0.00049		0.0025	0.00049	mg/L		06/10/16 08:45	06/10/16 14:20	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 14:20	5
Boron	<0.021		0.050	0.021	mg/L		06/10/16 08:45	06/10/16 14:20	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 08:45	06/10/16 14:20	5
Calcium	<0.13		0.25	0.13	mg/L		06/10/16 08:45	06/10/16 14:20	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 08:45	06/10/16 14:20	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 08:45	06/10/16 14:20	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 08:45	06/10/16 14:20	5
Lithium	<0.0032	^	0.0050	0.0032	mg/L		06/10/16 08:45	06/10/16 14:20	5

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

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

**Lab Sample ID: MB 400-309439/1-A ^5**  
**Matrix: Water**  
**Analysis Batch: 309544**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309439**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 08:45	06/10/16 14:20	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 08:45	06/10/16 14:20	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 08:45	06/10/16 14:20	5

**Lab Sample ID: LCS 400-309439/2-A ^1**  
**Matrix: Water**  
**Analysis Batch: 309544**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309439**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.0500	0.0587		mg/L		117	80 - 120
Arsenic	0.0500	0.0564		mg/L		113	80 - 120
Barium	0.0500	0.0515		mg/L		103	80 - 120
Beryllium	0.0500	0.0544		mg/L		109	80 - 120
Boron	0.100	0.112		mg/L		112	80 - 120
Cadmium	0.0500	0.0553		mg/L		111	80 - 120
Calcium	5.00	5.43		mg/L		109	80 - 120
Chromium	0.0500	0.0556		mg/L		111	80 - 120
Cobalt	0.0500	0.0545		mg/L		109	80 - 120
Lead	0.0500	0.0532		mg/L		106	80 - 120
Lithium	0.0500	0.0569	^	mg/L		114	80 - 120
Molybdenum	0.0500	0.0543		mg/L		109	80 - 120
Selenium	0.0500	0.0542		mg/L		108	80 - 120
Thallium	0.0100	0.0107		mg/L		107	80 - 120

**Lab Sample ID: 400-122751-1 MS**  
**Matrix: Water**  
**Analysis Batch: 309544**

**Client Sample ID: BGWC-8**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309439**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	<0.00020		0.0500	0.0564		mg/L		113	75 - 125
Arsenic	0.00018	J	0.0500	0.0564		mg/L		112	75 - 125
Barium	0.0051	F1	0.0500	0.0745	F1	mg/L		139	75 - 125
Beryllium	<0.000068		0.0500	0.0528		mg/L		106	75 - 125
Boron	0.020	F1	0.100	0.187	F1	mg/L		166	75 - 125
Cadmium	<0.000068		0.0500	0.0536		mg/L		107	75 - 125
Calcium	7.9	F1	5.00	45.7	F1	mg/L		755	75 - 125
Chromium	<0.00022		0.0500	0.0545		mg/L		109	75 - 125
Cobalt	0.00013	J	0.0500	0.0548		mg/L		109	75 - 125
Lead	<0.000070		0.0500	0.0511		mg/L		102	75 - 125
Lithium	<0.00064	^	0.0500	0.0533		mg/L		107	75 - 125
Molybdenum	0.00063	J	0.0500	0.0584		mg/L		115	75 - 125
Selenium	0.000048	J	0.0500	0.0541		mg/L		108	75 - 125
Thallium	<0.000017		0.0100	0.0107		mg/L		107	75 - 125



# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

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

**Lab Sample ID: 400-122751-1 MSD**

**Matrix: Water**

**Analysis Batch: 309544**

**Client Sample ID: BGWC-8**

**Prep Type: Total Recoverable**

**Prep Batch: 309439**

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
Antimony	<0.00020		0.0500	0.0566		mg/L		113	75 - 125	0	20	
Arsenic	0.00018	J	0.0500	0.0577		mg/L		115	75 - 125	2	20	
Barium	0.0051	F1	0.0500	0.0743	F1	mg/L		138	75 - 125	0	20	
Beryllium	<0.000068		0.0500	0.0553		mg/L		111	75 - 125	5	20	
Boron	0.020	F1	0.100	0.191	F1	mg/L		170	75 - 125	2	20	
Cadmium	<0.000068		0.0500	0.0542		mg/L		108	75 - 125	1	20	
Calcium	7.9	F1	5.00	45.6	F1	mg/L		753	75 - 125	0	20	
Chromium	<0.00022		0.0500	0.0555		mg/L		111	75 - 125	2	20	
Cobalt	0.00013	J	0.0500	0.0553		mg/L		110	75 - 125	1	20	
Lead	<0.000070		0.0500	0.0520		mg/L		104	75 - 125	2	20	
Lithium	<0.00064	^	0.0500	0.0541		mg/L		108	75 - 125	2	20	
Molybdenum	0.00063	J	0.0500	0.0587		mg/L		116	75 - 125	1	20	
Selenium	0.000048	J	0.0500	0.0555		mg/L		111	75 - 125	2	20	
Thallium	<0.000017		0.0100	0.0111		mg/L		111	75 - 125	3	20	

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 400-309300/14-A**

**Matrix: Water**

**Analysis Batch: 309516**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 309300**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	0.0000962	J	0.00020	0.000070	mg/L		06/09/16 09:20	06/10/16 12:59	1

**Lab Sample ID: LCS 400-309300/15-A**

**Matrix: Water**

**Analysis Batch: 309516**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 309300**

Analyte	Spike	LCS LCS		Unit	D	%Rec	Limits
		Added	Result				
Mercury	0.00101	0.00109		mg/L		109	80 - 120

**Lab Sample ID: 400-122714-K-1-B MS**

**Matrix: Water**

**Analysis Batch: 309516**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 309300**

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	%Rec.	
	Result	Qualifier		Result	Qualifier				Limits	RPD
Mercury	<0.000070		0.00201	0.00210		mg/L		104	80 - 120	

**Lab Sample ID: 400-122714-K-1-C MSD**

**Matrix: Water**

**Analysis Batch: 309516**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

**Prep Batch: 309300**

Analyte	Sample	Sample	Spike	MSD MSD		Unit	D	%Rec	%Rec.		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
Mercury	<0.000070		0.00201	0.00201		mg/L		100	80 - 120	4	20	

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
 SDG: AP

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 400-309570/1**  
**Matrix: Water**  
**Analysis Batch: 309570**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			06/10/16 16:50	1

**Lab Sample ID: LCS 400-309570/2**  
**Matrix: Water**  
**Analysis Batch: 309570**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	293	302		mg/L		103	78 - 122

**Lab Sample ID: 400-122751-2 DU**  
**Matrix: Water**  
**Analysis Batch: 309570**

**Client Sample ID: BGWC-16**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	580		584		mg/L		2	5

Georgia Power Environmental Laboratory  
 2480 Maner Road, Bin 39110  
 Atlanta, Georgia 30339  
 Phone: (404) 799-2100  
 Company: 8-530-2100

# ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

**LAB  
USE  
ONLY**

Work Order No. \_\_\_\_\_  
 Reviewed By: \_\_\_\_\_

<sup>12</sup> Page 1 of 1

<sup>13</sup> Standard Turnaround Time

122751

# of Business Days (Rush)

(Must be cleared through Env. Lab. prior to shipment)

Company: <sup>1</sup> Southern Company Services

Sample Shipment Date: <sup>8</sup> 6/7/2016

Report To: Jojo Abraham

Sampled By: <sup>9</sup> Robert Mull, Kevin Stephenson, Forrest Howard

Address: <sup>2</sup> 241 Ralph McGill Blvd SE B10185  
Atlanta, GA 30308

Robert B. Mull  
Print Name  
Signature

Phone/Fax: <sup>3</sup> 404-506-7239

Sample Received Date: <sup>10</sup> \_\_\_\_\_

Contact: <sup>4</sup> Jojo Abraham

Sample Received By: <sup>11</sup> \_\_\_\_\_

Project Location: <sup>5</sup> Plant Bowen

Authorization to subcontract analysis will be assumed acceptable by customer unless stated otherwise.

Account Number: <sup>6</sup> \_\_\_\_\_

Special Instructions: <sup>7</sup> CCR Ash Pond

PRESERVATIVE <sup>21</sup>					
N	I	N			
ANALYSIS REQUESTED <sup>22</sup>					

**Sample Type Key: <sup>23</sup>**  
 G-Grab C-Composite  
 O-Other  
**Matrix Key: <sup>24</sup>**  
 O-Oil SW-Surface Water  
 S-Solid GW-Ground Water  
 SL-Sludge WW-Waste Water  
 W-Wipe DW-Drinking Water  
 LQ-Liquid OW-Other Water

**Preservative Key: <sup>25</sup>**  
 H-Hydrochloric Acid  
 N-Nitric Acid  
 S-Sulfuric Acid  
 SH-Sodium Hydroxide  
 P-Phosphoric Acid  
 ST-Sodium Thiosulfate  
 I-Ice  
 U-Unpreserved  
 O-Other (Specify)

LAB USE ONLY <sup>14</sup> LAB ID	Sample Number <sup>15</sup>	Collection <sup>16</sup>		Sample Description <sup>17</sup>	Sample Type	Matrix	No. of Containers				LAB USE ONLY <sup>26</sup> Comments
		Date	Time								
	B6WL-8	6/7/2016	0948	Groundwater	G	GW	3	X	X	X	
	B6WL-16	6/7/2016	1020	Groundwater	G	GW	3	X	X	X	
	FBL 060716	6/7/2016	1735	Field Blank	G	DW	3	X	X	X	
	EQBL 060716	6/7/2016	1742	Nitrate Glove Rinse	G	OW	3	X	X	X	
	B6WL-12	6/7/2016	1733	Groundwater	G	GW	3	X	X	X	
	B6WL-10	6/7/2016	1230	Groundwater	G	GW	3	X	X	X	
	DUP-2	6/7/2016	---	Groundwater	G	GW	3	X	X	X	
	B6WL-17	6/7/2016	1630	Groundwater	G	GW	3	X	X	X	

Metals App 704 II  
 EPA 6020 & EPA 7470  
 Cl, F, SO4 EPA300  
 TDS SM2540  
 Radium 7264228  
 SW-846 93158-1320



400-122751 C0C

**FOR CHAIN OF CUSTODY USE ONLY <sup>27</sup>**

**LAB USE ONLY: Sample Receipt Information <sup>30</sup>**

Relinquished by: <sup>28</sup> <u>Robert B. Mull</u>	Date/Time	<u>6/7/2016 @ 1820</u>	3-9°C (GPEL-1R-4P) within cooler in good condition, PHL2, seal, Hand
Received by: <sup>29</sup> <u>[Signature]</u>	Date/Time	<u>6/7/2016 @ 1820</u>	
Relinquished by: <u>[Signature]</u>	Date/Time	<u>6/8/2016 @ 0717</u>	
Received by: <u>[Signature]</u>	Date/Time	<u>6/9/16 @ 7:17</u>	

REV'D: [Signature] TA PEN 6/9/16 JGS1

(See Back For Instructions)

347156B WHITE, CANARY & PINK—Laboratory GOLDENROD—Originator  
 Relinquished by [Signature] to FedEx. 10.0°C 23.7°C 23.9°C 12.3°C 0.0°C, 0.0°C, 0.0°C DR-6



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-122751-1

SDG Number: AP

**Login Number: 122751**

**List Number: 1**

**Creator: Whitmire, Cheyenne R**

**List Source: TestAmerica Pensacola**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	0.0, 0.0, 0.0, 10.0, 12.3, 23.7 & 23.9°C, IR-6
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-1  
SDG: AP

## Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-16
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	07-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-17 *
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	06-30-16

\* Certification renewal pending - certification considered valid.



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-122751-2

TestAmerica Sample Delivery Group: AP

Client Project/Site: CCR Plant Bowen

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

7/11/2016 7:14:55 PM

Cheyenne Whitmire, Project Manager II

(850)474-1001

[cheyenne.whitmire@testamericainc.com](mailto:cheyenne.whitmire@testamericainc.com)

### LINKS

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results through

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

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

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# Case Narrative

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

**Job ID: 400-122751-2**

**Laboratory: TestAmerica Pensacola**

## Narrative

### Job Narrative 400-122751-2

#### RAD

Method(s) PrecSep\_0: Radium 228 Batch 160-256817: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: BGWC-8 (400-122751-1), BGWC-16 (400-122751-2), FBL060716 (400-122751-3), EQBL060716 (400-122751-4), BGWC-12 (400-122751-5), BGWC-10 (400-122751-6), DUP-2 (400-122751-7) and BGWC-17 (400-122751-8). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead

Method(s) PrecSep-21: Radium 226 Batch 160-256814: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: BGWC-8 (400-122751-1), BGWC-16 (400-122751-2), FBL060716 (400-122751-3), EQBL060716 (400-122751-4), BGWC-12 (400-122751-5), BGWC-10 (400-122751-6), DUP-2 (400-122751-7) and BGWC-17 (400-122751-8). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead





# Method Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

**Laboratory References:**

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



# Sample Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-122751-1	BGWC-8	Water	06/07/16 09:48	06/09/16 08:51
400-122751-2	BGWC-16	Water	06/07/16 10:20	06/09/16 08:51
400-122751-3	FBL060716	Water	06/07/16 17:35	06/09/16 08:51
400-122751-4	EQBL060716	Water	06/07/16 17:42	06/09/16 08:51
400-122751-5	BGWC-12	Water	06/07/16 17:33	06/09/16 08:51
400-122751-6	BGWC-10	Water	06/07/16 12:30	06/09/16 08:51
400-122751-7	DUP-2	Water	06/07/16 00:00	06/09/16 08:51
400-122751-8	BGWC-17	Water	06/07/16 16:30	06/09/16 08:51

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

**Client Sample ID: BGWC-8**

**Date Collected: 06/07/16 09:48**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-1**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0748		0.0463	0.0468	1.00	0.0630	pCi/L	06/16/16 16:07	07/08/16 06:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.6		40 - 110					06/16/16 16:07	07/08/16 06:30	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0241	U	0.209	0.209	1.00	0.380	pCi/L	06/16/16 16:36	06/22/16 13:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.6		40 - 110					06/16/16 16:36	06/22/16 13:20	1
Y Carrier	95.0		40 - 110					06/16/16 16:36	06/22/16 13:20	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0507	U	0.214	0.214	5.00	0.380	pCi/L		07/08/16 20:20	1

**Client Sample ID: BGWC-16**

**Date Collected: 06/07/16 10:20**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-2**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.284		0.0791	0.0831	1.00	0.0752	pCi/L	06/16/16 16:07	07/08/16 06:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.6		40 - 110					06/16/16 16:07	07/08/16 06:30	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.000	U	0.199	0.199	1.00	0.361	pCi/L	06/16/16 16:36	06/22/16 13:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.6		40 - 110					06/16/16 16:36	06/22/16 13:20	1
Y Carrier	97.2		40 - 110					06/16/16 16:36	06/22/16 13:20	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

**Client Sample ID: BGWC-16**

**Lab Sample ID: 400-122751-2**

Date Collected: 06/07/16 10:20

Matrix: Water

Date Received: 06/09/16 08:51

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	0.284	U	0.214	0.216	5.00	0.361	pCi/L		07/08/16 20:20	1

**Client Sample ID: FBL060716**

**Lab Sample ID: 400-122751-3**

Date Collected: 06/07/16 17:35

Matrix: Water

Date Received: 06/09/16 08:51

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

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.0196	U	0.0355	0.0356	1.00	0.0626	pCi/L	06/16/16 16:07	07/08/16 06:31	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	88.0		40 - 110					06/16/16 16:07	07/08/16 06:31	1

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

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.217	U	0.255	0.256	1.00	0.420	pCi/L	06/16/16 16:36	06/22/16 13:20	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	88.0		40 - 110					06/16/16 16:36	06/22/16 13:20	1
Y Carrier	91.2		40 - 110					06/16/16 16:36	06/22/16 13:20	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Combined Radium 226 + 228	0.237	U	0.257	0.258	5.00	0.420	pCi/L		07/08/16 20:20	1

**Client Sample ID: EQBL060716**

**Lab Sample ID: 400-122751-4**

Date Collected: 06/07/16 17:42

Matrix: Water

Date Received: 06/09/16 08:51

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

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.0161	U	0.0398	0.0398	1.00	0.0723	pCi/L	06/16/16 16:07	07/08/16 06:31	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	77.8		40 - 110					06/16/16 16:07	07/08/16 06:31	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

**Client Sample ID: EQBL060716**

**Lab Sample ID: 400-122751-4**

Date Collected: 06/07/16 17:42

Matrix: Water

Date Received: 06/09/16 08:51

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.00726	U	0.224	0.224	1.00	0.406	pCi/L	06/16/16 16:36	06/22/16 13:21	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	77.8		40 - 110					06/16/16 16:36	06/22/16 13:21	1
Y Carrier	91.6		40 - 110					06/16/16 16:36	06/22/16 13:21	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.00885	U	0.227	0.227	5.00	0.406	pCi/L		07/08/16 20:20	1

**Client Sample ID: BGWC-12**

**Lab Sample ID: 400-122751-5**

Date Collected: 06/07/16 17:33

Matrix: Water

Date Received: 06/09/16 08:51

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0778		0.0516	0.0521	1.00	0.0724	pCi/L	06/16/16 16:07	07/08/16 06:31	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	76.6		40 - 110					06/16/16 16:07	07/08/16 06:31	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0538	U	0.232	0.232	1.00	0.427	pCi/L	06/16/16 16:36	06/22/16 13:22	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	76.6		40 - 110					06/16/16 16:36	06/22/16 13:22	1
Y Carrier	93.5		40 - 110					06/16/16 16:36	06/22/16 13:22	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0240	U	0.237	0.237	5.00	0.427	pCi/L		07/08/16 20:20	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

**Client Sample ID: BGWC-10**

**Lab Sample ID: 400-122751-6**

Date Collected: 06/07/16 12:30

Matrix: Water

Date Received: 06/09/16 08:51

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.402		0.0940	0.101	1.00	0.0862	pCi/L	06/16/16 16:07	07/08/16 06:31	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	79.8		40 - 110					06/16/16 16:07	07/08/16 06:31	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.214	U	0.250	0.251	1.00	0.412	pCi/L	06/16/16 16:36	06/22/16 13:22	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	79.8		40 - 110					06/16/16 16:36	06/22/16 13:22	1
Y Carrier	92.3		40 - 110					06/16/16 16:36	06/22/16 13:22	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.616		0.267	0.270	5.00	0.412	pCi/L		07/08/16 20:20	1

**Client Sample ID: DUP-2**

**Lab Sample ID: 400-122751-7**

Date Collected: 06/07/16 00:00

Matrix: Water

Date Received: 06/09/16 08:51

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.266		0.0865	0.0897	1.00	0.0972	pCi/L	06/16/16 16:07	07/08/16 06:31	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	72.6		40 - 110					06/16/16 16:07	07/08/16 06:31	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.211	U	0.269	0.269	1.00	0.446	pCi/L	06/16/16 16:36	06/22/16 13:33	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	72.6		40 - 110					06/16/16 16:36	06/22/16 13:33	1
Y Carrier	94.6		40 - 110					06/16/16 16:36	06/22/16 13:33	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

**Client Sample ID: DUP-2**  
**Date Collected: 06/07/16 00:00**  
**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-7**  
**Matrix: Water**

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.478		0.282	0.284	5.00	0.446	pCi/L		07/08/16 20:20	1

**Client Sample ID: BGWC-17**  
**Date Collected: 06/07/16 16:30**  
**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-8**  
**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0339	U	0.0353	0.0355	1.00	0.0559	pCi/L	06/16/16 16:07	07/08/16 06:31	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	89.2		40 - 110					06/16/16 16:07	07/08/16 06:31	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.102	U	0.217	0.217	1.00	0.372	pCi/L	06/16/16 16:36	06/22/16 13:23	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	89.2		40 - 110					06/16/16 16:36	06/22/16 13:23	1
Y Carrier	94.2		40 - 110					06/16/16 16:36	06/22/16 13:23	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.135	U	0.220	0.220	5.00	0.372	pCi/L		07/08/16 20:20	1

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

## Qualifiers

### Rad

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

## Glossary

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



# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

**Client Sample ID: BGWC-8**

**Date Collected: 06/07/16 09:48**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256814	06/16/16 16:07	MCJ	TAL SL
Total/NA	Analysis	9315		1	259733	07/08/16 06:30	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256817	06/16/16 16:36	MCJ	TAL SL
Total/NA	Analysis	9320		1	257505	06/22/16 13:20	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Client Sample ID: BGWC-16**

**Date Collected: 06/07/16 10:20**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256814	06/16/16 16:07	MCJ	TAL SL
Total/NA	Analysis	9315		1	259733	07/08/16 06:30	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256817	06/16/16 16:36	MCJ	TAL SL
Total/NA	Analysis	9320		1	257505	06/22/16 13:20	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Client Sample ID: FBL060716**

**Date Collected: 06/07/16 17:35**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256814	06/16/16 16:07	MCJ	TAL SL
Total/NA	Analysis	9315		1	259733	07/08/16 06:31	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256817	06/16/16 16:36	MCJ	TAL SL
Total/NA	Analysis	9320		1	257505	06/22/16 13:20	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Client Sample ID: EQBL060716**

**Date Collected: 06/07/16 17:42**

**Date Received: 06/09/16 08:51**

**Lab Sample ID: 400-122751-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256814	06/16/16 16:07	MCJ	TAL SL
Total/NA	Analysis	9315		1	259733	07/08/16 06:31	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256817	06/16/16 16:36	MCJ	TAL SL
Total/NA	Analysis	9320		1	257505	06/22/16 13:21	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

**Client Sample ID: BGWC-12**

**Lab Sample ID: 400-122751-5**

**Date Collected: 06/07/16 17:33**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256814	06/16/16 16:07	MCJ	TAL SL
Total/NA	Analysis	9315		1	259733	07/08/16 06:31	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256817	06/16/16 16:36	MCJ	TAL SL
Total/NA	Analysis	9320		1	257505	06/22/16 13:22	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Client Sample ID: BGWC-10**

**Lab Sample ID: 400-122751-6**

**Date Collected: 06/07/16 12:30**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256814	06/16/16 16:07	MCJ	TAL SL
Total/NA	Analysis	9315		1	259733	07/08/16 06:31	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256817	06/16/16 16:36	MCJ	TAL SL
Total/NA	Analysis	9320		1	257505	06/22/16 13:22	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Client Sample ID: DUP-2**

**Lab Sample ID: 400-122751-7**

**Date Collected: 06/07/16 00:00**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256814	06/16/16 16:07	MCJ	TAL SL
Total/NA	Analysis	9315		1	259733	07/08/16 06:31	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256817	06/16/16 16:36	MCJ	TAL SL
Total/NA	Analysis	9320		1	257503	06/22/16 13:33	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Client Sample ID: BGWC-17**

**Lab Sample ID: 400-122751-8**

**Date Collected: 06/07/16 16:30**

**Matrix: Water**

**Date Received: 06/09/16 08:51**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256814	06/16/16 16:07	MCJ	TAL SL
Total/NA	Analysis	9315		1	259733	07/08/16 06:31	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256817	06/16/16 16:36	MCJ	TAL SL
Total/NA	Analysis	9320		1	257505	06/22/16 13:23	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	259792	07/08/16 20:20	RTM	TAL SL

**Laboratory References:**

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

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

## Rad

### Prep Batch: 256814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122751-1	BGWC-8	Total/NA	Water	PrecSep-21	
400-122751-2	BGWC-16	Total/NA	Water	PrecSep-21	
400-122751-3	FBL060716	Total/NA	Water	PrecSep-21	
400-122751-4	EQBL060716	Total/NA	Water	PrecSep-21	
400-122751-5	BGWC-12	Total/NA	Water	PrecSep-21	
400-122751-6	BGWC-10	Total/NA	Water	PrecSep-21	
400-122751-7	DUP-2	Total/NA	Water	PrecSep-21	
400-122751-8	BGWC-17	Total/NA	Water	PrecSep-21	
LCS 160-256814/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-256814/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-256814/1-A	Method Blank	Total/NA	Water	PrecSep-21	

### Prep Batch: 256817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122751-1	BGWC-8	Total/NA	Water	PrecSep_0	
400-122751-2	BGWC-16	Total/NA	Water	PrecSep_0	
400-122751-3	FBL060716	Total/NA	Water	PrecSep_0	
400-122751-4	EQBL060716	Total/NA	Water	PrecSep_0	
400-122751-5	BGWC-12	Total/NA	Water	PrecSep_0	
400-122751-6	BGWC-10	Total/NA	Water	PrecSep_0	
400-122751-7	DUP-2	Total/NA	Water	PrecSep_0	
400-122751-8	BGWC-17	Total/NA	Water	PrecSep_0	
LCS 160-256817/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-256817/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-256817/1-A	Method Blank	Total/NA	Water	PrecSep_0	

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

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

**Lab Sample ID: MB 160-256814/1-A**  
**Matrix: Water**  
**Analysis Batch: 259733**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 256814**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02776	U	0.0375	0.0375	1.00	0.0629	pCi/L	06/16/16 16:07	07/08/16 06:30	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					06/16/16 16:07	07/08/16 06:30	1

**Lab Sample ID: LCS 160-256814/2-A**  
**Matrix: Water**  
**Analysis Batch: 259733**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 256814**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.2	15.33		1.46	1.00	0.0606	pCi/L	137	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	88.6		40 - 110						

**Lab Sample ID: LCSD 160-256814/3-A**  
**Matrix: Water**  
**Analysis Batch: 259733**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 256814**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.2	15.28		1.46	1.00	0.0645	pCi/L	137	68 - 137	0.02	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits								
Ba Carrier	90.0		40 - 110								

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

**Lab Sample ID: MB 160-256817/1-A**  
**Matrix: Water**  
**Analysis Batch: 257505**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 256817**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.07390	U	0.237	0.237	1.00	0.433	pCi/L	06/16/16 16:36	06/22/16 13:20	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					06/16/16 16:36	06/22/16 13:20	1
Y Carrier	90.8		40 - 110					06/16/16 16:36	06/22/16 13:20	1

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

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

**Lab Sample ID: LCS 160-256817/2-A**  
**Matrix: Water**  
**Analysis Batch: 257505**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 256817**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	15.0	17.14		1.81	1.00	0.392	pCi/L	114	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	88.6		40 - 110
Y Carrier	92.7		40 - 110

**Lab Sample ID: LCSD 160-256817/3-A**  
**Matrix: Water**  
**Analysis Batch: 257505**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 256817**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	15.0	16.99		1.78	1.00	0.351	pCi/L	113	56 - 140	0.04	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	90.0		40 - 110
Y Carrier	93.1		40 - 110

Georgia Power Environmental Laboratory  
 2480 Maner Road, Bin 39110  
 Atlanta, Georgia 30339  
 Phone: (404) 799-2100  
 Company: 8-530-2100

# ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

**LAB  
USE  
ONLY**

Work Order No. \_\_\_\_\_

Reviewed By: \_\_\_\_\_

<sup>12</sup> Page 1 of 1

<sup>13</sup> Standard Turnaround Time

122751

# of Business Days (Rush)

(Must be cleared through Env. Lab. prior to shipment)

Company: <sup>1</sup> Southern Company Services

Sample Shipment Date: <sup>8</sup> 6/7/2016

Report To: Jojo Abraham

Sampled By: <sup>9</sup> Robert Mull, Kevin Stephenson, Forrest Howard

Address: <sup>2</sup> 241 Ralph McGill Blvd SE B10185  
Atlanta, GA 30308

Robert E. Mull  
Signature

Phone/Fax: <sup>3</sup> 404-506-7239

Sample Received Date: <sup>10</sup> \_\_\_\_\_

Contact: <sup>4</sup> Jojo Abraham

Sample Received By: <sup>11</sup> \_\_\_\_\_

Project Location: <sup>5</sup> Plant Bowen

Authorization to subcontract analysis will be assumed acceptable by customer unless stated otherwise.

Account Number: <sup>6</sup> \_\_\_\_\_

Special Instructions: <sup>7</sup> CCR Ash Pond

PRESERVATIVE <sup>21</sup>					
N	I	N			
ANALYSIS REQUESTED <sup>22</sup>					

**Sample Type Key: <sup>23</sup>**  
 G-Grab O-Other C-Composite  
**Matrix Key: <sup>24</sup>**  
 O-Oil SW-Surface Water  
 S-Solid GW-Ground Water  
 SL-Sludge WW-Waste Water  
 W-Wipe DW-Drinking Water  
 LQ-Liquid OW-Other Water

**Preservative Key: <sup>25</sup>**  
 H-Hydrochloric Acid  
 N-Nitric Acid  
 S-Sulfuric Acid  
 SH-Sodium Hydroxide  
 P-Phosphoric Acid  
 ST-Sodium Thiosulfate  
 I-Ice  
 U-Unpreserved  
 O-Other (Specify)

LAB USE ONLY <sup>14</sup> LAB ID	Sample Number <sup>15</sup>	Collection <sup>16</sup>		Sample Description <sup>17</sup>	Sample Type	Matrix	No. of Containers				LAB USE ONLY <sup>26</sup> Comments
		Date	Time								
	BGWL-8	6/7/2016	0948	Groundwater	G	GW	3	X	X	X	
	BGWL-16	6/7/2016	1020	Groundwater	G	GW	3	X	X	X	
	FBL 060716	6/7/2016	1735	Field Blank	G	DW	3	X	X	X	
	EQBL 060716	6/7/2016	1742	Nitrate Glove Rinse	G	OW	3	X	X	X	
	BGWL-12	6/7/2016	1733	Groundwater	G	GW	3	X	X	X	
	BGWL-10	6/7/2016	1230	Groundwater	G	GW	3	X	X	X	
	DUP-2	6/7/2016	---	Groundwater	G	GW	3	X	X	X	
	BGWL-17	6/7/2016	1630	Groundwater	G	GW	3	X	X	X	

Metals App 704 II  
 EPA 6020 & EPA 7470  
 Cl, F, SO4 EPA300  
 TDS SM2540C  
 Radium 7264228  
 SW-846 93158-1320



400-122751 C0C

**FOR CHAIN OF CUSTODY USE ONLY <sup>27</sup>**

**LAB USE ONLY: Sample Receipt Information <sup>30</sup>**

Relinquished by: <sup>28</sup> <u>Robert E. Mull</u>	Date/Time	<u>6/7/2016 @ 1820</u>	<u>3-90°C (GPEL-1R-4P) within cooler in good condition, PHL2, seal, Hand</u>
Received by: <sup>29</sup> <u>[Signature]</u>	Date/Time	<u>6/7/2016 @ 1820</u>	
Relinquished by: <u>[Signature]</u>	Date/Time	<u>6/8/2016 @ 0717</u>	
Received by: <u>[Signature]</u>	Date/Time	<u>6/9/16 @ 7:17</u>	

REVD: [Signature] TAPEN 6/9/16 JGS1  
 (See Back For Instructions)

347156B WHITE, CANARY & PINK—Laboratory GOLDENROD—Originator  
Relinquished by Jojo Abraham to FedEx. 10.0°C 23.7°C 23.9°C 12.3°C 0.0°C, 0.0°C, 0.0°C DR-6

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7/11/2016



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-122751-2

SDG Number: AP

**Login Number: 122751**

**List Number: 1**

**Creator: Whitmire, Cheyenne R**

**List Source: TestAmerica Pensacola**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	0.0, 0.0, 0.0, 10.0, 12.3, 23.7 & 23.9°C, IR-6
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

## Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-17
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-17
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	07-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16 *
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-17
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16 *
Michigan	State Program	5	9912	06-30-16 *
New Jersey	NELAP	2	FL006	06-30-17
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16 *
Tennessee	State Program	4	TN02907	06-30-17
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	08-31-16

## Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16 *
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-16 *
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16 *
NRC	NRC		24-24817-01	12-31-22

\* Certification renewal pending - certification considered valid.

TestAmerica Pensacola



# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122751-2  
SDG: AP

## Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Oklahoma	State Program	6	9997	08-31-16 *
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-16 *
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16 *
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-16 *
West Virginia DEP	State Program	3	381	08-31-16 *

\* Certification renewal pending - certification considered valid.

TestAmerica Pensacola

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-122850-1

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Plant Bowen

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

6/17/2016 3:24:08 PM

Cheyenne Whitmire, Project Manager II

(850)474-1001

[cheyenne.whitmire@testamericainc.com](mailto:cheyenne.whitmire@testamericainc.com)

### LINKS

Review your project  
results through

Total Access

Have a Question?



Visit us at:

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

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

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

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# Case Narrative

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Job ID: 400-122850-1**

**Laboratory: TestAmerica Pensacola**

## Narrative

### Job Narrative 400-122850-1

#### HPLC/IC

Method(s) 300.0: The following samples were diluted to bring the concentration of target analytes within the calibration range: BGWC-22 (400-122850-1), BGWC-18 (400-122850-4), BGWC-19 (400-122850-5), BGWC-7 (400-122850-6), BGWC-21 (400-122850-8) and BGWC-20 (400-122850-9). Elevated reporting limits (RLs) are provided.

Method(s) 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 309830 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

#### Metals

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: BGWC-22 (400-122850-1), BGWC-7 (400-122850-6) and BGWC-20 (400-122850-9). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for prep batch 309506 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.



# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## Client Sample ID: BGWC-22

## Lab Sample ID: 400-122850-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	440		20	18	mg/L	20		300.0	Total/NA
Fluoride	0.43		0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	660		20	14	mg/L	20		300.0	Total/NA
Arsenic	0.0012	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.092		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cobalt	0.0079		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.012		0.0050	0.0032	mg/L	5		6020	Total Recoverable
Molybdenum	0.070		0.015	0.00085	mg/L	5		6020	Total Recoverable
Thallium	0.00035	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Boron - DL	7.6		1.0	0.42	mg/L	100		6020	Total Recoverable
Calcium - DL	350		5.0	2.5	mg/L	100		6020	Total Recoverable
Mercury	0.000092	J F1	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	2000		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: FBL060816

## Lab Sample ID: 400-122850-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	6.0		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: EQBL060816

## Lab Sample ID: 400-122850-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	4.0	J	5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-18

## Lab Sample ID: 400-122850-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	48		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.10	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	120		5.0	3.5	mg/L	5		300.0	Total/NA
Barium	0.039		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	1.2		0.050	0.021	mg/L	5		6020	Total Recoverable
Cadmium	0.00063	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Calcium	76		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.00071	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	390		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-19

## Lab Sample ID: 400-122850-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	23		1.0	0.89	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## Client Sample ID: BGWC-19 (Continued)

## Lab Sample ID: 400-122850-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	110		5.0	3.5	mg/L	5		300.0	Total/NA
Arsenic	0.00046	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.036		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.49		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	55		0.25	0.13	mg/L	5		6020	Total Recoverable
Selenium	0.00043	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Thallium	0.000085	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	340		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-7

## Lab Sample ID: 400-122850-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.19	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	410		20	14	mg/L	20		300.0	Total/NA
Arsenic	0.0024		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.048		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	1.7		0.050	0.021	mg/L	5		6020	Total Recoverable
Cobalt	0.00081	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0079		0.0050	0.0032	mg/L	5		6020	Total Recoverable
Molybdenum	0.0088	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Calcium - DL	140		1.3	0.63	mg/L	25		6020	Total Recoverable
Total Dissolved Solids	800		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-25

## Lab Sample ID: 400-122850-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.4		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.14	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	10		1.0	0.70	mg/L	1		300.0	Total/NA
Arsenic	0.0037		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.038		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.029	J	0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	32		0.25	0.13	mg/L	5		6020	Total Recoverable
Molybdenum	0.0064	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	170		5.0	3.4	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## Client Sample ID: BGWC-21

## Lab Sample ID: 400-122850-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.1		1.0	0.89	mg/L	1		300.0	Total/NA
Sulfate	75		5.0	3.5	mg/L	5		300.0	Total/NA
Arsenic	0.0015		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.054		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.12		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	43		0.25	0.13	mg/L	5		6020	Total Recoverable
Cobalt	0.00041	J	0.0025	0.00040	mg/L	5		6020	Total Recoverable
Molybdenum	0.0027	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Total Dissolved Solids	260		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-20

## Lab Sample ID: 400-122850-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	130		20	18	mg/L	20		300.0	Total/NA
Fluoride	0.090	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	530		20	14	mg/L	20		300.0	Total/NA
Arsenic	0.0011	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.036		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Lithium	0.016		0.0050	0.0032	mg/L	5		6020	Total Recoverable
Molybdenum	0.011	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Boron - DL	2.6		1.0	0.42	mg/L	100		6020	Total Recoverable
Calcium - DL	200		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	1000		5.0	3.4	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

# Method Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN

### Protocol References:

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

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

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

### Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001



# Sample Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-122850-1	BGWC-22	Water	06/08/16 13:33	06/10/16 08:55
400-122850-2	FBL060816	Water	06/08/16 15:55	06/10/16 08:55
400-122850-3	EQBL060816	Water	06/08/16 16:05	06/10/16 08:55
400-122850-4	BGWC-18	Water	06/08/16 09:55	06/10/16 08:55
400-122850-5	BGWC-19	Water	06/08/16 12:05	06/10/16 08:55
400-122850-6	BGWC-7	Water	06/08/16 13:15	06/10/16 08:55
400-122850-7	BGWC-25	Water	06/08/16 15:15	06/10/16 08:55
400-122850-8	BGWC-21	Water	06/08/16 15:10	06/10/16 08:55
400-122850-9	BGWC-20	Water	06/08/16 12:50	06/10/16 08:55

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: BGWC-22**

**Lab Sample ID: 400-122850-1**

Date Collected: 06/08/16 13:33

Matrix: Water

Date Received: 06/10/16 08:55

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	440		20	18	mg/L			06/14/16 04:17	20
Fluoride	0.43		0.20	0.082	mg/L			06/11/16 10:42	1
Sulfate	660		20	14	mg/L			06/14/16 04:17	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 13:05	06/16/16 12:33	5
Arsenic	0.0012	J	0.0013	0.00046	mg/L		06/10/16 13:05	06/16/16 12:33	5
Barium	0.092		0.0025	0.00049	mg/L		06/10/16 13:05	06/16/16 12:33	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 12:33	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 12:33	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 13:05	06/16/16 12:33	5
Cobalt	0.0079		0.0025	0.00040	mg/L		06/10/16 13:05	06/16/16 12:33	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 13:05	06/16/16 12:33	5
Lithium	0.012		0.0050	0.0032	mg/L		06/10/16 13:05	06/16/16 12:33	5
Molybdenum	0.070		0.015	0.00085	mg/L		06/10/16 13:05	06/16/16 12:33	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 13:05	06/16/16 12:33	5
Thallium	0.00035	J	0.00050	0.000085	mg/L		06/10/16 13:05	06/16/16 12:33	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	7.6		1.0	0.42	mg/L		06/10/16 13:05	06/16/16 14:40	100
Calcium	350		5.0	2.5	mg/L		06/10/16 13:05	06/16/16 14:40	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000092	J F1	0.00020	0.000070	mg/L		06/10/16 12:52	06/13/16 12:13	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2000		5.0	3.4	mg/L			06/14/16 09:51	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: FBL060816**

**Lab Sample ID: 400-122850-2**

**Date Collected: 06/08/16 15:55**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/11/16 11:05	1
Fluoride	<0.082		0.20	0.082	mg/L			06/11/16 11:05	1
Sulfate	<0.70		1.0	0.70	mg/L			06/11/16 11:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 13:05	06/16/16 10:54	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/10/16 13:05	06/16/16 10:54	5
Barium	<0.00049		0.0025	0.00049	mg/L		06/10/16 13:05	06/16/16 10:54	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 10:54	5
Boron	<0.021		0.050	0.021	mg/L		06/10/16 13:05	06/16/16 10:54	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 10:54	5
Calcium	<0.13		0.25	0.13	mg/L		06/10/16 13:05	06/16/16 10:54	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 13:05	06/16/16 10:54	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 13:05	06/16/16 10:54	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 13:05	06/16/16 10:54	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 13:05	06/16/16 10:54	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 13:05	06/16/16 10:54	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 13:05	06/16/16 10:54	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 13:05	06/16/16 10:54	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/10/16 12:52	06/13/16 12:19	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6.0		5.0	3.4	mg/L			06/14/16 09:51	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: EQBL060816**

**Lab Sample ID: 400-122850-3**

**Date Collected: 06/08/16 16:05**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

**Method: 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/11/16 11:27	1
Fluoride	<0.082		0.20	0.082	mg/L			06/11/16 11:27	1
Sulfate	<0.70		1.0	0.70	mg/L			06/11/16 11:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 13:05	06/16/16 10:59	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/10/16 13:05	06/16/16 10:59	5
Barium	<0.00049		0.0025	0.00049	mg/L		06/10/16 13:05	06/16/16 10:59	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 10:59	5
Boron	<0.021		0.050	0.021	mg/L		06/10/16 13:05	06/16/16 10:59	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 10:59	5
Calcium	<0.13		0.25	0.13	mg/L		06/10/16 13:05	06/16/16 10:59	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 13:05	06/16/16 10:59	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 13:05	06/16/16 10:59	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 13:05	06/16/16 10:59	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 13:05	06/16/16 10:59	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 13:05	06/16/16 10:59	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 13:05	06/16/16 10:59	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 13:05	06/16/16 10:59	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/10/16 12:52	06/13/16 12:20	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4.0	J	5.0	3.4	mg/L			06/14/16 09:51	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: BGWC-18**

**Lab Sample ID: 400-122850-4**

**Date Collected: 06/08/16 09:55**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	48		1.0	0.89	mg/L			06/11/16 11:50	1
Fluoride	0.10	J	0.20	0.082	mg/L			06/11/16 11:50	1
Sulfate	120		5.0	3.5	mg/L			06/14/16 04:39	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 13:05	06/16/16 12:37	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/10/16 13:05	06/16/16 12:37	5
Barium	0.039		0.0025	0.00049	mg/L		06/10/16 13:05	06/16/16 12:37	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 12:37	5
Boron	1.2		0.050	0.021	mg/L		06/10/16 13:05	06/16/16 12:37	5
Cadmium	0.00063	J	0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 12:37	5
Calcium	76		0.25	0.13	mg/L		06/10/16 13:05	06/16/16 12:37	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 13:05	06/16/16 12:37	5
Cobalt	0.00071	J	0.0025	0.00040	mg/L		06/10/16 13:05	06/16/16 12:37	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 13:05	06/16/16 12:37	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 13:05	06/16/16 12:37	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 13:05	06/16/16 12:37	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 13:05	06/16/16 12:37	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 13:05	06/16/16 12:37	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/10/16 12:52	06/13/16 12:22	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	390		5.0	3.4	mg/L			06/14/16 09:51	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: BGWC-19**

**Date Collected: 06/08/16 12:05**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-5**

**Matrix: Water**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>23</b>		1.0	0.89	mg/L			06/11/16 12:13	1
Fluoride	<0.082		0.20	0.082	mg/L			06/11/16 12:13	1
<b>Sulfate</b>	<b>110</b>		5.0	3.5	mg/L			06/14/16 05:02	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 13:05	06/16/16 13:42	5
<b>Arsenic</b>	<b>0.00046</b>	<b>J</b>	0.0013	0.00046	mg/L		06/10/16 13:05	06/16/16 13:42	5
<b>Barium</b>	<b>0.036</b>		0.0025	0.00049	mg/L		06/10/16 13:05	06/16/16 13:42	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 13:42	5
<b>Boron</b>	<b>0.49</b>		0.050	0.021	mg/L		06/10/16 13:05	06/16/16 13:42	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 13:42	5
<b>Calcium</b>	<b>55</b>		0.25	0.13	mg/L		06/10/16 13:05	06/16/16 13:42	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 13:05	06/16/16 13:42	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 13:05	06/16/16 13:42	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 13:05	06/16/16 13:42	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 13:05	06/16/16 13:42	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 13:05	06/16/16 13:42	5
<b>Selenium</b>	<b>0.00043</b>	<b>J</b>	0.0013	0.00024	mg/L		06/10/16 13:05	06/16/16 13:42	5
<b>Thallium</b>	<b>0.000085</b>	<b>J</b>	0.00050	0.000085	mg/L		06/10/16 13:05	06/16/16 13:42	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/10/16 12:52	06/13/16 12:23	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>340</b>		5.0	3.4	mg/L			06/14/16 09:51	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: BGWC-7**

**Lab Sample ID: 400-122850-6**

**Date Collected: 06/08/16 13:15**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11		1.0	0.89	mg/L			06/11/16 12:36	1
Fluoride	0.19	J	0.20	0.082	mg/L			06/11/16 12:36	1
Sulfate	410		20	14	mg/L			06/14/16 05:25	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 13:05	06/16/16 13:46	5
Arsenic	0.0024		0.0013	0.00046	mg/L		06/10/16 13:05	06/16/16 13:46	5
Barium	0.048		0.0025	0.00049	mg/L		06/10/16 13:05	06/16/16 13:46	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 13:46	5
Boron	1.7		0.050	0.021	mg/L		06/10/16 13:05	06/16/16 13:46	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 13:46	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 13:05	06/16/16 13:46	5
Cobalt	0.00081	J	0.0025	0.00040	mg/L		06/10/16 13:05	06/16/16 13:46	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 13:05	06/16/16 13:46	5
Lithium	0.0079		0.0050	0.0032	mg/L		06/10/16 13:05	06/16/16 13:46	5
Molybdenum	0.0088	J	0.015	0.00085	mg/L		06/10/16 13:05	06/16/16 13:46	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 13:05	06/16/16 13:46	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 13:05	06/16/16 13:46	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	140		1.3	0.63	mg/L		06/10/16 13:05	06/16/16 14:45	25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/10/16 12:52	06/13/16 12:31	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	800		5.0	3.4	mg/L			06/14/16 09:51	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: BGWC-25**

**Date Collected: 06/08/16 15:15**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-7**

**Matrix: Water**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.4		1.0	0.89	mg/L			06/11/16 13:44	1
Fluoride	0.14	J	0.20	0.082	mg/L			06/11/16 13:44	1
Sulfate	10		1.0	0.70	mg/L			06/11/16 13:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 13:05	06/16/16 13:51	5
Arsenic	0.0037		0.0013	0.00046	mg/L		06/10/16 13:05	06/16/16 13:51	5
Barium	0.038		0.0025	0.00049	mg/L		06/10/16 13:05	06/16/16 13:51	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 13:51	5
Boron	0.029	J	0.050	0.021	mg/L		06/10/16 13:05	06/16/16 13:51	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 13:51	5
Calcium	32		0.25	0.13	mg/L		06/10/16 13:05	06/16/16 13:51	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 13:05	06/16/16 13:51	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 13:05	06/16/16 13:51	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 13:05	06/16/16 13:51	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 13:05	06/16/16 13:51	5
Molybdenum	0.0064	J	0.015	0.00085	mg/L		06/10/16 13:05	06/16/16 13:51	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 13:05	06/16/16 13:51	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 13:05	06/16/16 13:51	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/10/16 12:52	06/13/16 12:33	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	170		5.0	3.4	mg/L			06/14/16 09:51	1



# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: BGWC-21**

**Date Collected: 06/08/16 15:10**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-8**

**Matrix: Water**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>7.1</b>		1.0	0.89	mg/L			06/11/16 14:07	1
Fluoride	<0.082		0.20	0.082	mg/L			06/11/16 14:07	1
<b>Sulfate</b>	<b>75</b>		5.0	3.5	mg/L			06/14/16 06:33	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 13:05	06/16/16 13:55	5
<b>Arsenic</b>	<b>0.0015</b>		0.0013	0.00046	mg/L		06/10/16 13:05	06/16/16 13:55	5
<b>Barium</b>	<b>0.054</b>		0.0025	0.00049	mg/L		06/10/16 13:05	06/16/16 13:55	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 13:55	5
<b>Boron</b>	<b>0.12</b>		0.050	0.021	mg/L		06/10/16 13:05	06/16/16 13:55	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 13:55	5
<b>Calcium</b>	<b>43</b>		0.25	0.13	mg/L		06/10/16 13:05	06/16/16 13:55	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 13:05	06/16/16 13:55	5
<b>Cobalt</b>	<b>0.00041</b>	<b>J</b>	0.0025	0.00040	mg/L		06/10/16 13:05	06/16/16 13:55	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 13:05	06/16/16 13:55	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 13:05	06/16/16 13:55	5
<b>Molybdenum</b>	<b>0.0027</b>	<b>J</b>	0.015	0.00085	mg/L		06/10/16 13:05	06/16/16 13:55	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 13:05	06/16/16 13:55	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 13:05	06/16/16 13:55	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/10/16 12:52	06/13/16 12:34	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>260</b>		5.0	3.4	mg/L			06/14/16 10:33	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: BGWC-20**

**Date Collected: 06/08/16 12:50**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-9**

**Matrix: Water**

**Method: 300.0 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	130		20	18	mg/L			06/14/16 06:56	20
Fluoride	0.090	J	0.20	0.082	mg/L			06/13/16 13:07	1
Sulfate	530		20	14	mg/L			06/14/16 06:56	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 13:05	06/16/16 14:00	5
Arsenic	0.0011	J	0.0013	0.00046	mg/L		06/10/16 13:05	06/16/16 14:00	5
Barium	0.036		0.0025	0.00049	mg/L		06/10/16 13:05	06/16/16 14:00	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 14:00	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 14:00	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 13:05	06/16/16 14:00	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 13:05	06/16/16 14:00	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 13:05	06/16/16 14:00	5
Lithium	0.016		0.0050	0.0032	mg/L		06/10/16 13:05	06/16/16 14:00	5
Molybdenum	0.011	J	0.015	0.00085	mg/L		06/10/16 13:05	06/16/16 14:00	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 13:05	06/16/16 14:00	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 13:05	06/16/16 14:00	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.6		1.0	0.42	mg/L		06/10/16 13:05	06/16/16 14:49	100
Calcium	200		5.0	2.5	mg/L		06/10/16 13:05	06/16/16 14:49	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/10/16 12:52	06/13/16 12:35	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1000		5.0	3.4	mg/L			06/14/16 10:33	1

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
E	Result exceeded calibration range.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

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

## Glossary

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

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: BGWC-22**

**Date Collected: 06/08/16 13:33**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309735	06/11/16 10:42	TAJ	TAL PEN
Total/NA	Analysis	300.0		20	309960	06/14/16 04:17	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309505	06/10/16 13:05	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 12:33	RJB	TAL PEN
Total Recoverable	Prep	3005A	DL		309505	06/10/16 13:05	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	100	310197	06/16/16 14:40	RJB	TAL PEN
Total/NA	Prep	7470A			309506	06/10/16 12:52	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309788	06/13/16 12:13	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Client Sample ID: FBL060816**

**Date Collected: 06/08/16 15:55**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309735	06/11/16 11:05	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309505	06/10/16 13:05	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 10:54	RJB	TAL PEN
Total/NA	Prep	7470A			309506	06/10/16 12:52	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309788	06/13/16 12:19	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Client Sample ID: EQBL060816**

**Date Collected: 06/08/16 16:05**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309735	06/11/16 11:27	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309505	06/10/16 13:05	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 10:59	RJB	TAL PEN
Total/NA	Prep	7470A			309506	06/10/16 12:52	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309788	06/13/16 12:20	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Client Sample ID: BGWC-18**

**Date Collected: 06/08/16 09:55**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309735	06/11/16 11:50	TAJ	TAL PEN
Total/NA	Analysis	300.0		5	309960	06/14/16 04:39	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309505	06/10/16 13:05	RJB	TAL PEN

TestAmerica Pensacola

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: BGWC-18**

**Lab Sample ID: 400-122850-4**

**Date Collected: 06/08/16 09:55**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6020		5	310197	06/16/16 12:37	RJB	TAL PEN
Total/NA	Prep	7470A			309506	06/10/16 12:52	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309788	06/13/16 12:22	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Client Sample ID: BGWC-19**

**Lab Sample ID: 400-122850-5**

**Date Collected: 06/08/16 12:05**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309735	06/11/16 12:13	TAJ	TAL PEN
Total/NA	Analysis	300.0		5	309960	06/14/16 05:02	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309505	06/10/16 13:05	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 13:42	RJB	TAL PEN
Total/NA	Prep	7470A			309506	06/10/16 12:52	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309788	06/13/16 12:23	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Client Sample ID: BGWC-7**

**Lab Sample ID: 400-122850-6**

**Date Collected: 06/08/16 13:15**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309735	06/11/16 12:36	TAJ	TAL PEN
Total/NA	Analysis	300.0		20	309960	06/14/16 05:25	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309505	06/10/16 13:05	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 13:46	RJB	TAL PEN
Total Recoverable	Prep	3005A	DL		309505	06/10/16 13:05	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	25	310197	06/16/16 14:45	RJB	TAL PEN
Total/NA	Prep	7470A			309506	06/10/16 12:52	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309788	06/13/16 12:31	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Client Sample ID: BGWC-25**

**Lab Sample ID: 400-122850-7**

**Date Collected: 06/08/16 15:15**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309735	06/11/16 13:44	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309505	06/10/16 13:05	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 13:51	RJB	TAL PEN
Total/NA	Prep	7470A			309506	06/10/16 12:52	JAP	TAL PEN

TestAmerica Pensacola

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

**Client Sample ID: BGWC-25**

**Lab Sample ID: 400-122850-7**

**Date Collected: 06/08/16 15:15**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7470A		1	309788	06/13/16 12:33	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Client Sample ID: BGWC-21**

**Lab Sample ID: 400-122850-8**

**Date Collected: 06/08/16 15:10**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309735	06/11/16 14:07	TAJ	TAL PEN
Total/NA	Analysis	300.0		5	309960	06/14/16 06:33	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309505	06/10/16 13:05	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 13:55	RJB	TAL PEN
Total/NA	Prep	7470A			309506	06/10/16 12:52	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309788	06/13/16 12:34	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309932	06/14/16 10:33	CAC	TAL PEN

**Client Sample ID: BGWC-20**

**Lab Sample ID: 400-122850-9**

**Date Collected: 06/08/16 12:50**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309830	06/13/16 13:07	TAJ	TAL PEN
Total/NA	Analysis	300.0		20	309960	06/14/16 06:56	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309505	06/10/16 13:05	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 14:00	RJB	TAL PEN
Total Recoverable	Prep	3005A	DL		309505	06/10/16 13:05	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	100	310197	06/16/16 14:49	RJB	TAL PEN
Total/NA	Prep	7470A			309506	06/10/16 12:52	JAP	TAL PEN
Total/NA	Analysis	7470A		1	309788	06/13/16 12:35	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309932	06/14/16 10:33	CAC	TAL PEN

**Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## HPLC/IC

### Analysis Batch: 309735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122759-A-9 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
400-122843-A-10 MS	Matrix Spike	Total/NA	Water	300.0	
400-122850-1	BGWC-22	Total/NA	Water	300.0	
400-122850-2	FBL060816	Total/NA	Water	300.0	
400-122850-3	EQBL060816	Total/NA	Water	300.0	
400-122850-4	BGWC-18	Total/NA	Water	300.0	
400-122850-5	BGWC-19	Total/NA	Water	300.0	
400-122850-6	BGWC-7	Total/NA	Water	300.0	
400-122850-7	BGWC-25	Total/NA	Water	300.0	
400-122850-8	BGWC-21	Total/NA	Water	300.0	
LCS 400-309735/35	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-309735/36	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-309735/34	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 309830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122850-9	BGWC-20	Total/NA	Water	300.0	
400-122850-9 MS	BGWC-20	Total/NA	Water	300.0	
400-122850-9 MSD	BGWC-20	Total/NA	Water	300.0	
LCS 400-309830/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-309830/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-309830/4	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 309960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122843-A-9 MS	Matrix Spike	Total/NA	Water	300.0	
400-122843-A-9 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
400-122850-1	BGWC-22	Total/NA	Water	300.0	
400-122850-4	BGWC-18	Total/NA	Water	300.0	
400-122850-5	BGWC-19	Total/NA	Water	300.0	
400-122850-6	BGWC-7	Total/NA	Water	300.0	
400-122850-8	BGWC-21	Total/NA	Water	300.0	
400-122850-9	BGWC-20	Total/NA	Water	300.0	
LCS 400-309960/36	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-309960/37	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-309960/35	Method Blank	Total/NA	Water	300.0	

## Metals

### Prep Batch: 309505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122843-B-1-B MS ^5	Matrix Spike	Total Recoverable	Water	3005A	
400-122843-B-1-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
400-122850-1	BGWC-22	Total Recoverable	Water	3005A	
400-122850-1 - DL	BGWC-22	Total Recoverable	Water	3005A	
400-122850-2	FBL060816	Total Recoverable	Water	3005A	
400-122850-3	EQBL060816	Total Recoverable	Water	3005A	
400-122850-4	BGWC-18	Total Recoverable	Water	3005A	
400-122850-5	BGWC-19	Total Recoverable	Water	3005A	
400-122850-6	BGWC-7	Total Recoverable	Water	3005A	

TestAmerica Pensacola

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## Metals (Continued)

### Prep Batch: 309505 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122850-6 - DL	BGWC-7	Total Recoverable	Water	3005A	
400-122850-7	BGWC-25	Total Recoverable	Water	3005A	
400-122850-8	BGWC-21	Total Recoverable	Water	3005A	
400-122850-9	BGWC-20	Total Recoverable	Water	3005A	
400-122850-9 - DL	BGWC-20	Total Recoverable	Water	3005A	
LCS 400-309505/2-A ^1	Lab Control Sample	Total Recoverable	Water	3005A	
MB 400-309505/1-A ^5	Method Blank	Total Recoverable	Water	3005A	

### Prep Batch: 309506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122850-1	BGWC-22	Total/NA	Water	7470A	
400-122850-1 MS	BGWC-22	Total/NA	Water	7470A	
400-122850-1 MSD	BGWC-22	Total/NA	Water	7470A	
400-122850-2	FBL060816	Total/NA	Water	7470A	
400-122850-3	EQBL060816	Total/NA	Water	7470A	
400-122850-4	BGWC-18	Total/NA	Water	7470A	
400-122850-5	BGWC-19	Total/NA	Water	7470A	
400-122850-6	BGWC-7	Total/NA	Water	7470A	
400-122850-7	BGWC-25	Total/NA	Water	7470A	
400-122850-8	BGWC-21	Total/NA	Water	7470A	
400-122850-9	BGWC-20	Total/NA	Water	7470A	
LCS 400-309506/15-A	Lab Control Sample	Total/NA	Water	7470A	
MB 400-309506/14-A	Method Blank	Total/NA	Water	7470A	

### Analysis Batch: 309788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122850-1	BGWC-22	Total/NA	Water	7470A	309506
400-122850-1 MS	BGWC-22	Total/NA	Water	7470A	309506
400-122850-1 MSD	BGWC-22	Total/NA	Water	7470A	309506
400-122850-2	FBL060816	Total/NA	Water	7470A	309506
400-122850-3	EQBL060816	Total/NA	Water	7470A	309506
400-122850-4	BGWC-18	Total/NA	Water	7470A	309506
400-122850-5	BGWC-19	Total/NA	Water	7470A	309506
400-122850-6	BGWC-7	Total/NA	Water	7470A	309506
400-122850-7	BGWC-25	Total/NA	Water	7470A	309506
400-122850-8	BGWC-21	Total/NA	Water	7470A	309506
400-122850-9	BGWC-20	Total/NA	Water	7470A	309506
LCS 400-309506/15-A	Lab Control Sample	Total/NA	Water	7470A	309506
MB 400-309506/14-A	Method Blank	Total/NA	Water	7470A	309506

### Analysis Batch: 310197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122843-B-1-B MS ^5	Matrix Spike	Total Recoverable	Water	6020	309505
400-122843-B-1-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	6020	309505
400-122850-1	BGWC-22	Total Recoverable	Water	6020	309505
400-122850-1 - DL	BGWC-22	Total Recoverable	Water	6020	309505
400-122850-2	FBL060816	Total Recoverable	Water	6020	309505
400-122850-3	EQBL060816	Total Recoverable	Water	6020	309505
400-122850-4	BGWC-18	Total Recoverable	Water	6020	309505
400-122850-5	BGWC-19	Total Recoverable	Water	6020	309505
400-122850-6	BGWC-7	Total Recoverable	Water	6020	309505

TestAmerica Pensacola



# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## Metals (Continued)

### Analysis Batch: 310197 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122850-6 - DL	BGWC-7	Total Recoverable	Water	6020	309505
400-122850-7	BGWC-25	Total Recoverable	Water	6020	309505
400-122850-8	BGWC-21	Total Recoverable	Water	6020	309505
400-122850-9	BGWC-20	Total Recoverable	Water	6020	309505
400-122850-9 - DL	BGWC-20	Total Recoverable	Water	6020	309505
LCS 400-309505/2-A ^1	Lab Control Sample	Total Recoverable	Water	6020	309505
MB 400-309505/1-A ^5	Method Blank	Total Recoverable	Water	6020	309505

## General Chemistry

### Analysis Batch: 309892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122850-1	BGWC-22	Total/NA	Water	SM 2540C	
400-122850-2	FBL060816	Total/NA	Water	SM 2540C	
400-122850-3	EQBL060816	Total/NA	Water	SM 2540C	
400-122850-4	BGWC-18	Total/NA	Water	SM 2540C	
400-122850-5	BGWC-19	Total/NA	Water	SM 2540C	
400-122850-6	BGWC-7	Total/NA	Water	SM 2540C	
400-122850-7	BGWC-25	Total/NA	Water	SM 2540C	
400-122891-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	
400-122891-A-3 DU	Duplicate	Total/NA	Water	SM 2540C	
LCS 400-309892/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 400-309892/1	Method Blank	Total/NA	Water	SM 2540C	

### Analysis Batch: 309932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122833-A-3 DU	Duplicate	Total/NA	Water	SM 2540C	
400-122843-A-10 DU	Duplicate	Total/NA	Water	SM 2540C	
400-122850-8	BGWC-21	Total/NA	Water	SM 2540C	
400-122850-9	BGWC-20	Total/NA	Water	SM 2540C	
LCS 400-309932/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 400-309932/1	Method Blank	Total/NA	Water	SM 2540C	

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 400-309735/34**  
**Matrix: Water**  
**Analysis Batch: 309735**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/11/16 02:20	1
Fluoride	<0.082		0.20	0.082	mg/L			06/11/16 02:20	1
Sulfate	<0.70		1.0	0.70	mg/L			06/11/16 02:20	1

**Lab Sample ID: LCS 400-309735/35**  
**Matrix: Water**  
**Analysis Batch: 309735**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.44		mg/L		94	90 - 110
Fluoride	10.0	9.77		mg/L		98	90 - 110
Sulfate	10.0	9.15		mg/L		92	90 - 110

**Lab Sample ID: LCSD 400-309735/36**  
**Matrix: Water**  
**Analysis Batch: 309735**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.29		mg/L		93	90 - 110	2	15
Fluoride	10.0	9.72		mg/L		97	90 - 110	1	15
Sulfate	10.0	9.04		mg/L		90	90 - 110	1	15

**Lab Sample ID: 400-122759-A-9 MSD**  
**Matrix: Water**  
**Analysis Batch: 309735**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2.8		10.0	12.8		mg/L		101	80 - 120	1	20
Fluoride	<0.082		10.0	10.5		mg/L		105	80 - 120	1	20
Sulfate	5.2		10.0	15.9		mg/L		106	80 - 120	3	20

**Lab Sample ID: 400-122843-A-10 MS**  
**Matrix: Water**  
**Analysis Batch: 309735**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	<0.89	F1	10.0	23.9		mg/L			
Fluoride	<0.082		10.0	11.2		mg/L			
Sulfate	<0.70	F1	10.0	481	E	mg/L			

**Lab Sample ID: MB 400-309830/4**  
**Matrix: Water**  
**Analysis Batch: 309830**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/13/16 11:59	1
Fluoride	<0.082		0.20	0.082	mg/L			06/13/16 11:59	1
Sulfate	<0.70		1.0	0.70	mg/L			06/13/16 11:59	1

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 400-309830/5**  
**Matrix: Water**  
**Analysis Batch: 309830**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.91		mg/L		99	90 - 110
Fluoride	10.0	10.2		mg/L		102	90 - 110
Sulfate	10.0	9.37		mg/L		94	90 - 110

**Lab Sample ID: LCSD 400-309830/6**  
**Matrix: Water**  
**Analysis Batch: 309830**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.67		mg/L		97	90 - 110	2	15
Fluoride	10.0	10.1		mg/L		101	90 - 110	1	15
Sulfate	10.0	9.30		mg/L		93	90 - 110	1	15

**Lab Sample ID: 400-122850-9 MS**  
**Matrix: Water**  
**Analysis Batch: 309830**

**Client Sample ID: BGWC-20**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	130	E	10.0	140	E 4	mg/L		80	80 - 120
Fluoride	0.090	J	10.0	11.6		mg/L		115	80 - 120
Sulfate	530	E	10.0	550	E 4	mg/L		179	80 - 120

**Lab Sample ID: 400-122850-9 MSD**  
**Matrix: Water**  
**Analysis Batch: 309830**

**Client Sample ID: BGWC-20**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	130	E	10.0	139	E 4	mg/L		69	80 - 120	1	20
Fluoride	0.090	J	10.0	11.5		mg/L		114	80 - 120	0	20
Sulfate	530	E	10.0	548	E 4	mg/L		160	80 - 120	0	20

**Lab Sample ID: MB 400-309960/35**  
**Matrix: Water**  
**Analysis Batch: 309960**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/14/16 00:05	1
Fluoride	<0.082		0.20	0.082	mg/L			06/14/16 00:05	1
Sulfate	<0.70		1.0	0.70	mg/L			06/14/16 00:05	1

**Lab Sample ID: LCS 400-309960/36**  
**Matrix: Water**  
**Analysis Batch: 309960**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.49		mg/L		95	90 - 110
Fluoride	10.0	9.88		mg/L		99	90 - 110
Sulfate	10.0	9.37		mg/L		94	90 - 110

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCSD 400-309960/37**  
**Matrix: Water**  
**Analysis Batch: 309960**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.58		mg/L		96	90 - 110	1	15
Fluoride	10.0	10.0		mg/L		100	90 - 110	2	15
Sulfate	10.0	9.38		mg/L		94	90 - 110	0	15

**Lab Sample ID: 400-122843-A-9 MS**  
**Matrix: Water**  
**Analysis Batch: 309960**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	<8.9		100	110		mg/L		110	80 - 120		
Fluoride	<0.82		100	112		mg/L		112	80 - 120		
Sulfate	850	E	100	948	E 4	mg/L		99	80 - 120		

**Lab Sample ID: 400-122843-A-9 MSD**  
**Matrix: Water**  
**Analysis Batch: 309960**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	<8.9		100	111		mg/L		111	80 - 120	0	20
Fluoride	<0.82		100	111		mg/L		111	80 - 120	1	20
Sulfate	850	E	100	951	E 4	mg/L		102	80 - 120	0	20

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

**Lab Sample ID: MB 400-309505/1-A ^5**  
**Matrix: Water**  
**Analysis Batch: 310197**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309505**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/10/16 13:05	06/16/16 10:41	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/10/16 13:05	06/16/16 10:41	5
Barium	<0.00049		0.0025	0.00049	mg/L		06/10/16 13:05	06/16/16 10:41	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 10:41	5
Boron	<0.021		0.050	0.021	mg/L		06/10/16 13:05	06/16/16 10:41	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/10/16 13:05	06/16/16 10:41	5
Calcium	<0.13		0.25	0.13	mg/L		06/10/16 13:05	06/16/16 10:41	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/10/16 13:05	06/16/16 10:41	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/10/16 13:05	06/16/16 10:41	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/10/16 13:05	06/16/16 10:41	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/10/16 13:05	06/16/16 10:41	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/10/16 13:05	06/16/16 10:41	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/10/16 13:05	06/16/16 10:41	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/10/16 13:05	06/16/16 10:41	5

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

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

**Lab Sample ID: LCS 400-309505/2-A ^1**  
**Matrix: Water**  
**Analysis Batch: 310197**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309505**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	0.0500	0.0560		mg/L		112	80 - 120
Arsenic	0.0500	0.0520		mg/L		104	80 - 120
Barium	0.0500	0.0532		mg/L		106	80 - 120
Beryllium	0.0500	0.0466		mg/L		93	80 - 120
Boron	0.100	0.0961		mg/L		96	80 - 120
Cadmium	0.0500	0.0527		mg/L		105	80 - 120
Calcium	5.00	5.12		mg/L		102	80 - 120
Chromium	0.0500	0.0501		mg/L		100	80 - 120
Cobalt	0.0500	0.0502		mg/L		100	80 - 120
Lead	0.0500	0.0544		mg/L		109	80 - 120
Lithium	0.0500	0.0482		mg/L		96	80 - 120
Molybdenum	0.0500	0.0492		mg/L		98	80 - 120
Selenium	0.0500	0.0497		mg/L		99	80 - 120
Thallium	0.0100	0.0102		mg/L		102	80 - 120

**Lab Sample ID: 400-122843-B-1-B MS ^5**  
**Matrix: Water**  
**Analysis Batch: 310197**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309505**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	<0.0010		0.0500	0.0570		mg/L		114	75 - 125
Arsenic	<0.00046		0.0500	0.0532		mg/L		106	75 - 125
Barium	0.020		0.0500	0.0739		mg/L		108	75 - 125
Beryllium	<0.00034		0.0500	0.0488		mg/L		98	75 - 125
Boron	<0.021		0.100	0.0790		mg/L		79	75 - 125
Cadmium	<0.00034		0.0500	0.0529		mg/L		106	75 - 125
Calcium	1.9		5.00	6.81		mg/L		98	75 - 125
Chromium	0.0022	J	0.0500	0.0522		mg/L		100	75 - 125
Cobalt	<0.00040		0.0500	0.0508		mg/L		102	75 - 125
Lead	<0.00035		0.0500	0.0513		mg/L		103	75 - 125
Lithium	<0.0032		0.0500	0.0510		mg/L		102	75 - 125
Molybdenum	<0.00085		0.0500	0.0497		mg/L		99	75 - 125
Selenium	<0.00024		0.0500	0.0510		mg/L		102	75 - 125
Thallium	<0.00085		0.0100	0.0102		mg/L		102	75 - 125

**Lab Sample ID: 400-122843-B-1-C MSD ^5**  
**Matrix: Water**  
**Analysis Batch: 310197**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309505**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	<0.0010		0.0500	0.0560		mg/L		112	75 - 125	2	20
Arsenic	<0.00046		0.0500	0.0525		mg/L		105	75 - 125	1	20
Barium	0.020		0.0500	0.0736		mg/L		107	75 - 125	0	20
Beryllium	<0.00034		0.0500	0.0473		mg/L		95	75 - 125	3	20
Boron	<0.021		0.100	0.0780		mg/L		78	75 - 125	1	20
Cadmium	<0.00034		0.0500	0.0513		mg/L		103	75 - 125	3	20
Calcium	1.9		5.00	6.87		mg/L		99	75 - 125	1	20
Chromium	0.0022	J	0.0500	0.0525		mg/L		101	75 - 125	1	20

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

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

Lab Sample ID: 400-122843-B-1-C MSD ^5  
Matrix: Water  
Analysis Batch: 310197

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total Recoverable  
Prep Batch: 309505

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Cobalt	<0.00040		0.0500	0.0507		mg/L		101	75 - 125	0	20
Lead	<0.00035		0.0500	0.0504		mg/L		101	75 - 125	2	20
Lithium	<0.0032		0.0500	0.0488		mg/L		98	75 - 125	4	20
Molybdenum	<0.00085		0.0500	0.0509		mg/L		102	75 - 125	2	20
Selenium	<0.00024		0.0500	0.0522		mg/L		104	75 - 125	2	20
Thallium	<0.000085		0.0100	0.0104		mg/L		104	75 - 125	2	20

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-309506/14-A  
Matrix: Water  
Analysis Batch: 309788

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 309506

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	<0.000070		0.00020	0.000070	mg/L		06/10/16 12:49	06/13/16 12:11	1

Lab Sample ID: LCS 400-309506/15-A  
Matrix: Water  
Analysis Batch: 309788

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 309506

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Mercury	0.00101	0.000885		mg/L		88	80 - 120

Lab Sample ID: 400-122850-1 MS  
Matrix: Water  
Analysis Batch: 309788

Client Sample ID: BGWC-22  
Prep Type: Total/NA  
Prep Batch: 309506

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Mercury	0.000092	J F1	0.00201	0.00151	F1	mg/L		71	80 - 120

Lab Sample ID: 400-122850-1 MSD  
Matrix: Water  
Analysis Batch: 309788

Client Sample ID: BGWC-22  
Prep Type: Total/NA  
Prep Batch: 309506

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Mercury	0.000092	J F1	0.00201	0.00155	F1	mg/L		73	80 - 120	3	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-309892/1  
Matrix: Water  
Analysis Batch: 309892

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			06/14/16 09:51	1

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# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: LCS 400-309892/2**  
**Matrix: Water**  
**Analysis Batch: 309892**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	264		mg/L		90	78 - 122

**Lab Sample ID: 400-122891-A-1 DU**  
**Matrix: Water**  
**Analysis Batch: 309892**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	5200		5110		mg/L		2	5

**Lab Sample ID: 400-122891-A-3 DU**  
**Matrix: Water**  
**Analysis Batch: 309892**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	4800		4710		mg/L		2	5

**Lab Sample ID: MB 400-309932/1**  
**Matrix: Water**  
**Analysis Batch: 309932**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			06/14/16 10:33	1

**Lab Sample ID: LCS 400-309932/2**  
**Matrix: Water**  
**Analysis Batch: 309932**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	278		mg/L		95	78 - 122

**Lab Sample ID: 400-122833-A-3 DU**  
**Matrix: Water**  
**Analysis Batch: 309932**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	70		72.0		mg/L		3	5

**Lab Sample ID: 400-122843-A-10 DU**  
**Matrix: Water**  
**Analysis Batch: 309932**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	750		768		mg/L		3	5



**Georgia Power Environmental Laboratory**  
 2480 Maner Road, Bin 39110  
 Atlanta, Georgia 30339  
 Phone: (404) 799-2100  
 Company: 8-530-2100

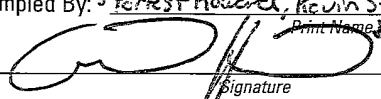
**ANALYSIS REQUEST AND  
 CHAIN OF CUSTODY RECORD**

**LAB USE ONLY**  
 Work Order No. \_\_\_\_\_  
 Reviewed By: \_\_\_\_\_

<sup>12</sup> Page 1 of 1

<sup>13</sup> Standard Turnaround Time  
 # of Business Days (Rush)  
 (Must be cleared through Env. Lab. prior to shipment)

Company: <sup>1</sup> Southern Company Services  
 Report To: Joju Abraham  
 Address: <sup>2</sup> 241 Ralph McGill Blvd SE B10105  
Atlanta, GA 30308  
 Phone/Fax: <sup>3</sup> 404-506-7239  
 Contact: <sup>4</sup> Joju Abraham  
 Project Location: <sup>5</sup> Plant Bowen  
 Account Number: <sup>6</sup> \_\_\_\_\_  
 Special Instructions: <sup>7</sup> CCR Ash Pond

Sample Shipment Date: <sup>8</sup> 6/9/16  
 Sampled By: <sup>9</sup> Forrest Howard, Kevin Stevenson, Robert Mull  
Print Name: Michael Patinkin  
  
 Signature

Sample Received Date: <sup>10</sup> 6/9/16 @ 7:20  
 Sample Received By: <sup>11</sup> [Signature]  
 Authorization to subcontract analysis will be assumed acceptable by customer unless stated otherwise.

PRESERVATIVE <sup>21</sup>				Sample Type Key: <sup>23</sup>	
N	I	N		G-Grab	C-Composite
				D-Other	
ANALYSIS REQUESTED <sup>22</sup>					
				Matrix Key: <sup>24</sup>	
				O-Oil	SW-Surface Water
				S-Solid	GW-Ground Water
				SL-Sludge	WW-Waste Water
				W-Wipe	DW-Drinking Water
				LQ-Liquid	DW-Other Water

18	19	20	Preservative Key: <sup>25</sup>		
Sample Type	Matrix	No. of Containers	H-Hydrochloric Acid	N-Nitric Acid	S-Sulfuric Acid
			SH-Sodium Hydroxide	P-Phosphoric Acid	ST-Sodium Thiosulfate
			I-Ice	U-Unpreserved	O-Other (Specify)
			LAB USE ONLY <sup>26</sup>		
			Comments		

Page 31 of 33

LAB USE ONLY <sup>14</sup> LAB ID	Sample Number <sup>15</sup>	Collection <sup>16</sup>		Sample Description <sup>17</sup>	Sample Type	Matrix	No. of Containers	Metals App III + IV EPA 602.0 + EPA 747.0 C11F, S04 EPA 300 TDS SM 2540 C Radium 22.6 + 228 SW 846 9315 + 9326			LAB USE ONLY <sup>26</sup> Comments
		Date	Time					X	X	X	
	BGWC-22	6/8/16	1333	Ground Water	G	GW	3	X	X	X	
	FBL060816	6/8/16	1555	Field Blank	G	OW	3	X	X	X	
	EQBL060816	6/8/16	1605	Rinsate Waterlevel Probe	G	OW	3	X	X	X	
	BGWC-18	6/8/16	0955	Ground Water	G	GW	3	X	X	X	
	BGWC-19	6/8/16	1205	Ground Water	G	GW	3	X	X	X	
	BGWC-7	6/8/16	1315	Ground Water	G	GW	3	X	X	X	
	BGWC-25	6/8/16	1515	Ground Water	G	GW	3	X	X	X	
	BGWC-21	6/8/16	1510	Ground Water	G	GW	3	X	X	X	
	BGWC-20	6/8/16	1250	Ground Water	G	GW	3	X	X	X	



400-122850 COC

FOR CHAIN OF CUSTODY USE ONLY <sup>27</sup>				LAB USE ONLY: Sample Receipt Information <sup>30</sup>	
Relinquished by: <sup>28</sup> <u>[Signature]</u>	Date/Time	<u>6/9/16 @ 12:00</u>	<u>3.2°C (61.8°F - 4°F)</u>	<u>With icy, cooler in good condition, seal, PHL2, Hand.</u>	
Received by: <sup>29</sup> <u>[Signature]</u>	Date/Time	<u>6/9/16 @ 20:15</u>	<u>20.5°C</u>		
Relinquished by:	Date/Time	<u>8:55</u>	<u>11.5°C 10.6°C 20.6°C 23.0°C 0.0°C, 0.0°C, 0.0°C</u>		
Received by:	Date/Time				

6/17/2016





## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-122850-1

SDG Number: Ash Pond

**Login Number: 122850**

**List Number: 1**

**Creator: Benforado, Jessica L**

**List Source: TestAmerica Pensacola**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	Rads are only samples received in coolers outside of 0.0°C-6.0°C.
Cooler Temperature is recorded.	True	0.0°C, 0.0°C, 0.0°C, 11.5°C, 10.6°C, 20.6°C, 23.0°C IR-5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-1  
SDG: Ash Pond

## Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-16
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	07-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-17 *
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	06-30-16

\* Certification renewal pending - certification considered valid.



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-122850-2

TestAmerica Sample Delivery Group: Ash Pond

Client Project/Site: CCR Plant Bowen

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

7/13/2016 5:22:11 PM

Cheyenne Whitmire, Project Manager II

(850)474-1001

[cheyenne.whitmire@testamericainc.com](mailto:cheyenne.whitmire@testamericainc.com)

### LINKS

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

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

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# Case Narrative

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

**Job ID: 400-122850-2**

**Laboratory: TestAmerica Pensacola**

## Narrative

### Job Narrative 400-122850-2

#### **RAD**

Method(s) PrecSep\_0: Radium-228 Prep Batch 160-256920: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: BGWC-22 (400-122850-1), FBL060816 (400-122850-2), EQBL060816 (400-122850-3), BGWC-18 (400-122850-4), BGWC-19 (400-122850-5), BGWC-7 (400-122850-6), BGWC-25 (400-122850-7), BGWC-21 (400-122850-8) and BGWC-20 (400-122850-9). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead.

Method(s) PrecSep-21: Radium-226 Prep Batch 160-256888: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: BGWC-22 (400-122850-1), FBL060816 (400-122850-2), EQBL060816 (400-122850-3), BGWC-18 (400-122850-4), BGWC-19 (400-122850-5), BGWC-7 (400-122850-6), BGWC-25 (400-122850-7), BGWC-21 (400-122850-8) and BGWC-20 (400-122850-9). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead.



# Method Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

**Laboratory References:**

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



# Sample Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-122850-1	BGWC-22	Water	06/08/16 13:33	06/10/16 08:55
400-122850-2	FBL060816	Water	06/08/16 15:55	06/10/16 08:55
400-122850-3	EQBL060816	Water	06/08/16 16:05	06/10/16 08:55
400-122850-4	BGWC-18	Water	06/08/16 09:55	06/10/16 08:55
400-122850-5	BGWC-19	Water	06/08/16 12:05	06/10/16 08:55
400-122850-6	BGWC-7	Water	06/08/16 13:15	06/10/16 08:55
400-122850-7	BGWC-25	Water	06/08/16 15:15	06/10/16 08:55
400-122850-8	BGWC-21	Water	06/08/16 15:10	06/10/16 08:55
400-122850-9	BGWC-20	Water	06/08/16 12:50	06/10/16 08:55

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

**Client Sample ID: BGWC-22**

**Date Collected: 06/08/16 13:33**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-1**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.945		0.151	0.173	1.00	0.110	pCi/L	06/17/16 11:42	07/11/16 19:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	72.9		40 - 110					06/17/16 11:42	07/11/16 19:04	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.585		0.326	0.330	1.00	0.485	pCi/L	06/17/16 14:44	07/05/16 13:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	72.9		40 - 110					06/17/16 14:44	07/05/16 13:39	1
Y Carrier	84.1		40 - 110					06/17/16 14:44	07/05/16 13:39	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.53		0.359	0.373	5.00	0.485	pCi/L		07/13/16 12:58	1

**Client Sample ID: FBL060816**

**Date Collected: 06/08/16 15:55**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-2**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0462	U	0.0548	0.0550	1.00	0.0902	pCi/L	06/17/16 11:42	07/11/16 19:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.2		40 - 110					06/17/16 11:42	07/11/16 19:04	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0391	U	0.250	0.250	1.00	0.438	pCi/L	06/17/16 14:44	07/05/16 13:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.2		40 - 110					06/17/16 14:44	07/05/16 13:39	1
Y Carrier	86.4		40 - 110					06/17/16 14:44	07/05/16 13:39	1

TestAmerica Pensacola



# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

**Client Sample ID: FBL060816**

**Lab Sample ID: 400-122850-2**

Date Collected: 06/08/16 15:55

Matrix: Water

Date Received: 06/10/16 08:55

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0853	U	0.256	0.256	5.00	0.438	pCi/L		07/13/16 12:58	1

**Client Sample ID: EQBL060816**

**Lab Sample ID: 400-122850-3**

Date Collected: 06/08/16 16:05

Matrix: Water

Date Received: 06/10/16 08:55

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0202	U	0.0484	0.0484	1.00	0.0865	pCi/L	06/17/16 11:42	07/11/16 19:04	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	92.9		40 - 110					06/17/16 11:42	07/11/16 19:04	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.148	U	0.235	0.235	1.00	0.396	pCi/L	06/17/16 14:44	07/05/16 13:39	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	92.9		40 - 110					06/17/16 14:44	07/05/16 13:39	1
Y Carrier	90.8		40 - 110					06/17/16 14:44	07/05/16 13:39	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.168	U	0.240	0.240	5.00	0.396	pCi/L		07/13/16 12:58	1

**Client Sample ID: BGWC-18**

**Lab Sample ID: 400-122850-4**

Date Collected: 06/08/16 09:55

Matrix: Water

Date Received: 06/10/16 08:55

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
<b>Radium-226</b>	<b>0.262</b>		0.0855	0.0887	1.00	0.0971	pCi/L	06/17/16 11:42	07/11/16 19:04	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	91.2		40 - 110					06/17/16 11:42	07/11/16 19:04	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

**Client Sample ID: BGWC-18**

**Lab Sample ID: 400-122850-4**

Date Collected: 06/08/16 09:55

Matrix: Water

Date Received: 06/10/16 08:55

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.145	U	0.236	0.237	1.00	0.399	pCi/L	06/17/16 14:44	07/05/16 13:39	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	91.2		40 - 110					06/17/16 14:44	07/05/16 13:39	1
Y Carrier	87.9		40 - 110					06/17/16 14:44	07/05/16 13:39	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.406		0.251	0.253	5.00	0.399	pCi/L		07/13/16 12:58	1

**Client Sample ID: BGWC-19**

**Lab Sample ID: 400-122850-5**

Date Collected: 06/08/16 12:05

Matrix: Water

Date Received: 06/10/16 08:55

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.130		0.0707	0.0717	1.00	0.0980	pCi/L	06/17/16 11:42	07/11/16 19:04	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	91.2		40 - 110					06/17/16 11:42	07/11/16 19:04	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.134	U	0.242	0.243	1.00	0.411	pCi/L	06/17/16 14:44	07/05/16 13:39	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	91.2		40 - 110					06/17/16 14:44	07/05/16 13:39	1
Y Carrier	88.2		40 - 110					06/17/16 14:44	07/05/16 13:39	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.264	U	0.252	0.253	5.00	0.411	pCi/L		07/13/16 12:58	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

**Client Sample ID: BGWC-7**

**Lab Sample ID: 400-122850-6**

Date Collected: 06/08/16 13:15

Matrix: Water

Date Received: 06/10/16 08:55

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.573		0.114	0.125	1.00	0.0875	pCi/L	06/17/16 11:42	07/11/16 19:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.3		40 - 110					06/17/16 11:42	07/11/16 19:05	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.281	U	0.231	0.233	1.00	0.365	pCi/L	06/17/16 14:44	07/05/16 13:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	86.3		40 - 110					06/17/16 14:44	07/05/16 13:39	1
Y Carrier	87.5		40 - 110					06/17/16 14:44	07/05/16 13:39	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.854		0.258	0.264	5.00	0.365	pCi/L		07/13/16 12:58	1

**Client Sample ID: BGWC-25**

**Lab Sample ID: 400-122850-7**

Date Collected: 06/08/16 15:15

Matrix: Water

Date Received: 06/10/16 08:55

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.164		0.0732	0.0747	1.00	0.0924	pCi/L	06/17/16 11:42	07/11/16 19:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.2		40 - 110					06/17/16 11:42	07/11/16 19:05	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.150	U	0.221	0.222	1.00	0.372	pCi/L	06/17/16 14:44	07/05/16 13:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.2		40 - 110					06/17/16 14:44	07/05/16 13:39	1
Y Carrier	86.4		40 - 110					06/17/16 14:44	07/05/16 13:39	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

**Client Sample ID: BGWC-25**

**Date Collected: 06/08/16 15:15**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-7**

**Matrix: Water**

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.314	U	0.233	0.234	5.00	0.372	pCi/L		07/13/16 12:58	1

**Client Sample ID: BGWC-21**

**Date Collected: 06/08/16 15:10**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-8**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.227		0.0738	0.0766	1.00	0.0766	pCi/L	06/17/16 11:42	07/11/16 19:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.7		40 - 110					06/17/16 11:42	07/11/16 19:05	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.346	U	0.238	0.240	1.00	0.369	pCi/L	06/17/16 14:44	07/05/16 13:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.7		40 - 110					06/17/16 14:44	07/05/16 13:39	1
Y Carrier	88.2		40 - 110					06/17/16 14:44	07/05/16 13:39	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.573		0.249	0.252	5.00	0.369	pCi/L		07/13/16 12:58	1

**Client Sample ID: BGWC-20**

**Date Collected: 06/08/16 12:50**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-9**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.651		0.113	0.127	1.00	0.0659	pCi/L	06/17/16 11:42	07/11/16 19:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.5		40 - 110					06/17/16 11:42	07/11/16 19:05	1

# Client Sample Results

Client: Southern Company  
 Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
 SDG: Ash Pond

**Client Sample ID: BGWC-20**

**Lab Sample ID: 400-122850-9**

**Date Collected: 06/08/16 12:50**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.211	U	0.525	0.526	1.00	0.898	pCi/L	06/17/16 14:44	07/05/16 13:33	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	91.5		40 - 110					06/17/16 14:44	07/05/16 13:33	1
Y Carrier	47.9		40 - 110					06/17/16 14:44	07/05/16 13:33	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.863	U	0.537	0.541	5.00	0.898	pCi/L		07/13/16 12:58	1

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

## Qualifiers

### Rad

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

## Glossary

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

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

**Client Sample ID: BGWC-22**

**Date Collected: 06/08/16 13:33**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256888	06/17/16 11:42	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 19:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256920	06/17/16 14:44	MCJ	TAL SL
Total/NA	Analysis	9320		1	259193	07/05/16 13:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

**Client Sample ID: FBL060816**

**Date Collected: 06/08/16 15:55**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256888	06/17/16 11:42	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 19:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256920	06/17/16 14:44	MCJ	TAL SL
Total/NA	Analysis	9320		1	259193	07/05/16 13:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

**Client Sample ID: EQBL060816**

**Date Collected: 06/08/16 16:05**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256888	06/17/16 11:42	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 19:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256920	06/17/16 14:44	MCJ	TAL SL
Total/NA	Analysis	9320		1	259193	07/05/16 13:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

**Client Sample ID: BGWC-18**

**Date Collected: 06/08/16 09:55**

**Date Received: 06/10/16 08:55**

**Lab Sample ID: 400-122850-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256888	06/17/16 11:42	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 19:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256920	06/17/16 14:44	MCJ	TAL SL
Total/NA	Analysis	9320		1	259193	07/05/16 13:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

**Client Sample ID: BGWC-19**

**Lab Sample ID: 400-122850-5**

**Date Collected: 06/08/16 12:05**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256888	06/17/16 11:42	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 19:04	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256920	06/17/16 14:44	MCJ	TAL SL
Total/NA	Analysis	9320		1	259193	07/05/16 13:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

**Client Sample ID: BGWC-7**

**Lab Sample ID: 400-122850-6**

**Date Collected: 06/08/16 13:15**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256888	06/17/16 11:42	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 19:05	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256920	06/17/16 14:44	MCJ	TAL SL
Total/NA	Analysis	9320		1	259193	07/05/16 13:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

**Client Sample ID: BGWC-25**

**Lab Sample ID: 400-122850-7**

**Date Collected: 06/08/16 15:15**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256888	06/17/16 11:42	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 19:05	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256920	06/17/16 14:44	MCJ	TAL SL
Total/NA	Analysis	9320		1	259193	07/05/16 13:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

**Client Sample ID: BGWC-21**

**Lab Sample ID: 400-122850-8**

**Date Collected: 06/08/16 15:10**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256888	06/17/16 11:42	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 19:05	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256920	06/17/16 14:44	MCJ	TAL SL
Total/NA	Analysis	9320		1	259193	07/05/16 13:39	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL



# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

**Client Sample ID: BGWC-20**

**Lab Sample ID: 400-122850-9**

**Date Collected: 06/08/16 12:50**

**Matrix: Water**

**Date Received: 06/10/16 08:55**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256888	06/17/16 11:42	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 19:05	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256920	06/17/16 14:44	MCJ	TAL SL
Total/NA	Analysis	9320		1	259192	07/05/16 13:33	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

**Laboratory References:**

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

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

## Rad

### Prep Batch: 256888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122850-1	BGWC-22	Total/NA	Water	PrecSep-21	
400-122850-2	FBL060816	Total/NA	Water	PrecSep-21	
400-122850-3	EQBL060816	Total/NA	Water	PrecSep-21	
400-122850-4	BGWC-18	Total/NA	Water	PrecSep-21	
400-122850-5	BGWC-19	Total/NA	Water	PrecSep-21	
400-122850-6	BGWC-7	Total/NA	Water	PrecSep-21	
400-122850-7	BGWC-25	Total/NA	Water	PrecSep-21	
400-122850-8	BGWC-21	Total/NA	Water	PrecSep-21	
400-122850-9	BGWC-20	Total/NA	Water	PrecSep-21	
LCS 160-256888/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-256888/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-256888/1-A	Method Blank	Total/NA	Water	PrecSep-21	

### Prep Batch: 256920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122850-1	BGWC-22	Total/NA	Water	PrecSep_0	
400-122850-2	FBL060816	Total/NA	Water	PrecSep_0	
400-122850-3	EQBL060816	Total/NA	Water	PrecSep_0	
400-122850-4	BGWC-18	Total/NA	Water	PrecSep_0	
400-122850-5	BGWC-19	Total/NA	Water	PrecSep_0	
400-122850-6	BGWC-7	Total/NA	Water	PrecSep_0	
400-122850-7	BGWC-25	Total/NA	Water	PrecSep_0	
400-122850-8	BGWC-21	Total/NA	Water	PrecSep_0	
400-122850-9	BGWC-20	Total/NA	Water	PrecSep_0	
LCS 160-256920/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-256920/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-256920/1-A	Method Blank	Total/NA	Water	PrecSep_0	

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

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

**Lab Sample ID: MB 160-256888/1-A**  
**Matrix: Water**  
**Analysis Batch: 259958**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 256888**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.05836	U	0.0565	0.0567	1.00	0.0880	pCi/L	06/17/16 11:42	07/11/16 19:02	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.7		40 - 110					06/17/16 11:42	07/11/16 19:02	1

**Lab Sample ID: LCS 160-256888/2-A**  
**Matrix: Water**  
**Analysis Batch: 259958**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 256888**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.2	14.93		1.44	1.00	0.0756	pCi/L	134	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	93.7		40 - 110						

**Lab Sample ID: LCSD 160-256888/3-A**  
**Matrix: Water**  
**Analysis Batch: 259958**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 256888**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.2	14.27		1.38	1.00	0.0794	pCi/L	128	68 - 137	0.23	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits								
Ba Carrier	93.4		40 - 110								

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

**Lab Sample ID: MB 160-256920/1-A**  
**Matrix: Water**  
**Analysis Batch: 259193**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 256920**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1639	U	0.248	0.248	1.00	0.416	pCi/L	06/17/16 14:44	07/05/16 13:37	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.7		40 - 110					06/17/16 14:44	07/05/16 13:37	1
Y Carrier	89.7		40 - 110					06/17/16 14:44	07/05/16 13:37	1

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
 SDG: Ash Pond

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

**Lab Sample ID: LCS 160-256920/2-A**  
**Matrix: Water**  
**Analysis Batch: 259193**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 256920**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	14.9	16.95		1.79	1.00	0.361	pCi/L	114	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	93.7		40 - 110
Y Carrier	91.2		40 - 110

**Lab Sample ID: LCSD 160-256920/3-A**  
**Matrix: Water**  
**Analysis Batch: 259193**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 256920**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	Limit
Radium-228	14.9	16.68		1.77	1.00	0.357	pCi/L	112	56 - 140	0.08	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	93.4		40 - 110
Y Carrier	88.6		40 - 110

**Georgia Power Environmental Laboratory**

2480 Maner Road, Bin 39110  
 Atlanta, Georgia 30339  
 Phone: (404) 799-2100  
 Company: 8-530-2100

**ANALYSIS REQUEST AND  
 CHAIN OF CUSTODY RECORD**

**LAB  
 USE  
 ONLY**

Work Order No. \_\_\_\_\_

Reviewed By: \_\_\_\_\_

<sup>12</sup> Page 1 of 1

<sup>13</sup> Standard Turnaround Time

# of Business Days (Rush)  
 (Must be cleared through Env. Lab. prior to shipment)

Company: <sup>1</sup> Southern Company Services

Sample Shipment Date: <sup>8</sup> 6/9/16

Report To: Joju Abraham

Sampled By: <sup>9</sup> Forrest Howard, Kevin Stevenson, Robert Mull  
 Print Name: Michael Patinkin

Address: <sup>2</sup> 241 Ralph McGill Blvd SE B101AS  
 Atlanta, GA 30308

[Signature]  
 Signature

Phone/Fax: <sup>3</sup> 404-506-7239

Sample Received Date: <sup>10</sup> 6/9/16 @ 7:20

Contact: <sup>4</sup> Joju Abraham

Sample Received By: <sup>11</sup> [Signature]

Project Location: <sup>5</sup> Plant Bowen

Authorization to subcontract analysis will be assumed acceptable by customer unless stated otherwise.

Account Number: <sup>6</sup> \_\_\_\_\_

Special Instructions: <sup>7</sup> CCR Ash Pond

PRESERVATIVE <sup>21</sup>				Sample Type Key: <sup>23</sup>	
N	I	N		G-Grab	C-Composite
				D-Other	
ANALYSIS REQUESTED <sup>22</sup>				Matrix Key: <sup>24</sup>	
				O-Oil	SW-Surface Water
				S-Solid	GW-Ground Water
				SL-Sludge	WW-Waste Water
				W-Wipe	DW-Drinking Water
				LQ-Liquid	DW-Other Water

18	19	20	Preservative Key: <sup>25</sup>		
Sample Type	Matrix	No. of Containers	H-Hydrochloric Acid	N-Nitric Acid	S-Sulfuric Acid
			SH-Sodium Hydroxide	P-Phosphoric Acid	ST-Sodium Thiosulfate
			I-Ice	U-Unpreserved	O-Other (Specify)
			LAB USE ONLY <sup>26</sup>		
			Comments		

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LAB USE ONLY <sup>14</sup> LAB ID	Sample Number <sup>15</sup>	Collection <sup>16</sup>		Sample Description <sup>17</sup>	Sample Type	Matrix	No. of Containers			
		Date	Time							
	BGWC-22	6/8/16	1333	Ground water	G	GW	3	X	X	X
	FBL060816	6/8/16	1555	Field Blank	G	OW	3	X	X	X
	EQBL060816	6/8/16	1605	Rinsate Waterlevel Probe	G	OW	3	X	X	X
	BGWC-18	6/8/16	0955	Ground water	G	GW	3	X	X	X
	BGWC-19	6/8/16	1205	Ground water	G	GW	3	X	X	X
	BGWC-7	6/8/16	1315	Ground water	G	GW	3	X	X	X
	BGWC-25	6/8/16	1515	Ground water	G	GW	3	X	X	X
	BGWC-21	6/8/16	1510	Ground water	G	GW	3	X	X	X
	BGWC-20	6/8/16	1250	Ground water	G	GW	3	X	X	X



400-122850 COC

FOR CHAIN OF CUSTODY USE ONLY <sup>27</sup>		LAB USE ONLY: Sample Receipt Information <sup>30</sup>	
Relinquished by: <sup>28</sup> <u>[Signature]</u>	Date/Time <u>6/9/16 @ 12:00</u>	3.2°C (60.8°F - 40)	With icy, cooler in good condition, seal, PHL2, Hand.
Received by: <sup>29</sup> <u>[Signature]</u>	Date/Time <u>6/9/16 20:15</u>	20.5°C	
Relinquished by:	Date/Time <u>8:55</u>	11.5°C 10.6°C 20.6°C 23.0°C 0.0°C, 0.0°C, 0.0°C	
Received by:	Date/Time		

7/13/2016



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-122850-2

SDG Number: Ash Pond

**Login Number: 122850**

**List Number: 1**

**Creator: Benforado, Jessica L**

**List Source: TestAmerica Pensacola**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	Rads are only samples received in coolers outside of 0.0°C-6.0°C.
Cooler Temperature is recorded.	True	0.0°C, 0.0°C, 0.0°C, 11.5°C, 10.6°C, 20.6°C, 23.0°C IR-5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

## Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-17
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-17
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	07-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16 *
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-17
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16 *
Michigan	State Program	5	9912	06-30-16 *
New Jersey	NELAP	2	FL006	06-30-17
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16 *
Tennessee	State Program	4	TN02907	06-30-17
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	08-31-16

## Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16 *
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-16 *
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16 *
NRC	NRC		24-24817-01	12-31-22

\* Certification renewal pending - certification considered valid.

# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122850-2  
SDG: Ash Pond

## Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Oklahoma	State Program	6	9997	08-31-16 *
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-16 *
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16 *
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-16 *
West Virginia DEP	State Program	3	381	08-31-16 *

\* Certification renewal pending - certification considered valid.

TestAmerica Pensacola



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-122891-1

TestAmerica Sample Delivery Group: AP

Client Project/Site: CCR Plant Bowen

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

6/17/2016 4:01:13 PM

Cheyenne Whitmire, Project Manager II

(850)474-1001

[cheyenne.whitmire@testamericainc.com](mailto:cheyenne.whitmire@testamericainc.com)

### LINKS

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results through

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*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

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

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

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# Case Narrative

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

**Job ID: 400-122891-1**

**Laboratory: TestAmerica Pensacola**

## Narrative

### Job Narrative 400-122891-1

#### HPLC/IC

Method(s) 300.0: The following samples were diluted to bring the concentration of target analytes within the calibration range: BGWC-24 (400-122891-1), BGWC-23 (400-122891-2), DUP-3 (400-122891-3) and BGWC-13 (400-122891-6). Elevated reporting limits (RLs) are provided.

#### Metals

Method(s) 6020: The native sample, post-digestion spike (PDS), matrix spike, and matrix spike duplicate (MS/MSD) associated with preparation batch 309716 and analytical batch 310197 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Boron and Calcium in the PDS and MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method(s) 6020: The following samples were diluted to bring the concentration of target analytes within the calibration range: BGWC-24 (400-122891-1), BGWC-23 (400-122891-2) and DUP-3 (400-122891-3). Elevated reporting limits (RLs) are provided.

Method(s) 7470A: The method blank for prep batch 309749 contained Mercury above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed.



# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

## Client Sample ID: BGWC-24

## Lab Sample ID: 400-122891-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1900		100	89	mg/L	100		300.0	Total/NA
Sulfate	730		100	70	mg/L	100		300.0	Total/NA
Arsenic	0.0016		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.14		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cadmium	0.00052	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Cobalt	0.0026		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lead	0.00059	J	0.0013	0.00035	mg/L	5		6020	Total Recoverable
Lithium	0.0057		0.0050	0.0032	mg/L	5		6020	Total Recoverable
Molybdenum	0.0024	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.00099	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Thallium	0.00022	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Boron - DL	26		2.0	0.84	mg/L	200		6020	Total Recoverable
Calcium - DL	800		10	5.0	mg/L	200		6020	Total Recoverable
Total Dissolved Solids	5200		13	8.5	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: BGWC-23

## Lab Sample ID: 400-122891-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	480		20	18	mg/L	20		300.0	Total/NA
Fluoride	0.12	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	510		20	14	mg/L	20		300.0	Total/NA
Arsenic	0.0012	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.11		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Lithium	0.0074		0.0050	0.0032	mg/L	5		6020	Total Recoverable
Molybdenum	0.013	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Thallium	0.00010	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Boron - DL	12		1.0	0.42	mg/L	100		6020	Total Recoverable
Calcium - DL	300		5.0	2.5	mg/L	100		6020	Total Recoverable
Total Dissolved Solids	1900		5.0	3.4	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: DUP-3

## Lab Sample ID: 400-122891-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1900		100	89	mg/L	100		300.0	Total/NA
Fluoride	0.082	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	700		100	70	mg/L	100		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

## Client Sample ID: DUP-3 (Continued)

## Lab Sample ID: 400-122891-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0015		0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.15		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Cadmium	0.00039	J	0.0025	0.00034	mg/L	5		6020	Total Recoverable
Cobalt	0.0026		0.0025	0.00040	mg/L	5		6020	Total Recoverable
Lithium	0.0057		0.0050	0.0032	mg/L	5		6020	Total Recoverable
Molybdenum	0.0019	J	0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.0010	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Thallium	0.00027	J	0.00050	0.000085	mg/L	5		6020	Total Recoverable
Boron - DL	27		2.0	0.84	mg/L	200		6020	Total Recoverable
Calcium - DL	830		10	5.0	mg/L	200		6020	Total Recoverable
Mercury	0.00011	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	4800		13	8.5	mg/L	1		SM 2540C	Total/NA

## Client Sample ID: FBL060916

## Lab Sample ID: 400-122891-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.00025	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Mercury	0.000070	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA

## Client Sample ID: EQBL060916

## Lab Sample ID: 400-122891-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.000083	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA

## Client Sample ID: BGWC-13

## Lab Sample ID: 400-122891-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	28		1.0	0.89	mg/L	1		300.0	Total/NA
Fluoride	0.17	J	0.20	0.082	mg/L	1		300.0	Total/NA
Sulfate	210		10	7.0	mg/L	10		300.0	Total/NA
Arsenic	0.00047	J	0.0013	0.00046	mg/L	5		6020	Total Recoverable
Barium	0.19		0.0025	0.00049	mg/L	5		6020	Total Recoverable
Boron	0.34		0.050	0.021	mg/L	5		6020	Total Recoverable
Calcium	110		0.25	0.13	mg/L	5		6020	Total Recoverable
Molybdenum	0.063		0.015	0.00085	mg/L	5		6020	Total Recoverable
Selenium	0.00076	J	0.0013	0.00024	mg/L	5		6020	Total Recoverable
Mercury	0.000083	J B	0.00020	0.000070	mg/L	1		7470A	Total/NA
Total Dissolved Solids	690		5.0	3.4	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

# Method Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN

### Protocol References:

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

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

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

### Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

# Sample Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-122891-1	BGWC-24	Water	06/09/16 11:05	06/11/16 09:11
400-122891-2	BGWC-23	Water	06/09/16 11:45	06/11/16 09:11
400-122891-3	DUP-3	Water	06/09/16 00:00	06/11/16 09:11
400-122891-4	FBL060916	Water	06/09/16 13:40	06/11/16 09:11
400-122891-5	EQBL060916	Water	06/09/16 13:30	06/11/16 09:11
400-122891-6	BGWC-13	Water	06/09/16 14:42	06/11/16 09:11

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# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

**Client Sample ID: BGWC-24**

**Lab Sample ID: 400-122891-1**

**Date Collected: 06/09/16 11:05**

**Matrix: Water**

**Date Received: 06/11/16 09:11**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Chloride</b>	<b>1900</b>		100	89	mg/L			06/16/16 22:03	100
Fluoride	<0.082		0.20	0.082	mg/L			06/14/16 09:13	1
<b>Sulfate</b>	<b>730</b>		100	70	mg/L			06/16/16 22:03	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/13/16 08:27	06/16/16 15:33	5
<b>Arsenic</b>	<b>0.0016</b>		0.0013	0.00046	mg/L		06/13/16 08:27	06/16/16 15:33	5
<b>Barium</b>	<b>0.14</b>		0.0025	0.00049	mg/L		06/13/16 08:27	06/16/16 15:33	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 15:33	5
<b>Cadmium</b>	<b>0.00052</b>	J	0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 15:33	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/13/16 08:27	06/16/16 15:33	5
<b>Cobalt</b>	<b>0.0026</b>		0.0025	0.00040	mg/L		06/13/16 08:27	06/16/16 15:33	5
<b>Lead</b>	<b>0.00059</b>	J	0.0013	0.00035	mg/L		06/13/16 08:27	06/16/16 15:33	5
<b>Lithium</b>	<b>0.0057</b>		0.0050	0.0032	mg/L		06/13/16 08:27	06/16/16 15:33	5
<b>Molybdenum</b>	<b>0.0024</b>	J	0.015	0.00085	mg/L		06/13/16 08:27	06/16/16 15:33	5
<b>Selenium</b>	<b>0.00099</b>	J	0.0013	0.00024	mg/L		06/13/16 08:27	06/16/16 15:33	5
<b>Thallium</b>	<b>0.00022</b>	J	0.00050	0.000085	mg/L		06/13/16 08:27	06/16/16 15:33	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Boron</b>	<b>26</b>		2.0	0.84	mg/L		06/13/16 08:27	06/16/16 15:57	200
<b>Calcium</b>	<b>800</b>		10	5.0	mg/L		06/13/16 08:27	06/16/16 15:57	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/13/16 10:55	06/14/16 14:37	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Total Dissolved Solids</b>	<b>5200</b>		13	8.5	mg/L			06/14/16 09:51	1



# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

**Client Sample ID: BGWC-23**

**Lab Sample ID: 400-122891-2**

**Date Collected: 06/09/16 11:45**

**Matrix: Water**

**Date Received: 06/11/16 09:11**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	480		20	18	mg/L			06/16/16 22:26	20
Fluoride	0.12	J	0.20	0.082	mg/L			06/14/16 09:36	1
Sulfate	510		20	14	mg/L			06/16/16 22:26	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/13/16 08:27	06/16/16 16:02	5
Arsenic	0.0012	J	0.0013	0.00046	mg/L		06/13/16 08:27	06/16/16 16:02	5
Barium	0.11		0.0025	0.00049	mg/L		06/13/16 08:27	06/16/16 16:02	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 16:02	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 16:02	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/13/16 08:27	06/16/16 16:02	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/13/16 08:27	06/16/16 16:02	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/13/16 08:27	06/16/16 16:02	5
Lithium	0.0074		0.0050	0.0032	mg/L		06/13/16 08:27	06/16/16 16:02	5
Molybdenum	0.013	J	0.015	0.00085	mg/L		06/13/16 08:27	06/16/16 16:02	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/13/16 08:27	06/16/16 16:02	5
Thallium	0.00010	J	0.00050	0.000085	mg/L		06/13/16 08:27	06/16/16 16:02	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	12		1.0	0.42	mg/L		06/13/16 08:27	06/16/16 16:11	100
Calcium	300		5.0	2.5	mg/L		06/13/16 08:27	06/16/16 16:11	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/13/16 10:55	06/14/16 14:38	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1900		5.0	3.4	mg/L			06/14/16 09:51	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

**Client Sample ID: DUP-3**  
**Date Collected: 06/09/16 00:00**  
**Date Received: 06/11/16 09:11**

**Lab Sample ID: 400-122891-3**  
**Matrix: Water**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1900		100	89	mg/L			06/16/16 22:49	100
Fluoride	0.082	J	0.20	0.082	mg/L			06/14/16 09:59	1
Sulfate	700		100	70	mg/L			06/16/16 22:49	100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/13/16 08:27	06/16/16 16:06	5
Arsenic	0.0015		0.0013	0.00046	mg/L		06/13/16 08:27	06/16/16 16:06	5
Barium	0.15		0.0025	0.00049	mg/L		06/13/16 08:27	06/16/16 16:06	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 16:06	5
Cadmium	0.00039	J	0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 16:06	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/13/16 08:27	06/16/16 16:06	5
Cobalt	0.0026		0.0025	0.00040	mg/L		06/13/16 08:27	06/16/16 16:06	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/13/16 08:27	06/16/16 16:06	5
Lithium	0.0057		0.0050	0.0032	mg/L		06/13/16 08:27	06/16/16 16:06	5
Molybdenum	0.0019	J	0.015	0.00085	mg/L		06/13/16 08:27	06/16/16 16:06	5
Selenium	0.0010	J	0.0013	0.00024	mg/L		06/13/16 08:27	06/16/16 16:06	5
Thallium	0.00027	J	0.00050	0.000085	mg/L		06/13/16 08:27	06/16/16 16:06	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	27		2.0	0.84	mg/L		06/13/16 08:27	06/16/16 16:15	200
Calcium	830		10	5.0	mg/L		06/13/16 08:27	06/16/16 16:15	200

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00011	J B	0.00020	0.000070	mg/L		06/13/16 10:55	06/14/16 15:09	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4800		13	8.5	mg/L			06/14/16 09:51	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

**Client Sample ID: FBL060916**

**Lab Sample ID: 400-122891-4**

**Date Collected: 06/09/16 13:40**

**Matrix: Water**

**Date Received: 06/11/16 09:11**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/14/16 11:07	1
Fluoride	<0.082		0.20	0.082	mg/L			06/14/16 11:07	1
Sulfate	<0.70		1.0	0.70	mg/L			06/14/16 11:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/13/16 08:27	06/16/16 15:03	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/13/16 08:27	06/16/16 15:03	5
Barium	<0.00049		0.0025	0.00049	mg/L		06/13/16 08:27	06/16/16 15:03	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 15:03	5
Boron	<0.021		0.050	0.021	mg/L		06/13/16 08:27	06/16/16 15:03	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 15:03	5
Calcium	<0.13		0.25	0.13	mg/L		06/13/16 08:27	06/16/16 15:03	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/13/16 08:27	06/16/16 15:03	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/13/16 08:27	06/16/16 15:03	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/13/16 08:27	06/16/16 15:03	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/13/16 08:27	06/16/16 15:03	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/13/16 08:27	06/16/16 15:03	5
<b>Selenium</b>	<b>0.00025</b>	<b>J</b>	0.0013	0.00024	mg/L		06/13/16 08:27	06/16/16 15:03	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/13/16 08:27	06/16/16 15:03	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Mercury</b>	<b>0.000070</b>	<b>J B</b>	0.00020	0.000070	mg/L		06/13/16 10:55	06/14/16 14:52	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			06/14/16 09:51	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

**Client Sample ID: EQBL060916**

**Lab Sample ID: 400-122891-5**

**Date Collected: 06/09/16 13:30**

**Matrix: Water**

**Date Received: 06/11/16 09:11**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/14/16 11:30	1
Fluoride	<0.082		0.20	0.082	mg/L			06/14/16 11:30	1
Sulfate	<0.70		1.0	0.70	mg/L			06/14/16 11:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/13/16 08:27	06/16/16 15:07	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/13/16 08:27	06/16/16 15:07	5
Barium	<0.00049		0.0025	0.00049	mg/L		06/13/16 08:27	06/16/16 15:07	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 15:07	5
Boron	<0.021		0.050	0.021	mg/L		06/13/16 08:27	06/16/16 15:07	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 15:07	5
Calcium	<0.13		0.25	0.13	mg/L		06/13/16 08:27	06/16/16 15:07	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/13/16 08:27	06/16/16 15:07	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/13/16 08:27	06/16/16 15:07	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/13/16 08:27	06/16/16 15:07	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/13/16 08:27	06/16/16 15:07	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/13/16 08:27	06/16/16 15:07	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/13/16 08:27	06/16/16 15:07	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/13/16 08:27	06/16/16 15:07	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000083	J B	0.00020	0.000070	mg/L		06/13/16 10:55	06/14/16 14:54	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			06/14/16 09:51	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

**Client Sample ID: BGWC-13**

**Date Collected: 06/09/16 14:42**

**Date Received: 06/11/16 09:11**

**Lab Sample ID: 400-122891-6**

**Matrix: Water**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	28		1.0	0.89	mg/L			06/14/16 11:53	1
Fluoride	0.17	J	0.20	0.082	mg/L			06/14/16 11:53	1
Sulfate	210		10	7.0	mg/L			06/16/16 23:12	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/13/16 08:27	06/16/16 17:06	5
Arsenic	0.00047	J	0.0013	0.00046	mg/L		06/13/16 08:27	06/16/16 17:06	5
Barium	0.19		0.0025	0.00049	mg/L		06/13/16 08:27	06/16/16 17:06	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 17:06	5
Boron	0.34		0.050	0.021	mg/L		06/13/16 08:27	06/16/16 17:06	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 17:06	5
Calcium	110		0.25	0.13	mg/L		06/13/16 08:27	06/16/16 17:06	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/13/16 08:27	06/16/16 17:06	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/13/16 08:27	06/16/16 17:06	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/13/16 08:27	06/16/16 17:06	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/13/16 08:27	06/16/16 17:06	5
Molybdenum	0.063		0.015	0.00085	mg/L		06/13/16 08:27	06/16/16 17:06	5
Selenium	0.00076	J	0.0013	0.00024	mg/L		06/13/16 08:27	06/16/16 17:06	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/13/16 08:27	06/16/16 17:06	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000083	J B	0.00020	0.000070	mg/L		06/13/16 10:55	06/14/16 14:55	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	690		5.0	3.4	mg/L			06/14/16 09:51	1

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.

## Glossary

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

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

**Client Sample ID: BGWC-24**

**Date Collected: 06/09/16 11:05**

**Date Received: 06/11/16 09:11**

**Lab Sample ID: 400-122891-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309960	06/14/16 09:13	TAJ	TAL PEN
Total/NA	Analysis	300.0		100	310321	06/16/16 22:03	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309716	06/13/16 08:27	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 15:33	RJB	TAL PEN
Total Recoverable	Prep	3005A	DL		309716	06/13/16 08:27	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	200	310197	06/16/16 15:57	RJB	TAL PEN
Total/NA	Prep	7470A			309749	06/13/16 10:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	310100	06/14/16 14:37	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Client Sample ID: BGWC-23**

**Date Collected: 06/09/16 11:45**

**Date Received: 06/11/16 09:11**

**Lab Sample ID: 400-122891-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309960	06/14/16 09:36	TAJ	TAL PEN
Total/NA	Analysis	300.0		20	310321	06/16/16 22:26	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309716	06/13/16 08:27	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 16:02	RJB	TAL PEN
Total Recoverable	Prep	3005A	DL		309716	06/13/16 08:27	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	100	310197	06/16/16 16:11	RJB	TAL PEN
Total/NA	Prep	7470A			309749	06/13/16 10:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	310100	06/14/16 14:38	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Client Sample ID: DUP-3**

**Date Collected: 06/09/16 00:00**

**Date Received: 06/11/16 09:11**

**Lab Sample ID: 400-122891-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309960	06/14/16 09:59	TAJ	TAL PEN
Total/NA	Analysis	300.0		100	310321	06/16/16 22:49	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309716	06/13/16 08:27	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 16:06	RJB	TAL PEN
Total Recoverable	Prep	3005A	DL		309716	06/13/16 08:27	RJB	TAL PEN
Total Recoverable	Analysis	6020	DL	200	310197	06/16/16 16:15	RJB	TAL PEN
Total/NA	Prep	7470A			309749	06/13/16 10:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	310100	06/14/16 15:09	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

**Client Sample ID: FBL060916**

**Lab Sample ID: 400-122891-4**

**Date Collected: 06/09/16 13:40**

**Matrix: Water**

**Date Received: 06/11/16 09:11**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309960	06/14/16 11:07	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309716	06/13/16 08:27	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 15:03	RJB	TAL PEN
Total/NA	Prep	7470A			309749	06/13/16 10:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	310100	06/14/16 14:52	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Client Sample ID: EQBL060916**

**Lab Sample ID: 400-122891-5**

**Date Collected: 06/09/16 13:30**

**Matrix: Water**

**Date Received: 06/11/16 09:11**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309960	06/14/16 11:30	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309716	06/13/16 08:27	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 15:07	RJB	TAL PEN
Total/NA	Prep	7470A			309749	06/13/16 10:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	310100	06/14/16 14:54	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Client Sample ID: BGWC-13**

**Lab Sample ID: 400-122891-6**

**Date Collected: 06/09/16 14:42**

**Matrix: Water**

**Date Received: 06/11/16 09:11**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	309960	06/14/16 11:53	TAJ	TAL PEN
Total/NA	Analysis	300.0		10	310321	06/16/16 23:12	TAJ	TAL PEN
Total Recoverable	Prep	3005A			309716	06/13/16 08:27	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310197	06/16/16 17:06	RJB	TAL PEN
Total/NA	Prep	7470A			309749	06/13/16 10:55	JAP	TAL PEN
Total/NA	Analysis	7470A		1	310100	06/14/16 14:55	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	309892	06/14/16 09:51	CAC	TAL PEN

**Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001



# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

## HPLC/IC

### Analysis Batch: 309960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122843-A-9 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
400-122890-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
400-122891-1	BGWC-24	Total/NA	Water	300.0	
400-122891-2	BGWC-23	Total/NA	Water	300.0	
400-122891-3	DUP-3	Total/NA	Water	300.0	
400-122891-4	FBL060916	Total/NA	Water	300.0	
400-122891-5	EQBL060916	Total/NA	Water	300.0	
400-122891-6	BGWC-13	Total/NA	Water	300.0	
LCS 400-309960/36	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-309960/37	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-309960/35	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 310321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122891-1	BGWC-24	Total/NA	Water	300.0	
400-122891-2	BGWC-23	Total/NA	Water	300.0	
400-122891-3	DUP-3	Total/NA	Water	300.0	
400-122891-6	BGWC-13	Total/NA	Water	300.0	
400-123007-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
400-123105-A-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 400-310321/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-310321/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-310321/4	Method Blank	Total/NA	Water	300.0	

## Metals

### Prep Batch: 309716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122891-1 - DL	BGWC-24	Total Recoverable	Water	3005A	
400-122891-1	BGWC-24	Total Recoverable	Water	3005A	
400-122891-1 MS - DL	BGWC-24	Total Recoverable	Water	3005A	
400-122891-1 MSD - DL	BGWC-24	Total Recoverable	Water	3005A	
400-122891-2	BGWC-23	Total Recoverable	Water	3005A	
400-122891-2 - DL	BGWC-23	Total Recoverable	Water	3005A	
400-122891-3 - DL	DUP-3	Total Recoverable	Water	3005A	
400-122891-3	DUP-3	Total Recoverable	Water	3005A	
400-122891-4	FBL060916	Total Recoverable	Water	3005A	
400-122891-5	EQBL060916	Total Recoverable	Water	3005A	
400-122891-6	BGWC-13	Total Recoverable	Water	3005A	
LCS 400-309716/2-A ^1	Lab Control Sample	Total Recoverable	Water	3005A	
MB 400-309716/1-A ^5	Method Blank	Total Recoverable	Water	3005A	

### Prep Batch: 309749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122891-1	BGWC-24	Total/NA	Water	7470A	
400-122891-2	BGWC-23	Total/NA	Water	7470A	
400-122891-2 MS	BGWC-23	Total/NA	Water	7470A	
400-122891-2 MSD	BGWC-23	Total/NA	Water	7470A	
400-122891-3	DUP-3	Total/NA	Water	7470A	
400-122891-4	FBL060916	Total/NA	Water	7470A	

TestAmerica Pensacola

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

## Metals (Continued)

### Prep Batch: 309749 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122891-5	EQBL060916	Total/NA	Water	7470A	
400-122891-6	BGWC-13	Total/NA	Water	7470A	
400-122901-A-1-C MS	Matrix Spike	Total/NA	Water	7470A	
400-122901-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
LCS 400-309749/15-A	Lab Control Sample	Total/NA	Water	7470A	
MB 400-309749/14-A	Method Blank	Total/NA	Water	7470A	

### Analysis Batch: 310100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122891-1	BGWC-24	Total/NA	Water	7470A	309749
400-122891-2	BGWC-23	Total/NA	Water	7470A	309749
400-122891-2 MS	BGWC-23	Total/NA	Water	7470A	309749
400-122891-2 MSD	BGWC-23	Total/NA	Water	7470A	309749
400-122891-3	DUP-3	Total/NA	Water	7470A	309749
400-122891-4	FBL060916	Total/NA	Water	7470A	309749
400-122891-5	EQBL060916	Total/NA	Water	7470A	309749
400-122891-6	BGWC-13	Total/NA	Water	7470A	309749
400-122901-A-1-C MS	Matrix Spike	Total/NA	Water	7470A	309749
400-122901-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	309749
LCS 400-309749/15-A	Lab Control Sample	Total/NA	Water	7470A	309749
MB 400-309749/14-A	Method Blank	Total/NA	Water	7470A	309749

### Analysis Batch: 310197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122891-1	BGWC-24	Total Recoverable	Water	6020	309716
400-122891-1 - DL	BGWC-24	Total Recoverable	Water	6020	309716
400-122891-1 MS - DL	BGWC-24	Total Recoverable	Water	6020	309716
400-122891-1 MSD - DL	BGWC-24	Total Recoverable	Water	6020	309716
400-122891-2	BGWC-23	Total Recoverable	Water	6020	309716
400-122891-2 - DL	BGWC-23	Total Recoverable	Water	6020	309716
400-122891-3	DUP-3	Total Recoverable	Water	6020	309716
400-122891-3 - DL	DUP-3	Total Recoverable	Water	6020	309716
400-122891-4	FBL060916	Total Recoverable	Water	6020	309716
400-122891-5	EQBL060916	Total Recoverable	Water	6020	309716
400-122891-6	BGWC-13	Total Recoverable	Water	6020	309716
LCS 400-309716/2-A ^1	Lab Control Sample	Total Recoverable	Water	6020	309716
MB 400-309716/1-A ^5	Method Blank	Total Recoverable	Water	6020	309716

## General Chemistry

### Analysis Batch: 309892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122891-1	BGWC-24	Total/NA	Water	SM 2540C	
400-122891-1 DU	BGWC-24	Total/NA	Water	SM 2540C	
400-122891-2	BGWC-23	Total/NA	Water	SM 2540C	
400-122891-3	DUP-3	Total/NA	Water	SM 2540C	
400-122891-3 DU	DUP-3	Total/NA	Water	SM 2540C	
400-122891-4	FBL060916	Total/NA	Water	SM 2540C	
400-122891-5	EQBL060916	Total/NA	Water	SM 2540C	
400-122891-6	BGWC-13	Total/NA	Water	SM 2540C	

TestAmerica Pensacola

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

## General Chemistry (Continued)

### Analysis Batch: 309892 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 400-309892/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 400-309892/1	Method Blank	Total/NA	Water	SM 2540C	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 400-309960/35**  
**Matrix: Water**  
**Analysis Batch: 309960**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/14/16 00:05	1
Fluoride	<0.082		0.20	0.082	mg/L			06/14/16 00:05	1
Sulfate	<0.70		1.0	0.70	mg/L			06/14/16 00:05	1

**Lab Sample ID: LCS 400-309960/36**  
**Matrix: Water**  
**Analysis Batch: 309960**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.49		mg/L		95	90 - 110
Fluoride	10.0	9.88		mg/L		99	90 - 110
Sulfate	10.0	9.37		mg/L		94	90 - 110

**Lab Sample ID: LCSD 400-309960/37**  
**Matrix: Water**  
**Analysis Batch: 309960**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.58		mg/L		96	90 - 110	1	15
Fluoride	10.0	10.0		mg/L		100	90 - 110	2	15
Sulfate	10.0	9.38		mg/L		94	90 - 110	0	15

**Lab Sample ID: 400-122843-A-9 MSD**  
**Matrix: Water**  
**Analysis Batch: 309960**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	<8.9		100	111		mg/L		111	80 - 120	0	20
Fluoride	<0.82		100	111		mg/L		111	80 - 120	1	20
Sulfate	850	E	100	951	E 4	mg/L		102	80 - 120	0	20

**Lab Sample ID: 400-122890-A-1 MS**  
**Matrix: Water**  
**Analysis Batch: 309960**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	18		10.0	29.2		mg/L		112	80 - 120
Fluoride	0.098	J	10.0	12.1		mg/L		120	80 - 120
Sulfate	8.7	F1	10.0	21.7	F1	mg/L		130	80 - 120

**Lab Sample ID: MB 400-310321/4**  
**Matrix: Water**  
**Analysis Batch: 310321**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/16/16 13:40	1
Sulfate	<0.70		1.0	0.70	mg/L			06/16/16 13:40	1

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 400-310321/5**  
**Matrix: Water**  
**Analysis Batch: 310321**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.5		mg/L		105	90 - 110
Sulfate	10.0	10.7		mg/L		107	90 - 110

**Lab Sample ID: LCSD 400-310321/6**  
**Matrix: Water**  
**Analysis Batch: 310321**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.6		mg/L		106	90 - 110	1	15
Sulfate	10.0	10.8		mg/L		108	90 - 110	1	15

**Lab Sample ID: 400-123105-A-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 310321**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	E F1	10.0	256	E 4	mg/L		71	80 - 120	1	20
Fluoride	0.21	F1	10.0	17.4	F1	mg/L		171	80 - 120	3	20
Sulfate	610	E F1	10.0	622	E 4	mg/L		79	80 - 120	2	20

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

**Lab Sample ID: MB 400-309716/1-A ^5**  
**Matrix: Water**  
**Analysis Batch: 310197**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309716**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/13/16 08:27	06/16/16 14:54	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/13/16 08:27	06/16/16 14:54	5
Barium	<0.00049		0.0025	0.00049	mg/L		06/13/16 08:27	06/16/16 14:54	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 14:54	5
Boron	<0.021		0.050	0.021	mg/L		06/13/16 08:27	06/16/16 14:54	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/13/16 08:27	06/16/16 14:54	5
Calcium	<0.13		0.25	0.13	mg/L		06/13/16 08:27	06/16/16 14:54	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/13/16 08:27	06/16/16 14:54	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/13/16 08:27	06/16/16 14:54	5
Lead	<0.00035		0.0013	0.00035	mg/L		06/13/16 08:27	06/16/16 14:54	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/13/16 08:27	06/16/16 14:54	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/13/16 08:27	06/16/16 14:54	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/13/16 08:27	06/16/16 14:54	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/13/16 08:27	06/16/16 14:54	5

**Lab Sample ID: LCS 400-309716/2-A ^1**  
**Matrix: Water**  
**Analysis Batch: 310197**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309716**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0520		mg/L		104	80 - 120
Arsenic	0.0500	0.0493		mg/L		99	80 - 120

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

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

**Lab Sample ID: LCS 400-309716/2-A ^1**  
**Matrix: Water**  
**Analysis Batch: 310197**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309716**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.0500	0.0483		mg/L		97	80 - 120
Beryllium	0.0500	0.0452		mg/L		90	80 - 120
Boron	0.100	0.0949		mg/L		95	80 - 120
Cadmium	0.0500	0.0493		mg/L		99	80 - 120
Calcium	5.00	4.77		mg/L		95	80 - 120
Chromium	0.0500	0.0477		mg/L		95	80 - 120
Cobalt	0.0500	0.0480		mg/L		96	80 - 120
Lead	0.0500	0.0521		mg/L		104	80 - 120
Lithium	0.0500	0.0475		mg/L		95	80 - 120
Molybdenum	0.0500	0.0472		mg/L		94	80 - 120
Selenium	0.0500	0.0485		mg/L		97	80 - 120
Thallium	0.0100	0.00965		mg/L		97	80 - 120

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

**Lab Sample ID: 400-122891-1 MS**  
**Matrix: Water**  
**Analysis Batch: 310197**

**Client Sample ID: BGWC-24**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309716**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony - DL	<0.0010		0.0500	0.0595		mg/L		119	75 - 125
Arsenic - DL	0.0016		0.0500	0.0561		mg/L		109	75 - 125
Barium - DL	0.14		0.0500	0.195		mg/L		112	75 - 125
Beryllium - DL	<0.00034		0.0500	0.0494		mg/L		99	75 - 125
Cadmium - DL	0.00052	J	0.0500	0.0540		mg/L		107	75 - 125
Calcium - DL	880	E	5.00	850	4	mg/L		-570	75 - 125
Chromium - DL	<0.0011		0.0500	0.0510		mg/L		102	75 - 125
Cobalt - DL	0.0026		0.0500	0.0529		mg/L		101	75 - 125
Lead - DL	0.00059	J	0.0500	0.0509		mg/L		101	75 - 125
Lithium - DL	0.0057		0.0500	0.0575		mg/L		104	75 - 125
Molybdenum - DL	0.0024	J	0.0500	0.0522	J	mg/L		100	75 - 125
Selenium - DL	0.00099	J	0.0500	0.0545		mg/L		107	75 - 125
Thallium - DL	0.00022	J	0.0100	0.0109		mg/L		107	75 - 125

**Lab Sample ID: 400-122891-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 310197**

**Client Sample ID: BGWC-24**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309716**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony - DL	<0.0010		0.0500	0.0570		mg/L		114	75 - 125	4	20
Arsenic - DL	0.0016		0.0500	0.0542		mg/L		105	75 - 125	4	20
Barium - DL	0.14		0.0500	0.194		mg/L		111	75 - 125	0	20
Beryllium - DL	<0.00034		0.0500	0.0470		mg/L		94	75 - 125	5	20
Cadmium - DL	0.00052	J	0.0500	0.0531		mg/L		105	75 - 125	2	20
Calcium - DL	880	E	5.00	826	4	mg/L		-1053	75 - 125	3	20
Chromium - DL	<0.0011		0.0500	0.0496		mg/L		99	75 - 125	3	20
Cobalt - DL	0.0026		0.0500	0.0526		mg/L		100	75 - 125	1	20
Lead - DL	0.00059	J	0.0500	0.0492		mg/L		97	75 - 125	3	20

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

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

**Lab Sample ID: 400-122891-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 310197**

**Client Sample ID: BGWC-24**  
**Prep Type: Total Recoverable**  
**Prep Batch: 309716**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Lithium - DL	0.0057		0.0500	0.0538		mg/L		96	75 - 125	7	20
Molybdenum - DL	0.0024	J	0.0500	0.0507	J	mg/L		97	75 - 125	3	20
Selenium - DL	0.00099	J	0.0500	0.0525		mg/L		103	75 - 125	4	20
Thallium - DL	0.00022	J	0.0100	0.0101		mg/L		99	75 - 125	8	20

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 400-309749/14-A**  
**Matrix: Water**  
**Analysis Batch: 310100**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 309749**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	0.0000855	J	0.00020	0.000070	mg/L		06/13/16 10:54	06/14/16 14:34	1

**Lab Sample ID: LCS 400-309749/15-A**  
**Matrix: Water**  
**Analysis Batch: 310100**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 309749**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Mercury	0.00101	0.000952		mg/L		94	80 - 120

**Lab Sample ID: 400-122891-2 MS**  
**Matrix: Water**  
**Analysis Batch: 310100**

**Client Sample ID: BGWC-23**  
**Prep Type: Total/NA**  
**Prep Batch: 309749**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Mercury	<0.000070		0.00201	0.00175		mg/L		87	80 - 120

**Lab Sample ID: 400-122891-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 310100**

**Client Sample ID: BGWC-23**  
**Prep Type: Total/NA**  
**Prep Batch: 309749**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Mercury	<0.000070		0.00201	0.00186		mg/L		92	80 - 120	6	20

**Lab Sample ID: 400-122901-A-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 310100**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 309749**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				Limits
Mercury	0.000079	J B	0.00201	0.00194		mg/L		93	80 - 120

**Lab Sample ID: 400-122901-A-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 310100**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 309749**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Mercury	0.000079	J B	0.00201	0.00197		mg/L		94	80 - 120	1	20

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
 SDG: AP

## Method: SM 2540C - Solids, Total Dissolved (TDS)

**Lab Sample ID: MB 400-309892/1**  
**Matrix: Water**  
**Analysis Batch: 309892**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			06/14/16 09:51	1

**Lab Sample ID: LCS 400-309892/2**  
**Matrix: Water**  
**Analysis Batch: 309892**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	293	264		mg/L		90	78 - 122

**Lab Sample ID: 400-122891-1 DU**  
**Matrix: Water**  
**Analysis Batch: 309892**

**Client Sample ID: BGWC-24**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	5200		5110		mg/L		2	5

**Lab Sample ID: 400-122891-3 DU**  
**Matrix: Water**  
**Analysis Batch: 309892**

**Client Sample ID: DUP-3**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	4800		4710		mg/L		2	5



Georgia Power Environmental Laboratory  
 2480 Maner Road, Bin 39110  
 Atlanta, Georgia 30339  
 Phone: (404) 799-2100  
 Company: 8-530-2100



400-122891 COC

**ANALYSIS REQUEST AND  
 CHAIN OF CUSTODY RECORD**

400-122891

**LAB  
 USE  
 ONLY**

Work Order No. \_\_\_\_\_  
 Reviewed By: \_\_\_\_\_

12 Page 1 of 1

Company: 1 Southern Company Services  
 Report To: Jay Abraham  
 Address: 241 Ralph McGill Drive Bldg 50185  
Atlanta, GA 30308

Sample Shipment Date: 8 6/9/16

Sampled By: Kevin Stagnaro, Michael Dinkins, Robert M. Forrest  
 Print Name

[Signature]  
 Signature

13 Standard Turnaround Time

# of Business Days (Rush)  
 (Must be cleared through Env. Lab. prior to shipment)

Phone/Fax: 3 404-506-7239

Sample Received Date: 10

Contact: 4 Jay Abraham

Sample Received By: 11

Project Location: 5 Plant Bowen

Authorization to subcontract analysis will be assumed acceptable by customer unless stated otherwise.

Account Number: 6

Special Instructions: 7 CCR Acid Pond

PRESERVATIVE 21					
<u>2</u>	<u>1</u>	<u>2</u>			
ANALYSIS REQUESTED 22					

Sample Type Key: 23  
 G-Grab C-Composite  
 O-Other  
 Matrix Key: 24  
 S-Solid SW-Surface Water  
 SL-Sludge GW-Ground Water  
 W-Wipe WW-Waste Water  
 LQ-Liquid DW-Drinking Water  
 OW-Other Water

Preservative Key: 25  
 H-Hydrochloric Acid  
 N-Nitric Acid  
 S-Sulfuric Acid  
 SH-Sodium Hydroxide  
 P-Phosphoric Acid  
 ST-Sodium Thiosulfate  
 I-Ice  
 U-Unpreserved  
 O-Other (Specify)

Page 25 of 27

LAB USE ONLY 14 LAB ID	Sample Number 15	Collection 16		Sample Description 17	Sample Type 18	Matrix 19	No. of Containers 20	Metals App. 7E & 7E.1 III EPA 6020, 7417D	CUTS 5M2540C	Radiation 226.4 228B 310-5M6 9315 1320									
		Date	Time																
	BGWC-24	6/9/16	1105	Groundwater	G	GW	3	X	X	X									
	BGWC-23	6/9/16	1145	Groundwater	G	GW	3	X	X	X									
	Dup-3	6/9/16	/	Groundwater	G	GW	3	X	X	X									
	FB060916	6/9/16	1340	Field Blank	G	OW	3	X	X	X									
	ED060916	6/9/16	1330	Roadside (Pump bladder)	G	OW	3	X	X	X									
	RGWC-13	6/9/16	1442	Groundwater	G	GW	2	X	X										

LAB USE ONLY 26  
 Comments

FOR CHAIN OF CUSTODY USE ONLY 27

LAB USE ONLY: Sample Receipt Information 30

Relinquished by: Kevin Stagnaro Date/Time 6/9/16 @ 1540  
 Received by: [Signature] Date/Time 6/9/16 @ 1540  
 Relinquished by: [Signature] Date/Time 6/10/16 0718  
 Received by: [Signature] Date/Time 6/10/16 7:18

43C (GPEL-1R-4P), with ice, cooler in good condition, PHK2  
Hand.  
[Signature] 6/11/16 0911

6/17/2016

## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-122891-1

SDG Number: AP

**Login Number: 122891**

**List Number: 1**

**Creator: Crawford, Lauren E**

**List Source: TestAmerica Pensacola**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	25.1°C, 0.6°C, 15.4°C IR-6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-1  
SDG: AP

## Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-16
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	07-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-17 *
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	06-30-16

\* Certification renewal pending - certification considered valid.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-122891-2

TestAmerica Sample Delivery Group: AP

Client Project/Site: CCR Plant Bowen

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

7/13/2016 5:21:28 PM

Cheyenne Whitmire, Project Manager II

(850)474-1001

[cheyenne.whitmire@testamericainc.com](mailto:cheyenne.whitmire@testamericainc.com)

### LINKS

Review your project  
results through

Total Access

Have a Question?



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

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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# Case Narrative

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

**Job ID: 400-122891-2**

**Laboratory: TestAmerica Pensacola**

## Narrative

### Job Narrative 400-122891-2

#### **RAD**

Method(s) PrecSep\_0: Radium-228 Prep Batch 160-256930: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: BGWC-24 (400-122891-1), BGWC-23 (400-122891-2), DUP-3 (400-122891-3), FBL060916 (400-122891-4) and EQBL060916 (400-122891-5). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead.

Method(s) PrecSep-21: Radium-226 Prep Batch 160-256891: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: BGWC-24 (400-122891-1), BGWC-23 (400-122891-2), DUP-3 (400-122891-3), FBL060916 (400-122891-4) and EQBL060916 (400-122891-5). A laboratory control sample/ laboratory sample duplicate (LCS/LCSD) were prepared instead.



# Method Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.  
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

**Laboratory References:**

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



# Sample Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-122891-1	BGWC-24	Water	06/09/16 11:05	06/11/16 09:11
400-122891-2	BGWC-23	Water	06/09/16 11:45	06/11/16 09:11
400-122891-3	DUP-3	Water	06/09/16 00:00	06/11/16 09:11
400-122891-4	FBL060916	Water	06/09/16 13:40	06/11/16 09:11
400-122891-5	EQBL060916	Water	06/09/16 13:30	06/11/16 09:11

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



# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

**Client Sample ID: BGWC-24**

**Date Collected: 06/09/16 11:05**

**Date Received: 06/11/16 09:11**

**Lab Sample ID: 400-122891-1**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.33		0.164	0.202	1.00	0.0826	pCi/L	06/17/16 11:45	07/11/16 07:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.7		40 - 110					06/17/16 11:45	07/11/16 07:08	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.807		0.292	0.301	1.00	0.397	pCi/L	06/17/16 17:22	07/05/16 13:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.7		40 - 110					06/17/16 17:22	07/05/16 13:44	1
Y Carrier	90.8		40 - 110					06/17/16 17:22	07/05/16 13:44	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.13		0.335	0.363	5.00	0.397	pCi/L		07/13/16 12:58	1

**Client Sample ID: BGWC-23**

**Date Collected: 06/09/16 11:45**

**Date Received: 06/11/16 09:11**

**Lab Sample ID: 400-122891-2**

**Matrix: Water**

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.515		0.106	0.116	1.00	0.0713	pCi/L	06/17/16 11:45	07/11/16 07:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.2		40 - 110					06/17/16 11:45	07/11/16 07:08	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.190	U	0.237	0.238	1.00	0.393	pCi/L	06/17/16 17:22	07/05/16 13:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.2		40 - 110					06/17/16 17:22	07/05/16 13:44	1
Y Carrier	87.9		40 - 110					06/17/16 17:22	07/05/16 13:44	1

TestAmerica Pensacola

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

**Client Sample ID: BGWC-23**

**Lab Sample ID: 400-122891-2**

Date Collected: 06/09/16 11:45

Matrix: Water

Date Received: 06/11/16 09:11

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.704		0.260	0.265	5.00	0.393	pCi/L		07/13/16 12:58	1

**Client Sample ID: DUP-3**

**Lab Sample ID: 400-122891-3**

Date Collected: 06/09/16 00:00

Matrix: Water

Date Received: 06/11/16 09:11

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	1.28		0.208	0.238	1.00	0.114	pCi/L	06/17/16 11:45	07/11/16 07:08	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	46.7		40 - 110					06/17/16 11:45	07/11/16 07:08	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.845		0.502	0.508	1.00	0.761	pCi/L	06/17/16 17:22	07/05/16 13:44	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	46.7		40 - 110					06/17/16 17:22	07/05/16 13:44	1
Y Carrier	91.2		40 - 110					06/17/16 17:22	07/05/16 13:44	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.12		0.543	0.561	5.00	0.761	pCi/L		07/13/16 12:58	1

**Client Sample ID: FBL060916**

**Lab Sample ID: 400-122891-4**

Date Collected: 06/09/16 13:40

Matrix: Water

Date Received: 06/11/16 09:11

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0616	U	0.0726	0.0728	1.00	0.120	pCi/L	06/17/16 11:45	07/11/16 07:08	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	87.7		40 - 110					06/17/16 11:45	07/11/16 07:08	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

**Client Sample ID: FBL060916**

**Lab Sample ID: 400-122891-4**

Date Collected: 06/09/16 13:40

Matrix: Water

Date Received: 06/11/16 09:11

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.210	U	0.250	0.251	1.00	0.412	pCi/L	06/17/16 17:22	07/05/16 13:44	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	87.7		40 - 110					06/17/16 17:22	07/05/16 13:44	1
Y Carrier	88.2		40 - 110					06/17/16 17:22	07/05/16 13:44	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.271	U	0.260	0.261	5.00	0.412	pCi/L		07/13/16 12:58	1

**Client Sample ID: EQBL060916**

**Lab Sample ID: 400-122891-5**

Date Collected: 06/09/16 13:30

Matrix: Water

Date Received: 06/11/16 09:11

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00557	U	0.0422	0.0422	1.00	0.0853	pCi/L	06/17/16 11:45	07/11/16 07:08	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	92.3		40 - 110					06/17/16 11:45	07/11/16 07:08	1

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

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.00437	U	0.197	0.197	1.00	0.357	pCi/L	06/17/16 17:22	07/05/16 13:44	1
<b>Carrier</b>	<b>%Yield</b>	<b>Qualifier</b>	<b>Limits</b>					<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Ba Carrier	92.3		40 - 110					06/17/16 17:22	07/05/16 13:44	1
Y Carrier	90.1		40 - 110					06/17/16 17:22	07/05/16 13:44	1

**Method: Ra226\_Ra228 - Combined Radium-226 and Radium-228**

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.00120	U	0.202	0.202	5.00	0.357	pCi/L		07/13/16 12:58	1

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

## Qualifiers

### Rad

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

## Glossary

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

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

**Client Sample ID: BGWC-24**

**Date Collected: 06/09/16 11:05**

**Date Received: 06/11/16 09:11**

**Lab Sample ID: 400-122891-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256891	06/17/16 11:45	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 07:08	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256930	06/17/16 17:22	MCJ	TAL SL
Total/NA	Analysis	9320		1	259194	07/05/16 13:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

**Client Sample ID: BGWC-23**

**Date Collected: 06/09/16 11:45**

**Date Received: 06/11/16 09:11**

**Lab Sample ID: 400-122891-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256891	06/17/16 11:45	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 07:08	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256930	06/17/16 17:22	MCJ	TAL SL
Total/NA	Analysis	9320		1	259194	07/05/16 13:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

**Client Sample ID: DUP-3**

**Date Collected: 06/09/16 00:00**

**Date Received: 06/11/16 09:11**

**Lab Sample ID: 400-122891-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256891	06/17/16 11:45	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 07:08	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256930	06/17/16 17:22	MCJ	TAL SL
Total/NA	Analysis	9320		1	259194	07/05/16 13:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

**Client Sample ID: FBL060916**

**Date Collected: 06/09/16 13:40**

**Date Received: 06/11/16 09:11**

**Lab Sample ID: 400-122891-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256891	06/17/16 11:45	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 07:08	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256930	06/17/16 17:22	MCJ	TAL SL
Total/NA	Analysis	9320		1	259194	07/05/16 13:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

**Client Sample ID: EQBL060916**

**Lab Sample ID: 400-122891-5**

**Date Collected: 06/09/16 13:30**

**Matrix: Water**

**Date Received: 06/11/16 09:11**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			256891	06/17/16 11:45	MCJ	TAL SL
Total/NA	Analysis	9315		1	259959	07/11/16 07:08	RTM	TAL SL
Total/NA	Prep	PrecSep_0			256930	06/17/16 17:22	MCJ	TAL SL
Total/NA	Analysis	9320		1	259194	07/05/16 13:44	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	260368	07/13/16 12:58	RTM	TAL SL

**Laboratory References:**

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

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

## Rad

### Prep Batch: 256891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122891-1	BGWC-24	Total/NA	Water	PrecSep-21	
400-122891-2	BGWC-23	Total/NA	Water	PrecSep-21	
400-122891-3	DUP-3	Total/NA	Water	PrecSep-21	
400-122891-4	FBL060916	Total/NA	Water	PrecSep-21	
400-122891-5	EQBL060916	Total/NA	Water	PrecSep-21	
LCS 160-256891/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-256891/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	
MB 160-256891/1-A	Method Blank	Total/NA	Water	PrecSep-21	

### Prep Batch: 256930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122891-1	BGWC-24	Total/NA	Water	PrecSep_0	
400-122891-2	BGWC-23	Total/NA	Water	PrecSep_0	
400-122891-3	DUP-3	Total/NA	Water	PrecSep_0	
400-122891-4	FBL060916	Total/NA	Water	PrecSep_0	
400-122891-5	EQBL060916	Total/NA	Water	PrecSep_0	
LCS 160-256930/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-256930/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	
MB 160-256930/1-A	Method Blank	Total/NA	Water	PrecSep_0	

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

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

**Lab Sample ID: MB 160-256891/1-A**  
**Matrix: Water**  
**Analysis Batch: 259958**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 256891**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04344	U	0.0479	0.0480	1.00	0.0772	pCi/L	06/17/16 11:45	07/11/16 07:04	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110					06/17/16 11:45	07/11/16 07:04	1

**Lab Sample ID: LCS 160-256891/2-A**  
**Matrix: Water**  
**Analysis Batch: 259958**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 256891**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.2	14.49		1.41	1.00	0.110	pCi/L	130	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	90.6		40 - 110						

**Lab Sample ID: LCSD 160-256891/3-A**  
**Matrix: Water**  
**Analysis Batch: 259958**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 256891**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.2	14.86		1.44	1.00	0.117	pCi/L	133	68 - 137	0.13	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits								
Ba Carrier	91.7		40 - 110								

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

**Lab Sample ID: MB 160-256930/1-A**  
**Matrix: Water**  
**Analysis Batch: 259194**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 256930**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4213		0.260	0.263	1.00	0.398	pCi/L	06/17/16 17:22	07/05/16 13:45	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110					06/17/16 17:22	07/05/16 13:45	1
Y Carrier	92.0		40 - 110					06/17/16 17:22	07/05/16 13:45	1



# QC Sample Results

Client: Southern Company  
 Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
 SDG: AP

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

**Lab Sample ID: LCS 160-256930/2-A**  
**Matrix: Water**  
**Analysis Batch: 259194**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 256930**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	14.9	17.85		1.89	1.00	0.435	pCi/L	120	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	90.6		40 - 110
Y Carrier	89.3		40 - 110

**Lab Sample ID: LCSD 160-256930/3-A**  
**Matrix: Water**  
**Analysis Batch: 259194**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 256930**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	Limit
Radium-228	14.9	16.34		1.73	1.00	0.416	pCi/L	110	56 - 140	0.42	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	91.7		40 - 110
Y Carrier	91.2		40 - 110

Georgia Power Environmental Laboratory  
 2480 Maner Road, Bin 39110  
 Atlanta, Georgia 30339  
 Phone: (404) 799-2100  
 Company: 8-530-2100



400-122891 COC

400-122891  
**ANALYSIS REQUEST AND  
 CHAIN OF CUSTODY RECORD**

**LAB  
 USE  
 ONLY**

Work Order No. \_\_\_\_\_  
 Reviewed By: \_\_\_\_\_

12 Page 1 of 1

Company: 1 Southern Company Services  
 Report To: Jay Abraham  
 Address: 2 241 Ralph McGill Drive Bldg 50185  
Atlanta, GA 30308

Sample Shipment Date: 8 6/9/16

Sampled By: 9 Kevin S. Johnson, Michael P. Johnson, Robert M. Johnson, Forrest Howard  
 Signature: [Signature]  
 Print Name: \_\_\_\_\_

13 Standard Turnaround Time  
 # of Business Days (Rush)  
 (Must be cleared through Env. Lab. prior to shipment)

Phone/Fax: 3 404-506-7239

Sample Received Date: 10

Contact: 4 Jay Abraham

Sample Received By: 11

Project Location: 5 Plant Bowen

Authorization to subcontract analysis will be assumed acceptable by customer unless stated otherwise.

Account Number: 6

Special Instructions: 7 CCR Acid Pond

PRESERVATIVE 21					
<u>2</u>	<u>1</u>	<u>2</u>			
ANALYSIS REQUESTED 22					

Sample Type Key: 23  
 G-Grab C-Composite  
 O-Other  
 Matrix Key: 24  
 S-Solid SW-Surface Water  
 SL-Sludge GW-Ground Water  
 W-Wipe WW-Waste Water  
 LQ-Liquid DW-Drinking Water  
 OW-Other Water

Preservative Key: 25  
 H-Hydrochloric Acid  
 N-Nitric Acid  
 S-Sulfuric Acid  
 SH-Sodium Hydroxide  
 P-Phosphoric Acid  
 ST-Sodium Thiosulfate  
 I-Ice  
 U-Unpreserved  
 O-Other (Specify) \_\_\_\_\_

Page 15 of 18

LAB USE ONLY 14 LAB ID	Sample Number 15	Collection 16		Sample Description 17	Sample Type 18	Matrix 19	No. of Containers 20	Metals App. 7E & 7F EPA 6020, 7417D	CATIONS EPA 8210 7417D	Radiation 226 & 232 EPA 9006, 9015 & 9020									
		Date	Time																
	BGWC-24	6/9/16	1105	Groundwater	G	GW	3	X	X	X									
	BGWC-23	6/9/16	1145	Groundwater	G	GW	3	X	X	X									
	Dup-3	6/9/16	/	Groundwater	G	GW	3	X	X	X									
	FB060916	6/9/16	1340	Field Blank	G	OW	3	X	X	X									
	EB060916	6/9/16	1330	Roadside (Pump bladder)	G	OW	3	X	X	X									
	RGWC-13	6/9/16	1442	Groundwater	G	GW	2	X	X										

LAB USE ONLY 26  
 Comments

FOR CHAIN OF CUSTODY USE ONLY 27

LAB USE ONLY: Sample Receipt Information 30

Relinquished by: 28 Kevin S. Johnson Date/Time 6/9/16 @ 1540  
 Received by: [Signature] Date/Time 6/9/16 @ 1540  
 Relinquished by: [Signature] Date/Time 6/10/16 0718  
 Received by: [Signature] Date/Time 6/10/16 7:18

43C (GPEL-1R-4P), with ice, cooler in good condition, PHK2  
Hand.  
[Signature] 6/11/16 0911

7/13/2016

347156B WHITE, CANARY & PINK—Laboratory GOLDENROD—Originator (See Back For Instructions)  
 Relinquished by: [Signature] to FedEx @ 9:00, 6/10/16 25.1°C, 0.6°C, 15.4°C JR6

## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-122891-2

SDG Number: AP

**Login Number: 122891**

**List Number: 1**

**Creator: Crawford, Lauren E**

**List Source: TestAmerica Pensacola**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	25.1°C, 0.6°C, 15.4°C IR-6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

## Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-17
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-17
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	07-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16 *
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-17
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16 *
Michigan	State Program	5	9912	06-30-16 *
New Jersey	NELAP	2	FL006	06-30-17
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16 *
Tennessee	State Program	4	TN02907	06-30-17
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	08-31-16

## Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-17
California	State Program	9	2886	03-31-18
Connecticut	State Program	1	PH-0241	03-31-17
Florida	NELAP	4	E87689	06-30-17
Illinois	NELAP	5	003757	11-30-16
Iowa	State Program	7	373	12-01-16
Kansas	NELAP	7	E-10236	07-31-16 *
Kentucky (DW)	State Program	4	90125	12-31-16
L-A-B	DoD ELAP		L2305	04-06-19
Louisiana	NELAP	6	04080	06-30-17
Louisiana (DW)	NELAP	6	LA160008	12-31-16
Maryland	State Program	3	310	09-30-16 *
Missouri	State Program	7	780	06-30-17
Nevada	State Program	9	MO000542016-1	07-31-16 *
New Jersey	NELAP	2	MO002	06-30-17
New York	NELAP	2	11616	03-31-17
North Dakota	State Program	8	R207	06-30-16 *
NRC	NRC		24-24817-01	12-31-22

\* Certification renewal pending - certification considered valid.

TestAmerica Pensacola

# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-122891-2  
SDG: AP

## Laboratory: TestAmerica St. Louis (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Oklahoma	State Program	6	9997	08-31-16 *
Pennsylvania	NELAP	3	68-00540	02-28-17 *
South Carolina	State Program	4	85002001	06-30-16 *
Texas	NELAP	6	T104704193-15-9	07-31-16 *
USDA	Federal		P330-07-00122	01-09-17
Utah	NELAP	8	MO000542015-7	07-31-16 *
Virginia	NELAP	3	460230	06-14-17
Washington	State Program	10	C592	08-30-16 *
West Virginia DEP	State Program	3	381	08-31-16 *

\* Certification renewal pending - certification considered valid.

TestAmerica Pensacola

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-123007-1

TestAmerica Sample Delivery Group: AP

Client Project/Site: CCR Plant Bowen

For:

Southern Company

241 Ralph McGill Blvd SE

B10185

Atlanta, Georgia 30308

Attn: Joju Abraham



Authorized for release by:

6/20/2016 4:20:55 PM

Cheyenne Whitmire, Project Manager II

(850)474-1001

[cheyenne.whitmire@testamericainc.com](mailto:cheyenne.whitmire@testamericainc.com)

### LINKS

Review your project  
results through

Total Access

Have a Question?



Visit us at:

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

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

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

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

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# Case Narrative

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

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**Job ID: 400-123007-1**

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**Laboratory: TestAmerica Pensacola**

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**Narrative**

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**Job Narrative  
400-123007-1**

**HPLC/IC**

Method(s) 300.0: The following samples were diluted to bring the concentration of target analytes within the calibration range: BGWC-15 (400-123007-1) and BGWC-14 (400-123007-2). Elevated reporting limits (RLs) are provided.

**Metals**

Method(s) 6020: The continuing calibration verification (CCV) associated with batch 310768 recovered above the upper control limit for Lead. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: BGWC-15 (400-123007-1) and BGWC-14 (400-123007-2).

Method(s) 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for prep batch 309914 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.





# Detection Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

## Client Sample ID: BGWC-15

## Lab Sample ID: 400-123007-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Chloride	12		1.0	0.89	mg/L	1			300.0	Total/NA
Fluoride	0.12	J	0.20	0.082	mg/L	1			300.0	Total/NA
Sulfate	460		10	7.0	mg/L	10			300.0	Total/NA
Arsenic	0.0073		0.0013	0.00046	mg/L	5			6020	Total Recoverable
Barium	0.093		0.0025	0.00049	mg/L	5			6020	Total Recoverable
Boron	0.035	J	0.050	0.021	mg/L	5			6020	Total Recoverable
Calcium	130		0.25	0.13	mg/L	5			6020	Total Recoverable
Cobalt	0.018		0.0025	0.00040	mg/L	5			6020	Total Recoverable
Molybdenum	0.0090	J	0.015	0.00085	mg/L	5			6020	Total Recoverable
Total Dissolved Solids	980		5.0	3.4	mg/L	1			SM 2540C	Total/NA

## Client Sample ID: BGWC-14

## Lab Sample ID: 400-123007-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Chloride	35		1.0	0.89	mg/L	1			300.0	Total/NA
Fluoride	0.23		0.20	0.082	mg/L	1			300.0	Total/NA
Sulfate	100		5.0	3.5	mg/L	5			300.0	Total/NA
Arsenic	0.0049		0.0013	0.00046	mg/L	5			6020	Total Recoverable
Barium	0.080		0.0025	0.00049	mg/L	5			6020	Total Recoverable
Boron	0.54		0.050	0.021	mg/L	5			6020	Total Recoverable
Calcium	70		0.25	0.13	mg/L	5			6020	Total Recoverable
Molybdenum	0.014	J	0.015	0.00085	mg/L	5			6020	Total Recoverable
Total Dissolved Solids	420		5.0	3.4	mg/L	1			SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

# Method Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PEN
6020	Metals (ICP/MS)	SW846	TAL PEN
7470A	Mercury (CVAA)	SW846	TAL PEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PEN

### Protocol References:

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

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

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

### Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

# Sample Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-123007-1	BGWC-15	Water	06/10/16 08:51	06/14/16 10:23
400-123007-2	BGWC-14	Water	06/10/16 09:58	06/14/16 10:23

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

**Client Sample ID: BGWC-15**

**Lab Sample ID: 400-123007-1**

**Date Collected: 06/10/16 08:51**

**Matrix: Water**

**Date Received: 06/14/16 10:23**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		1.0	0.89	mg/L			06/17/16 13:39	1
Fluoride	0.12	J	0.20	0.082	mg/L			06/17/16 13:39	1
Sulfate	460		10	7.0	mg/L			06/17/16 00:43	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/16/16 14:00	06/20/16 13:39	5
Arsenic	0.0073		0.0013	0.00046	mg/L		06/16/16 14:00	06/20/16 13:39	5
Barium	0.093		0.0025	0.00049	mg/L		06/16/16 14:00	06/20/16 13:39	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/16/16 14:00	06/20/16 13:39	5
Boron	0.035	J	0.050	0.021	mg/L		06/16/16 14:00	06/20/16 13:39	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/16/16 14:00	06/20/16 13:39	5
Calcium	130		0.25	0.13	mg/L		06/16/16 14:00	06/20/16 13:39	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/16/16 14:00	06/20/16 13:39	5
Cobalt	0.018		0.0025	0.00040	mg/L		06/16/16 14:00	06/20/16 13:39	5
Lead	<0.00035	^	0.0013	0.00035	mg/L		06/16/16 14:00	06/20/16 13:39	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/16/16 14:00	06/20/16 13:39	5
Molybdenum	0.0090	J	0.015	0.00085	mg/L		06/16/16 14:00	06/20/16 13:39	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/16/16 14:00	06/20/16 13:39	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/16/16 14:00	06/20/16 13:39	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/14/16 09:28	06/17/16 11:55	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	980		5.0	3.4	mg/L			06/16/16 16:09	1

# Client Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

**Client Sample ID: BGWC-14**

**Lab Sample ID: 400-123007-2**

**Date Collected: 06/10/16 09:58**

**Matrix: Water**

**Date Received: 06/14/16 10:23**

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	35		1.0	0.89	mg/L			06/17/16 14:02	1
Fluoride	0.23		0.20	0.082	mg/L			06/17/16 14:02	1
Sulfate	100		5.0	3.5	mg/L			06/17/16 14:25	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/16/16 14:00	06/20/16 13:44	5
Arsenic	0.0049		0.0013	0.00046	mg/L		06/16/16 14:00	06/20/16 13:44	5
Barium	0.080		0.0025	0.00049	mg/L		06/16/16 14:00	06/20/16 13:44	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/16/16 14:00	06/20/16 13:44	5
Boron	0.54		0.050	0.021	mg/L		06/16/16 14:00	06/20/16 13:44	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/16/16 14:00	06/20/16 13:44	5
Calcium	70		0.25	0.13	mg/L		06/16/16 14:00	06/20/16 13:44	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/16/16 14:00	06/20/16 13:44	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/16/16 14:00	06/20/16 13:44	5
Lead	<0.00035	^	0.0013	0.00035	mg/L		06/16/16 14:00	06/20/16 13:44	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/16/16 14:00	06/20/16 13:44	5
Molybdenum	0.014	J	0.015	0.00085	mg/L		06/16/16 14:00	06/20/16 13:44	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/16/16 14:00	06/20/16 13:44	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/16/16 14:00	06/20/16 13:44	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/14/16 09:28	06/17/16 11:57	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	420		5.0	3.4	mg/L			06/16/16 16:09	1

# Definitions/Glossary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

### Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.

## Glossary

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

# Lab Chronicle

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

**Client Sample ID: BGWC-15**

**Lab Sample ID: 400-123007-1**

**Date Collected: 06/10/16 08:51**

**Matrix: Water**

**Date Received: 06/14/16 10:23**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	310321	06/17/16 00:43	TAJ	TAL PEN
Total/NA	Analysis	300.0		1	310546	06/17/16 13:39	TAJ	TAL PEN
Total Recoverable	Prep	3005A			310216	06/16/16 14:00	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310768	06/20/16 13:39	RJB	TAL PEN
Total/NA	Prep	7470A			309914	06/14/16 09:28	JAP	TAL PEN
Total/NA	Analysis	7470A		1	310417	06/17/16 11:55	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	310243	06/16/16 16:09	CAC	TAL PEN

**Client Sample ID: BGWC-14**

**Lab Sample ID: 400-123007-2**

**Date Collected: 06/10/16 09:58**

**Matrix: Water**

**Date Received: 06/14/16 10:23**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	310546	06/17/16 14:02	TAJ	TAL PEN
Total/NA	Analysis	300.0		5	310546	06/17/16 14:25	TAJ	TAL PEN
Total Recoverable	Prep	3005A			310216	06/16/16 14:00	RJB	TAL PEN
Total Recoverable	Analysis	6020		5	310768	06/20/16 13:44	RJB	TAL PEN
Total/NA	Prep	7470A			309914	06/14/16 09:28	JAP	TAL PEN
Total/NA	Analysis	7470A		1	310417	06/17/16 11:57	JAP	TAL PEN
Total/NA	Analysis	SM 2540C		1	310243	06/16/16 16:09	CAC	TAL PEN

**Laboratory References:**

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

## HPLC/IC

### Analysis Batch: 310321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-123007-1	BGWC-15	Total/NA	Water	300.0	
400-123007-A-2 MS	400-123007-A-2 MS	Total/NA	Water	300.0	
400-123105-A-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 400-310321/5	Lab Control Sample	Total/NA	Water	300.0	
LCS 400-310321/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-310321/4	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 310546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122676-A-4 MS	Matrix Spike	Total/NA	Water	300.0	
400-122676-A-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
400-123007-1	BGWC-15	Total/NA	Water	300.0	
400-123007-2	BGWC-14	Total/NA	Water	300.0	
400-123007-2	BGWC-14	Total/NA	Water	300.0	
LCS 400-310546/5	Lab Control Sample	Total/NA	Water	300.0	
LCS 400-310546/6	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 400-310546/4	Method Blank	Total/NA	Water	300.0	

## Metals

### Prep Batch: 309914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-123007-1	BGWC-15	Total/NA	Water	7470A	
400-123007-2	BGWC-14	Total/NA	Water	7470A	
600-132442-B-1-B MS	Matrix Spike	Total/NA	Water	7470A	
600-132442-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
LCS 400-309914/15-A	Lab Control Sample	Total/NA	Water	7470A	
MB 400-309914/14-A	Method Blank	Total/NA	Water	7470A	

### Prep Batch: 310216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-123007-1	BGWC-15	Total Recoverable	Water	3005A	
400-123007-2	BGWC-14	Total Recoverable	Water	3005A	
LCS 400-310216/2-A ^1	Lab Control Sample	Total Recoverable	Water	3005A	
MB 400-310216/1-A ^5	Method Blank	Total Recoverable	Water	3005A	

### Analysis Batch: 310417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-123007-1	BGWC-15	Total/NA	Water	7470A	309914
400-123007-2	BGWC-14	Total/NA	Water	7470A	309914
600-132442-B-1-B MS	Matrix Spike	Total/NA	Water	7470A	309914
600-132442-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	309914
MB 400-309914/14-A	Method Blank	Total/NA	Water	7470A	309914

### Analysis Batch: 310420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 400-309914/15-A	Lab Control Sample	Total/NA	Water	7470A	309914

TestAmerica Pensacola



# QC Association Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

## Metals (Continued)

### Analysis Batch: 310768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-123007-1	BGWC-15	Total Recoverable	Water	6020	310216
400-123007-2	BGWC-14	Total Recoverable	Water	6020	310216
LCS 400-310216/2-A ^1	Lab Control Sample	Total Recoverable	Water	6020	310216
MB 400-310216/1-A ^5	Method Blank	Total Recoverable	Water	6020	310216

## General Chemistry

### Analysis Batch: 310243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-122879-D-5 DU	Duplicate	Total/NA	Water	SM 2540C	
400-123007-1	BGWC-15	Total/NA	Water	SM 2540C	
400-123007-2	BGWC-14	Total/NA	Water	SM 2540C	
LCS 400-310243/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 400-310243/1	Method Blank	Total/NA	Water	SM 2540C	

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 400-310321/4**  
**Matrix: Water**  
**Analysis Batch: 310321**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<0.70		1.0	0.70	mg/L			06/16/16 13:40	1

**Lab Sample ID: LCS 400-310321/5**  
**Matrix: Water**  
**Analysis Batch: 310321**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.7		mg/L		107	90 - 110

**Lab Sample ID: LCSD 400-310321/6**  
**Matrix: Water**  
**Analysis Batch: 310321**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.8		mg/L		108	90 - 110	1	15

**Lab Sample ID: 400-123105-A-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 310321**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	610	E F1	10.0	622	E 4	mg/L		79	80 - 120	2	20

**Lab Sample ID: MB 400-310546/4**  
**Matrix: Water**  
**Analysis Batch: 310546**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.89		1.0	0.89	mg/L			06/17/16 12:30	1
Fluoride	<0.082		0.20	0.082	mg/L			06/17/16 12:30	1
Sulfate	<0.70		1.0	0.70	mg/L			06/17/16 12:30	1

**Lab Sample ID: LCS 400-310546/5**  
**Matrix: Water**  
**Analysis Batch: 310546**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.62		mg/L		96	90 - 110
Fluoride	10.0	10.4		mg/L		104	90 - 110
Sulfate	10.0	9.59		mg/L		96	90 - 110

**Lab Sample ID: LCSD 400-310546/6**  
**Matrix: Water**  
**Analysis Batch: 310546**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.62		mg/L		96	90 - 110	0	15
Fluoride	10.0	10.4		mg/L		104	90 - 110	0	15
Sulfate	10.0	9.81		mg/L		98	90 - 110	2	15

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 400-122676-A-4 MS**

**Matrix: Water**

**Analysis Batch: 310546**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7.7		10.0	17.7		mg/L		100	80 - 120
Fluoride	0.17	J	10.0	11.2		mg/L		111	80 - 120
Sulfate	6.3		10.0	17.0		mg/L		107	80 - 120

**Lab Sample ID: 400-122676-A-4 MSD**

**Matrix: Water**

**Analysis Batch: 310546**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7.7		10.0	18.1		mg/L		103	80 - 120	2	20
Fluoride	0.17	J	10.0	11.5		mg/L		113	80 - 120	2	20
Sulfate	6.3		10.0	17.4		mg/L		110	80 - 120	2	20

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

**Lab Sample ID: MB 400-310216/1-A ^5**

**Matrix: Water**

**Analysis Batch: 310768**

**Client Sample ID: Method Blank**

**Prep Type: Total Recoverable**

**Prep Batch: 310216**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.0010		0.0025	0.0010	mg/L		06/16/16 14:00	06/20/16 13:23	5
Arsenic	<0.00046		0.0013	0.00046	mg/L		06/16/16 14:00	06/20/16 13:23	5
Barium	<0.00049		0.0025	0.00049	mg/L		06/16/16 14:00	06/20/16 13:23	5
Beryllium	<0.00034		0.0025	0.00034	mg/L		06/16/16 14:00	06/20/16 13:23	5
Boron	<0.021		0.050	0.021	mg/L		06/16/16 14:00	06/20/16 13:23	5
Cadmium	<0.00034		0.0025	0.00034	mg/L		06/16/16 14:00	06/20/16 13:23	5
Calcium	<0.13		0.25	0.13	mg/L		06/16/16 14:00	06/20/16 13:23	5
Chromium	<0.0011		0.0025	0.0011	mg/L		06/16/16 14:00	06/20/16 13:23	5
Cobalt	<0.00040		0.0025	0.00040	mg/L		06/16/16 14:00	06/20/16 13:23	5
Lead	<0.00035	^	0.0013	0.00035	mg/L		06/16/16 14:00	06/20/16 13:23	5
Lithium	<0.0032		0.0050	0.0032	mg/L		06/16/16 14:00	06/20/16 13:23	5
Molybdenum	<0.00085		0.015	0.00085	mg/L		06/16/16 14:00	06/20/16 13:23	5
Selenium	<0.00024		0.0013	0.00024	mg/L		06/16/16 14:00	06/20/16 13:23	5
Thallium	<0.000085		0.00050	0.000085	mg/L		06/16/16 14:00	06/20/16 13:23	5

**Lab Sample ID: LCS 400-310216/2-A ^1**

**Matrix: Water**

**Analysis Batch: 310768**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total Recoverable**

**Prep Batch: 310216**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.0500	0.0522		mg/L		104	80 - 120
Arsenic	0.0500	0.0533		mg/L		107	80 - 120
Barium	0.0500	0.0468		mg/L		94	80 - 120
Beryllium	0.0500	0.0491		mg/L		98	80 - 120
Boron	0.100	0.0959		mg/L		96	80 - 120
Cadmium	0.0500	0.0505		mg/L		101	80 - 120
Calcium	5.00	4.93		mg/L		99	80 - 120
Chromium	0.0500	0.0514		mg/L		103	80 - 120

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

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

Lab Sample ID: LCS 400-310216/2-A ^1  
Matrix: Water  
Analysis Batch: 310768

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 310216

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.0500	0.0506		mg/L		101	80 - 120
Lead	0.0500	0.0529	^	mg/L		106	80 - 120
Lithium	0.0500	0.0515		mg/L		103	80 - 120
Molybdenum	0.0500	0.0507		mg/L		101	80 - 120
Selenium	0.0500	0.0518		mg/L		104	80 - 120
Thallium	0.0100	0.00993		mg/L		99	80 - 120

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 400-309914/14-A  
Matrix: Water  
Analysis Batch: 310417

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 309914

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000070		0.00020	0.000070	mg/L		06/14/16 09:27	06/17/16 11:51	1

Lab Sample ID: LCS 400-309914/15-A  
Matrix: Water  
Analysis Batch: 310420

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 309914

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00101	0.00103		mg/L		102	80 - 120

Lab Sample ID: 600-132442-B-1-B MS  
Matrix: Water  
Analysis Batch: 310417

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 309914

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.000071	J F1	0.00201	0.00156	F1	mg/L		74	80 - 120

Lab Sample ID: 600-132442-B-1-C MSD  
Matrix: Water  
Analysis Batch: 310417

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 309914

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Mercury	0.000071	J F1	0.00201	0.00159	F1	mg/L		76	80 - 120	2	20

## Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 400-310243/1  
Matrix: Water  
Analysis Batch: 310243

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<3.4		5.0	3.4	mg/L			06/16/16 16:09	1

TestAmerica Pensacola

# QC Sample Results

Client: Southern Company  
 Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
 SDG: AP

## Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: LCS 400-310243/2**  
**Matrix: Water**  
**Analysis Batch: 310243**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	293	252		mg/L		86	78 - 122

**Lab Sample ID: 400-122879-D-5 DU**  
**Matrix: Water**  
**Analysis Batch: 310243**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	340		334		mg/L		3	5

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

**Georgia Power Environmental Laboratory**  
 2480 Maner Road, Bin 39110  
 Atlanta, Georgia 30339  
 Phone: (404) 799-2100  
 Company: 8-530-2100

400-123007  
**ANALYSIS REQUEST AND  
 CHAIN OF CUSTODY RECORD**

**LAB USE ONLY**  
 Work Order No. \_\_\_\_\_  
 Reviewed By: \_\_\_\_\_

<sup>12</sup> Page 1 of 1

<sup>13</sup> Standard Turnaround Time  
 # of Business Days (Rush)  
 (Must be cleared through Env. Lab. prior to shipment)

Company: <sup>1</sup> Interim Company Services  
 Report To: Jojo Abraham  
 Address: <sup>2</sup> 241 Rigid McCall Blvd SE 8026  
Atlanta, Ga 30308  
 Phone/Fax: <sup>3</sup> 404-506-7239  
 Contact: <sup>4</sup> Jojo Abraham  
 Project Location: <sup>5</sup> Plant Board  
 Account Number: <sup>6</sup> \_\_\_\_\_  
 Special Instructions: <sup>7</sup> CCR Asn Prod

Sample Shipment Date: <sup>8</sup> 6/10/16  
 Sampled By: <sup>9</sup> Kevin Stinson *Print Name*  
Kevin Stinson, Robert M. Hill, Forrest Howard, Michael P. Allen  
Kevin Stinson *Signature*

Sample Received Date: <sup>10</sup> \_\_\_\_\_  
 Sample Received By: <sup>11</sup> \_\_\_\_\_  
 Authorization to subcontract analysis will be assumed acceptable by customer unless stated otherwise.

PRESERVATIVE <sup>21</sup>					
Z	T	Z			
ANALYSIS REQUESTED <sup>22</sup>					

- Sample Type Key: <sup>23</sup>**  
 G-Grab C-Composite  
 O-Other
- Matrix Key: <sup>24</sup>**  
 O-Oil SW-Surface Water  
 S-Solid GW-Ground Water  
 SL-Sludge WW-Waste Water  
 W-Wipe DW-Drinking Water  
 LQ-Liquid OW-Other Water
- Preservative Key: <sup>25</sup>**  
 H-Hydrochloric Acid  
 N-Nitric Acid  
 S-Sulfuric Acid  
 SH-Sodium Hydroxide  
 P-Phosphoric Acid  
 ST-Sodium Thiosulfate  
 I-Ice  
 U-Unpreserved  
 O-Other (Specify)

LAB USE ONLY <sup>14</sup> LAB ID	Sample Number <sup>15</sup>	Collection <sup>16</sup>		Sample Description <sup>17</sup>	Sample Type <sup>18</sup>	Matrix <sup>19</sup>	No. of Containers <sup>20</sup>	Methods Applied EPA 620, 1470 C.I.F. 301 EPA 803 TDS 581510C	Refrigeration 22.65 226 5.0 6.16 93.5 9322	QR Code	LAB USE ONLY <sup>26</sup> Comments
		Date	Time								
	BGC-15	6/10/16	0851	Groundwater	G	GW	2	X	X		
	BGC-14	6/10/16	0958	Groundwater	G	GW	2	X	X		



FOR CHAIN OF CUSTODY USE ONLY <sup>27</sup>				LAB USE ONLY: Sample Receipt Information <sup>30</sup>			
Relinquished by: <sup>28</sup> <u>Kevin Stinson</u>	Date/Time	<u>6/10/16 @ 1200</u>		4.6°C (69°F) IR-4P ice, hand, seal, cooler in good condition, pH 2			
Received by: <sup>29</sup> <u>[Signature]</u>	Date/Time	<u>6/10/16 @ 1200</u>					
Relinquished by: <sup>28</sup> <u>[Signature]</u>	Date/Time	<u>6/10/16 1404</u>					
Received by: <sup>29</sup> <u>[Signature]</u>	Date/Time	<u>6/10/16 14:04</u>					

347156B  
 Relinquished by [Signature] 6-13-16 @ 1100  
 WHITE, CANARY & PINK — Laboratory GOLDENROD — Originator  
 Received @ LAB by: [Signature] 6/14/16 10:23 0.7°C IR-4  
 (See Back For Instructions)

Page 17 of 19

6/20/2016



## Login Sample Receipt Checklist

Client: Southern Company

Job Number: 400-123007-1

SDG Number: AP

**Login Number: 123007**

**List Number: 1**

**Creator: Crawford, Lauren E**

**List Source: TestAmerica Pensacola**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.2°C IR-6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Certification Summary

Client: Southern Company  
Project/Site: CCR Plant Bowen

TestAmerica Job ID: 400-123007-1  
SDG: AP

## Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-16
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	07-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-17 *
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	06-30-16

\* Certification renewal pending - certification considered valid.





**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: AZH0320**

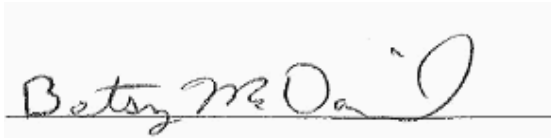
**August 17, 2016**

**Project: CCR Event**

**Project #: Plant Bowen Ash Pond**

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:



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

August 17, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-1	AZH0320-01	Ground Water	08/09/16 10:35	08/10/16 09:10
BGWA-2	AZH0320-02	Ground Water	08/09/16 11:25	08/10/16 09:10
BGWA-3	AZH0320-03	Ground Water	08/09/16 13:44	08/10/16 09:10
BGWA-4	AZH0320-04	Ground Water	08/09/16 14:10	08/10/16 09:10



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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 17, 2016

Report No.: AZH0320

Project: CCR Event

Client ID: BGWA-1

Lab Number ID: AZH0320-01

Date/Time Sampled: 8/9/2016 10:35:00AM

Date/Time Received: 8/10/2016 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	432	25	10	mg/L	SM 2540 C		1	08/13/16 12:30	08/13/16 12:30	6080361	JPT
<b>Inorganic Anions</b>											
Chloride	56	0.50	0.03	mg/L	EPA 300.0		2	08/11/16 18:09	08/14/16 18:28	6080343	RLC
Fluoride	0.36	0.30	0.02	mg/L	EPA 300.0		1	08/11/16 18:09	08/16/16 19:45	6080343	RLC
Sulfate	45	2.0	0.10	mg/L	EPA 300.0		2	08/11/16 18:09	08/14/16 18:28	6080343	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Barium	0.103	0.0100	0.0003	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Boron	0.808	0.100	0.0044	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Calcium	80.5	5.00	0.126	mg/L	EPA 6020B		10	08/12/16 08:40	08/16/16 18:33	6080325	KLH
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Cobalt	0.0005	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Lead	0.000090	0.0050	0.00008	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Molybdenum	0.0007	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Selenium	0.0032	0.0100	0.0009	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Thallium	0.0002	0.0010	0.00006	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:28	6080325	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/11/16 14:15	08/12/16 13:28	6080292	CSW



**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

August 17, 2016

Report No.: AZH0320

Project: CCR Event

Client ID: BGWA-2

Lab Number ID: AZH0320-02

Date/Time Sampled: 8/9/2016 11:25:00AM

Date/Time Received: 8/10/2016 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	08/13/16 12:30	08/13/16 12:30	6080361	JPT
<b>Inorganic Anions</b>											
Chloride	2.5	0.25	0.01	mg/L	EPA 300.0		1	08/11/16 18:09	08/14/16 18:48	6080343	RLC
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	08/11/16 18:09	08/14/16 18:48	6080343	RLC
Sulfate	6.5	1.0	0.05	mg/L	EPA 300.0		1	08/11/16 18:09	08/14/16 18:48	6080343	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Barium	0.188	0.0100	0.0003	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Boron	0.0336	0.100	0.0044	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Calcium	32.2	2.50	0.0628	mg/L	EPA 6020B		5	08/12/16 08:40	08/17/16 15:19	6080325	KLH
Chromium	0.0019	0.0100	0.0004	mg/L	EPA 6020B	B-01, J	1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Cobalt	0.0005	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Molybdenum	0.0016	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Thallium	0.0001	0.0010	0.00006	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:34	6080325	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/11/16 14:15	08/12/16 13:31	6080292	CSW



**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

August 17, 2016

Report No.: AZH0320

Project: CCR Event

Client ID: BGWA-3

Lab Number ID: AZH0320-03

Date/Time Sampled: 8/9/2016 1:44:00PM

Date/Time Received: 8/10/2016 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	476	25	10	mg/L	SM 2540 C		1	08/13/16 12:30	08/13/16 12:30	6080361	JPT
<b>Inorganic Anions</b>											
Chloride	61	1.2	0.07	mg/L	EPA 300.0		5	08/11/16 18:09	08/14/16 19:50	6080343	RLC
Fluoride	0.07	0.30	0.02	mg/L	EPA 300.0	J	1	08/11/16 18:09	08/16/16 20:06	6080343	RLC
Sulfate	41	5.0	0.26	mg/L	EPA 300.0		5	08/11/16 18:09	08/14/16 19:50	6080343	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Barium	0.0132	0.0100	0.0003	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Boron	0.677	0.100	0.0044	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Calcium	67.6	5.00	0.126	mg/L	EPA 6020B		10	08/12/16 08:40	08/16/16 18:38	6080325	KLH
Chromium	0.0024	0.0100	0.0004	mg/L	EPA 6020B	B-01, J	1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Cobalt	0.0020	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Selenium	0.0059	0.0100	0.0009	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Thallium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:39	6080325	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/11/16 14:15	08/12/16 13:33	6080292	CSW



**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

August 17, 2016

Report No.: AZH0320

Project: CCR Event

Client ID: BGWA-4

Lab Number ID: AZH0320-04

Date/Time Sampled: 8/9/2016 2:10:00PM

Date/Time Received: 8/10/2016 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	908	25	10	mg/L	SM 2540 C		1	08/13/16 12:30	08/13/16 12:30	6080361	JPT
<b>Inorganic Anions</b>											
Chloride	210	1.2	0.07	mg/L	EPA 300.0		5	08/11/16 18:09	08/16/16 20:27	6080343	RLC
Fluoride	1.1	0.30	0.02	mg/L	EPA 300.0		1	08/11/16 18:09	08/14/16 20:11	6080343	RLC
Sulfate	82	5.0	0.26	mg/L	EPA 300.0		5	08/11/16 18:09	08/16/16 20:27	6080343	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Arsenic	0.0034	0.0050	0.0007	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Barium	0.0545	0.0100	0.0003	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Boron	2.62	0.100	0.0044	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Calcium	123	25.0	0.628	mg/L	EPA 6020B		50	08/12/16 08:40	08/16/16 18:16	6080325	KLH
Chromium	0.0011	0.0100	0.0004	mg/L	EPA 6020B	B-01, J	1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Cobalt	0.0009	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Lead	0.000090	0.0050	0.00008	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Molybdenum	0.0029	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Selenium	0.0074	0.0100	0.0009	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Thallium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Lithium	0.0013	0.0500	0.0012	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 14:45	6080325	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/11/16 14:15	08/12/16 13:35	6080292	CSW



**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

August 17, 2016

**Report No.: AZH0320**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080361 - SM 2540 C</b>											
<b>Blank (6080361-BLK1)</b>						Prepared & Analyzed: 08/13/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6080361-BS1)</b>						Prepared & Analyzed: 08/13/16					
Total Dissolved Solids	386	25	10	mg/L	400.00		96	84-108			
<b>Duplicate (6080361-DUP1)</b>						Source: AZH0320-02 Prepared & Analyzed: 08/13/16					
Total Dissolved Solids	198	25	10	mg/L		183			8	10	
<b>Duplicate (6080361-DUP2)</b>						Source: AZH0320-04 Prepared & Analyzed: 08/13/16					
Total Dissolved Solids	902	25	10	mg/L		908			0.7	10	



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August 17, 2016

**Report No.: AZH0320**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080343 - EPA 300.0</b>											
<b>Blank (6080343-BLK1)</b>						Prepared: 08/11/16 Analyzed: 08/14/16					
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 (6080343-BS1)</b>						Prepared: 08/11/16 Analyzed: 08/14/16					
Chloride	9.97	0.25	0.01	mg/L	10.010		100	90-110			
Fluoride	10.3	0.30	0.02	mg/L	10.010		103	90-110			
Sulfate	10.1	1.0	0.05	mg/L	10.010		101	90-110			
<b>Matrix Spike (6080343-MS1)</b>						Source: AZH0320-02 Prepared: 08/11/16 Analyzed: 08/14/16					
Chloride	12.4	0.25	0.01	mg/L	10.010	2.53	98	90-110			
Fluoride	10.3	0.30	0.02	mg/L	10.010	0.09	102	90-110			
Sulfate	15.9	1.0	0.05	mg/L	10.010	6.53	94	90-110			
<b>Matrix Spike (6080343-MS2)</b>						Source: AZH0380-03 Prepared: 08/11/16 Analyzed: 08/14/16					
Chloride	12.0	0.25	0.01	mg/L	10.010	2.15	98	90-110			
Fluoride	10.2	0.30	0.02	mg/L	10.010	0.07	101	90-110			
Sulfate	36.0	1.0	0.05	mg/L	10.010	28.8	72	90-110			QM-05
<b>Matrix Spike Dup (6080343-MSD1)</b>						Source: AZH0320-02 Prepared: 08/11/16 Analyzed: 08/14/16					
Chloride	12.4	0.25	0.01	mg/L	10.010	2.53	99	90-110	0.4	15	
Fluoride	10.3	0.30	0.02	mg/L	10.010	0.09	102	90-110	0.4	15	
Sulfate	15.9	1.0	0.05	mg/L	10.010	6.53	94	90-110	0.02	15	





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August 17, 2016

**Report No.: AZH0320**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080292 - EPA 7470A</b>											
<b>Blank (6080292-BLK1)</b>						Prepared: 08/11/16 Analyzed: 08/12/16					
Mercury	ND	0.00020	0.00013	mg/L							
<b>Blank (6080292-BLK2)</b>						Prepared: 08/11/16 Analyzed: 08/12/16					
Mercury	ND	0.00020	0.00013	mg/L							
<b>LCS (6080292-BS1)</b>						Prepared: 08/11/16 Analyzed: 08/12/16					
Mercury	0.00248	0.00050	0.00013	mg/L	2.5000E-3		99	80-120			
<b>LCS (6080292-BS2)</b>						Prepared: 08/11/16 Analyzed: 08/12/16					
Mercury	0.00246	0.00050	0.00013	mg/L	2.5000E-3		98	80-120			
<b>Matrix Spike (6080292-MS1)</b>			<b>Source: AZH0320-01</b>			Prepared: 08/11/16 Analyzed: 08/12/16					
Mercury	0.00252	0.00050	0.00013	mg/L	2.5000E-3	ND	101	75-125			
<b>Matrix Spike Dup (6080292-MSD1)</b>			<b>Source: AZH0320-01</b>			Prepared: 08/11/16 Analyzed: 08/12/16					
Mercury	0.00248	0.00050	0.00013	mg/L	2.5000E-3	ND	99	75-125	1	20	
<b>Post Spike (6080292-PS1)</b>			<b>Source: AZH0320-01</b>			Prepared: 08/11/16 Analyzed: 08/12/16					
Mercury	1.62			ug/L	1.6667	0.00103	97	80-120			
<b>Batch 6080325 - EPA 3005A</b>											
<b>Blank (6080325-BLK1)</b>						Prepared: 08/12/16 Analyzed: 08/16/16					
Antimony	ND	0.0030	0.0002	mg/L							
Arsenic	ND	0.0050	0.0007	mg/L							
Barium	ND	0.0100	0.0003	mg/L							
Beryllium	ND	0.0030	0.00008	mg/L							
Boron	ND	0.100	0.0044	mg/L							
Cadmium	ND	0.0010	0.00007	mg/L							
Calcium	ND	0.500	0.0126	mg/L							
Chromium	0.0023	0.0100	0.0004	mg/L							J
Cobalt	ND	0.0100	0.0003	mg/L							
Copper	ND	0.0250	0.0004	mg/L							
Lead	ND	0.0050	0.00008	mg/L							
Molybdenum	ND	0.0100	0.0005	mg/L							
Nickel	ND	0.0100	0.0005	mg/L							
Selenium	ND	0.0100	0.0009	mg/L							
Silver	ND	0.0100	0.0002	mg/L							
Thallium	ND	0.0010	0.00006	mg/L							
Vanadium	0.0026	0.0100	0.0016	mg/L							J
Zinc	ND	0.0100	0.0013	mg/L							
Lithium	ND	0.0500	0.0012	mg/L							



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August 17, 2016

**Report No.: AZH0320**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080325 - EPA 3005A</b>											
<b>LCS (6080325-BS1)</b>						Prepared: 08/12/16 Analyzed: 08/16/16					
Antimony	0.0980	0.0030	0.0008	mg/L	0.10000		98	80-120			
Arsenic	0.0993	0.0050	0.0016	mg/L	0.10000		99	80-120			
Barium	0.0918	0.0100	0.0004	mg/L	0.10000		92	80-120			
Beryllium	0.0956	0.0030	0.00008	mg/L	0.10000		96	80-120			
Boron	0.929	0.100	0.0064	mg/L	1.0000		93	80-120			
Cadmium	0.0965	0.0010	0.00007	mg/L	0.10000		97	80-120			
Calcium	0.976	0.500	0.0311	mg/L	1.0000		98	80-120			
Chromium	0.101	0.0100	0.0009	mg/L	0.10000		101	80-120			
Cobalt	0.0984	0.0100	0.0005	mg/L	0.10000		98	80-120			
Copper	0.0971	0.0250	0.0005	mg/L	0.10000		97	80-120			
Lead	0.0894	0.0050	0.0001	mg/L	0.10000		89	80-120			
Molybdenum	0.0975	0.0100	0.0017	mg/L	0.10000		97	80-120			
Nickel	0.0985	0.0100	0.0006	mg/L	0.10000		98	80-120			
Selenium	0.0968	0.0100	0.0010	mg/L	0.10000		97	80-120			
Silver	0.0947	0.0100	0.0005	mg/L	0.10000		95	80-120			
Thallium	0.0906	0.0010	0.0002	mg/L	0.10000		91	80-120			
Vanadium	0.0983	0.0100	0.0071	mg/L	0.10000		98	80-120			
Zinc	0.104	0.0100	0.0021	mg/L	0.10000		104	80-120			
Lithium	0.0971	0.0500	0.0021	mg/L	0.10000		97	80-120			
<b>Matrix Spike (6080325-MS1)</b>											
				<b>Source: AZH0380-04</b>		Prepared: 08/12/16 Analyzed: 08/16/16					
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125			
Arsenic	0.0971	0.0050	0.0016	mg/L	0.10000	ND	97	75-125			
Barium	0.127	0.0100	0.0004	mg/L	0.10000	0.0353	92	75-125			
Beryllium	0.0914	0.0030	0.00008	mg/L	0.10000	ND	91	75-125			
Boron	3.51	0.100	0.0064	mg/L	1.0000	2.71	80	75-125			
Cadmium	0.0980	0.0010	0.00007	mg/L	0.10000	ND	98	75-125			
Calcium	132	25.0	1.55	mg/L	1.0000	122	NR	75-125			QM-02
Chromium	0.0990	0.0100	0.0009	mg/L	0.10000	0.0054	94	75-125			
Cobalt	0.0946	0.0100	0.0005	mg/L	0.10000	0.0006	94	75-125			
Copper	0.0916	0.0250	0.0005	mg/L	0.10000	ND	92	75-125			
Lead	0.0875	0.0050	0.0001	mg/L	0.10000	ND	88	75-125			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000	ND	103	75-125			
Nickel	0.0992	0.0100	0.0006	mg/L	0.10000	0.0062	93	75-125			
Selenium	0.116	0.0100	0.0010	mg/L	0.10000	0.0170	99	75-125			
Silver	0.0929	0.0100	0.0005	mg/L	0.10000	ND	93	75-125			
Thallium	0.0896	0.0010	0.0002	mg/L	0.10000	ND	90	75-125			
Vanadium	0.0957	0.0100	0.0071	mg/L	0.10000	ND	96	75-125			
Zinc	0.0994	0.0100	0.0021	mg/L	0.10000	0.0025	97	75-125			
Lithium	0.0950	0.0500	0.0021	mg/L	0.10000	ND	95	75-125			



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 17, 2016

**Report No.: AZH0320**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080325 - EPA 3005A</b>											
<b>Matrix Spike Dup (6080325-MSD1)</b>			<b>Source: AZH0380-04</b>			<b>Prepared: 08/12/16 Analyzed: 08/16/16</b>					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125	1	20	
Arsenic	0.0988	0.0050	0.0016	mg/L	0.10000	ND	99	75-125	2	20	
Barium	0.123	0.0100	0.0004	mg/L	0.10000	0.0353	88	75-125	3	20	
Beryllium	0.0930	0.0030	0.00008	mg/L	0.10000	ND	93	75-125	2	20	
Boron	3.67	0.100	0.0064	mg/L	1.0000	2.71	96	75-125	4	20	
Cadmium	0.0976	0.0010	0.00007	mg/L	0.10000	ND	98	75-125	0.4	20	
Calcium	131	25.0	1.55	mg/L	1.0000	122	855	75-125	1	20	QM-02
Chromium	0.0976	0.0100	0.0009	mg/L	0.10000	0.0054	92	75-125	1	20	
Cobalt	0.0927	0.0100	0.0005	mg/L	0.10000	0.0006	92	75-125	2	20	
Copper	0.0896	0.0250	0.0005	mg/L	0.10000	ND	90	75-125	2	20	
Lead	0.0868	0.0050	0.0001	mg/L	0.10000	ND	87	75-125	0.9	20	
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000	ND	103	75-125	0.01	20	
Nickel	0.0973	0.0100	0.0006	mg/L	0.10000	0.0062	91	75-125	2	20	
Selenium	0.116	0.0100	0.0010	mg/L	0.10000	0.0170	99	75-125	0.1	20	
Silver	0.0944	0.0100	0.0005	mg/L	0.10000	ND	94	75-125	2	20	
Thallium	0.0876	0.0010	0.0002	mg/L	0.10000	ND	88	75-125	2	20	
Vanadium	0.0986	0.0100	0.0071	mg/L	0.10000	ND	99	75-125	3	20	
Zinc	0.101	0.0100	0.0021	mg/L	0.10000	0.0025	99	75-125	2	20	
Lithium	0.0925	0.0500	0.0021	mg/L	0.10000	ND	93	75-125	3	20	
<b>Post Spike (6080325-PS1)</b>			<b>Source: AZH0380-04</b>			<b>Prepared: 08/12/16 Analyzed: 08/16/16</b>					
Antimony	102			ug/L	100.00	0.0800	102	80-120			
Arsenic	98.4			ug/L	100.00	-1.74	100	80-120			
Barium	125			ug/L	100.00	35.3	90	80-120			
Beryllium	96.6			ug/L	100.00	0.0200	97	80-120			
Boron	3800			ug/L	1000.0	2710	109	80-120			
Cadmium	96.8			ug/L	100.00	0.0200	97	80-120			
Calcium	127000			ug/L	1000.0	122000	512	80-120			QM-02
Chromium	100			ug/L	100.00	5.44	95	80-120			
Cobalt	95.1			ug/L	100.00	0.580	95	80-120			
Copper	92.3			ug/L	100.00	0.400	92	80-120			
Lead	87.8			ug/L	100.00	-0.0100	88	80-120			
Molybdenum	102			ug/L	100.00	0.250	101	80-120			
Nickel	99.1			ug/L	100.00	6.23	93	80-120			
Selenium	118			ug/L	100.00	17.0	101	80-120			
Silver	93.0			ug/L	100.00	ND	93	80-120			
Thallium	89.0			ug/L	100.00	0.0100	89	80-120			
Vanadium	94.8			ug/L	100.00	-2.00	97	80-120			
Zinc	101			ug/L	100.00	2.46	99	80-120			
Lithium	98.2			ug/L	100.00	0.750	97	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 17, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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

PAGE: 1 OF 2

CLIENT NAME					ANALYSIS REQUESTED					L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER 241 Rapid McGin Blvd SE B10185 Atlanta, GA 30308 Phone: 404-506-7239					CONTAINER TYPE								P - PLASTIC	1 - HCl, ≤6°C
					PRESERVATION								A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C
					# of								G - CLEAR GLASS	3 - HNO <sub>3</sub>
REPORT TO:					CONTAINERS						V - VOA VIAL	4 - NaOH, ≤8°C		
REQUESTED COMPLETION DATE:					C O N T A I N E R S						S - STERILE	5 - NaOH/ZnAc, ≤8°C		
PROJECT NAME/STATE:					↓ Metab App II + III EPA 600.20 EPA 710 U.F. 504 EPA 300 SDS 31055405 Residual 226.7278 Spill-Bulk 9315-9320						O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C		
PROJECT #:														7 - ≤6°C not frozen
COLLECTION DATE					M A T R I X C O D E S									
COLLECTION TIME					D W - DRINKING WATER					S - SOIL				
MATRIX CODE*					W W - WASTEWATER					S L - SLUDGE				
C O M P					G W - GROUNDWATER					S D - SOLID				
S R A B					S W - SURFACE WATER					A - AIR				
SAMPLE IDENTIFICATION					S T - STORM WATER					L - LIQUID				
					W - WATER					P - PRODUCT				
										REMARKS/ADDITIONAL INFORMATION				
8/9/16	1035	GW		A	RGWA-1	3	X	1	1			1		
8/9/16	1125	GW		X	RGWA-2	3	X	1	1			2		
8/9/16	1344	GW		A	RGWA-3	3	X	1	1			3		
8/9/16	1410	GW		A	RGWA-4	3	X	1	1			4		

SAMPLED BY AND TITLE		DATE/TIME		RELINQUISHED BY		DATE/TIME		FOR LAB USE ONLY	
RECEIVED BY:		DATE/TIME		RELINQUISHED BY		DATE/TIME		LAB #:	
RECEIVED BY LAB:		DATE/TIME		SAMPLE SHIPPED VIA:		DATE/TIME		Entered into LIMS: [initials]	
Checked:		Temperature:		Custody Seal:		# of Coolers:		Tracking #:	
Yes No NA		Min Max		Intact Broken Not Present		Cooler ID:		8044 5444 7843	



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Environmental Monitoring & Laboratory Analysis  
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## LOG-IN CHECKLIST

Printed: 8/17/2016 5:18:40PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 08/10/16 09:10

Work Order: AZH0320

Logged In By: Charles Hawks

### OBSERVATIONS

#Samples: 4

#Containers: 12

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:



September 28, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen AW Pond CCR  
Pace Project No.: 30192812

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on August 11, 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.

Report reissued 9/27/16 to reflect the inclusion of Ra-226 QC data that did not appear on the initial 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 Bowen AW Pond CCR  
Pace Project No.: 30192812

### 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

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### SAMPLE SUMMARY

Project: Plant Bowen AW Pond CCR  
Pace Project No.: 30192812

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30192812001	BGWA-1	Water	08/09/16 10:35	08/11/16 09:40
30192812002	BGWA-2	Water	08/09/16 11:25	08/11/16 09:40
30192812003	BGWA-3	Water	08/09/16 13:44	08/11/16 09:40
30192812004	BGWA-4	Water	08/09/16 14:10	08/11/16 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen AW Pond CCR  
Pace Project No.: 30192812

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30192812001	BGWA-1	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30192812002	BGWA-2	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30192812003	BGWA-3	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30192812004	BGWA-4	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen AW Pond CCR

Pace Project No.: 30192812

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWA-1</b> <b>Lab ID: 30192812001</b> Collected: 08/09/16 10:35      Received: 08/11/16 09:40      Matrix: Water						
PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.738 ± 0.220 (0.206)</b> C:91% T:NA	pCi/L	08/24/16 08:23	13982-63-3	
Radium-228	EPA 9320	<b>1.18 ± 0.452 (0.648)</b> C:76% T:78%	pCi/L	08/30/16 21:47	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.92 ± 0.672 (0.854)</b>	pCi/L	09/08/16 12:34	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWA-2</b> <b>Lab ID: 30192812002</b> Collected: 08/09/16 11:25      Received: 08/11/16 09:40      Matrix: Water						
PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.339 ± 0.146 (0.188)</b> C:92% T:NA	pCi/L	08/24/16 08:23	13982-63-3	
Radium-228	EPA 9320	<b>0.839 ± 0.430 (0.745)</b> C:71% T:83%	pCi/L	08/30/16 21:47	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.18 ± 0.576 (0.933)</b>	pCi/L	09/08/16 12:34	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWA-3</b> <b>Lab ID: 30192812003</b> Collected: 08/09/16 13:44      Received: 08/11/16 09:40      Matrix: Water						
PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.137 ± 0.101 (0.169)</b> C:88% T:NA	pCi/L	08/24/16 08:23	13982-63-3	
Radium-228	EPA 9320	<b>0.550 ± 0.365 (0.690)</b> C:77% T:84%	pCi/L	08/30/16 21:47	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.687 ± 0.466 (0.859)</b>	pCi/L	09/08/16 12:34	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWA-4</b> <b>Lab ID: 30192812004</b> Collected: 08/09/16 14:10      Received: 08/11/16 09:40      Matrix: Water						
PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.522 ± 0.179 (0.193)</b> C:91% T:NA	pCi/L	08/24/16 11:30	13982-63-3	
Radium-228	EPA 9320	<b>1.69 ± 0.531 (0.646)</b> C:75% T:86%	pCi/L	08/30/16 21:47	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.21 ± 0.710 (0.839)</b>	pCi/L	09/08/16 12:34	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: Plant Bowen AW Pond CCR  
 Pace Project No.: 30192812

---

QC Batch: 230247 Analysis Method: EPA 9315  
 QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
 Associated Lab Samples: 30192812001, 30192812002, 30192812003, 30192812004

---

METHOD BLANK: 1128358 Matrix: Water  
 Associated Lab Samples: 30192812001, 30192812002, 30192812003, 30192812004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.00933 ± 0.0667 (0.180) C:95% T:NA	pCi/L	08/24/16 08:23	

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 Bowen AW Pond CCR  
 Pace Project No.: 30192812

---

QC Batch: 230246 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30192812001, 30192812002, 30192812003, 30192812004

---

METHOD BLANK: 1128357 Matrix: Water  
 Associated Lab Samples: 30192812001, 30192812002, 30192812003, 30192812004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.736 ± 0.370 (0.643) C:81% T:88%	pCi/L	08/30/16 21:45	

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 Bowen AW Pond CCR  
Pace Project No.: 30192812

### 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#: 30192812



30192812

CHAIN OF CUSTODY RECORD



Pace Analytical Services, Inc
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 3
(770) 734-4200 : FAX (770) 734-4201

Form containing client information, analysis requested details, container types, collection dates, and lab use only section.

received: Karen E. Hill 8/11/16 0940

Sample Condition Upon Receipt Pittsburgh

30192812



Client Name: Pace Georgia Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 0812 5098 3480

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

Thermometer Used NIA    Type of Ice: Wet Blue (None)

Cooler Temperature Observed Temp NIA °C    Correction Factor: NIA °C    Final Temp: NIA °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: AK 8/11/16

Comments:	Yes	No	N/A	
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:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID/Analysis    Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.
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>AK</u>		Date/time of preservation	
	Lot # of added preservative			
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>AK</u> Date: <u>8/11/16</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-228  
Analyst: JLW  
Date: 8/22/2016  
Worklist: 30963  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1128357
MB concentration:	0.736
M/B Counting Uncertainty:	0.346
MB MDC:	0.643
MB Numerical Performance Indicator:	4.17
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS30963	LCSD30963
Count Date:	8/30/2016	
Spike I.D.:	16-025	
Spike Concentration (pCi/mL):	25.799	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.802	
Target Conc. (pCi/L, g, F):	6.436	
Uncertainty (Calculated):	0.463	
Result (pCi/L, g, F):	6.647	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.757	
Numerical Performance Indicator:	0.47	
Percent Recovery:	103.28%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30192430001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30192430001DUP	
Sample Result (pCi/L, g, F):	0.673	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.383	
Sample Duplicate Result (pCi/L, g, F):	0.400	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.442	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.913	30192430001
Duplicate RPD:	50.84%	30192430001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.*  
*Q9/9/16*



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: WRR  
Date: 8/22/2016  
Worklist: 30964  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1128358
MB concentration:	-0.009
M/B Counting Uncertainty:	0.067
MB MDC:	0.180
MB Numerical Performance Indicator:	-0.27
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS30964	LCSD30964
Count Date:	8/24/2016		
Spike I.D.:	16-026		
Spike Concentration (pCi/mL):	44.679		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.505		
Target Conc. (pCi/L, g, F):	8.842		
Uncertainty (Calculated):	0.416		
Result (pCi/L, g, F):	7.177		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.520		
Numerical Performance Indicator:	-4.90		
Percent Recovery:	81.18%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30192430003	
Duplicate Sample I.D.	30192430003DUP	
Sample Result (pCi/L, g, F):	0.283	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.130	
Sample Duplicate Result (pCi/L, g, F):	0.354	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.145	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.715	30192430003
Duplicate RPD:	22.34%	30192430003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*WRR 8/22/16*



**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: AZH0380**

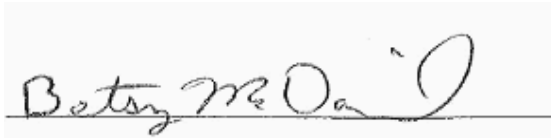
**August 18, 2016**

**Project: CCR Event**

**Project #: Plant Bowen Ash Pond**

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:



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.**

---

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 18, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-5	AZH0380-01	Ground Water	08/10/16 09:46	08/11/16 09:05
BGWA-6	AZH0380-02	Ground Water	08/10/16 12:20	08/11/16 09:05
BGWC-8	AZH0380-03	Ground Water	08/10/16 10:55	08/11/16 09:05
Dup-1	AZH0380-04	Ground Water	08/10/16 00:00	08/11/16 09:05



**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

August 18, 2016

Report No.: AZH0380

Project: CCR Event

Client ID: BGWA-5

Lab Number ID: AZH0380-01

Date/Time Sampled: 8/10/2016 9:46:00AM

Date/Time Received: 8/11/2016 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	938	25	10	mg/L	SM 2540 C		1	08/13/16 12:30	08/13/16 12:30	6080361	JPT
<b>Inorganic Anions</b>											
Chloride	160	1.2	0.07	mg/L	EPA 300.0		5	08/11/16 18:09	08/14/16 21:33	6080343	RLC
Fluoride	0.05	0.30	0.02	mg/L	EPA 300.0	J	1	08/11/16 18:09	08/16/16 22:32	6080343	RLC
Sulfate	110	5.0	0.26	mg/L	EPA 300.0		5	08/11/16 18:09	08/14/16 21:33	6080343	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Barium	0.0361	0.0100	0.0003	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Boron	2.86	0.100	0.0044	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Calcium	127	25.0	0.628	mg/L	EPA 6020B		50	08/12/16 08:40	08/16/16 18:22	6080325	KLH
Chromium	0.0037	0.0100	0.0004	mg/L	EPA 6020B	B-01, J	1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Cobalt	0.0006	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Selenium	0.0175	0.0100	0.0009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Thallium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:26	6080325	KLH
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/12/16 08:40	08/17/16 14:56	6080325	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:20	6080419	CSW



**PACE ANALYTICAL SERVICES, INC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 18, 2016

Report No.: AZH0380

Project: CCR Event

Client ID: BGWA-6

Lab Number ID: AZH0380-02

Date/Time Sampled: 8/10/2016 12:20:00PM

Date/Time Received: 8/11/2016 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	299	25	10	mg/L	SM 2540 C		1	08/13/16 12:30	08/13/16 12:30	6080361	JPT
<b>Inorganic Anions</b>											
Chloride	5.3	0.25	0.01	mg/L	EPA 300.0		1	08/11/16 18:09	08/14/16 23:17	6080343	RLC
Fluoride	0.04	0.30	0.02	mg/L	EPA 300.0	J	1	08/11/16 18:09	08/14/16 23:17	6080343	RLC
Sulfate	22	1.0	0.05	mg/L	EPA 300.0		1	08/11/16 18:09	08/14/16 23:17	6080343	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Barium	0.0142	0.0100	0.0003	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Boron	0.0876	0.100	0.0044	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Calcium	56.0	5.00	0.126	mg/L	EPA 6020B		10	08/12/16 08:40	08/16/16 18:49	6080325	KLH
Chromium	0.0044	0.0100	0.0004	mg/L	EPA 6020B	B-01, J	1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Cobalt	0.0006	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Thallium	0.000070	0.0010	0.00006	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 15:31	6080325	KLH
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/12/16 08:40	08/17/16 15:01	6080325	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:22	6080419	CSW



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Attention: Mr. Joju Abraham

August 18, 2016

Report No.: AZH0380

Project: CCR Event

Client ID: BGWC-8

Lab Number ID: AZH0380-03

Date/Time Sampled: 8/10/2016 10:55:00AM

Date/Time Received: 8/11/2016 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	228	25	10	mg/L	SM 2540 C		1	08/13/16 12:30	08/13/16 12:30	6080361	JPT
<b>Inorganic Anions</b>											
Chloride	2.1	0.25	0.01	mg/L	EPA 300.0		1	08/11/16 18:09	08/14/16 23:37	6080343	RLC
Fluoride	0.07	0.30	0.02	mg/L	EPA 300.0	J	1	08/11/16 18:09	08/14/16 23:37	6080343	RLC
Sulfate	29	1.0	0.05	mg/L	EPA 300.0		1	08/11/16 18:09	08/14/16 23:37	6080343	RLC
<b>Metals, Total</b>											
Antimony	0.0004	0.0030	0.0002	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Barium	0.0264	0.0100	0.0003	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Boron	0.117	0.100	0.0044	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Calcium	36.8	2.50	0.0628	mg/L	EPA 6020B		5	08/12/16 08:40	08/17/16 15:24	6080325	KLH
Chromium	0.0052	0.0100	0.0004	mg/L	EPA 6020B	B-01, J	1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Cobalt	0.0003	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Molybdenum	0.0039	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Thallium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:37	6080325	KLH
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/12/16 08:40	08/17/16 15:07	6080325	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:25	6080419	CSW



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 18, 2016

Report No.: AZH0380

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AZH0380-04

Date/Time Sampled: 8/10/2016 12:00:00AM

Date/Time Received: 8/11/2016 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	935	25	10	mg/L	SM 2540 C		1	08/13/16 12:30	08/13/16 12:30	6080361	JPT
<b>Inorganic Anions</b>											
Chloride	200	1.2	0.07	mg/L	EPA 300.0		5	08/11/16 18:09	08/16/16 22:53	6080343	RLC
Fluoride	0.05	0.30	0.02	mg/L	EPA 300.0	J	1	08/11/16 18:09	08/15/16 00:19	6080343	RLC
Sulfate	140	5.0	0.26	mg/L	EPA 300.0		5	08/11/16 18:09	08/16/16 22:53	6080343	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Barium	0.0353	0.0100	0.0003	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Boron	2.71	0.100	0.0044	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Calcium	122	25.0	0.628	mg/L	EPA 6020B		50	08/12/16 08:40	08/16/16 18:27	6080325	KLH
Chromium	0.0054	0.0100	0.0004	mg/L	EPA 6020B	B-01, J	1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Cobalt	0.0006	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Selenium	0.0170	0.0100	0.0009	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Thallium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	08/12/16 08:40	08/16/16 15:42	6080325	KLH
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/12/16 08:40	08/17/16 15:42	6080325	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:27	6080419	CSW





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Attention: Mr. Joju Abraham

August 18, 2016

**Report No.: AZH0380**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080361 - SM 2540 C</b>											
<b>Blank (6080361-BLK1)</b>						Prepared & Analyzed: 08/13/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6080361-BS1)</b>						Prepared & Analyzed: 08/13/16					
Total Dissolved Solids	386	25	10	mg/L	400.00		96	84-108			
<b>Duplicate (6080361-DUP1)</b>						Source: AZH0320-02 Prepared & Analyzed: 08/13/16					
Total Dissolved Solids	198	25	10	mg/L		183			8	10	
<b>Duplicate (6080361-DUP2)</b>						Source: AZH0320-04 Prepared & Analyzed: 08/13/16					
Total Dissolved Solids	902	25	10	mg/L		908			0.7	10	



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Attention: Mr. Joju Abraham

August 18, 2016

**Report No.: AZH0380**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080343 - EPA 300.0</b>											
<b>Blank (6080343-BLK1)</b>						Prepared: 08/11/16 Analyzed: 08/14/16					
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 (6080343-BS1)</b>						Prepared: 08/11/16 Analyzed: 08/14/16					
Chloride	9.97	0.25	0.01	mg/L	10.010		100	90-110			
Fluoride	10.3	0.30	0.02	mg/L	10.010		103	90-110			
Sulfate	10.1	1.0	0.05	mg/L	10.010		101	90-110			
<b>Matrix Spike (6080343-MS1)</b>						Source: AZH0320-02 Prepared: 08/11/16 Analyzed: 08/14/16					
Chloride	12.4	0.25	0.01	mg/L	10.010	2.53	98	90-110			
Fluoride	10.3	0.30	0.02	mg/L	10.010	0.09	102	90-110			
Sulfate	15.9	1.0	0.05	mg/L	10.010	6.53	94	90-110			
<b>Matrix Spike (6080343-MS2)</b>						Source: AZH0380-03 Prepared: 08/11/16 Analyzed: 08/14/16					
Chloride	12.0	0.25	0.01	mg/L	10.010	2.15	98	90-110			
Fluoride	10.2	0.30	0.02	mg/L	10.010	0.07	101	90-110			
Sulfate	36.0	1.0	0.05	mg/L	10.010	28.8	72	90-110			QM-05
<b>Matrix Spike Dup (6080343-MSD1)</b>						Source: AZH0320-02 Prepared: 08/11/16 Analyzed: 08/14/16					
Chloride	12.4	0.25	0.01	mg/L	10.010	2.53	99	90-110	0.4	15	
Fluoride	10.3	0.30	0.02	mg/L	10.010	0.09	102	90-110	0.4	15	
Sulfate	15.9	1.0	0.05	mg/L	10.010	6.53	94	90-110	0.02	15	



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August 18, 2016

**Report No.: AZH0380**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080325 - EPA 3005A</b>											
<b>Blank (6080325-BLK1)</b>						Prepared: 08/12/16 Analyzed: 08/16/16					
Antimony	ND	0.0030	0.0002	mg/L							
Arsenic	ND	0.0050	0.0007	mg/L							
Barium	ND	0.0100	0.0003	mg/L							
Beryllium	ND	0.0030	0.00008	mg/L							
Boron	ND	0.100	0.0044	mg/L							
Cadmium	ND	0.0010	0.00007	mg/L							
Calcium	ND	0.500	0.0126	mg/L							
Chromium	0.0023	0.0100	0.0004	mg/L							J
Cobalt	ND	0.0100	0.0003	mg/L							
Copper	ND	0.0250	0.0004	mg/L							
Lead	ND	0.0050	0.00008	mg/L							
Molybdenum	ND	0.0100	0.0005	mg/L							
Nickel	ND	0.0100	0.0005	mg/L							
Selenium	ND	0.0100	0.0009	mg/L							
Silver	ND	0.0100	0.0002	mg/L							
Thallium	ND	0.0010	0.00006	mg/L							
Vanadium	0.0026	0.0100	0.0016	mg/L							J
Zinc	ND	0.0100	0.0013	mg/L							
Lithium	ND	0.0500	0.0012	mg/L							
<b>LCS (6080325-BS1)</b>						Prepared: 08/12/16 Analyzed: 08/16/16					
Antimony	0.0980	0.0030	0.0008	mg/L	0.10000		98	80-120			
Arsenic	0.0993	0.0050	0.0016	mg/L	0.10000		99	80-120			
Barium	0.0918	0.0100	0.0004	mg/L	0.10000		92	80-120			
Beryllium	0.0956	0.0030	0.00008	mg/L	0.10000		96	80-120			
Boron	0.929	0.100	0.0064	mg/L	1.0000		93	80-120			
Cadmium	0.0965	0.0010	0.00007	mg/L	0.10000		97	80-120			
Calcium	0.976	0.500	0.0311	mg/L	1.0000		98	80-120			
Chromium	0.101	0.0100	0.0009	mg/L	0.10000		101	80-120			
Cobalt	0.0984	0.0100	0.0005	mg/L	0.10000		98	80-120			
Copper	0.0971	0.0250	0.0005	mg/L	0.10000		97	80-120			
Lead	0.0894	0.0050	0.0001	mg/L	0.10000		89	80-120			
Molybdenum	0.0975	0.0100	0.0017	mg/L	0.10000		97	80-120			
Nickel	0.0985	0.0100	0.0006	mg/L	0.10000		98	80-120			
Selenium	0.0968	0.0100	0.0010	mg/L	0.10000		97	80-120			
Silver	0.0947	0.0100	0.0005	mg/L	0.10000		95	80-120			
Thallium	0.0906	0.0010	0.0002	mg/L	0.10000		91	80-120			
Vanadium	0.0983	0.0100	0.0071	mg/L	0.10000		98	80-120			
Zinc	0.104	0.0100	0.0021	mg/L	0.10000		104	80-120			
Lithium	0.0971	0.0500	0.0021	mg/L	0.10000		97	80-120			



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Attention: Mr. Joju Abraham

August 18, 2016

**Report No.: AZH0380**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080325 - EPA 3005A</b>											
<b>Matrix Spike (6080325-MS1)</b>			<b>Source: AZH0380-04</b>			<b>Prepared: 08/12/16 Analyzed: 08/16/16</b>					
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125			
Arsenic	0.0971	0.0050	0.0016	mg/L	0.10000	ND	97	75-125			
Barium	0.127	0.0100	0.0004	mg/L	0.10000	0.0353	92	75-125			
Beryllium	0.0914	0.0030	0.00008	mg/L	0.10000	ND	91	75-125			
Boron	3.51	0.100	0.0064	mg/L	1.0000	2.71	80	75-125			
Cadmium	0.0980	0.0010	0.00007	mg/L	0.10000	ND	98	75-125			
Calcium	132	25.0	1.55	mg/L	1.0000	122	NR	75-125			QM-02
Chromium	0.0990	0.0100	0.0009	mg/L	0.10000	0.0054	94	75-125			
Cobalt	0.0946	0.0100	0.0005	mg/L	0.10000	0.0006	94	75-125			
Copper	0.0916	0.0250	0.0005	mg/L	0.10000	ND	92	75-125			
Lead	0.0875	0.0050	0.0001	mg/L	0.10000	ND	88	75-125			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000	ND	103	75-125			
Nickel	0.0992	0.0100	0.0006	mg/L	0.10000	0.0062	93	75-125			
Selenium	0.116	0.0100	0.0010	mg/L	0.10000	0.0170	99	75-125			
Silver	0.0929	0.0100	0.0005	mg/L	0.10000	ND	93	75-125			
Thallium	0.0896	0.0010	0.0002	mg/L	0.10000	ND	90	75-125			
Vanadium	0.0957	0.0100	0.0071	mg/L	0.10000	ND	96	75-125			
Zinc	0.0994	0.0100	0.0021	mg/L	0.10000	0.0025	97	75-125			
Lithium	0.0950	0.0500	0.0021	mg/L	0.10000	ND	95	75-125			
<b>Matrix Spike Dup (6080325-MSD1)</b>			<b>Source: AZH0380-04</b>			<b>Prepared: 08/12/16 Analyzed: 08/16/16</b>					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125	1	20	
Arsenic	0.0988	0.0050	0.0016	mg/L	0.10000	ND	99	75-125	2	20	
Barium	0.123	0.0100	0.0004	mg/L	0.10000	0.0353	88	75-125	3	20	
Beryllium	0.0930	0.0030	0.00008	mg/L	0.10000	ND	93	75-125	2	20	
Boron	3.67	0.100	0.0064	mg/L	1.0000	2.71	96	75-125	4	20	
Cadmium	0.0976	0.0010	0.00007	mg/L	0.10000	ND	98	75-125	0.4	20	
Calcium	131	25.0	1.55	mg/L	1.0000	122	855	75-125	1	20	QM-02
Chromium	0.0976	0.0100	0.0009	mg/L	0.10000	0.0054	92	75-125	1	20	
Cobalt	0.0927	0.0100	0.0005	mg/L	0.10000	0.0006	92	75-125	2	20	
Copper	0.0896	0.0250	0.0005	mg/L	0.10000	ND	90	75-125	2	20	
Lead	0.0868	0.0050	0.0001	mg/L	0.10000	ND	87	75-125	0.9	20	
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000	ND	103	75-125	0.01	20	
Nickel	0.0973	0.0100	0.0006	mg/L	0.10000	0.0062	91	75-125	2	20	
Selenium	0.116	0.0100	0.0010	mg/L	0.10000	0.0170	99	75-125	0.1	20	
Silver	0.0944	0.0100	0.0005	mg/L	0.10000	ND	94	75-125	2	20	
Thallium	0.0876	0.0010	0.0002	mg/L	0.10000	ND	88	75-125	2	20	
Vanadium	0.0986	0.0100	0.0071	mg/L	0.10000	ND	99	75-125	3	20	
Zinc	0.101	0.0100	0.0021	mg/L	0.10000	0.0025	99	75-125	2	20	
Lithium	0.0925	0.0500	0.0021	mg/L	0.10000	ND	93	75-125	3	20	



**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

August 18, 2016

**Report No.: AZH0380**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080325 - EPA 3005A</b>											
<b>Post Spike (6080325-PS1)</b>				<b>Source: AZH0380-04</b>				Prepared: 08/12/16 Analyzed: 08/16/16			
Antimony	102			ug/L	100.00	0.0800	102	80-120			
Arsenic	98.4			ug/L	100.00	-1.74	100	80-120			
Barium	125			ug/L	100.00	35.3	90	80-120			
Beryllium	96.6			ug/L	100.00	0.0200	97	80-120			
Boron	3800			ug/L	1000.0	2710	109	80-120			
Cadmium	96.8			ug/L	100.00	0.0200	97	80-120			
Calcium	127000			ug/L	1000.0	122000	512	80-120			QM-02
Chromium	100			ug/L	100.00	5.44	95	80-120			
Cobalt	95.1			ug/L	100.00	0.580	95	80-120			
Copper	92.3			ug/L	100.00	0.400	92	80-120			
Lead	87.8			ug/L	100.00	-0.0100	88	80-120			
Molybdenum	102			ug/L	100.00	0.250	101	80-120			
Nickel	99.1			ug/L	100.00	6.23	93	80-120			
Selenium	118			ug/L	100.00	17.0	101	80-120			
Silver	93.0			ug/L	100.00	ND	93	80-120			
Thallium	89.0			ug/L	100.00	0.0100	89	80-120			
Vanadium	94.8			ug/L	100.00	-2.00	97	80-120			
Zinc	101			ug/L	100.00	2.46	99	80-120			
Lithium	98.2			ug/L	100.00	0.750	97	80-120			

**Batch 6080419 - EPA 7470A**

<b>Blank (6080419-BLK1)</b>				Prepared & Analyzed: 08/16/16							
Mercury	ND	0.00050	0.00013	mg/L							
<b>LCS (6080419-BS1)</b>				Prepared & Analyzed: 08/16/16							
Mercury	0.00248	0.00050	0.00013	mg/L	2.5000E-3	99	80-120				



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 18, 2016

**Report No.: AZH0380**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080419 - EPA 7470A</b>											
<b>Matrix Spike (6080419-MS1)</b>			<b>Source: AZH0440-07</b>			<b>Prepared &amp; Analyzed: 08/16/16</b>					
Mercury	0.00253	0.00050	0.00013	mg/L	2.5000E-3	ND	101	75-125			
<b>Matrix Spike Dup (6080419-MSD1)</b>			<b>Source: AZH0440-07</b>			<b>Prepared &amp; Analyzed: 08/16/16</b>					
Mercury	0.00246	0.00050	0.00013	mg/L	2.5000E-3	ND	98	75-125	3	20	
<b>Post Spike (6080419-PS1)</b>			<b>Source: AZH0440-07</b>			<b>Prepared &amp; Analyzed: 08/16/16</b>					
Mercury	1.55			ug/L	1.6667	0.0160	92	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 18, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>						ANALYSIS REQUESTED						L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION			
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE 310185 Atlanta, GA 30308 404-506-7239</u>						PRESERVATION: <u>3 7 3</u>							P - PLASTIC		1 - HCl, ≤8°C			
REPORT TO: <u>Joju Abraham</u> CC:						C O N T A I N E R S  ↓	Metals App III + IV EPA 6020 + EPA 7470 Cl, F, SO4 EPA 300 TDS Sm 2540C Radium 226 + 228 SW 846 9315 + 9320						A - AMBER GLASS		2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C			
REQUESTED COMPLETION DATE: <u>LABURCH@Southernco.com</u> PO #:													G - CLEAR GLASS		3 - HNO <sub>3</sub>			
PROJECT NAME/STATE: <u>Plant Bowen, Ash Pond CCR</u>													V - VOA VIAL		4 - NaOH, ≤6°C			
PROJECT #:													S - STERILE		5 - NaOH/ZnAc, ≤6°C			
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION							O - OTHER		6 - Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> , ≤6°C				
													*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			
8/10/16	0946	GW	X		B6WA-5	4	X	1	2						1			
8/10/16	1220	GW	X		B6WA-6	3	X	1	1						2			
8/10/16	1055	GW	X		<del>B6WA-8</del> B6WL-8 PHS sample	3	X	1	1						3			
8/10/16	✓	GW	X		Dup-1	3	X	1	1						4			

SAMPLED BY AND TITLE: <u>Kenneth Reed / Robert / Kenneth Steven</u>		DATE/TIME: <u>8/10/16 1545</u>	RELINQUISHED BY: <u>Kenneth Reed</u>	DATE/TIME: <u>8/10/16 1545</u>	FOR LAB USE ONLY	
RECEIVED BY: <u>Kenneth Steven</u>		DATE/TIME: <u>8/10/16 @ 1355</u>	RELINQUISHED BY: <u>Kenneth Steven</u>	DATE/TIME: <u>8/10/16 @ 1625</u>	LAB #: <u>AZH 0380</u>	
RECEIVED BY LAB: <u>Joju Abraham</u>		DATE/TIME: <u>8/10/16 0905</u>	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS		Entered into LIMS: <u>MR</u>	
pH checked: Yes No NA		Temperature: 10 Min: 10 Max:	Cooler ID: Intact Broken Not Present		Tracking #: <u>809523380797</u>	





**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: 8/18/2016 3:50:44PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 08/11/16 09:05

**Work Order:** AZH0380

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 4

**#Containers:** 13

**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:**



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

September 12, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30192960

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on August 12, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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 Bowen Ash Pond CCR  
Pace Project No.: 30192960

### 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

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30192960

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30192960001	BGWA-5	Water	08/10/16 09:46	08/12/16 09:40
30192960002	BGWA-6	Water	08/10/16 12:20	08/12/16 09:40
30192960003	BGWC-8	Water	08/10/16 10:55	08/12/16 09:40
30192960004	DUP-1	Water	08/10/16 00:01	08/12/16 09:40

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30192960

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30192960001	BGWA-5	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30192960002	BGWA-6	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30192960003	BGWC-8	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30192960004	DUP-1	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1

**REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30192960

Sample: BGWA-5		Lab ID: 30192960001	Collected: 08/10/16 09:46	Received: 08/12/16 09:40	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.308 ± 0.143</b>	<b>(0.189)</b>	pCi/L	08/24/16 11:30	13982-63-3	
		<b>C:84% T:NA</b>					
Radium-228	EPA 9320	<b>1.24 ± 0.514</b>	<b>(0.813)</b>	pCi/L	08/30/16 21:48	15262-20-1	
		<b>C:68% T:84%</b>					
Total Radium	Total Radium Calculation	<b>1.55 ± 0.657</b>	<b>(1.00)</b>	pCi/L	09/09/16 09:26	7440-14-4	

Sample: BGWA-6		Lab ID: 30192960002	Collected: 08/10/16 12:20	Received: 08/12/16 09:40	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.269 ± 0.133</b>	<b>(0.192)</b>	pCi/L	08/24/16 11:30	13982-63-3	
		<b>C:87% T:NA</b>					
Radium-228	EPA 9320	<b>0.922 ± 0.460</b>	<b>(0.793)</b>	pCi/L	08/30/16 21:48	15262-20-1	
		<b>C:72% T:79%</b>					
Total Radium	Total Radium Calculation	<b>1.19 ± 0.593</b>	<b>(0.985)</b>	pCi/L	09/09/16 09:26	7440-14-4	

Sample: BGWC-8		Lab ID: 30192960003	Collected: 08/10/16 10:55	Received: 08/12/16 09:40	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.120 ± 0.126</b>	<b>(0.255)</b>	pCi/L	08/24/16 11:30	13982-63-3	
		<b>C:86% T:NA</b>					
Radium-228	EPA 9320	<b>0.742 ± 0.411</b>	<b>(0.735)</b>	pCi/L	08/30/16 21:48	15262-20-1	
		<b>C:77% T:80%</b>					
Total Radium	Total Radium Calculation	<b>0.862 ± 0.537</b>	<b>(0.990)</b>	pCi/L	09/09/16 09:26	7440-14-4	

Sample: DUP-1		Lab ID: 30192960004	Collected: 08/10/16 00:01	Received: 08/12/16 09:40	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.257 ± 0.131</b>	<b>(0.194)</b>	pCi/L	08/24/16 11:30	13982-63-3	
		<b>C:94% T:NA</b>					
Radium-228	EPA 9320	<b>0.822 ± 0.459</b>	<b>(0.830)</b>	pCi/L	08/30/16 21:48	15262-20-1	
		<b>C:69% T:83%</b>					
Total Radium	Total Radium Calculation	<b>1.08 ± 0.590</b>	<b>(1.02)</b>	pCi/L	09/09/16 09:26	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30192960

---

QC Batch:	230247	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30192960001, 30192960002, 30192960003, 30192960004		

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 Bowen Ash Pond CCR  
 Pace Project No.: 30192960

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QC Batch: 230246 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30192960001, 30192960002, 30192960003, 30192960004

---

METHOD BLANK: 1128357 Matrix: Water  
 Associated Lab Samples: 30192960001, 30192960002, 30192960003, 30192960004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.736 ± 0.370 (0.643) C:81% T:88%	pCi/L	08/30/16 21:45	

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 Bowen Ash Pond CCR  
Pace Project No.: 30192960

### 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, PEACHTREE CORNERS  
(770) 734-4200 : FAX (770) 734-4201



CLIENT NAME:		ANALYSIS REQUESTED										CONTAINER TYPE	PRESERVATION
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:	P	P	P								
Southern Company Services		3		7		3						P - PLASTIC	1 - HCl, ≤6°C
241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308		PRESERVATION:		7		3						A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C
404-506-7239		# of										G - CLEAR GLASS	3 - HNO <sub>3</sub>
REPORT TO: Jojo Abraham		CONTAINERS		↓								V - VOA VIAL	4 - NaOH, ≤6°C
REQUESTED COMPLETION DATE:		C O N T A I N E R S		↓								S - STERILE	5 - NaOH/ZnAc, ≤6°C
PROJECT NAME/STATE: Plant Bowen Ash Pond CCR		↓										O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C
PROJECT #:		↓											7 - ≤6°C not frozen
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of							
8/10/16	0946	GW	X	X	BGWA-5	4	X	1	2				
8/10/16	1220	GW	X	X	BGWA-6	3	X	1	1				
8/10/16	1055	GW	X	X	<del>BGWA-8</del> BGWL-8 PH Specific	3	X	1	1				
8/10/16	/	GW	X	X	Dup-1	3	X	1	1				
SAMPLED BY AND TITLE:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		FOR LAB USE ONLY					
Kermit Howard / Robert Miller / Kevin Stover		8/10/16 1545		Kermit Howard		8/10/16 1545		LAB #:					
RECEIVED BY:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		Entered into LIMS:					
Kevin Stover		8/10/16 @ 1055		Kevin Stover / Jojo Fed EA		8/10/16 @ 1625		Tracking #:					
RECEIVED BY LAB:		DATE/TIME:		SAMPLE SHIPPED VIA:		CLIENT		OTHER FS					
				UPS FED-EX USPS COURIER									
pH checked:		Ice:		Temperature:		Custody Seal:		# of Coolers		Cooler ID:			
Yes No NA		Yes No NA		Min: Max:		Intact Broken Not Present							

Handwritten signature and date: 8-12-16 0940

Sample Condition Upon Receipt Pittsburgh



Client Name: GA Power Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 681250983847

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and initials of person examining contents: NTV  
8-12-16

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/Analysis 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.
Filtered volume received for Dissolved tests			X	12.
All containers needing preservation have been checked.	X			13.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>pkz</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>NTV</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			X	14.
Trip Blank Present:			X	15.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>NTV</u> Date: <u>8-12-16</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

Test: Ra-228  
Analyst: JLW  
Date: 8/22/2016  
Worklist: 30963  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1128357	
MB concentration:	0.736	
M/B Counting Uncertainty:	0.346	
MB MDC:	0.643	
MB Numerical Performance Indicator:	4.17	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	See Comment*	

Laboratory Control Sample Assessment		LCS (Y or N)?	N
	LCS30963		LCS30963
Count Date:	8/30/2016		
Spike I.D.:	16-025		
Spike Concentration (pCi/mL):	25.799		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.802		
Target Conc. (pCi/L, g, F):	6.436		
Uncertainty (Calculated):	0.463		
Result (pCi/L, g, F):	6.647		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.757		
Numerical Performance Indicator:	0.47		
Percent Recovery:	103.28%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30192430001	
Duplicate Sample I.D.:	30192430001DUP	
Sample Result (pCi/L, g, F):	0.673	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.383	
Sample Duplicate Result (pCi/L, g, F):	0.400	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.442	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.913	30192430001
Duplicate RPD:	50.84%	30192430001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: WRR  
Date: 8/22/2016  
Worklist: 30964  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1128358	
MB concentration:	-0.009	
M/B Counting Uncertainty:	0.067	
MB MDC:	0.180	
MB Numerical Performance Indicator:	-0.27	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS30964	LCS30964
Count Date:	8/24/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.679	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.505	
Target Conc. (pCi/L, g, F):	8.842	
Uncertainty (Calculated):	0.416	
Result (pCi/L, g, F):	7.177	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.520	
Numerical Performance Indicator:	-4.90	
Percent Recovery:	81.18%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30192430003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30192430003DUP	
Sample Result (pCi/L, g, F):	0.283	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.130	
Sample Duplicate Result (pCi/L, g, F):	0.354	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.145	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.715	30192430003
Duplicate RPD:	22.34%	30192430003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:



**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: AZH0440**

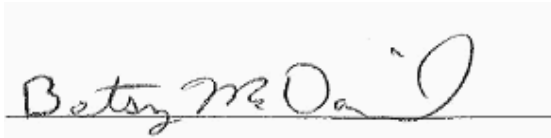
**August 19, 2016**

**Project: CCR Event**

**Project #: Plant Bowen Ash Pond**

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:



Project Manager

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All test results relate only to the samples analyzed.



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 19, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
FBL081116	AZH0440-01	DI Water	08/11/16 14:20	08/12/16 09:30
EQBL081116	AZH0440-02	DI Water	08/11/16 14:30	08/12/16 09:30
BGWC-16	AZH0440-03	Ground Water	08/11/16 10:57	08/12/16 09:30
BGWC-17	AZH0440-04	Ground Water	08/11/16 12:40	08/12/16 09:30
BGWC-11	AZH0440-05	Ground Water	08/11/16 14:05	08/12/16 09:30
BGWC-7	AZH0440-06	Ground Water	08/11/16 09:15	08/12/16 09:30
BGWC-9	AZH0440-07	Ground Water	08/11/16 12:05	08/12/16 09:30



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 19, 2016

Report No.: AZH0440

Project: CCR Event

Client ID: FBL081116

Lab Number ID: AZH0440-01

Date/Time Sampled: 8/11/2016 2:20:00PM

Date/Time Received: 8/12/2016 9:30:00AM

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	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	0.07	0.25	0.01	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/18/16 19:25	6080452	RLC
Fluoride	0.03	0.30	0.02	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/18/16 19:25	6080452	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	08/16/16 11:53	08/18/16 19:25	6080452	RLC
<b>Metals, Total</b>											
Antimony	0.0014	0.0030	0.0002	mg/L	EPA 6020B	B-01, J	1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Boron	0.0117	0.100	0.0044	mg/L	EPA 6020B	B-01, J	1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Calcium	ND	0.500	0.0126	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Lead	0.0004	0.0050	0.00008	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Thallium	0.00009	0.0010	0.00006	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:32	6080417	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:29	6080419	CSW





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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 19, 2016

Report No.: AZH0440

Project: CCR Event

Client ID: EQBL081116

Lab Number ID: AZH0440-02

Date/Time Sampled: 8/11/2016 2:30:00PM

Date/Time Received: 8/12/2016 9:30:00AM

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	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	0.07	0.25	0.01	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/17/16 06:50	6080452	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 06:50	6080452	RLC
Sulfate	0.26	1.0	0.05	mg/L	EPA 300.0	B-01, J	1	08/16/16 11:53	08/17/16 06:50	6080452	RLC
<b>Metals, Total</b>											
Antimony	0.0005	0.0030	0.0002	mg/L	EPA 6020B	B-01, J	1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Boron	0.0066	0.100	0.0044	mg/L	EPA 6020B	B-01, J	1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Calcium	ND	0.500	0.0126	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Thallium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:38	6080417	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:38	6080419	CSW



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 19, 2016

Report No.: AZH0440

Project: CCR Event

Client ID: BGWC-16

Lab Number ID: AZH0440-03

Date/Time Sampled: 8/11/2016 10:57:00AM

Date/Time Received: 8/12/2016 9:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	548	25	10	mg/L	SM 2540 C		1	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	41	0.25	0.01	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 07:11	6080452	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/17/16 07:11	6080452	RLC
Sulfate	250	5.0	0.26	mg/L	EPA 300.0	B-01	5	08/16/16 11:53	08/17/16 13:33	6080452	RLC
<b>Metals, Total</b>											
Antimony	0.0004	0.0030	0.0002	mg/L	EPA 6020B	B-01, J	1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Barium	0.0292	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Boron	1.37	0.100	0.0044	mg/L	EPA 6020B	B-01	1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Cadmium	0.0011	0.0010	0.0001	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Calcium	111	25.0	0.628	mg/L	EPA 6020B	B-01	50	08/16/16 08:35	08/18/16 15:58	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Cobalt	0.0039	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Thallium	0.0002	0.0010	0.00006	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:43	6080417	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:40	6080419	CSW



**PACE ANALYTICAL SERVICES, INC.**

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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 19, 2016

Report No.: AZH0440

Project: CCR Event

Client ID: BGWC-17

Lab Number ID: AZH0440-04

Date/Time Sampled: 8/11/2016 12:40:00PM

Date/Time Received: 8/12/2016 9:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	340	25	10	mg/L	SM 2540 C		1	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	34	0.25	0.01	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 08:15	6080452	RLC
Fluoride	0.30	0.30	0.02	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/17/16 08:15	6080452	RLC
Sulfate	110	5.0	0.26	mg/L	EPA 300.0	B-01	5	08/16/16 11:53	08/17/16 13:55	6080452	RLC
<b>Metals, Total</b>											
Antimony	0.0002	0.0030	0.0002	mg/L	EPA 6020B	B-01, J	1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Barium	0.0152	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Boron	1.41	0.100	0.0044	mg/L	EPA 6020B	B-01	1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Cadmium	0.0001	0.0010	0.0001	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Calcium	61.0	5.00	0.126	mg/L	EPA 6020B	B-01	10	08/16/16 08:35	08/18/16 16:10	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Thallium	0.00008	0.0010	0.00006	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:49	6080417	CSW
Mercury	0.00019	0.00050	0.00013	mg/L	EPA 7470A	J	1	08/16/16 09:15	08/16/16 16:42	6080419	CSW



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 19, 2016

Report No.: AZH0440

Project: CCR Event

Client ID: BGWC-11

Lab Number ID: AZH0440-05

Date/Time Sampled: 8/11/2016 2:05:00PM

Date/Time Received: 8/12/2016 9:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	285	25	10	mg/L	SM 2540 C		1	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	10	0.25	0.01	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 08:36	6080452	RLC
Fluoride	0.25	0.30	0.02	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/17/16 08:36	6080452	RLC
Sulfate	89	5.0	0.26	mg/L	EPA 300.0	B-01	5	08/16/16 11:53	08/17/16 14:17	6080452	RLC
<b>Metals, Total</b>											
Antimony	0.0020	0.0030	0.0002	mg/L	EPA 6020B	B-01, J	1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Arsenic	0.0037	0.0050	0.0007	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Barium	0.0222	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Boron	0.174	0.100	0.0044	mg/L	EPA 6020B	B-01	1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Calcium	34.4	2.50	0.0628	mg/L	EPA 6020B	B-01	5	08/16/16 08:35	08/18/16 16:27	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Molybdenum	0.0039	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Thallium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 12:55	6080417	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:45	6080419	CSW



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 19, 2016

Report No.: AZH0440

Project: CCR Event

Client ID: BGWC-7

Lab Number ID: AZH0440-06

Date/Time Sampled: 8/11/2016 9:15:00AM

Date/Time Received: 8/12/2016 9:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	852	25	10	mg/L	SM 2540 C		1	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	11	0.25	0.01	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 08:57	6080452	RLC
Fluoride	0.15	0.30	0.02	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/17/16 08:57	6080452	RLC
Sulfate	460	20	1.0	mg/L	EPA 300.0	B-01	20	08/16/16 11:53	08/18/16 19:46	6080452	RLC
<b>Metals, Total</b>											
Antimony	0.0005	0.0030	0.0002	mg/L	EPA 6020B	B-01, J	1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Arsenic	0.0024	0.0050	0.0007	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Barium	0.0428	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Boron	1.95	0.100	0.0044	mg/L	EPA 6020B	B-01	1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Calcium	141	25.0	0.628	mg/L	EPA 6020B	B-01	50	08/16/16 08:35	08/18/16 16:04	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Cobalt	0.0007	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Molybdenum	0.0100	0.0100	0.0005	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Thallium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Lithium	0.0093	0.0500	0.0012	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:12	6080417	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:47	6080419	CSW



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 19, 2016

Report No.: AZH0440

Project: CCR Event

Client ID: BGWC-9

Lab Number ID: AZH0440-07

Date/Time Sampled: 8/11/2016 12:05:00PM

Date/Time Received: 8/12/2016 9:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	361	25	10	mg/L	SM 2540 C		1	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	30	0.25	0.01	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 09:18	6080452	RLC
Fluoride	0.27	0.30	0.02	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/17/16 09:18	6080452	RLC
Sulfate	110	5.0	0.26	mg/L	EPA 300.0	B-01	5	08/16/16 11:53	08/17/16 16:25	6080452	RLC
<b>Metals, Total</b>											
Antimony	0.0003	0.0030	0.0002	mg/L	EPA 6020B	B-01, J	1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Arsenic	0.0028	0.0050	0.0007	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Barium	0.0305	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Boron	0.612	0.100	0.0044	mg/L	EPA 6020B	B-01	1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Calcium	65.2	5.00	0.126	mg/L	EPA 6020B	B-01	10	08/16/16 08:35	08/19/16 12:06	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Cobalt	0.0003	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Molybdenum	0.0030	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Selenium	0.0010	0.0100	0.0009	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Thallium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:18	6080417	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:49	6080419	CSW



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Attention: Mr. Joju Abraham

August 19, 2016

**Report No.: AZH0440**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080434 - SM 2540 C</b>											
<b>Blank (6080434-BLK1)</b>						Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6080434-BS1)</b>						Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	365	25	10	mg/L	400.00		91	84-108			
<b>Duplicate (6080434-DUP1)</b>						Source: AZH0440-07 Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	359	25	10	mg/L		361			0.6	10	
<b>Duplicate (6080434-DUP2)</b>						Source: AZH0474-01 Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	475	25	10	mg/L		476			0.2	10	



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August 19, 2016

**Report No.: AZH0440**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080452 - EPA 300.0</b>											
<b>Blank (6080452-BLK1)</b>						Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	0.42	1.0	0.05	mg/L							J
<b>LCS (6080452-BS1)</b>						Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	10.1	0.25	0.01	mg/L	10.010		101	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.010		105	90-110			
Sulfate	10.4	1.0	0.05	mg/L	10.010		104	90-110			
<b>Matrix Spike (6080452-MS1)</b>						Source: AZH0440-03 Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	46.3	0.25	0.01	mg/L	10.010	40.8	55	90-110			QM-05
Fluoride	10.5	0.30	0.02	mg/L	10.010	0.12	104	90-110			
Sulfate	185	1.0	0.05	mg/L	10.010	193	NR	90-110			QM-05
<b>Matrix Spike (6080452-MS2)</b>						Source: AZH0474-04 Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	107	0.25	0.01	mg/L	10.010	108	NR	90-110			QM-05
Fluoride	10.6	0.30	0.02	mg/L	10.010	0.04	106	90-110			
Sulfate	312	1.0	0.05	mg/L	10.010	330	NR	90-110			QM-05
<b>Matrix Spike Dup (6080452-MSD1)</b>						Source: AZH0440-03 Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	46.4	0.25	0.01	mg/L	10.010	40.8	55	90-110	0.05	15	QM-05
Fluoride	10.6	0.30	0.02	mg/L	10.010	0.12	104	90-110	0.2	15	
Sulfate	185	1.0	0.05	mg/L	10.010	193	NR	90-110	0.05	15	QM-05





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Attention: Mr. Joju Abraham

August 19, 2016

**Report No.: AZH0440**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080417 - EPA 3005A</b>											
<b>Blank (6080417-BLK1)</b>						Prepared: 08/16/16 Analyzed: 08/18/16					
Antimony	0.0007	0.0030	0.0002	mg/L							J
Arsenic	ND	0.0050	0.0007	mg/L							
Barium	ND	0.0100	0.0003	mg/L							
Beryllium	ND	0.0030	0.00008	mg/L							
Boron	0.0063	0.100	0.0044	mg/L							J
Cadmium	ND	0.0010	0.00007	mg/L							
Calcium	0.0174	0.500	0.0126	mg/L							J
Chromium	ND	0.0100	0.0004	mg/L							
Cobalt	ND	0.0100	0.0003	mg/L							
Copper	ND	0.0050	0.0004	mg/L							
Lead	ND	0.0050	0.00008	mg/L							
Molybdenum	ND	0.0100	0.0005	mg/L							
Nickel	ND	0.0050	0.0005	mg/L							
Selenium	ND	0.0100	0.0009	mg/L							
Silver	ND	0.0050	0.0002	mg/L							
Thallium	ND	0.0010	0.00006	mg/L							
Vanadium	ND	0.0100	0.0016	mg/L							
Zinc	ND	0.0100	0.0013	mg/L							
Lithium	ND	0.0500	0.0012	mg/L							
<b>LCS (6080417-BS1)</b>						Prepared: 08/16/16 Analyzed: 08/18/16					
Antimony	0.105	0.0030	0.0008	mg/L	0.10000		105	80-120			
Arsenic	0.0969	0.0050	0.0016	mg/L	0.10000		97	80-120			
Barium	0.0944	0.0100	0.0004	mg/L	0.10000		94	80-120			
Beryllium	0.102	0.0030	0.00008	mg/L	0.10000		102	80-120			
Boron	1.03	0.100	0.0064	mg/L	1.0000		103	80-120			
Cadmium	0.0987	0.0010	0.00007	mg/L	0.10000		99	80-120			
Calcium	1.06	0.500	0.0311	mg/L	1.0000		106	80-120			
Chromium	0.103	0.0100	0.0009	mg/L	0.10000		103	80-120			
Cobalt	0.0951	0.0100	0.0005	mg/L	0.10000		95	80-120			
Copper	0.0986	0.0050	0.0005	mg/L	0.10000		99	80-120			
Lead	0.0990	0.0050	0.0001	mg/L	0.10000		99	80-120			
Molybdenum	0.0990	0.0100	0.0017	mg/L	0.10000		99	80-120			
Nickel	0.0994	0.0050	0.0006	mg/L	0.10000		99	80-120			
Selenium	0.0987	0.0100	0.0010	mg/L	0.10000		99	80-120			
Silver	0.0992	0.0050	0.0005	mg/L	0.10000		99	80-120			
Thallium	0.0985	0.0010	0.0002	mg/L	0.10000		98	80-120			
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000		105	80-120			
Zinc	0.110	0.0100	0.0021	mg/L	0.10000		110	80-120			
Lithium	0.103	0.0500	0.0021	mg/L	0.10000		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

August 19, 2016

**Report No.: AZH0440**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080417 - EPA 3005A</b>											
<b>Matrix Spike (6080417-MS1)</b>			<b>Source: AZH0440-03</b>			<b>Prepared: 08/16/16 Analyzed: 08/18/16</b>					
Antimony	0.106	0.0030	0.0008	mg/L	0.10000	0.0004	106	75-125			
Arsenic	0.105	0.0050	0.0016	mg/L	0.10000	ND	105	75-125			
Barium	0.123	0.0100	0.0004	mg/L	0.10000	0.0292	94	75-125			
Beryllium	0.0887	0.0030	0.00008	mg/L	0.10000	ND	89	75-125			
Boron	2.18	0.100	0.0064	mg/L	1.0000	1.37	81	75-125			
Cadmium	0.0992	0.0010	0.00007	mg/L	0.10000	0.0011	98	75-125			
Calcium	101	25.0	1.55	mg/L	1.0000	111	NR	75-125			QM-02
Chromium	0.101	0.0100	0.0009	mg/L	0.10000	ND	101	75-125			
Cobalt	0.0991	0.0100	0.0005	mg/L	0.10000	0.0039	95	75-125			
Copper	0.0947	0.0050	0.0005	mg/L	0.10000	ND	95	75-125			
Lead	0.0952	0.0050	0.0001	mg/L	0.10000	ND	95	75-125			
Molybdenum	0.104	0.0100	0.0017	mg/L	0.10000	ND	104	75-125			
Nickel	0.102	0.0050	0.0006	mg/L	0.10000	0.0023	100	75-125			
Selenium	0.109	0.0100	0.0010	mg/L	0.10000	ND	109	75-125			
Silver	0.0963	0.0050	0.0005	mg/L	0.10000	ND	96	75-125			
Thallium	0.0975	0.0010	0.0002	mg/L	0.10000	0.0002	97	75-125			
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125			
Zinc	0.136	0.0100	0.0021	mg/L	0.10000	0.0330	103	75-125			
Lithium	0.0927	0.0500	0.0021	mg/L	0.10000	ND	93	75-125			
<b>Matrix Spike Dup (6080417-MSD1)</b>			<b>Source: AZH0440-03</b>			<b>Prepared: 08/16/16 Analyzed: 08/18/16</b>					
Antimony	0.107	0.0030	0.0008	mg/L	0.10000	0.0004	106	75-125	0.6	20	
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	ND	104	75-125	0.8	20	
Barium	0.128	0.0100	0.0004	mg/L	0.10000	0.0292	99	75-125	4	20	
Beryllium	0.0873	0.0030	0.00008	mg/L	0.10000	ND	87	75-125	2	20	
Boron	2.23	0.100	0.0064	mg/L	1.0000	1.37	86	75-125	3	20	
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	0.0011	100	75-125	2	20	
Calcium	100	25.0	1.55	mg/L	1.0000	111	NR	75-125	0.5	20	QM-02
Chromium	0.0986	0.0100	0.0009	mg/L	0.10000	ND	99	75-125	3	20	
Cobalt	0.0953	0.0100	0.0005	mg/L	0.10000	0.0039	91	75-125	4	20	
Copper	0.0915	0.0050	0.0005	mg/L	0.10000	ND	91	75-125	3	20	
Lead	0.0957	0.0050	0.0001	mg/L	0.10000	ND	96	75-125	0.4	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	2	20	
Nickel	0.0975	0.0050	0.0006	mg/L	0.10000	0.0023	95	75-125	5	20	
Selenium	0.106	0.0100	0.0010	mg/L	0.10000	ND	106	75-125	3	20	
Silver	0.0986	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.0980	0.0010	0.0002	mg/L	0.10000	0.0002	98	75-125	0.4	20	
Vanadium	0.102	0.0100	0.0071	mg/L	0.10000	ND	102	75-125	3	20	
Zinc	0.132	0.0100	0.0021	mg/L	0.10000	0.0330	99	75-125	3	20	
Lithium	0.0944	0.0500	0.0021	mg/L	0.10000	ND	94	75-125	2	20	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 19, 2016

**Report No.: AZH0440**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080417 - EPA 3005A</b>											
<b>Post Spike (6080417-PS1)</b>				<b>Source: AZH0440-03</b>				Prepared: 08/16/16 Analyzed: 08/18/16			
Antimony	101			ug/L	100.00	0.353	100	80-120			
Arsenic	103			ug/L	100.00	0.346	103	80-120			
Barium	125			ug/L	100.00	29.2	95	80-120			
Beryllium	90.2			ug/L	100.00	0.0329	90	80-120			
Boron	2190			ug/L	1000.0	1370	82	80-120			
Cadmium	101			ug/L	100.00	1.11	100	80-120			
Calcium	105000			ug/L	1000.0	111000	NR	80-120			QM-02
Chromium	99.2			ug/L	100.00	-1.33	101	80-120			
Cobalt	101			ug/L	100.00	3.94	97	80-120			
Copper	93.0			ug/L	100.00	-0.330	93	80-120			
Lead	97.6			ug/L	100.00	0.0177	98	80-120			
Molybdenum	105			ug/L	100.00	0.116	105	80-120			
Nickel	101			ug/L	100.00	2.29	99	80-120			
Selenium	105			ug/L	100.00	0.270	105	80-120			
Silver	96.7			ug/L	100.00	0.0080	97	80-120			
Thallium	99.3			ug/L	100.00	0.223	99	80-120			
Vanadium	105			ug/L	100.00	-0.0276	105	80-120			
Zinc	140			ug/L	100.00	33.0	107	80-120			
Lithium	92.7			ug/L	100.00	0.394	92	80-120			

**Batch 6080419 - EPA 7470A**

<b>Blank (6080419-BLK1)</b>											
						Prepared & Analyzed: 08/16/16					
Mercury	ND	0.00050	0.00013	mg/L							
<b>LCS (6080419-BS1)</b>											
						Prepared & Analyzed: 08/16/16					
Mercury	0.00248	0.00050	0.00013	mg/L	2.5000E-3	99	80-120				



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 19, 2016

**Report No.: AZH0440**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080419 - EPA 7470A</b>											
<b>Matrix Spike (6080419-MS1)</b>			<b>Source: AZH0440-07</b>			<b>Prepared &amp; Analyzed: 08/16/16</b>					
Mercury	0.00253	0.00050	0.00013	mg/L	2.5000E-3	ND	101	75-125			
<b>Matrix Spike Dup (6080419-MSD1)</b>			<b>Source: AZH0440-07</b>			<b>Prepared &amp; Analyzed: 08/16/16</b>					
Mercury	0.00246	0.00050	0.00013	mg/L	2.5000E-3	ND	98	75-125	3	20	
<b>Post Spike (6080419-PS1)</b>			<b>Source: AZH0440-07</b>			<b>Prepared &amp; Analyzed: 08/16/16</b>					
Mercury	1.55			ug/L	1.6667	0.0160	92	80-120			



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 19, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:				CONTAINER TYPE	P	P	P											
REPORT TO:				PRESERVATION		CONTAINERS												
REQUESTED COMPLETION DATE:				# of														
PROJECT NAME/STATE:				METHS		APPENDIX		EPA		EPA		EPA		EPA		EPA		
PROJECT #:				6020		1470		1470		1470		1470		1470		1470		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	E R A B	SAMPLE IDENTIFICATION													
8/11/16	1420	W	X		FBL081116	3	X	1	1									
8/11/16	1430	W	X		CABL081116	3	X	1	1									
8/11/16	1057	6W	X		BBWC-16	3	X	1	1									
8/11/16	1240	6W	X		BBWC-17	3	X	1	1									
8/11/16	1405	6W	X		BBWC-11	3	X	1	1									
8/11/16	0915	6W	X		BBWC-7	3	X	1	1									
8/11/16	1205	6W	X		BBWC-9	3	X	1	1									
SAMPLED BY AND TITLE:				DATE/TIME:		RELINQUISHED BY:				DATE/TIME:		FOR LAB USE ONLY						
RECEIVED BY:				DATE/TIME:		RELINQUISHED BY:				DATE/TIME:		LAB #:						
RECEIVED BY LAB:				DATE/TIME:		SAMPLE SHIPPED VIA:				DATE/TIME:		Entered into LIMS:						
Checked:				Temperature:		Custody Seal:				A of Coolest:		Tracking #:						
Temp. Min. Max.				Min. Max.		Intact Broken Not Present				Cooler ID:		Cooler ID:						



# 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: 8/19/2016 4:13:21PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 08/12/16 09:30

Work Order: AZH0440

Logged In By: Charles Hawks

### OBSERVATIONS

#Samples: 7

#Containers: 21

Minimum Temp(C): 2.0

Maximum Temp(C): 2.0

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:



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

September 13, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193130

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on August 15, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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 Bowen Ash Pond CCR  
Pace Project No.: 30193130

### 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 Bowen Ash Pond CCR  
Pace Project No.: 30193130

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30193130001	FBL081116	Water	08/11/16 14:20	08/15/16 09:40
30193130002	EQBL081116	Water	08/11/16 14:30	08/15/16 09:40
30193130003	BGWC-16	Water	08/11/16 10:57	08/15/16 09:40
30193130004	BGWC-17	Water	08/11/16 12:40	08/15/16 09:40
30193130005	BGWC-11	Water	08/11/16 14:05	08/15/16 09:40
30193130006	BGWC-7	Water	08/11/16 09:15	08/15/16 09:40
30193130007	BGWC-9	Water	08/11/16 12:05	08/15/16 09:40

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193130

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30193130001	FBL081116	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193130002	EQBL081116	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193130003	BGWC-16	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193130004	BGWC-17	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193130005	BGWC-11	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193130006	BGWC-7	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193130007	BGWC-9	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

**REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193130

Sample: FBL081116		Lab ID: 30193130001	Collected: 08/11/16 14:20	Received: 08/15/16 09:40	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.00183 ± 0.0715 (0.183)</b> C:91% T:NA	pCi/L	08/24/16 11:30	13982-63-3	
Radium-228	EPA 9320	<b>0.0251 ± 0.254 (0.593)</b> C:73% T:93%	pCi/L	08/30/16 21:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.0269 ± 0.326 (0.776)</b>	pCi/L	09/12/16 14:04	7440-14-4	

Sample: EQBL081116		Lab ID: 30193130002	Collected: 08/11/16 14:30	Received: 08/15/16 09:40	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0479 ± 0.0737 (0.157)</b> C:93% T:NA	pCi/L	08/24/16 11:30	13982-63-3	
Radium-228	EPA 9320	<b>0.352 ± 0.343 (0.695)</b> C:69% T:79%	pCi/L	08/30/16 21:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.400 ± 0.417 (0.852)</b>	pCi/L	09/12/16 14:04	7440-14-4	

Sample: BGWC-16		Lab ID: 30193130003	Collected: 08/11/16 10:57	Received: 08/15/16 09:40	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.251 ± 0.139 (0.228)</b> C:92% T:NA	pCi/L	08/24/16 10:01	13982-63-3	
Radium-228	EPA 9320	<b>1.46 ± 0.537 (0.774)</b> C:68% T:83%	pCi/L	08/30/16 21:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.71 ± 0.676 (1.00)</b>	pCi/L	09/12/16 14:04	7440-14-4	

Sample: BGWC-17		Lab ID: 30193130004	Collected: 08/11/16 12:40	Received: 08/15/16 09:40	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0575 ± 0.0743 (0.152)</b> C:78% T:NA	pCi/L	08/29/16 10:58	13982-63-3	
Radium-228	EPA 9320	<b>0.750 ± 0.369 (0.636)</b> C:79% T:83%	pCi/L	09/09/16 02:23	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.808 ± 0.443 (0.788)</b>	pCi/L	09/12/16 14:04	7440-14-4	

Sample: BGWC-11		Lab ID: 30193130005	Collected: 08/11/16 14:05	Received: 08/15/16 09:40	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0355 ± 0.0647 (0.143)</b> C:79% T:NA	pCi/L	08/29/16 10:58	13982-63-3	
Radium-228	EPA 9320	<b>0.500 ± 0.367 (0.702)</b> C:75% T:77%	pCi/L	09/09/16 02:24	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193130

**Sample: BGWC-11** Lab ID: **30193130005** Collected: 08/11/16 14:05 Received: 08/15/16 09:40 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>0.536 ± 0.432 (0.845)</b>	pCi/L	09/12/16 14:04	7440-14-4	

**Sample: BGWC-7** Lab ID: **30193130006** Collected: 08/11/16 09:15 Received: 08/15/16 09:40 Matrix: Water  
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.289 ± 0.132 (0.184)</b> C:84% T:NA	pCi/L	08/29/16 10:58	13982-63-3	
Radium-228	EPA 9320	<b>0.951 ± 0.372 (0.564)</b> C:75% T:87%	pCi/L	09/09/16 02:24	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.24 ± 0.504 (0.748)</b>	pCi/L	09/12/16 14:04	7440-14-4	

**Sample: BGWC-9** Lab ID: **30193130007** Collected: 08/11/16 12:05 Received: 08/15/16 09:40 Matrix: Water  
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.129 ± 0.0918 (0.152)</b> C:83% T:NA	pCi/L	08/29/16 10:58	13982-63-3	
Radium-228	EPA 9320	<b>0.510 ± 0.378 (0.719)</b> C:67% T:78%	pCi/L	09/09/16 02:24	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.639 ± 0.470 (0.871)</b>	pCi/L	09/12/16 14:04	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193130

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QC Batch:	230247	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30193130001, 30193130002, 30193130003		

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 Bowen Ash Pond CCR  
Pace Project No.: 30193130

---

QC Batch:	230890	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30193130004, 30193130005, 30193130006, 30193130007		

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 Bowen Ash Pond CCR  
 Pace Project No.: 30193130

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QC Batch: 230995 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30193130004, 30193130005, 30193130006, 30193130007

---

METHOD BLANK: 1131807 Matrix: Water  
 Associated Lab Samples: 30193130004, 30193130005, 30193130006, 30193130007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.396 ± 0.387 (0.780) C:83% T:77%	pCi/L	09/09/16 02:23	

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 Bowen Ash Pond CCR  
 Pace Project No.: 30193130

---

QC Batch: 230246 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30193130001, 30193130002, 30193130003

---

METHOD BLANK: 1128357 Matrix: Water  
 Associated Lab Samples: 30193130001, 30193130002, 30193130003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.736 ± 0.370 (0.643) C:81% T:88%	pCi/L	08/30/16 21:45	

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.

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## QUALIFIERS

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193130

### 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#: 30193130

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CHAIN OF CUSTODY RECORD



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



CLIENT NAME:						ANALYSIS REQUESTED										CONTAINER TYPE	PRESERVATION			
Southern Company Services						CONTAINER TYPE:	P	P	P											
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd B10185 Atlanta, GA 30308 404 506-7239						PRESERVATION:	3	7	3											
REPORT TO: Teju Abraham						# of														
REQUESTED COMPLETION DATE:						CONTAINERS	Metals App III & IV EPA 602.0 & EPA 7470 C, F, SO <sub>4</sub> & EPA 300 TDS SM 2540C Radium 226 & 228 SW 846 9015 & 9320										LABORCH@southernco.com	*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		
PROJECT NAME/STATE: Plant Bowen Ashford CCR																				
PROJECT #:																				
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION															
8/11/16	1420	W		X	FBLO81116	3	X	1	1									001		
8/11/16	1430	W		X	CBLO81116	3	X	1	1									002		
8/11/16	1057	6W		X	B6WC-16	3	X	1	1									003		
8/11/16	1240	6W		X	D6WC-17	3	X	1	1									004		
8/11/16	1405	6W		X	B6WC-11	3	X	1	1									005		
8/11/16	0915	6W		X	B6WC-7	3	X	1	1									006		
8/11/16	1205	6W		X	B6WC-9	3	X	1	1									007		
SAMPLED BY AND TITLE: Forrest Howard / Kevin Stenerson						DATE/TIME: 8/11/16 1605	RELINQUISHED BY: Forrest Howard to FedEx						DATE/TIME: 8/11/16 1605	FOR LAB USE ONLY						
RECEIVED BY: Kevin E. Hill						DATE/TIME: 8/15/16 0940	RELINQUISHED BY:						DATE/TIME:	LAB #:						
RECEIVED BY LAB:						DATE/TIME:	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS						Entered into LIMS:							
pH checked: Yes (X) No NA						Ice: Yes (X) No NA	Temperature: N/A Min: Max:						Custody Seal: Intact (X) Broken Not Present				# of Coolers: Cooler ID:			
												Tracking #:								

Sample Condition Upon Receipt Pittsburgh

30193130



Client Name: Face Georgia Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 0812 5098 4166

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

Thermometer Used NIA Type of Ice: Wet Blue None

Cooler Temperature Observed Temp NIA °C Correction Factor: NIA °C Final Temp: NIA °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KH 8/15/16

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>Face 9/13/16</u>
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: <u>WT</u>	✓			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:	✓			10.
-Pace Containers Used:		✓		
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>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>8/15/16</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

Test: Ra-228  
Analyst: JLW  
Date: 8/22/2016  
Worklist: 30963  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1128357
MB concentration:	0.736
M/B Counting Uncertainty:	0.346
MB MDC:	0.643
MB Numerical Performance Indicator:	4.17
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS30963	LCS30963
Count Date:	8/30/2016		
Spike I.D.:	16-025		
Spike Concentration (pCi/mL):	25.799		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.802		
Target Conc. (pCi/L, g, F):	6.436		
Uncertainty (Calculated):	0.463		
Result (pCi/L, g, F):	6.647		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.757		
Numerical Performance Indicator:	0.47		
Percent Recovery:	103.28%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30192430001	
Duplicate Sample I.D.:	30192430001DUP	
Sample Result (pCi/L, g, F):	0.673	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.383	
Sample Duplicate Result (pCi/L, g, F):	0.400	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.442	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.913	30192430001
Duplicate RPD:	50.84%	30192430001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Handwritten signature and date: JLW 9/13/16*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 8/29/2016  
Worklist: 31072  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID		1131807
MB concentration:		0.396
M/B Counting Uncertainty:		0.381
MB MDC:		0.780
MB Numerical Performance Indicator:		2.04
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		
	LCS/D (Y or N)?	N
	LCS31072	LCS/D31072
Count Date:		9/9/2016
Spike I.D.:		16-025
Spike Concentration (pCi/mL):		25.721
Volume Used (mL):		0.20
Aliquot Volume (L, g, F):		0.814
Target Conc. (pCi/L, g, F):		6.318
Uncertainty (Calculated):		0.455
Result (pCi/L, g, F):		7.823
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		0.639
Numerical Performance Indicator:		3.76
Percent Recovery:		123.82%
Status vs Numerical Indicator:		N/A
Status vs Recovery:		Pass

Sample Matrix Spike Control Assessment	
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):	
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:	
Sample Matrix Spike 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:	

Duplicate Sample Assessment		
Sample I.D.:	30193748003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30193748003DUP	
Sample Result (pCi/L, g, F):	0.351	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.307	
Sample Duplicate Result (pCi/L, g, F):	0.071	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.258	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.371	30193748003
Duplicate RPD:	132.89%	30193748003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Handwritten signature and initials*



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: WRR  
Date: 8/22/2016  
Worklist: 30964  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1128358	
MB concentration:	-0.009	
MB Counting Uncertainty:	0.067	
MB MDC:	0.180	
MB Numerical Performance Indicator:	-0.27	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCSD30964	LCSD30964
Count Date:	8/24/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.679	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.505	
Target Conc. (pCi/L, g, F):	8.842	
Uncertainty (Calculated):	0.416	
Result (pCi/L, g, F):	7.177	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.520	
Numerical Performance Indicator:	-4.90	
Percent Recovery:	81.18%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30192430003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30192430003DUP	
Sample Result (pCi/L, g, F):	0.283	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.130	
Sample Duplicate Result (pCi/L, g, F):	0.354	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.145	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.715	30192430003
Duplicate RPD:	22.34%	30192430003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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

Test: Ra-226  
Analyst: WRR  
Date: 8/29/2016  
Worklist: 31045  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1131393	
MB concentration:	0.009	
M/B Counting Uncertainty:	0.052	
MB MDC:	0.131	
MB Numerical Performance Indicator:	0.33	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCS31045	LCS31045
Count Date:	8/29/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.678	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.502	
Target Conc. (pCi/L, g, F):	8.892	
Uncertainty (Calculated):	0.418	
Result (pCi/L, g, F):	7.006	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.488	
Numerical Performance Indicator:	-5.75	
Percent Recovery:	78.79%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30193249002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30193249002DUP	
Sample Result (pCi/L, g, F):	0.113	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.102	
Sample Duplicate Result (pCi/L, g, F):	0.176	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.112	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.825	
Duplicate RPD:	44.06%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*WRR*  
*[Signature]*





**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: AZH0474**

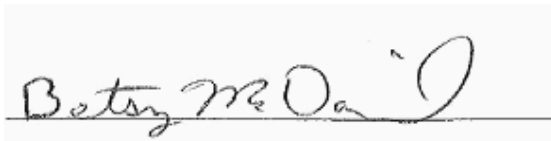
**August 22, 2016**

**Project: CCR Event**

**Project #: Plant Bowen Ash Pond**

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:



Project Manager

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All test results relate only to the samples analyzed.



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 22, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-12	AZH0474-01	Ground Water	08/12/16 13:05	08/13/16 09:40
BGWC-18	AZH0474-02	Ground Water	08/12/16 09:47	08/13/16 09:40
BGWC-19	AZH0474-03	Ground Water	08/12/16 12:07	08/13/16 09:40
BGWC-20	AZH0474-04	Ground Water	08/12/16 14:50	08/13/16 09:40
Dup-2	AZH0474-05	Ground Water	08/12/16 00:00	08/13/16 09:40



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 22, 2016

Report No.: AZH0474

Project: CCR Event

Client ID: BGWC-12

Lab Number ID: AZH0474-01

Date/Time Sampled: 8/12/2016 1:05:00PM

Date/Time Received: 8/13/2016 9:40:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	476	25	10	mg/L	SM 2540 C		1	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	43	0.25	0.01	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 09:40	6080452	RLC
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/17/16 09:40	6080452	RLC
Sulfate	180	5.0	0.26	mg/L	EPA 300.0	B-01	5	08/16/16 11:53	08/17/16 16:46	6080452	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Arsenic	0.0009	0.0050	0.0007	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Barium	0.0260	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Boron	0.867	0.100	0.0044	mg/L	EPA 6020B	B-01	1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Calcium	76.6	5.00	0.126	mg/L	EPA 6020B	B-01	10	08/16/16 08:35	08/18/16 16:16	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Lead	0.0001	0.0050	0.00008	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Thallium	0.00009	0.0010	0.00006	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:24	6080417	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:52	6080419	CSW



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 22, 2016

Report No.: AZH0474

Project: CCR Event

Client ID: BGWC-18

Lab Number ID: AZH0474-02

Date/Time Sampled: 8/12/2016 9:47:00AM

Date/Time Received: 8/13/2016 9:40:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	310	25	10	mg/L	SM 2540 C		1	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	27	0.25	0.01	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 11:26	6080452	RLC
Fluoride	0.39	0.30	0.02	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 11:26	6080452	RLC
Sulfate	81	5.0	0.26	mg/L	EPA 300.0	B-01	5	08/16/16 11:53	08/17/16 17:07	6080452	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Barium	0.0310	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Boron	0.895	0.100	0.0044	mg/L	EPA 6020B	B-01	1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Cadmium	0.0004	0.0010	0.0001	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Calcium	61.7	5.00	0.126	mg/L	EPA 6020B	B-01	10	08/16/16 08:35	08/18/16 16:21	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Cobalt	0.0006	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Lead	0.0001	0.0050	0.00008	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Thallium	0.00006	0.0010	0.00006	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:29	6080417	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:54	6080419	CSW



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 22, 2016

Report No.: AZH0474

Project: CCR Event

Client ID: BGWC-19

Lab Number ID: AZH0474-03

Date/Time Sampled: 8/12/2016 12:07:00PM

Date/Time Received: 8/13/2016 9:40:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	326	25	10	mg/L	SM 2540 C		1	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	26	0.25	0.01	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 11:47	6080452	RLC
Fluoride	0.20	0.30	0.02	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/17/16 11:47	6080452	RLC
Sulfate	110	5.0	0.26	mg/L	EPA 300.0	B-01	5	08/16/16 11:53	08/17/16 17:28	6080452	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Arsenic	0.0008	0.0050	0.0007	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Barium	0.0412	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Boron	0.647	0.100	0.0044	mg/L	EPA 6020B	B-01	1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Calcium	61.2	5.00	0.126	mg/L	EPA 6020B	B-01	10	08/16/16 08:35	08/18/16 17:36	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Thallium	0.00008	0.0010	0.00006	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:35	6080417	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:57	6080419	CSW



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 22, 2016

Report No.: AZH0474

Project: CCR Event

Client ID: BGWC-20

Lab Number ID: AZH0474-04

Date/Time Sampled: 8/12/2016 2:50:00PM

Date/Time Received: 8/13/2016 9:40:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1100	25	10	mg/L	SM 2540 C		1	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	130	2.5	0.14	mg/L	EPA 300.0		10	08/16/16 11:53	08/17/16 17:50	6080452	RLC
Fluoride	0.04	0.30	0.02	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/17/16 12:08	6080452	RLC
Sulfate	530	20	1.0	mg/L	EPA 300.0	B-01	20	08/16/16 11:53	08/18/16 20:06	6080452	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Arsenic	0.0017	0.0050	0.0007	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Barium	0.0283	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Boron	2.74	0.100	0.0044	mg/L	EPA 6020B	B-01	1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Calcium	196	50.0	1.26	mg/L	EPA 6020B	B-01	100	08/16/16 08:35	08/19/16 15:33	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Lead	ND	0.0050	0.00008	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Molybdenum	0.0127	0.0100	0.0005	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Thallium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Lithium	0.0202	0.0500	0.0012	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:41	6080417	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 16:59	6080419	CSW



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 22, 2016

Report No.: AZH0474

Project: CCR Event

Client ID: Dup-2

Lab Number ID: AZH0474-05

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

Date/Time Received: 8/13/2016 9:40:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	315	25	10	mg/L	SM 2540 C		1	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	27	0.25	0.01	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 12:50	6080452	RLC
Fluoride	0.43	0.30	0.02	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 12:50	6080452	RLC
Sulfate	81	5.0	0.26	mg/L	EPA 300.0	B-01	5	08/16/16 11:53	08/17/16 18:11	6080452	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0002	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Arsenic	ND	0.0050	0.0007	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Barium	0.0291	0.0100	0.0003	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Boron	0.804	0.100	0.0044	mg/L	EPA 6020B	B-01	1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Cadmium	0.0003	0.0010	0.0001	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Calcium	61.0	5.00	0.126	mg/L	EPA 6020B	B-01	10	08/16/16 08:35	08/18/16 17:47	6080417	CSW
Chromium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Cobalt	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Lead	0.0002	0.0050	0.00008	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Molybdenum	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Selenium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Thallium	0.00006	0.0010	0.00006	mg/L	EPA 6020B	J	1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Lithium	ND	0.0500	0.0012	mg/L	EPA 6020B		1	08/16/16 08:35	08/18/16 13:47	6080417	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/16/16 09:15	08/16/16 17:07	6080419	CSW



**PACE ANALYTICAL SERVICES, INC.**

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Attention: Mr. Joju Abraham

August 22, 2016

**Report No.: AZH0474**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080434 - SM 2540 C</b>											
<b>Blank (6080434-BLK1)</b>						Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6080434-BS1)</b>						Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	365	25	10	mg/L	400.00		91	84-108			
<b>Duplicate (6080434-DUP1)</b>						Source: AZH0440-07 Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	359	25	10	mg/L		361			0.6	10	
<b>Duplicate (6080434-DUP2)</b>						Source: AZH0474-01 Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	475	25	10	mg/L		476			0.2	10	





**PACE ANALYTICAL SERVICES, INC.**

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Attention: Mr. Joju Abraham

August 22, 2016

**Report No.: AZH0474**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080452 - EPA 300.0</b>											
<b>Blank (6080452-BLK1)</b>						Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	0.42	1.0	0.05	mg/L							J
<b>LCS (6080452-BS1)</b>						Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	10.1	0.25	0.01	mg/L	10.010		101	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.010		105	90-110			
Sulfate	10.4	1.0	0.05	mg/L	10.010		104	90-110			
<b>Matrix Spike (6080452-MS1)</b>						Source: AZH0440-03 Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	46.3	0.25	0.01	mg/L	10.010	40.8	55	90-110			QM-05
Fluoride	10.5	0.30	0.02	mg/L	10.010	0.12	104	90-110			
Sulfate	185	1.0	0.05	mg/L	10.010	193	NR	90-110			QM-05
<b>Matrix Spike (6080452-MS2)</b>						Source: AZH0474-04 Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	107	0.25	0.01	mg/L	10.010	108	NR	90-110			QM-05
Fluoride	10.6	0.30	0.02	mg/L	10.010	0.04	106	90-110			
Sulfate	312	1.0	0.05	mg/L	10.010	330	NR	90-110			QM-05
<b>Matrix Spike Dup (6080452-MSD1)</b>						Source: AZH0440-03 Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	46.4	0.25	0.01	mg/L	10.010	40.8	55	90-110	0.05	15	QM-05
Fluoride	10.6	0.30	0.02	mg/L	10.010	0.12	104	90-110	0.2	15	
Sulfate	185	1.0	0.05	mg/L	10.010	193	NR	90-110	0.05	15	QM-05



**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

August 22, 2016

**Report No.: AZH0474**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080417 - EPA 3005A</b>											
<b>Blank (6080417-BLK1)</b>						Prepared: 08/16/16 Analyzed: 08/18/16					
Antimony	0.0007	0.0030	0.0002	mg/L							J
Arsenic	ND	0.0050	0.0007	mg/L							
Barium	ND	0.0100	0.0003	mg/L							
Beryllium	ND	0.0030	0.00008	mg/L							
Boron	0.0063	0.100	0.0044	mg/L							J
Cadmium	ND	0.0010	0.00007	mg/L							
Calcium	0.0174	0.500	0.0126	mg/L							J
Chromium	ND	0.0100	0.0004	mg/L							
Cobalt	ND	0.0100	0.0003	mg/L							
Copper	ND	0.0050	0.0004	mg/L							
Lead	ND	0.0050	0.00008	mg/L							
Molybdenum	ND	0.0100	0.0005	mg/L							
Nickel	ND	0.0050	0.0005	mg/L							
Selenium	ND	0.0100	0.0009	mg/L							
Silver	ND	0.0050	0.0002	mg/L							
Thallium	ND	0.0010	0.00006	mg/L							
Vanadium	ND	0.0100	0.0016	mg/L							
Zinc	ND	0.0100	0.0013	mg/L							
Lithium	ND	0.0500	0.0012	mg/L							
<b>LCS (6080417-BS1)</b>						Prepared: 08/16/16 Analyzed: 08/18/16					
Antimony	0.105	0.0030	0.0008	mg/L	0.10000		105	80-120			
Arsenic	0.0969	0.0050	0.0016	mg/L	0.10000		97	80-120			
Barium	0.0944	0.0100	0.0004	mg/L	0.10000		94	80-120			
Beryllium	0.102	0.0030	0.00008	mg/L	0.10000		102	80-120			
Boron	1.03	0.100	0.0064	mg/L	1.0000		103	80-120			
Cadmium	0.0987	0.0010	0.00007	mg/L	0.10000		99	80-120			
Calcium	1.06	0.500	0.0311	mg/L	1.0000		106	80-120			
Chromium	0.103	0.0100	0.0009	mg/L	0.10000		103	80-120			
Cobalt	0.0951	0.0100	0.0005	mg/L	0.10000		95	80-120			
Copper	0.0986	0.0050	0.0005	mg/L	0.10000		99	80-120			
Lead	0.0990	0.0050	0.0001	mg/L	0.10000		99	80-120			
Molybdenum	0.0990	0.0100	0.0017	mg/L	0.10000		99	80-120			
Nickel	0.0994	0.0050	0.0006	mg/L	0.10000		99	80-120			
Selenium	0.0987	0.0100	0.0010	mg/L	0.10000		99	80-120			
Silver	0.0992	0.0050	0.0005	mg/L	0.10000		99	80-120			
Thallium	0.0985	0.0010	0.0002	mg/L	0.10000		98	80-120			
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000		105	80-120			
Zinc	0.110	0.0100	0.0021	mg/L	0.10000		110	80-120			
Lithium	0.103	0.0500	0.0021	mg/L	0.10000		103	80-120			



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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 22, 2016

**Report No.: AZH0474**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080417 - EPA 3005A</b>											
<b>Matrix Spike (6080417-MS1)</b>			<b>Source: AZH0440-03</b>			<b>Prepared: 08/16/16 Analyzed: 08/18/16</b>					
Antimony	0.106	0.0030	0.0008	mg/L	0.10000	0.0004	106	75-125			
Arsenic	0.105	0.0050	0.0016	mg/L	0.10000	ND	105	75-125			
Barium	0.123	0.0100	0.0004	mg/L	0.10000	0.0292	94	75-125			
Beryllium	0.0887	0.0030	0.00008	mg/L	0.10000	ND	89	75-125			
Boron	2.18	0.100	0.0064	mg/L	1.0000	1.37	81	75-125			
Cadmium	0.0992	0.0010	0.00007	mg/L	0.10000	0.0011	98	75-125			
Calcium	101	25.0	1.55	mg/L	1.0000	111	NR	75-125			QM-02
Chromium	0.101	0.0100	0.0009	mg/L	0.10000	ND	101	75-125			
Cobalt	0.0991	0.0100	0.0005	mg/L	0.10000	0.0039	95	75-125			
Copper	0.0947	0.0050	0.0005	mg/L	0.10000	ND	95	75-125			
Lead	0.0952	0.0050	0.0001	mg/L	0.10000	ND	95	75-125			
Molybdenum	0.104	0.0100	0.0017	mg/L	0.10000	ND	104	75-125			
Nickel	0.102	0.0050	0.0006	mg/L	0.10000	0.0023	100	75-125			
Selenium	0.109	0.0100	0.0010	mg/L	0.10000	ND	109	75-125			
Silver	0.0963	0.0050	0.0005	mg/L	0.10000	ND	96	75-125			
Thallium	0.0975	0.0010	0.0002	mg/L	0.10000	0.0002	97	75-125			
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125			
Zinc	0.136	0.0100	0.0021	mg/L	0.10000	0.0330	103	75-125			
Lithium	0.0927	0.0500	0.0021	mg/L	0.10000	ND	93	75-125			
<b>Matrix Spike Dup (6080417-MSD1)</b>			<b>Source: AZH0440-03</b>			<b>Prepared: 08/16/16 Analyzed: 08/18/16</b>					
Antimony	0.107	0.0030	0.0008	mg/L	0.10000	0.0004	106	75-125	0.6	20	
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	ND	104	75-125	0.8	20	
Barium	0.128	0.0100	0.0004	mg/L	0.10000	0.0292	99	75-125	4	20	
Beryllium	0.0873	0.0030	0.00008	mg/L	0.10000	ND	87	75-125	2	20	
Boron	2.23	0.100	0.0064	mg/L	1.0000	1.37	86	75-125	3	20	
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	0.0011	100	75-125	2	20	
Calcium	100	25.0	1.55	mg/L	1.0000	111	NR	75-125	0.5	20	QM-02
Chromium	0.0986	0.0100	0.0009	mg/L	0.10000	ND	99	75-125	3	20	
Cobalt	0.0953	0.0100	0.0005	mg/L	0.10000	0.0039	91	75-125	4	20	
Copper	0.0915	0.0050	0.0005	mg/L	0.10000	ND	91	75-125	3	20	
Lead	0.0957	0.0050	0.0001	mg/L	0.10000	ND	96	75-125	0.4	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	2	20	
Nickel	0.0975	0.0050	0.0006	mg/L	0.10000	0.0023	95	75-125	5	20	
Selenium	0.106	0.0100	0.0010	mg/L	0.10000	ND	106	75-125	3	20	
Silver	0.0986	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.0980	0.0010	0.0002	mg/L	0.10000	0.0002	98	75-125	0.4	20	
Vanadium	0.102	0.0100	0.0071	mg/L	0.10000	ND	102	75-125	3	20	
Zinc	0.132	0.0100	0.0021	mg/L	0.10000	0.0330	99	75-125	3	20	
Lithium	0.0944	0.0500	0.0021	mg/L	0.10000	ND	94	75-125	2	20	



**PACE ANALYTICAL SERVICES, INC.**

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

August 22, 2016

**Report No.: AZH0474**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080417 - EPA 3005A</b>											
<b>Post Spike (6080417-PS1)</b>				<b>Source: AZH0440-03</b>				Prepared: 08/16/16 Analyzed: 08/18/16			
Antimony	101			ug/L	100.00	0.353	100	80-120			
Arsenic	103			ug/L	100.00	0.346	103	80-120			
Barium	125			ug/L	100.00	29.2	95	80-120			
Beryllium	90.2			ug/L	100.00	0.0329	90	80-120			
Boron	2190			ug/L	1000.0	1370	82	80-120			
Cadmium	101			ug/L	100.00	1.11	100	80-120			
Calcium	105000			ug/L	1000.0	111000	NR	80-120			QM-02
Chromium	99.2			ug/L	100.00	-1.33	101	80-120			
Cobalt	101			ug/L	100.00	3.94	97	80-120			
Copper	93.0			ug/L	100.00	-0.330	93	80-120			
Lead	97.6			ug/L	100.00	0.0177	98	80-120			
Molybdenum	105			ug/L	100.00	0.116	105	80-120			
Nickel	101			ug/L	100.00	2.29	99	80-120			
Selenium	105			ug/L	100.00	0.270	105	80-120			
Silver	96.7			ug/L	100.00	0.0080	97	80-120			
Thallium	99.3			ug/L	100.00	0.223	99	80-120			
Vanadium	105			ug/L	100.00	-0.0276	105	80-120			
Zinc	140			ug/L	100.00	33.0	107	80-120			
Lithium	92.7			ug/L	100.00	0.394	92	80-120			

**Batch 6080419 - EPA 7470A**

<b>Blank (6080419-BLK1)</b>											
						Prepared & Analyzed: 08/16/16					
Mercury	ND	0.00050	0.00013	mg/L							
<b>LCS (6080419-BS1)</b>											
						Prepared & Analyzed: 08/16/16					
Mercury	0.00248	0.00050	0.00013	mg/L	2.5000E-3	99	80-120				



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 22, 2016

**Report No.: AZH0474**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080419 - EPA 7470A</b>											
<b>Matrix Spike (6080419-MS1)</b>			<b>Source: AZH0440-07</b>			<b>Prepared &amp; Analyzed: 08/16/16</b>					
Mercury	0.00253	0.00050	0.00013	mg/L	2.5000E-3	ND	101	75-125			
<b>Matrix Spike Dup (6080419-MSD1)</b>			<b>Source: AZH0440-07</b>			<b>Prepared &amp; Analyzed: 08/16/16</b>					
Mercury	0.00246	0.00050	0.00013	mg/L	2.5000E-3	ND	98	75-125	3	20	
<b>Post Spike (6080419-PS1)</b>			<b>Source: AZH0440-07</b>			<b>Prepared &amp; Analyzed: 08/16/16</b>					
Mercury	1.55			ug/L	1.6667	0.0160	92	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 22, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION					
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER					CONTAINER TYPE	P	P	P															
REPORT TO:					PRESERVATION:					CONTAINERS					*MATRIX CODES:								
REQUESTED COMPLETION DATE:					# of																		
Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAB	SAMPLE IDENTIFICATION																		
Southern Company Services																P - PLASTIC	1 - HCl, ≤6°C						
241 Ryals McGill Blvd SE B10185 Atlanta Ga 30308																A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C						
404-506-1729																G - CLEAR GLASS	3 - HNO <sub>3</sub>						
Joy Adams																V - VOA VIAL	4 - NaOH, ≤6°C						
LABORCA@atlantico.com																S - STERILE	5 - NaOH/ZnAc, ≤6°C						
Plant Bowen Ash Pond CCR																O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C						
																	7 - ≤6°C, not frozen						
																*MATRIX CODES:							
																DW - DRINKING WATER	S - SOIL						
																WW - WASTEWATER	SL - SLUDGE						
																GW - GROUNDWATER	SD - SOLID						
																SW - SURFACE WATER	A - AIR						
																ST - STORM WATER	L - LIQUID						
																W - WATER	P - PRODUCT						
																REMARKS/ADDITIONAL INFORMATION							
8/12/16	1305	GW	X		BGWC-12	3	X	1	1														
8/12/16	0944	GW	X		BGWC-18	4	X	1	1														
8/12/16	1207	GW	X		BGWC-19	3	X	1	1														
8/12/16	1450	GW	X		BGWC-20	3	X	1	1														
8/12/16	/	GW	X		Dup-2	3	X	1	1														
SAMPLED BY AND TITLE: Kevin Stephens					DATE/TIME: 8/12/16 @ 1430					RELINQUISHED BY: Kevin Stephens To FedEx					DATE/TIME: 8/12/16 @ 1630					FOR LAB USE ONLY			
RECEIVED BY: [Signature]					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:					LAB #: AZH0474			
RECEIVED BY LAB: [Signature]					DATE/TIME: 08/13/16 0940					SAMPLE SHIPPED VIA: UPS					CLIENT OTHER FS:					Entered into LIMS: MK			
pH checked: (ed) No NA (ee) No NA					Temperature: 12 12					Custody Seal: (Intact) Broken Not Present					# of Coolers: (Cooler ID):					Tracking #: 8095 2338 0753			

Page 15 OF 15



# **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: 8/22/2016 4:20:08PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 08/13/16 09:40

**Work Order:** AZH0474  
**Logged In By:** Mohammad M. Rahman

### **OBSERVATIONS**

**#Samples:** 5                      **#Containers:** 16  
**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:**





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

September 13, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193249

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on August 16, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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 Bowen Ash Pond CCR  
Pace Project No.: 30193249

### 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 Bowen Ash Pond CCR  
Pace Project No.: 30193249

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30193249001	BGWC-12	Water	08/12/16 13:05	08/16/16 10:00
30193249002	BGWC-18	Water	08/12/16 09:47	08/16/16 10:00
30193249003	BGWC-19	Water	08/12/16 12:07	08/16/16 10:00
30193249004	BGWC-20	Water	08/12/16 14:50	08/16/16 10:00
30193249005	Dup-2	Water	08/12/16 00:01	08/16/16 10:00

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193249

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30193249001	BGWC-12	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193249002	BGWC-18	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193249003	BGWC-19	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193249004	BGWC-20	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193249005	Dup-2	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

**REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193249

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-12</b> <b>Lab ID: 30193249001</b> Collected: 08/12/16 13:05      Received: 08/16/16 10:00      Matrix: Water						
PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.0906 ± 0.0843 (0.159)</b> C:84% T:NA	pCi/L	08/29/16 10:58	13982-63-3	
Radium-228	EPA 9320	<b>0.758 ± 0.395 (0.682)</b> C:68% T:78%	pCi/L	09/09/16 02:24	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.849 ± 0.479 (0.841)</b>	pCi/L	09/12/16 14:22	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-18</b> <b>Lab ID: 30193249002</b> Collected: 08/12/16 09:47      Received: 08/16/16 10:00      Matrix: Water						
PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.113 ± 0.103 (0.199)</b> C:84% T:NA	pCi/L	08/29/16 10:58	13982-63-3	
Radium-228	EPA 9320	<b>1.28 ± 0.448 (0.627)</b> C:73% T:81%	pCi/L	09/09/16 02:32	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.39 ± 0.551 (0.826)</b>	pCi/L	09/12/16 14:22	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-19</b> <b>Lab ID: 30193249003</b> Collected: 08/12/16 12:07      Received: 08/16/16 10:00      Matrix: Water						
PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.246 ± 0.117 (0.153)</b> C:82% T:NA	pCi/L	08/29/16 10:58	13982-63-3	
Radium-228	EPA 9320	<b>0.937 ± 0.408 (0.655)</b> C:74% T:79%	pCi/L	09/09/16 02:33	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.18 ± 0.525 (0.808)</b>	pCi/L	09/12/16 14:22	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-20</b> <b>Lab ID: 30193249004</b> Collected: 08/12/16 14:50      Received: 08/16/16 10:00      Matrix: Water						
PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.737 ± 0.205 (0.165)</b> C:84% T:NA	pCi/L	08/29/16 10:58	13982-63-3	
Radium-228	EPA 9320	<b>1.00 ± 0.385 (0.576)</b> C:78% T:82%	pCi/L	09/09/16 02:24	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.74 ± 0.590 (0.741)</b>	pCi/L	09/12/16 14:22	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: Dup-2</b> <b>Lab ID: 30193249005</b> Collected: 08/12/16 00:01      Received: 08/16/16 10:00      Matrix: Water						
PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.153 ± 0.104 (0.173)</b> C:79% T:NA	pCi/L	08/29/16 10:58	13982-63-3	
Radium-228	EPA 9320	<b>0.134 ± 0.276 (0.589)</b> C:79% T:80%	pCi/L	09/09/16 02:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193249

**Sample: Dup-2**      **Lab ID: 30193249005**      Collected: 08/12/16 00:01      Received: 08/16/16 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>0.287 ± 0.380 (0.762)</b>	pCi/L	09/12/16 14:22	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193249

---

QC Batch:	230890	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30193249001, 30193249002, 30193249003, 30193249004, 30193249005		

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 Bowen Ash Pond CCR  
 Pace Project No.: 30193249

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QC Batch: 230995 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30193249001, 30193249002, 30193249003, 30193249004, 30193249005

---

METHOD BLANK: 1131807 Matrix: Water  
 Associated Lab Samples: 30193249001, 30193249002, 30193249003, 30193249004, 30193249005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.396 ± 0.387 (0.780) C:83% T:77%	pCi/L	09/09/16 02:23	

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 Bowen Ash Pond CCR  
Pace Project No.: 30193249

### 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, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED										L A B  I D  N U M B E R	CONTAINER TYPE		PRESERVATION					
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:																		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of																	
CLIENT NAME: <u>Southern Company Services</u> CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ruffin McGill Blvd SE 310185 Atlanta, Ga 30308</u> REPORT TO: <u>Joey Abraham</u> CC: <u>404-506-17239</u> REQUESTED COMPLETION DATE: _____ PO #: <u>LABORCA@southco.com</u> PROJECT NAME/STATE: <u>Plant Bowen Ash Pond CCR</u> PROJECT #: _____					CONTAINER TYPE: <u>P P P</u> PRESERVATION: <u>9 7 3</u> # of CONTAINERS: <u>3 4 3 3 3</u> ANALYSIS: <u>Asst # 111 EPA 602 &amp; EPA 1110 C.F. SD1 EPA 300 TDS 3M2540C Radium 226 &amp; 228 SUDPHS 931519320</u>										P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER		1 - HCl, ≤6°C 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C 3 - HNO <sub>3</sub> 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen						
*MATRIX CODES:																							
DW - DRINKING WATER										S - SOIL													
WW - WASTEWATER										SL - SLUDGE													
GW - GROUNDWATER										SD - SOLID													
SW - SURFACE WATER										A - AIR													
ST - STORM WATER										L - LIQUID													
W - WATER										P - PRODUCT													
REMARKS/ADDITIONAL INFORMATION																							
001																							
002																							
003																							
004																							
005																							
<div style="border: 1px solid black; padding: 5px; display: inline-block;">                         WO#: 30193249                            30193249                     </div>																							
SAMPLED BY AND TITLE: <u>Karen E. Thi</u> RECEIVED BY: <u>Karen E. Thi</u> RECEIVED BY LAB: _____					DATE/TIME: <u>8/12/16 @ 1430</u> DATE/TIME: <u>8/16/16 @ 1000</u> DATE/TIME: _____					RELINQUISHED BY: <u>Karen E. Thi</u> RELINQUISHED BY: _____ DATE/TIME: _____ DATE/TIME: _____					DATE/TIME: <u>8/12/16 @ 1630</u> DATE/TIME: _____					FOR LAB USE ONLY			
SAMPLE SHIPPED VIA: <u>UPS</u> <input type="checkbox"/> <u>FED-EX</u> <input type="checkbox"/> <u>USPS</u> <input type="checkbox"/> <u>COURIER</u> <input type="checkbox"/> <u>CLIENT</u> <input type="checkbox"/> <u>OTHER</u> <input type="checkbox"/> <u>FS</u> <input type="checkbox"/> Custody Seal: <u>Intact</u> <input type="checkbox"/> <u>Broken</u> <input type="checkbox"/> <u>Not Present</u> <input type="checkbox"/> # of Coolers: _____ Cooler ID: _____																			Entered into LIMS: _____ Tracking #: _____				
pH checked: <u>Yes</u> <input type="checkbox"/> <u>No</u> <input type="checkbox"/> <u>NA</u> <input type="checkbox"/> Ice: <u>Yes</u> <input type="checkbox"/> <u>No</u> <input type="checkbox"/> <u>NA</u> <input type="checkbox"/>					Temperature: _____ Min: _____ Max: _____																		

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace Georgia

Project # 30193249

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 0812 5098 4523

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

Thermometer Used NIA Type of Ice: Wet Blue (None)

Cooler Temperature Observed Temp NIA °C Correction Factor: NIA °C Final Temp: NIA °C  
Temp should be above freezing to 6°C

Date and Initials of person examining contents: KH 8/16/16

Comments:	Yes	No	N/A	
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:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID/Analysis Matrix: <u>WF</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>PH 22</u>
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>KH</u> Date/time of preservation: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>KH</u> Date: <u>8/16/16</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

Test: Ra-226  
Analyst: WRR  
Date: 8/29/2016  
Worklist: 31045  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1131393	
MB concentration:	0.009	
M/B Counting Uncertainty:	0.052	
MB MDC:	0.131	
MB Numerical Performance Indicator:	0.33	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCS (Y or N)?	N
	LCS31045	LCS31045
Count Date:	8/29/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.678	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.502	
Target Conc. (pCi/L, g, F):	8.892	
Uncertainty (Calculated):	0.418	
Result (pCi/L, g, F):	7.006	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.488	
Numerical Performance Indicator:	-5.75	
Percent Recovery:	78.79%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30193249002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30193249002DUP	
Sample Result (pCi/L, g, F):	0.113	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.102	
Sample Duplicate Result (pCi/L, g, F):	0.176	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.112	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.825	30193249002
Duplicate RPD:	44.06%	30193249002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*WRR*  
*[Signature]*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 8/29/2016  
Worklist: 31072  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1131807
MB concentration:	0.396
M/B Counting Uncertainty:	0.381
MB MDC:	0.780
MB Numerical Performance Indicator:	2.04
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS/D (Y or N)?	N
		LCS31072	LCS/D31072
Count Date:	9/9/2016		
Spike I.D.:	16-025		
Spike Concentration (pCi/mL):	25.721		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.814		
Target Conc. (pCi/L, g, F):	6.318		
Uncertainty (Calculated):	0.455		
Result (pCi/L, g, F):	7.823		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.639		
Numerical Performance Indicator:	3.76		
Percent Recovery:	123.82%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30193748003	
Duplicate Sample I.D.:	30193748003DUP	
Sample Result (pCi/L, g, F):	0.351	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.307	
Sample Duplicate Result (pCi/L, g, F):	0.071	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.258	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.371	30193748003
Duplicate RPD:	132.89%	30193748003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Handwritten signature and initials*



**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: AZH0500**

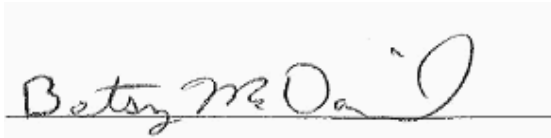
**August 23, 2016**

**Project: CCR Event**

**Project #: Plant Bowen Ash Pond**

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:



Project Manager

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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

August 23, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<u>Sample ID</u>	<u>Laboratory ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
BGWC-25	AZH0500-01	Ground Water	08/15/16 11:53	08/16/16 09:15



**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

August 23, 2016

Report No.: AZH0500

Project: CCR Event

Client ID: BGWC-25

Lab Number ID: AZH0500-01

Date/Time Sampled: 8/15/2016 11:53:00AM

Date/Time Received: 8/16/2016 9:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	161	25	10	mg/L	SM 2540 C		1	08/16/16 19:08	08/16/16 19:08	6080434	JPT
<b>Inorganic Anions</b>											
Chloride	4.3	0.25	0.01	mg/L	EPA 300.0		1	08/16/16 11:53	08/17/16 13:12	6080452	RLC
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	08/16/16 11:53	08/17/16 13:12	6080452	RLC
Sulfate	10	1.0	0.05	mg/L	EPA 300.0	B-01	1	08/16/16 11:53	08/17/16 13:12	6080452	RLC
<b>Metals, Total</b>											
Antimony	0.0013	0.0030	0.0008	mg/L	EPA 6020B	J	1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Arsenic	0.0030	0.0050	0.0016	mg/L	EPA 6020B	J	1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Barium	0.0321	0.0100	0.0004	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Boron	0.0228	0.100	0.0064	mg/L	EPA 6020B	J	1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Calcium	33.1	2.50	0.155	mg/L	EPA 6020B		5	08/19/16 08:40	08/23/16 14:24	6080526	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Lead	0.0005	0.0050	0.0001	mg/L	EPA 6020B	J	1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Molybdenum	0.0039	0.0100	0.0017	mg/L	EPA 6020B	J	1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:31	6080526	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/19/16 08:15	08/19/16 16:35	6080488	CSW





**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

August 23, 2016

**Report No.: AZH0500**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080434 - SM 2540 C</b>											
<b>Blank (6080434-BLK1)</b>						Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6080434-BS1)</b>						Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	365	25	10	mg/L	400.00		91	84-108			
<b>Duplicate (6080434-DUP1)</b>						Source: AZH0440-07 Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	359	25	10	mg/L		361			0.6	10	
<b>Duplicate (6080434-DUP2)</b>						Source: AZH0474-01 Prepared & Analyzed: 08/16/16					
Total Dissolved Solids	475	25	10	mg/L		476			0.2	10	



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August 23, 2016

**Report No.: AZH0500**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080452 - EPA 300.0</b>											
<b>Blank (6080452-BLK1)</b>						Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	0.42	1.0	0.05	mg/L							J
<b>LCS (6080452-BS1)</b>						Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	10.1	0.25	0.01	mg/L	10.010		101	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.010		105	90-110			
Sulfate	10.4	1.0	0.05	mg/L	10.010		104	90-110			
<b>Matrix Spike (6080452-MS1)</b>						Source: AZH0440-03 Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	46.3	0.25	0.01	mg/L	10.010	40.8	55	90-110			QM-05
Fluoride	10.5	0.30	0.02	mg/L	10.010	0.12	104	90-110			
Sulfate	185	1.0	0.05	mg/L	10.010	193	NR	90-110			QM-05
<b>Matrix Spike (6080452-MS2)</b>						Source: AZH0474-04 Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	107	0.25	0.01	mg/L	10.010	108	NR	90-110			QM-05
Fluoride	10.6	0.30	0.02	mg/L	10.010	0.04	106	90-110			
Sulfate	312	1.0	0.05	mg/L	10.010	330	NR	90-110			QM-05
<b>Matrix Spike Dup (6080452-MSD1)</b>						Source: AZH0440-03 Prepared: 08/16/16 Analyzed: 08/17/16					
Chloride	46.4	0.25	0.01	mg/L	10.010	40.8	55	90-110	0.05	15	QM-05
Fluoride	10.6	0.30	0.02	mg/L	10.010	0.12	104	90-110	0.2	15	
Sulfate	185	1.0	0.05	mg/L	10.010	193	NR	90-110	0.05	15	QM-05



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**Report No.: AZH0500**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080488 - EPA 7470A</b>											
<b>Blank (6080488-BLK1)</b>						Prepared & Analyzed: 08/19/16					
Mercury	ND	0.00050	0.00013	mg/L							
<b>LCS (6080488-BS1)</b>						Prepared & Analyzed: 08/19/16					
Mercury	0.00245	0.00050	0.00013	mg/L	2.5000E-3		98	80-120			
<b>Matrix Spike (6080488-MS1)</b>						Source: AZH0500-01 Prepared & Analyzed: 08/19/16					
Mercury	0.00247	0.00050	0.00013	mg/L	2.5000E-3	ND	99	75-125			
<b>Matrix Spike Dup (6080488-MSD1)</b>						Source: AZH0500-01 Prepared & Analyzed: 08/19/16					
Mercury	0.00224	0.00050	0.00013	mg/L	2.5000E-3	ND	90	75-125	10	20	
<b>Post Spike (6080488-PS1)</b>						Source: AZH0500-01 Prepared & Analyzed: 08/19/16					
Mercury	1.48			ug/L	1.6667	0.0693	85	80-120			
<b>Batch 6080526 - EPA 3005A</b>											
<b>Blank (6080526-BLK1)</b>						Prepared: 08/19/16 Analyzed: 08/23/16					
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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Attention: Mr. Joju Abraham

August 23, 2016

**Report No.: AZH0500**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080526 - EPA 3005A</b>											
<b>LCS (6080526-BS1)</b>						Prepared: 08/19/16 Analyzed: 08/23/16					
Antimony	0.100	0.0030	0.0008	mg/L	0.10000		100	80-120			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000		101	80-120			
Barium	0.0967	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.0965	0.0030	0.00008	mg/L	0.10000		96	80-120			
Boron	1.02	0.100	0.0064	mg/L	1.0000		102	80-120			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000		103	80-120			
Calcium	0.970	0.500	0.0311	mg/L	1.0000		97	80-120			
Chromium	0.107	0.0100	0.0009	mg/L	0.10000		107	80-120			
Cobalt	0.106	0.0100	0.0005	mg/L	0.10000		106	80-120			
Copper	0.100	0.0050	0.0005	mg/L	0.10000		100	80-120			
Lead	0.105	0.0050	0.0001	mg/L	0.10000		105	80-120			
Molybdenum	0.101	0.0100	0.0017	mg/L	0.10000		101	80-120			
Nickel	0.103	0.0050	0.0006	mg/L	0.10000		103	80-120			
Selenium	0.0987	0.0100	0.0010	mg/L	0.10000		99	80-120			
Silver	0.104	0.0050	0.0005	mg/L	0.10000		104	80-120			
Thallium	0.107	0.0010	0.0002	mg/L	0.10000		107	80-120			
Vanadium	0.110	0.0100	0.0071	mg/L	0.10000		110	80-120			
Zinc	0.108	0.0100	0.0021	mg/L	0.10000		108	80-120			
Lithium	0.0981	0.0500	0.0021	mg/L	0.10000		98	80-120			
<b>Matrix Spike (6080526-MS1)</b>											
				<b>Source: AZH0606-01</b>		Prepared: 08/19/16 Analyzed: 08/23/16					
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125			
Arsenic	0.109	0.0050	0.0016	mg/L	0.10000	0.0042	105	75-125			
Barium	0.185	0.0100	0.0004	mg/L	0.10000	0.0801	105	75-125			
Beryllium	0.0965	0.0030	0.00008	mg/L	0.10000	ND	97	75-125			
Boron	1.73	0.100	0.0064	mg/L	1.0000	0.787	95	75-125			
Cadmium	0.0993	0.0010	0.00007	mg/L	0.10000	ND	99	75-125			
Calcium	78.5	5.00	0.311	mg/L	1.0000	75.7	285	75-125			QM-02
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	ND	108	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Copper	0.0957	0.0050	0.0005	mg/L	0.10000	ND	96	75-125			
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.113	0.0100	0.0017	mg/L	0.10000	0.0085	105	75-125			
Nickel	0.103	0.0050	0.0006	mg/L	0.10000	0.0014	102	75-125			
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	ND	103	75-125			
Silver	0.0967	0.0050	0.0005	mg/L	0.10000	ND	97	75-125			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125			
Vanadium	0.109	0.0100	0.0071	mg/L	0.10000	ND	109	75-125			
Zinc	0.103	0.0100	0.0021	mg/L	0.10000	ND	103	75-125			
Lithium	0.101	0.0500	0.0021	mg/L	0.10000	ND	101	75-125			



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 23, 2016

**Report No.: AZH0500**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080526 - EPA 3005A</b>											
<b>Matrix Spike Dup (6080526-MSD1)</b>			<b>Source: AZH0606-01</b>			<b>Prepared: 08/19/16 Analyzed: 08/23/16</b>					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125	0.5	20	
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	0.0042	102	75-125	3	20	
Barium	0.185	0.0100	0.0004	mg/L	0.10000	0.0801	105	75-125	0.2	20	
Beryllium	0.0968	0.0030	0.00008	mg/L	0.10000	ND	97	75-125	0.3	20	
Boron	1.74	0.100	0.0064	mg/L	1.0000	0.787	96	75-125	0.6	20	
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125	4	20	
Calcium	77.6	5.00	0.311	mg/L	1.0000	75.7	195	75-125	1	20	QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125	4	20	
Cobalt	0.0979	0.0100	0.0005	mg/L	0.10000	ND	98	75-125	5	20	
Copper	0.0986	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	3	20	
Lead	0.0999	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	0.2	20	
Molybdenum	0.114	0.0100	0.0017	mg/L	0.10000	0.0085	106	75-125	0.7	20	
Nickel	0.102	0.0050	0.0006	mg/L	0.10000	0.0014	101	75-125	0.9	20	
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	2	20	
Silver	0.0989	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125	0.6	20	
Vanadium	0.104	0.0100	0.0071	mg/L	0.10000	ND	104	75-125	5	20	
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	ND	106	75-125	3	20	
Lithium	0.0990	0.0500	0.0021	mg/L	0.10000	ND	99	75-125	2	20	
<b>Post Spike (6080526-PS1)</b>			<b>Source: AZH0606-01</b>			<b>Prepared: 08/19/16 Analyzed: 08/23/16</b>					
Antimony	96.3			ug/L	100.00	0.676	96	80-120			
Arsenic	106			ug/L	100.00	4.17	102	80-120			
Barium	181			ug/L	100.00	80.1	101	80-120			
Beryllium	97.4			ug/L	100.00	0.0052	97	80-120			
Boron	1780			ug/L	1000.0	787	99	80-120			
Cadmium	98.7			ug/L	100.00	0.0150	99	80-120			
Calcium	73000			ug/L	1000.0	75700	NR	80-120			QM-02
Chromium	102			ug/L	100.00	0.429	102	80-120			
Cobalt	100			ug/L	100.00	0.256	100	80-120			
Copper	94.3			ug/L	100.00	0.150	94	80-120			
Lead	98.1			ug/L	100.00	0.0204	98	80-120			
Molybdenum	112			ug/L	100.00	8.49	104	80-120			
Nickel	101			ug/L	100.00	1.39	100	80-120			
Selenium	101			ug/L	100.00	0.550	100	80-120			
Silver	99.7			ug/L	100.00	0.0030	100	80-120			
Thallium	101			ug/L	100.00	0.0118	101	80-120			
Vanadium	109			ug/L	100.00	0.767	109	80-120			
Zinc	99.7			ug/L	100.00	1.79	98	80-120			
Lithium	100			ug/L	100.00	0.113	100	80-120			



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Attention: Mr. Joju Abraham

August 23, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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										L A B  I D  N U M B E R  ↓	CONTAINER TYPE	PRESERVATION			
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER		CONTAINER TYPE	P	P	P												
REPORT TO:	CC:	PRESERVATION:	# of														
Southern Company Services												↓	P - PLASTIC	1 - HCl, ≤6°C			
241 Radium Hill Blvd SE Bldg 195 Atlanta, GA 30308 404-506-7239													A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C			
REPORT TO: Jon Armstrong												G - CLEAR GLASS	3 - HNO <sub>3</sub>				
REQUESTED COMPLETION DATE												V - VOA VIAL	4 - NaOH, ≤6°C				
PROJECT NAME/STATE: Lead and Pencil												S - STERILE	5 - NaOH/ZnAc, ≤6°C				
PROJECT #:												O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> , ≤6°C				
													7 - ≤6°C not frozen				
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	C O N T A I N E R S  ↓											
8/15/16	155	60		X	Black 75	3	X										
SAMPLED BY AND TITLE: <i>Kevin ...</i>		DATE/TIME: 8/15/16 @ 1645		RELINQUISHED BY: <i>Kevin ...</i>		DATE/TIME: 8/15/16 @ 1645		FOR LAB USE ONLY				LAB #: A2140500		Entered into LIMS: <i>JA</i>			
RECEIVED BY LAB: <i>Kevin ...</i>		DATE/TIME: 8/16/16 0915		SAMPLE SHIPPED VIA: UPS		COURIER: <i>1</i>		CLIENT: <i>1014</i>		OTHER: <i>FS</i>		Tracking #: 809523380742					
Checked: Yes No NA		Temperature: 2 Min. 2 Max.		Custody Seal: Intact Broken Not Present		# of Coolers: <i>1</i>		Cooling: <i>1014</i>									



## **PACE ANALYTICAL SERVICES, INC.**

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### **LOG-IN CHECKLIST**

**Printed: 8/23/2016 5:01:26PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 08/16/16 09:15

**Work Order:** AZH0500

**Logged In By:** Charles Hawks

### **OBSERVATIONS**

**#Samples:** 1

**#Containers:** 3

**Minimum Temp(C):** 2.0

**Maximum Temp(C):** 2.0

**Custody Seal(s) Used:** 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	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:**





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

September 13, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Bowen Ash Pond CCR  
Pace Project No.: 30193367

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on August 17, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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: Bowen Ash Pond CCR  
Pace Project No.: 30193367

### 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: Bowen Ash Pond CCR  
Pace Project No.: 30193367

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30193367001	BGWC-25	Water	08/15/16 11:53	08/17/16 10:10

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Bowen Ash Pond CCR  
Pace Project No.: 30193367

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30193367001	BGWC-25	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: Bowen Ash Pond CCR  
 Pace Project No.: 30193367

Sample: **BGWC-25** Lab ID: **30193367001** Collected: 08/15/16 11:53 Received: 08/17/16 10:10 Matrix: Water  
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0754 ± 0.105 (0.223)</b> C:77% T:NA	pCi/L	08/29/16 11:14	13982-63-3	
Radium-228	EPA 9320	<b>1.12 ± 0.403 (0.580)</b> C:77% T:84%	pCi/L	09/09/16 02:25	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.20 ± 0.508 (0.803)</b>	pCi/L	09/12/16 14:22	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Bowen Ash Pond CCR  
Pace Project No.: 30193367

---

QC Batch:	230890	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30193367001		

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: Bowen Ash Pond CCR  
 Pace Project No.: 30193367

---

QC Batch: 230995 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30193367001

---

METHOD BLANK: 1131807 Matrix: Water  
 Associated Lab Samples: 30193367001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.396 ± 0.387 (0.780) C:83% T:77%	pCi/L	09/09/16 02:23	

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: Bowen Ash Pond CCR  
Pace Project No.: 30193367

### 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, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE:  1  OF  1

CLIENT NAME:						ANALYSIS REQUESTED												L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION					
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:						CONTAINER TYPE:	P	P	P																	
PROJECT NAME/STATE:						PRESERVATION:	3	7	3																	
<p>Southwest Company Services                  241 Robert McGill Blvd SE B10185                  Atlanta, GA 30308                  404-506-17239</p> <p>REPORT TO: <u>Jon Atkinson</u> CC:                  REQUESTED COMPLETION DATE: PO # <u>LABRCH@</u></p>						CONTAINERS	# of	Metals Asst EPA 821 EPA 602.1 EPA 816 C.F. 821 EPA 300 TDS 812546 Radon 226+228 SW 846 9315+932	3	X	-	1													P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	1 - HCl, ≤6°C 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C 3 - HNO <sub>3</sub> 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen
PROJECT #:													*MATRIX CODES:													
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION																				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													
																		001								
SAMPLED BY AND TITLE: <u>Ken [Signature] / Forest Road</u>						DATE/TIME: <u>8/15/16 @ 1625</u>			RELINQUISHED BY: <u>[Signature]</u>						DATE/TIME: <u>8/15/16 @ 1645</u>			FOR LAB USE ONLY								
RECEIVED BY: <u>[Signature]</u>						DATE/TIME: <u>8-17-16 1010</u>			RECEIVED BY: <u>[Signature]</u>						DATE/TIME: (Blank)			LAB #: Entered into LIMS:								
RECEIVED BY LAB: <u>[Signature]</u>						DATE/TIME: <u>8/16/16 0915</u>			SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS						Tracking #:											
pH checked: Yes No NA			Temperature: <u>21</u> Min <u>2</u> Max			Custody Seal: Intact Broken Not Present			# of Coolers			Cooler ID:														

WO#: 30193367



30193367

Sample Condition Upon Receipt Pittsburgh



Client Name: BA Power

Project # 30193367

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 681250984648

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

Thermometer Used NIA    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: NJV  
8-17-16

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/Analysis    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.
Filtered volume received for Dissolved tests			X	12.
All containers needing preservation have been checked.	X			13.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PHLZ</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>NJV</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):			X	14.
Trip Blank Present:			X	15.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>NJV</u> Date: <u>8-17-16</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

Test: Ra-226  
Analyst: WRR  
Date: 8/29/2016  
Worklist: 31045  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1131393	
MB concentration:	0.009	
M/B Counting Uncertainty:	0.052	
MB MDC:	0.131	
MB Numerical Performance Indicator:	0.33	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
LCSD (Y or N)?	N	
Count Date:	8/29/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.678	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.502	
Target Conc. (pCi/L, g, F):	8.892	
Uncertainty (Calculated):	0.418	
Result (pCi/L, g, F):	7.006	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.488	
Numerical Performance Indicator:	-5.75	
Percent Recovery:	78.79%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Duplicate Sample Assessment		
Sample I.D.:	30193249002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30193249002DUP	
Sample Result (pCi/L, g, F):	0.113	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.102	
Sample Duplicate Result (pCi/L, g, F):	0.176	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.112	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.825	30193249002
Duplicate RPD:	44.06%	30193249002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Sample Matrix Spike Control Assessment	
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):	
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:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 8/29/2016  
Worklist: 31072  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1131807
MB concentration:	0.396
M/B Counting Uncertainty:	0.381
MB MDC:	0.780
MB Numerical Performance Indicator:	2.04
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS31072	LCSD31072
Count Date:	9/9/2016		
Spike I.D.:	16-025		
Spike Concentration (pCi/mL):	25.721		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.814		
Target Conc. (pCi/L, g, F):	6.318		
Uncertainty (Calculated):	0.455		
Result (pCi/L, g, F):	7.823		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.639		
Numerical Performance Indicator:	3.76		
Percent Recovery:	123.82%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30193748003	
Duplicate Sample I.D.:	30193748003DUP	
Sample Result (pCi/L, g, F):	0.351	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.307	
Sample Duplicate Result (pCi/L, g, F):	0.071	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.258	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.371	30193748003
Duplicate RPD:	132.89%	30193748003DUP
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.

Comments:

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

Sample Matrix Spike Control Assessment	
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):	
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:	
Sample Matrix Spike Duplicate 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:	
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	
MSD Status vs Recovery:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

*Handwritten signature and initials*



**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: AZH0536**

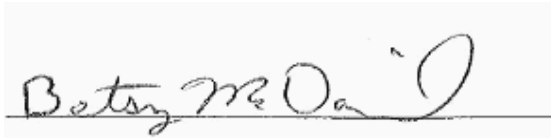
**August 24, 2016**

**Project: CCR Event**

**Project #: Plant Bowen Ash Pond**

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:



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

August 24, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-10	AZH0536-01	Ground Water	08/16/16 09:25	08/17/16 08:00
FBL081616	AZH0536-02	DI Water	08/16/16 15:45	08/17/16 08:00
EQBL081616	AZH0536-03	DI Water	08/16/16 15:50	08/17/16 08:00



**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

August 24, 2016

Report No.: AZH0536

Project: CCR Event

Client ID: BGWC-10

Lab Number ID: AZH0536-01

Date/Time Sampled: 8/16/2016 9:25:00AM

Date/Time Received: 8/17/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	286	25	10	mg/L	SM 2540 C		1	08/22/16 12:15	08/22/16 12:15	6080582	JPT
<b>Inorganic Anions</b>											
Chloride	20	0.25	0.01	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 13:38	6080559	RLC
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	08/19/16 12:16	08/19/16 13:38	6080559	RLC
Sulfate	110	5.0	0.26	mg/L	EPA 300.0		5	08/19/16 12:16	08/23/16 19:30	6080559	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Arsenic	0.0091	0.0050	0.0016	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Barium	0.0667	0.0100	0.0004	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Boron	0.525	0.100	0.0064	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Calcium	49.2	5.00	0.311	mg/L	EPA 6020B		10	08/19/16 08:40	08/23/16 14:47	6080526	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Molybdenum	0.0032	0.0100	0.0017	mg/L	EPA 6020B	J	1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:37	6080526	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/19/16 08:15	08/19/16 16:37	6080488	CSW



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 24, 2016

Report No.: AZH0536

Project: CCR Event

Client ID: FBL081616

Lab Number ID: AZH0536-02

Date/Time Sampled: 8/16/2016 3:45:00PM

Date/Time Received: 8/17/2016 8:00:00AM

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	08/22/16 12:15	08/22/16 12:15	6080582	JPT
<b>Inorganic Anions</b>											
Chloride	0.06	0.25	0.01	mg/L	EPA 300.0	J	1	08/19/16 12:16	08/19/16 14:40	6080559	RLC
Fluoride	0.02	0.30	0.02	mg/L	EPA 300.0	J	1	08/19/16 12:16	08/19/16 14:40	6080559	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 14:40	6080559	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:42	6080526	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/19/16 08:15	08/19/16 16:40	6080488	CSW





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Attention: Mr. Joju Abraham

August 24, 2016

Report No.: AZH0536

Project: CCR Event

Client ID: EQBL081616

Lab Number ID: AZH0536-03

Date/Time Sampled: 8/16/2016 3:50:00PM

Date/Time Received: 8/17/2016 8:00:00AM

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	08/22/16 12:15	08/22/16 12:15	6080582	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 15:01	6080559	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 15:01	6080559	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 15:01	6080559	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:48	6080526	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/19/16 08:15	08/19/16 16:42	6080488	CSW



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August 24, 2016

**Report No.: AZH0536**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080582 - SM 2540 C</b>											
<b>Blank (6080582-BLK1)</b>						Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6080582-BS1)</b>						Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	377	25	10	mg/L	400.00		94	84-108			
<b>Duplicate (6080582-DUP1)</b>						Source: AZH0537-05 Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	869	25	10	mg/L		853			2	10	
<b>Duplicate (6080582-DUP2)</b>						Source: AZH0583-03 Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	1280	25	10	mg/L		1260			0.9	10	



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August 24, 2016

**Report No.: AZH0536**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080559 - EPA 300.0</b>											
<b>Blank (6080559-BLK1)</b>						Prepared & Analyzed: 08/19/16					
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 (6080559-BS1)</b>						Prepared & Analyzed: 08/19/16					
Chloride	10.4	0.25	0.01	mg/L	10.010		104	90-110			
Fluoride	10.6	0.30	0.02	mg/L	10.010		105	90-110			
Sulfate	10.3	1.0	0.05	mg/L	10.010		103	90-110			
<b>Matrix Spike (6080559-MS1)</b>						Source: AZH0536-01 Prepared & Analyzed: 08/19/16					
Chloride	28.2	0.25	0.01	mg/L	10.010	19.9	83	90-110			QM-05
Fluoride	10.1	0.30	0.02	mg/L	10.010	0.09	100	90-110			
Sulfate	98.0	1.0	0.05	mg/L	10.010	98.3	NR	90-110			QM-05
<b>Matrix Spike (6080559-MS2)</b>						Source: AZH0646-03 Prepared & Analyzed: 08/19/16					
Chloride	17.0	0.25	0.01	mg/L	10.010	6.94	101	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.010	0.09	104	90-110			
Sulfate	68.4	1.0	0.05	mg/L	10.010	65.3	30	90-110			QM-05
<b>Matrix Spike Dup (6080559-MSD1)</b>						Source: AZH0536-01 Prepared & Analyzed: 08/19/16					
Chloride	28.2	0.25	0.01	mg/L	10.010	19.9	83	90-110	0.1	15	QM-05
Fluoride	10.1	0.30	0.02	mg/L	10.010	0.09	100	90-110	0.2	15	
Sulfate	98.0	1.0	0.05	mg/L	10.010	98.3	NR	90-110	0.04	15	QM-05



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**Report No.: AZH0536**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080488 - EPA 7470A</b>											
<b>Blank (6080488-BLK1)</b>						Prepared & Analyzed: 08/19/16					
Mercury	ND	0.00050	0.00013	mg/L							
<b>LCS (6080488-BS1)</b>						Prepared & Analyzed: 08/19/16					
Mercury	0.00245	0.00050	0.00013	mg/L	2.5000E-3		98	80-120			
<b>Matrix Spike (6080488-MS1)</b>						Source: AZH0500-01 Prepared & Analyzed: 08/19/16					
Mercury	0.00247	0.00050	0.00013	mg/L	2.5000E-3	ND	99	75-125			
<b>Matrix Spike Dup (6080488-MSD1)</b>						Source: AZH0500-01 Prepared & Analyzed: 08/19/16					
Mercury	0.00224	0.00050	0.00013	mg/L	2.5000E-3	ND	90	75-125	10	20	
<b>Post Spike (6080488-PS1)</b>						Source: AZH0500-01 Prepared & Analyzed: 08/19/16					
Mercury	1.48			ug/L	1.6667	0.0693	85	80-120			
<b>Batch 6080526 - EPA 3005A</b>											
<b>Blank (6080526-BLK1)</b>						Prepared: 08/19/16 Analyzed: 08/23/16					
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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August 24, 2016

**Report No.: AZH0536**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080526 - EPA 3005A</b>											
<b>LCS (6080526-BS1)</b>						Prepared: 08/19/16 Analyzed: 08/23/16					
Antimony	0.100	0.0030	0.0008	mg/L	0.10000		100	80-120			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000		101	80-120			
Barium	0.0967	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.0965	0.0030	0.00008	mg/L	0.10000		96	80-120			
Boron	1.02	0.100	0.0064	mg/L	1.0000		102	80-120			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000		103	80-120			
Calcium	0.970	0.500	0.0311	mg/L	1.0000		97	80-120			
Chromium	0.107	0.0100	0.0009	mg/L	0.10000		107	80-120			
Cobalt	0.106	0.0100	0.0005	mg/L	0.10000		106	80-120			
Copper	0.100	0.0050	0.0005	mg/L	0.10000		100	80-120			
Lead	0.105	0.0050	0.0001	mg/L	0.10000		105	80-120			
Molybdenum	0.101	0.0100	0.0017	mg/L	0.10000		101	80-120			
Nickel	0.103	0.0050	0.0006	mg/L	0.10000		103	80-120			
Selenium	0.0987	0.0100	0.0010	mg/L	0.10000		99	80-120			
Silver	0.104	0.0050	0.0005	mg/L	0.10000		104	80-120			
Thallium	0.107	0.0010	0.0002	mg/L	0.10000		107	80-120			
Vanadium	0.110	0.0100	0.0071	mg/L	0.10000		110	80-120			
Zinc	0.108	0.0100	0.0021	mg/L	0.10000		108	80-120			
Lithium	0.0981	0.0500	0.0021	mg/L	0.10000		98	80-120			
<b>Matrix Spike (6080526-MS1)</b>											
				<b>Source: AZH0606-01</b>		Prepared: 08/19/16 Analyzed: 08/23/16					
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125			
Arsenic	0.109	0.0050	0.0016	mg/L	0.10000	0.0042	105	75-125			
Barium	0.185	0.0100	0.0004	mg/L	0.10000	0.0801	105	75-125			
Beryllium	0.0965	0.0030	0.00008	mg/L	0.10000	ND	97	75-125			
Boron	1.73	0.100	0.0064	mg/L	1.0000	0.787	95	75-125			
Cadmium	0.0993	0.0010	0.00007	mg/L	0.10000	ND	99	75-125			
Calcium	78.5	5.00	0.311	mg/L	1.0000	75.7	285	75-125			QM-02
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	ND	108	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Copper	0.0957	0.0050	0.0005	mg/L	0.10000	ND	96	75-125			
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.113	0.0100	0.0017	mg/L	0.10000	0.0085	105	75-125			
Nickel	0.103	0.0050	0.0006	mg/L	0.10000	0.0014	102	75-125			
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	ND	103	75-125			
Silver	0.0967	0.0050	0.0005	mg/L	0.10000	ND	97	75-125			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125			
Vanadium	0.109	0.0100	0.0071	mg/L	0.10000	ND	109	75-125			
Zinc	0.103	0.0100	0.0021	mg/L	0.10000	ND	103	75-125			
Lithium	0.101	0.0500	0.0021	mg/L	0.10000	ND	101	75-125			



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August 24, 2016

**Report No.: AZH0536**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080526 - EPA 3005A</b>											
<b>Matrix Spike Dup (6080526-MSD1)</b>			<b>Source: AZH0606-01</b>			<b>Prepared: 08/19/16 Analyzed: 08/23/16</b>					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125	0.5	20	
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	0.0042	102	75-125	3	20	
Barium	0.185	0.0100	0.0004	mg/L	0.10000	0.0801	105	75-125	0.2	20	
Beryllium	0.0968	0.0030	0.00008	mg/L	0.10000	ND	97	75-125	0.3	20	
Boron	1.74	0.100	0.0064	mg/L	1.0000	0.787	96	75-125	0.6	20	
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125	4	20	
Calcium	77.6	5.00	0.311	mg/L	1.0000	75.7	195	75-125	1	20	QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125	4	20	
Cobalt	0.0979	0.0100	0.0005	mg/L	0.10000	ND	98	75-125	5	20	
Copper	0.0986	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	3	20	
Lead	0.0999	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	0.2	20	
Molybdenum	0.114	0.0100	0.0017	mg/L	0.10000	0.0085	106	75-125	0.7	20	
Nickel	0.102	0.0050	0.0006	mg/L	0.10000	0.0014	101	75-125	0.9	20	
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	2	20	
Silver	0.0989	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125	0.6	20	
Vanadium	0.104	0.0100	0.0071	mg/L	0.10000	ND	104	75-125	5	20	
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	ND	106	75-125	3	20	
Lithium	0.0990	0.0500	0.0021	mg/L	0.10000	ND	99	75-125	2	20	
<b>Post Spike (6080526-PS1)</b>			<b>Source: AZH0606-01</b>			<b>Prepared: 08/19/16 Analyzed: 08/23/16</b>					
Antimony	96.3			ug/L	100.00	0.676	96	80-120			
Arsenic	106			ug/L	100.00	4.17	102	80-120			
Barium	181			ug/L	100.00	80.1	101	80-120			
Beryllium	97.4			ug/L	100.00	0.0052	97	80-120			
Boron	1780			ug/L	1000.0	787	99	80-120			
Cadmium	98.7			ug/L	100.00	0.0150	99	80-120			
Calcium	73000			ug/L	1000.0	75700	NR	80-120			QM-02
Chromium	102			ug/L	100.00	0.429	102	80-120			
Cobalt	100			ug/L	100.00	0.256	100	80-120			
Copper	94.3			ug/L	100.00	0.150	94	80-120			
Lead	98.1			ug/L	100.00	0.0204	98	80-120			
Molybdenum	112			ug/L	100.00	8.49	104	80-120			
Nickel	101			ug/L	100.00	1.39	100	80-120			
Selenium	101			ug/L	100.00	0.550	100	80-120			
Silver	99.7			ug/L	100.00	0.0030	100	80-120			
Thallium	101			ug/L	100.00	0.0118	101	80-120			
Vanadium	109			ug/L	100.00	0.767	109	80-120			
Zinc	99.7			ug/L	100.00	1.79	98	80-120			
Lithium	100			ug/L	100.00	0.113	100	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

August 24, 2016

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## Legend

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### 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

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

PAGE: 1 OF 1

CLIENT NAME:		ANALYSIS REQUESTED										L A B  I D  N U M B E R  ↓	CONTAINER TYPE	PRESERVATION	
Sutton Company Services		CONTAINER TYPE	P	V	D									P - PLASTIC	1 - HCl, ≤6°C
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		PRESERVATION	3	7	3									A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C
241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-1739		# of												G - CLEAR GLASS	3 - HNO <sub>3</sub>
REPORT TO:	CC:	CONTAINERS	C	O	N	T	A	I	N	E	R	S	V - VOA VIAL	4 - NaOH, ≤6°C	
REQUESTED COMPLETION DATE:	PO #:													LABURCH@pacelabs.com	5 - NaOH/ZnAc, ≤6°C
PROJECT NAME/STATE:	Plant Based Ash Pond CCR													6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
PROJECT #:														7 - ≤6°C not frozen	
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION							*MATRIX CODES:			
3/16/16	0925	GW	X										DW - DRINKING WATER	S - SOIL	
3/16/16	1545	W	X										WW - WASTEWATER	SL - SLUDGE	
3/16/16	1550	W	X										GW - GROUNDWATER	SD - SOLID	
													SW - SURFACE WATER	A - AIR	
													ST - STORM WATER	L - LIQUID	
													W - WATER	P - PRODUCT	
REMARKS/ADDITIONAL INFORMATION															
SAMPLED BY AND TITLE:			DATE/TIME:			RELINQUISHED BY:			DATE/TIME:			FOR LAB USE ONLY			
Kendrick Stinson			3/16/16 @ 1520			Kendrick Stinson			3/17/16 @ 0800			LAB #: A240536			
RECEIVED BY:			DATE/TIME:			RELINQUISHED BY:			DATE/TIME:			Entered into LIMS: MR			
M. Salzman			03/17/16 0800									Tracking #:			
RECEIVED BY LAB:			DATE/TIME:			SAMPLE SHIPPED VIA:			CLIENT			OTHER FS			
M. Salzman			03/17/16 0800			UPS FED-EX USPS COURIER			CLIENT			OTHER FS			
Checked:			Temperature:			Custody Seal:			# of Coolers			Cooler ID:			
Yes No NA			2°C Min 2°C Max			Intact Broken Not Present			0						

Page 12 of 12





**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: 8/24/2016 5:29:56PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 08/17/16 08:00

**Work Order:** AZH0536

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 3

**#Containers:** 9

**Minimum Temp(C):** 2.0

**Maximum Temp(C):** 2.0

**Custody Seal(s) Used:** 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:**



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

September 13, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193485

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on August 18, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,  
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## CERTIFICATIONS

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193485

### 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 Bowen Ash Pond CCR  
Pace Project No.: 30193485

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30193485001	BGWC-10	Water	08/16/16 09:25	08/18/16 10:15
30193485002	FBL081616	Water	08/16/16 15:45	08/18/16 10:15
30193485003	EQBL081616	Water	08/16/16 15:50	08/18/16 10:15

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193485

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30193485001	BGWC-10	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193485002	FBL081616	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193485003	EQBL081616	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193485

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-10</b> Lab ID: 30193485001 Collected: 08/16/16 09:25 Received: 08/18/16 10:15 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	<b>0.452 ± 0.174 (0.238)</b> C:87% T:NA	pCi/L	08/29/16 11:14	13982-63-3	
Radium-228	EPA 9320	<b>0.627 ± 0.361 (0.651)</b> C:77% T:80%	pCi/L	09/09/16 02:25	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.08 ± 0.535 (0.889)</b>	pCi/L	09/12/16 14:22	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: FBL081616</b> Lab ID: 30193485002 Collected: 08/16/16 15:45 Received: 08/18/16 10:15 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	<b>0.134 ± 0.154 (0.313)</b> C:46% T:NA	pCi/L	08/29/16 11:14	13982-63-3	
Radium-228	EPA 9320	<b>0.738 ± 0.350 (0.578)</b> C:71% T:86%	pCi/L	09/09/16 02:25	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.872 ± 0.504 (0.891)</b>	pCi/L	09/12/16 14:22	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: EQBL081616</b> Lab ID: 30193485003 Collected: 08/16/16 15:50 Received: 08/18/16 10:15 Matrix: Water						
PWS: Site ID: Sample Type:						
Radium-226	EPA 9315	<b>0.311 ± 0.135 (0.188)</b> C:92% T:NA	pCi/L	08/29/16 11:14	13982-63-3	
Radium-228	EPA 9320	<b>-0.0836 ± 0.247 (0.572)</b> C:74% T:85%	pCi/L	09/09/16 02:25	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.311 ± 0.382 (0.760)</b>	pCi/L	09/12/16 14:22	7440-14-4	

**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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193485

---

QC Batch:	230890	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30193485001, 30193485002, 30193485003		

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 Bowen Ash Pond CCR  
 Pace Project No.: 30193485

---

QC Batch: 230995 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30193485001, 30193485002, 30193485003

---

METHOD BLANK: 1131807 Matrix: Water  
 Associated Lab Samples: 30193485001, 30193485002, 30193485003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.396 ± 0.387 (0.780) C:83% T:77%	pCi/L	09/09/16 02:23	

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 Bowen Ash Pond CCR  
Pace Project No.: 30193485

### 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.

### SAMPLE QUALIFIERS

Sample: 30193485001

[1] COC missing Relinquished by signature, date and time.

## REPORT OF LABORATORY ANALYSIS

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CHAIN OF CUSTODY RECORD



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										CONTAINER TYPE	PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE	P	V	D										
REPORT TO:					PRESERVATION:	3	7	W										
REQUESTED COMPLETION DATE:					# of													
CLIENT NAME: <u>Southern Company Services</u> CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-1739</u> REPORT TO: <u>John Abraham</u> CC: REQUESTED COMPLETION DATE: <u>LABURCH@scs.com</u> PROJECT NAME/STATE: <u>Plant Based Ash Pond CER</u> PROJECT #:					CONTAINERS ↓ Matrix: Air, Soil EPA 822, EPA 817D U.F. 504 EPA 300 TDS, SM2540C Rebound 226 1228 SW-0-846 9315 9320										L A B I D N U M B E R ↓	P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	1 - HCl, ≤6°C 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C 3 - HNO <sub>3</sub> 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen	
												*MATRIX CODES:						
												DW - DRINKING WATER	S - SOIL					
												WW - WASTEWATER	SL - SLUDGE					
												GW - GROUNDWATER	SD - SOLID					
												SW - SURFACE WATER	A - AIR					
												ST - STORM WATER	L - LIQUID					
												W - WATER	P - PRODUCT					
												REMARKS/ADDITIONAL INFORMATION						
												001						
												002						
												003						
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of												
8/16/16	0925	GW	X	X	B6WC-10	3	X	1	1									
8/16/16	1345	W	X	X	EBLOB1616	3	X	1	1									
8/16/16	1550	W	X	X	EQBLOB1616	3	X	1	1									
SAMPLED BY AND TITLE:					DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	FOR LAB USE ONLY										
RECEIVED BY:					DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	LAB #:										
RECEIVED BY LAB:					DATE/TIME:	SAMPLE SHIPPED VIA:	DATE/TIME:	Entered into LIMS:	Tracking #:									
pH checked:					Ice:	Temperature:	UPS	FED-EX	USPS	COURIER	CLIENT	OTHER	FS					
Yes No NA					Yes No NA	Min. Max.	Intact	Broken	Not Present	# of Coolers	Cooler ID:							

WO#: 30193485

Sample Condition Upon Receipt Pittsburgh

30193485



Client Name: Pace Atlanta Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 50985162

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 8-18-16

Comments:	Yes	No	N/A	
Chain of Custody Present:	/			1.
Chain of Custody Filled Out:	/			2.
Chain of Custody Relinquished:	/	/		3. <u>Jan 9/13/16</u>
Sampler Name & Signature on COC:	/	/		4. <u>Jac 9/13/16</u>
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: <u>WT</u>	/			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.	/			13. <u>PhC2</u>
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>8-18-16</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

Test: Ra-226  
Analyst: WRR  
Date: 8/29/2016  
Worklist: 31045  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1131393	
MB concentration:	0.009	
M/B Counting Uncertainty:	0.052	
MB MDC:	0.131	
MB Numerical Performance Indicator:	0.33	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCS (Y or N)?	N
	LCS31045	LCS31045
Count Date:	8/29/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.678	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.502	
Target Conc. (pCi/L, g, F):	8.892	
Uncertainty (Calculated):	0.418	
Result (pCi/L, g, F):	7.006	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.488	
Numerical Performance Indicator:	-5.75	
Percent Recovery:	78.79%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30193249002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30193249002DUP	
Sample Result (pCi/L, g, F):	0.113	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.102	
Sample Duplicate Result (pCi/L, g, F):	0.176	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.112	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.825	30193249002
Duplicate RPD:	44.06%	30193249002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 8/29/2016  
Worklist: 31072  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID		1131807
MB concentration:		0.396
M/B Counting Uncertainty:		0.381
MB MDC:		0.780
MB Numerical Performance Indicator:		2.04
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCSD31072	LCSD31072
Count Date:	9/9/2016	
Spike I.D.:	16-025	
Spike Concentration (pCi/mL):	25.721	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.814	
Target Conc. (pCi/L, g, F):	6.318	
Uncertainty (Calculated):	0.455	
Result (pCi/L, g, F):	7.823	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.639	
Numerical Performance Indicator:	3.76	
Percent Recovery:	123.82%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
	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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30193748003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30193748003DUP	
Sample Result (pCi/L, g, F):	0.351	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.307	
Sample Duplicate Result (pCi/L, g, F):	0.071	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.258	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.371	30193748003
Duplicate RPD:	132.89%	30193748003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
	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:	

## 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.

*Handwritten signatures and initials:*  
KMP  
Quip



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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: AZH0606**

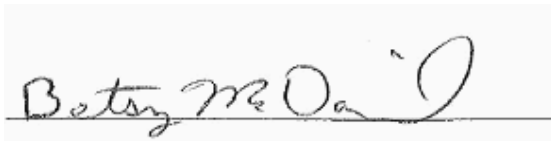
**August 25, 2016**

**Project: CCR Event**

**Project #: Plant Bowen Ash Pond**

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:



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

August 25, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-14	AZH0606-01	Ground Water	08/17/16 12:25	08/18/16 09:05
FBL081716	AZH0606-02	DI Water	08/17/16 14:35	08/18/16 09:05
EQBL081716	AZH0606-03	DI Water	08/17/16 14:45	08/18/16 09:05



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2016

Report No.: AZH0606

Project: CCR Event

Client ID: BGWC-14

Lab Number ID: AZH0606-01

Date/Time Sampled: 8/17/2016 12:25:00PM

Date/Time Received: 8/18/2016 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	453	25	10	mg/L	SM 2540 C		1	08/22/16 12:15	08/22/16 12:15	6080582	JPT
<b>Inorganic Anions</b>											
Chloride	35	0.25	0.01	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 15:22	6080559	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	08/19/16 12:16	08/19/16 15:22	6080559	RLC
Sulfate	130	5.0	0.26	mg/L	EPA 300.0		5	08/19/16 12:16	08/23/16 19:50	6080559	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Arsenic	0.0042	0.0050	0.0016	mg/L	EPA 6020B	J	1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Barium	0.0801	0.0100	0.0004	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Boron	0.787	0.100	0.0064	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Calcium	75.7	5.00	0.311	mg/L	EPA 6020B		10	08/19/16 08:40	08/23/16 14:52	6080526	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Molybdenum	0.0085	0.0100	0.0017	mg/L	EPA 6020B	J	1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 13:54	6080526	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/22/16 14:15	08/23/16 15:53	6080565	CSW





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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2016

Report No.: AZH0606

Project: CCR Event

Client ID: FBL081716

Lab Number ID: AZH0606-02

Date/Time Sampled: 8/17/2016 2:35:00PM

Date/Time Received: 8/18/2016 9:05:00AM

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	08/22/16 12:15	08/22/16 12:15	6080582	JPT
<b>Inorganic Anions</b>											
Chloride	0.06	0.25	0.01	mg/L	EPA 300.0	J	1	08/19/16 12:16	08/19/16 15:42	6080559	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 15:42	6080559	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 15:42	6080559	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:12	6080526	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/22/16 14:15	08/23/16 16:06	6080565	CSW



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Attention: Mr. Joju Abraham

August 25, 2016

Report No.: AZH0606

Project: CCR Event

Client ID: EQBL081716

Lab Number ID: AZH0606-03

Date/Time Sampled: 8/17/2016 2:45:00PM

Date/Time Received: 8/18/2016 9:05:00AM

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	08/22/16 12:15	08/22/16 12:15	6080582	JPT
<b>Inorganic Anions</b>											
Chloride	0.05	0.25	0.01	mg/L	EPA 300.0	J	1	08/19/16 12:16	08/19/16 16:03	6080559	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 16:03	6080559	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 16:03	6080559	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/19/16 08:40	08/23/16 14:18	6080526	CSW
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/22/16 14:15	08/23/16 16:08	6080565	CSW



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2016

**Report No.: AZH0606**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080582 - SM 2540 C</b>											
<b>Blank (6080582-BLK1)</b>						Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6080582-BS1)</b>						Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	377	25	10	mg/L	400.00		94	84-108			
<b>Duplicate (6080582-DUP1)</b>						Source: AZH0537-05 Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	869	25	10	mg/L		853			2	10	
<b>Duplicate (6080582-DUP2)</b>						Source: AZH0583-03 Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	1280	25	10	mg/L		1260			0.9	10	



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August 25, 2016

**Report No.: AZH0606**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080559 - EPA 300.0</b>											
<b>Blank (6080559-BLK1)</b>						Prepared & Analyzed: 08/19/16					
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 (6080559-BS1)</b>						Prepared & Analyzed: 08/19/16					
Chloride	10.4	0.25	0.01	mg/L	10.010		104	90-110			
Fluoride	10.6	0.30	0.02	mg/L	10.010		105	90-110			
Sulfate	10.3	1.0	0.05	mg/L	10.010		103	90-110			
<b>Matrix Spike (6080559-MS1)</b>						Source: AZH0536-01 Prepared & Analyzed: 08/19/16					
Chloride	28.2	0.25	0.01	mg/L	10.010	19.9	83	90-110			QM-05
Fluoride	10.1	0.30	0.02	mg/L	10.010	0.09	100	90-110			
Sulfate	98.0	1.0	0.05	mg/L	10.010	98.3	NR	90-110			QM-05
<b>Matrix Spike (6080559-MS2)</b>						Source: AZH0646-03 Prepared & Analyzed: 08/19/16					
Chloride	17.0	0.25	0.01	mg/L	10.010	6.94	101	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.010	0.09	104	90-110			
Sulfate	68.4	1.0	0.05	mg/L	10.010	65.3	30	90-110			QM-05
<b>Matrix Spike Dup (6080559-MSD1)</b>						Source: AZH0536-01 Prepared & Analyzed: 08/19/16					
Chloride	28.2	0.25	0.01	mg/L	10.010	19.9	83	90-110	0.1	15	QM-05
Fluoride	10.1	0.30	0.02	mg/L	10.010	0.09	100	90-110	0.2	15	
Sulfate	98.0	1.0	0.05	mg/L	10.010	98.3	NR	90-110	0.04	15	QM-05



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Attention: Mr. Joju Abraham

August 25, 2016

**Report No.: AZH0606**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080526 - EPA 3005A</b>											
<b>Blank (6080526-BLK1)</b>						Prepared: 08/19/16 Analyzed: 08/23/16					
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							
<b>LCS (6080526-BS1)</b>						Prepared: 08/19/16 Analyzed: 08/23/16					
Antimony	0.100	0.0030	0.0008	mg/L	0.10000		100	80-120			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000		101	80-120			
Barium	0.0967	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.0965	0.0030	0.00008	mg/L	0.10000		96	80-120			
Boron	1.02	0.100	0.0064	mg/L	1.0000		102	80-120			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000		103	80-120			
Calcium	0.970	0.500	0.0311	mg/L	1.0000		97	80-120			
Chromium	0.107	0.0100	0.0009	mg/L	0.10000		107	80-120			
Cobalt	0.106	0.0100	0.0005	mg/L	0.10000		106	80-120			
Copper	0.100	0.0050	0.0005	mg/L	0.10000		100	80-120			
Lead	0.105	0.0050	0.0001	mg/L	0.10000		105	80-120			
Molybdenum	0.101	0.0100	0.0017	mg/L	0.10000		101	80-120			
Nickel	0.103	0.0050	0.0006	mg/L	0.10000		103	80-120			
Selenium	0.0987	0.0100	0.0010	mg/L	0.10000		99	80-120			
Silver	0.104	0.0050	0.0005	mg/L	0.10000		104	80-120			
Thallium	0.107	0.0010	0.0002	mg/L	0.10000		107	80-120			
Vanadium	0.110	0.0100	0.0071	mg/L	0.10000		110	80-120			
Zinc	0.108	0.0100	0.0021	mg/L	0.10000		108	80-120			
Lithium	0.0981	0.0500	0.0021	mg/L	0.10000		98	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

August 25, 2016

**Report No.: AZH0606**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080526 - EPA 3005A</b>											
<b>Matrix Spike (6080526-MS1)</b>			<b>Source: AZH0606-01</b>			<b>Prepared: 08/19/16 Analyzed: 08/23/16</b>					
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125			
Arsenic	0.109	0.0050	0.0016	mg/L	0.10000	0.0042	105	75-125			
Barium	0.185	0.0100	0.0004	mg/L	0.10000	0.0801	105	75-125			
Beryllium	0.0965	0.0030	0.00008	mg/L	0.10000	ND	97	75-125			
Boron	1.73	0.100	0.0064	mg/L	1.0000	0.787	95	75-125			
Cadmium	0.0993	0.0010	0.00007	mg/L	0.10000	ND	99	75-125			
Calcium	78.5	5.00	0.311	mg/L	1.0000	75.7	285	75-125			QM-02
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	ND	108	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Copper	0.0957	0.0050	0.0005	mg/L	0.10000	ND	96	75-125			
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.113	0.0100	0.0017	mg/L	0.10000	0.0085	105	75-125			
Nickel	0.103	0.0050	0.0006	mg/L	0.10000	0.0014	102	75-125			
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	ND	103	75-125			
Silver	0.0967	0.0050	0.0005	mg/L	0.10000	ND	97	75-125			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125			
Vanadium	0.109	0.0100	0.0071	mg/L	0.10000	ND	109	75-125			
Zinc	0.103	0.0100	0.0021	mg/L	0.10000	ND	103	75-125			
Lithium	0.101	0.0500	0.0021	mg/L	0.10000	ND	101	75-125			
<b>Matrix Spike Dup (6080526-MSD1)</b>			<b>Source: AZH0606-01</b>			<b>Prepared: 08/19/16 Analyzed: 08/23/16</b>					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125	0.5	20	
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	0.0042	102	75-125	3	20	
Barium	0.185	0.0100	0.0004	mg/L	0.10000	0.0801	105	75-125	0.2	20	
Beryllium	0.0968	0.0030	0.00008	mg/L	0.10000	ND	97	75-125	0.3	20	
Boron	1.74	0.100	0.0064	mg/L	1.0000	0.787	96	75-125	0.6	20	
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125	4	20	
Calcium	77.6	5.00	0.311	mg/L	1.0000	75.7	195	75-125	1	20	QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125	4	20	
Cobalt	0.0979	0.0100	0.0005	mg/L	0.10000	ND	98	75-125	5	20	
Copper	0.0986	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	3	20	
Lead	0.0999	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	0.2	20	
Molybdenum	0.114	0.0100	0.0017	mg/L	0.10000	0.0085	106	75-125	0.7	20	
Nickel	0.102	0.0050	0.0006	mg/L	0.10000	0.0014	101	75-125	0.9	20	
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	2	20	
Silver	0.0989	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125	0.6	20	
Vanadium	0.104	0.0100	0.0071	mg/L	0.10000	ND	104	75-125	5	20	
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	ND	106	75-125	3	20	
Lithium	0.0990	0.0500	0.0021	mg/L	0.10000	ND	99	75-125	2	20	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2016

**Report No.: AZH0606**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080526 - EPA 3005A</b>											
<b>Post Spike (6080526-PS1)</b>				<b>Source: AZH0606-01</b>			<b>Prepared: 08/19/16 Analyzed: 08/23/16</b>				
Antimony	96.3			ug/L	100.00	0.676	96	80-120			
Arsenic	106			ug/L	100.00	4.17	102	80-120			
Barium	181			ug/L	100.00	80.1	101	80-120			
Beryllium	97.4			ug/L	100.00	0.0052	97	80-120			
Boron	1780			ug/L	1000.0	787	99	80-120			
Cadmium	98.7			ug/L	100.00	0.0150	99	80-120			
Calcium	73000			ug/L	1000.0	75700	NR	80-120			QM-02
Chromium	102			ug/L	100.00	0.429	102	80-120			
Cobalt	100			ug/L	100.00	0.256	100	80-120			
Copper	94.3			ug/L	100.00	0.150	94	80-120			
Lead	98.1			ug/L	100.00	0.0204	98	80-120			
Molybdenum	112			ug/L	100.00	8.49	104	80-120			
Nickel	101			ug/L	100.00	1.39	100	80-120			
Selenium	101			ug/L	100.00	0.550	100	80-120			
Silver	99.7			ug/L	100.00	0.0030	100	80-120			
Thallium	101			ug/L	100.00	0.0118	101	80-120			
Vanadium	109			ug/L	100.00	0.767	109	80-120			
Zinc	99.7			ug/L	100.00	1.79	98	80-120			
Lithium	100			ug/L	100.00	0.113	100	80-120			

**Batch 6080565 - EPA 7470A**

<b>Blank (6080565-BLK1)</b>				<b>Prepared: 08/22/16 Analyzed: 08/23/16</b>							
Mercury	ND	0.00020	0.00013	mg/L							
<b>LCS (6080565-BS1)</b>				<b>Prepared: 08/22/16 Analyzed: 08/23/16</b>							
Mercury	0.00248	0.00050	0.00013	mg/L	2.5000E-3		99	80-120			



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2016

**Report No.: AZH0606**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080565 - EPA 7470A</b>											
<b>Matrix Spike (6080565-MS1)</b>		<b>Source: AZH0646-02</b>				<b>Prepared: 08/22/16 Analyzed: 08/23/16</b>					
Mercury	0.00210	0.00050	0.00013	mg/L	2.5000E-3	ND	84	75-125			
<b>Matrix Spike Dup (6080565-MSD1)</b>		<b>Source: AZH0646-02</b>				<b>Prepared: 08/22/16 Analyzed: 08/23/16</b>					
Mercury	0.00199	0.00050	0.00013	mg/L	2.5000E-3	ND	79	75-125	5	20	
<b>Post Spike (6080565-PS1)</b>		<b>Source: AZH0646-02</b>				<b>Prepared: 08/22/16 Analyzed: 08/23/16</b>					
Mercury	1.35			ug/L	1.6667	0.0141	80	80-120			





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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 25, 2016

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## Legend

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### 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

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

PAGE: 1 OF 1

CLIENT INFORMATION					ANALYSIS REQUESTED					LAB ID NUMBER	CONTAINER TYPE		PRESERVATION	
CLIENT NAME: <i>Southern Consulting Services</i>					CONTAINER TYPE:	PRESEVATION:	# of						P - PLASTIC	1 - HCl, ≤8°C
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7234												A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤8°C	
REPORT TO: <i>John Abraham</i> CC:												G - CLEAR GLASS	3 - HNO <sub>3</sub>	
REQUESTED COMPLETION DATE:												V - VOA VIAL	4 - NaOH, ≤8°C	
PROJECT NAME/STATE: <i>Plant Based Acid Pond CCR</i>												S - STERILE	5 - NaOH/ZnAc, ≤8°C	
PROJECT #:												O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤8°C	
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of						*MATRIX CODES:		
8/17/16	1225	GW		X	RGWC-14	3						DW - DRINKING WATER	S - SOIL	
8/17/16	1435	W		X	FBLO81716	3						WW - WASTEWATER	SL - SLUDGE	
8/17/16	1445	W		X	EDLO81716	3						GW - GROUNDWATER	SD - SOLID	
												SW - SURFACE WATER	A - AIR	
												ST - STORM WATER	L - LIQUID	
												W - WATER	P - PRODUCT	
											REMARKS/ADDITIONAL INFORMATION			
											Reservoir not full, well ran dry during pumping			
SAMPLED BY AND TITLE: <i>Kevin Stimpson</i>					DATE/TIME: 8/17/16 1405	RELINQUISHED BY: <i>Kevin Stimpson</i>					DATE/TIME: 8/17/16 0600	FOR LAB USE ONLY		
RECEIVED BY:					DATE/TIME:	RECEIVED BY:					DATE/TIME:	LAB #:	AZH0606	
RECEIVED BY LAB: <i>Charles Hunte</i>					DATE/TIME: 8/18/16 0905	SAMPLE SHIPPED VIA: UPS <input checked="" type="checkbox"/> FED-EX <input checked="" type="checkbox"/> USPS <input type="checkbox"/> COURIER <input type="checkbox"/> CLIENT <input type="checkbox"/> OTHER <input type="checkbox"/> FS <input type="checkbox"/>					Entered into LIMS: <i>CH</i>		Tracking #:	
Checked: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA					Temp: <i>20</i> Min: <i>20</i> Max: <i>20</i>	Custody Seal: <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Broken <input type="checkbox"/> Not Present					# of Coolers: <i>1</i>	Cooler: <i>White</i>	<i>8095 2338 0694</i>	



# 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: 8/25/2016 3:11:44PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 08/18/16 09:05

Work Order: AZH0606

Logged In By: Charles Hawks

### OBSERVATIONS

#Samples: 3

#Containers: 9

Minimum Temp(C): 2.0

Maximum Temp(C): 2.0

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:



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

September 20, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193643

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on August 19, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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,  
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## CERTIFICATIONS

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193643

### 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 Bowen Ash Pond CCR  
Pace Project No.: 30193643

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30193643001	BGWC-14	Water	08/17/16 12:25	08/19/16 09:30
30193643002	FBL081716	Water	08/17/16 14:35	08/19/16 09:30
30193643003	EQBL081716	Water	08/17/16 14:45	08/19/16 09:30

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193643

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30193643001	BGWC-14	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193643002	FBL081716	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193643003	EQBL081716	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193643

Sample: <b>BGWC-14</b>		Lab ID: <b>30193643001</b>	Collected: 08/17/16 12:25	Received: 08/19/16 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>2.77 ± 0.511 (0.157)</b>		pCi/L	08/29/16 11:15	13982-63-3	
		<b>C:84% T:NA</b>					
Radium-228	EPA 9320	<b>2.41 ± 0.613 (0.578)</b>		pCi/L	09/09/16 02:25	15262-20-1	
		<b>C:75% T:82%</b>					
Total Radium	Total Radium Calculation	<b>5.18 ± 1.12 (0.735)</b>		pCi/L	09/12/16 14:22	7440-14-4	

Sample: <b>FBL081716</b>		Lab ID: <b>30193643002</b>	Collected: 08/17/16 14:35	Received: 08/19/16 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>0.00584 ± 0.0845 (0.207)</b>		pCi/L	08/29/16 11:15	13982-63-3	
		<b>C:82% T:NA</b>					
Radium-228	EPA 9320	<b>0.372 ± 0.305 (0.593)</b>		pCi/L	09/09/16 02:25	15262-20-1	
		<b>C:78% T:86%</b>					
Total Radium	Total Radium Calculation	<b>0.378 ± 0.390 (0.800)</b>		pCi/L	09/12/16 14:22	7440-14-4	

Sample: <b>EQBL081716</b>		Lab ID: <b>30193643003</b>	Collected: 08/17/16 14:45	Received: 08/19/16 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>0.111 ± 0.223 (0.497)</b>		pCi/L	08/29/16 11:15	13982-63-3	
		<b>C:95% T:NA</b>					
Radium-228	EPA 9320	<b>0.995 ± 0.547 (0.967)</b>		pCi/L	09/09/16 02:25	15262-20-1	
		<b>C:75% T:81%</b>					
Total Radium	Total Radium Calculation	<b>1.11 ± 0.770 (1.46)</b>		pCi/L	09/12/16 14:22	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193643

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QC Batch:	230890	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30193643001, 30193643002, 30193643003		

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 Bowen Ash Pond CCR  
 Pace Project No.: 30193643

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QC Batch: 230995 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30193643001, 30193643002, 30193643003

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METHOD BLANK: 1131807 Matrix: Water  
 Associated Lab Samples: 30193643001, 30193643002, 30193643003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.396 ± 0.387 (0.780) C:83% T:77%	pCi/L	09/09/16 02:23	

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 Bowen Ash Pond CCR  
Pace Project No.: 30193643

### 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.

### SAMPLE QUALIFIERS

Sample: 30193643003

[1] Low volume, client notified. Received with lid off. Client indicated to proceed.

## REPORT OF LABORATORY ANALYSIS

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CHAIN OF CUSTODY RECORD



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										CONTAINER TYPE	PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER					CONTAINER TYPE:													
Southern Company Services 241 Ralph McGill Blvd SE Bldg 185 Atlanta, GA 30308 704-506-7234					PRESERVATION: 3 4 3										L A B I D N U M B E R	P - PLASTIC 1 - HCl, ≤6°C A - AMBER GLASS 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C G - CLEAR GLASS 3 - HNO <sub>3</sub> V - VOA VIAL 4 - NaOH, ≤6°C S - STERILE 5 - NaOH/ZnAc, ≤6°C O - OTHER 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen		
REPORT TO: John Adams REQUESTED COMPLETION DATE:					# of													
PROJECT NAME/STATE: Plant Based Acid And CCP					CONTAINERS										*MATRIX CODES:			
PROJECT #:					↓										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			
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION										REMARKS/ADDITIONAL INFORMATION			
8/17/16	1225	GW	X		BGWL-14										Redmond not Full, Well sandy during pumpage 001			
8/17/16	1435	W	X		FBLO81716										002			
8/17/16	1445	W	X		EOBLO81716										003			
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p>WO#: 30193643</p> <p>30193643</p> </div>																		
SAMPLED BY AND TITLE: [Signature]					DATE/TIME: 8/17/16 @ 1425					RELINQUISHED BY: [Signature]					DATE/TIME: 8/17/16 @ 1600		FOR LAB USE ONLY	
RECEIVED BY: [Signature]					DATE/TIME: 8-19-16 9:30					RECEIVED BY: [Signature]					DATE/TIME:		LAB #: AZH0606 Entered into LIMS: [Signature]	
RECEIVED BY LAB: Charles Harris					DATE/TIME: 8/18/16 0905					SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS					Tracking #:			
Checked: Yes No NA					Temperature: 2°C Min Max					Custody Seal: Intact Broken Not Present					# of Coolers: 1		Cooler ID: White	

Sample Condition Upon Receipt Pittsburgh



Client Name: GA Power Project # 30193643

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5098 5552

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 8-19-16

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:	/	/		5.
-Includes date/time/ID/Analysis 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. <u>Low volume for sample</u>
Correct Containers Used:	/	/		10. <u>003</u>
-Pace Containers Used:	/	/		
Containers Intact: <u>BM 8-19-16</u>	/	/		11. <u>Sample 003 was received</u>
Filtered volume received for Dissolved tests	/	/		12. <u>with lid off</u>
All containers needing preservation have been checked.	/	/		13. <u>PhL2</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>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>8-19-16</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

Test: Ra-228  
Analyst: JLW  
Date: 8/29/2016  
Worklist: 31072  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1131807	
MB concentration:	0.396	
M/B Counting Uncertainty:	0.381	
MB MDC:	0.780	
MB Numerical Performance Indicator:	2.04	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS31072	LCSD31072
Count Date:	9/9/2016	
Spike I.D.:	16-025	
Spike Concentration (pCi/mL):	25.721	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.814	
Target Conc. (pCi/L, g, F):	6.318	
Uncertainty (Calculated):	0.455	
Result (pCi/L, g, F):	7.823	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.639	
Numerical Performance Indicator:	3.76	
Percent Recovery:	123.82%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30193748003	
Duplicate Sample I.D.:	30193748003DUP	
Sample Result (pCi/L, g, F):	0.351	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.307	
Sample Duplicate Result (pCi/L, g, F):	0.071	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.258	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.371	
Duplicate RPD:	132.89%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.~~

*results < 5x MDC - use numerical indicator to assess < 2 acceptable for all matrices*

*Analytic*

## Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: WRR  
Date: 8/29/2016  
Worklist: 31045  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1131393	
MB concentration:	0.009	
M/B Counting Uncertainty:	0.052	
MB MDC:	0.131	
MB Numerical Performance Indicator:	0.33	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCSD31045	LCSD31045
Count Date:	8/29/2016	
Spike I.D.:	18-026	
Spike Concentration (pCi/mL):	44.678	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.502	
Target Conc. (pCi/L, g, F):	8.892	
Uncertainty (Calculated):	0.418	
Result (pCi/L, g, F):	7.006	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.488	
Numerical Performance Indicator:	-5.75	
Percent Recovery:	78.79%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30193249002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30193249002DUP	
Sample Result (pCi/L, g, F):	0.113	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.102	
Sample Duplicate Result (pCi/L, g, F):	0.176	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.112	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.825	30193249002
Duplicate RPD:	47.06%	30193249002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Dw 9/19/16*

*results < 50 mdc - use numerical indicator to assess < 2 acceptable for all matrices*

*Dw 9/19/16*



**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: AZH0646**

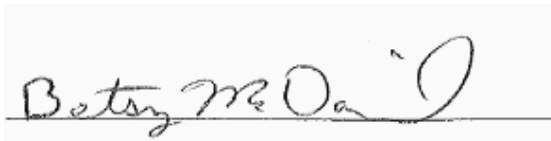
**August 26, 2016**

**Project: CCR Event**

**Project #: Plant Bowen Ash Pond**

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:



Project Manager

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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

August 26, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-22	AZH0646-01	Ground Water	08/18/16 12:10	08/19/16 09:15
BGWC-23	AZH0646-02	Ground Water	08/18/16 14:00	08/19/16 09:15
BGWC-21	AZH0646-03	Ground Water	08/18/16 10:35	08/19/16 09:15
BGWC-24	AZH0646-04	Ground Water	08/18/16 14:02	08/19/16 09:15
Dup-3	AZH0646-05	Ground Water	08/18/16 00:00	08/19/16 09:15



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 26, 2016

Report No.: AZH0646

Project: CCR Event

Client ID: BGWC-22

Lab Number ID: AZH0646-01

Date/Time Sampled: 8/18/2016 12:10:00PM

Date/Time Received: 8/19/2016 9:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1960	25	10	mg/L	SM 2540 C		1	08/22/16 12:15	08/22/16 12:15	6080582	JPT
<b>Inorganic Anions</b>											
Chloride	500	25	1.4	mg/L	EPA 300.0		100	08/19/16 12:16	08/23/16 20:11	6080559	RLC
Fluoride	0.30	0.30	0.02	mg/L	EPA 300.0	J	1	08/19/16 12:16	08/19/16 16:24	6080559	RLC
Sulfate	730	100	5.1	mg/L	EPA 300.0		100	08/19/16 12:16	08/23/16 20:11	6080559	RLC
<b>Metals, Total</b>											
Antimony	0.0023	0.0030	0.0008	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Arsenic	0.0022	0.0050	0.0016	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Barium	0.0953	0.0100	0.0004	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Boron	8.37	0.100	0.0064	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Calcium	370	50.0	3.11	mg/L	EPA 6020B		100	08/24/16 09:10	08/25/16 13:05	6080645	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Cobalt	0.0109	0.0100	0.0005	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Molybdenum	0.0758	0.0100	0.0017	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Thallium	0.0005	0.0010	0.0002	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Lithium	0.0118	0.0500	0.0021	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:04	6080645	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/22/16 14:15	08/23/16 16:10	6080565	CSW



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 26, 2016

Report No.: AZH0646

Project: CCR Event

Client ID: BGWC-23

Lab Number ID: AZH0646-02

Date/Time Sampled: 8/18/2016 2:00:00PM

Date/Time Received: 8/19/2016 9:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1600	25	10	mg/L	SM 2540 C		1	08/22/16 12:15	08/22/16 12:15	6080582	JPT
<b>Inorganic Anions</b>											
Chloride	400	25	1.4	mg/L	EPA 300.0		100	08/19/16 12:16	08/23/16 20:32	6080559	RLC
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	08/19/16 12:16	08/19/16 16:44	6080559	RLC
Sulfate	480	100	5.1	mg/L	EPA 300.0		100	08/19/16 12:16	08/23/16 20:32	6080559	RLC
<b>Metals, Total</b>											
Antimony	0.0009	0.0030	0.0008	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Arsenic	0.0030	0.0050	0.0016	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Barium	0.0893	0.0100	0.0004	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Boron	5.20	0.100	0.0064	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Calcium	290	50.0	3.11	mg/L	EPA 6020B		100	08/24/16 09:10	08/25/16 13:10	6080645	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Molybdenum	0.0136	0.0100	0.0017	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Lithium	0.0078	0.0500	0.0021	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:10	6080645	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/22/16 14:15	08/23/16 16:13	6080565	CSW



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 26, 2016

Report No.: AZH0646

Project: CCR Event

Client ID: BGWC-21

Lab Number ID: AZH0646-03

Date/Time Sampled: 8/18/2016 10:35:00AM

Date/Time Received: 8/19/2016 9:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	239	25	10	mg/L	SM 2540 C		1	08/22/16 12:15	08/22/16 12:15	6080582	JPT
<b>Inorganic Anions</b>											
Chloride	6.9	0.25	0.01	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 18:28	6080559	RLC
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	08/19/16 12:16	08/19/16 18:28	6080559	RLC
Sulfate	66	5.0	0.26	mg/L	EPA 300.0		5	08/19/16 12:16	08/23/16 20:52	6080559	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Barium	0.0479	0.0100	0.0004	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Boron	0.191	0.100	0.0064	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Calcium	38.6	2.50	0.155	mg/L	EPA 6020B		5	08/24/16 09:10	08/25/16 13:16	6080645	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Molybdenum	0.0023	0.0100	0.0017	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:16	6080645	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/22/16 14:15	08/23/16 16:15	6080565	CSW



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 26, 2016

Report No.: AZH0646

Project: CCR Event

Client ID: BGWC-24

Lab Number ID: AZH0646-04

Date/Time Sampled: 8/18/2016 2:02:00PM

Date/Time Received: 8/19/2016 9:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4200	25	10	mg/L	SM 2540 C		1	08/22/16 12:15	08/22/16 12:15	6080582	JPT
<b>Inorganic Anions</b>											
Chloride	1600	25	1.4	mg/L	EPA 300.0		100	08/19/16 12:16	08/23/16 22:36	6080559	RLC
Fluoride	0.24	0.30	0.02	mg/L	EPA 300.0	J	1	08/19/16 12:16	08/19/16 19:09	6080559	RLC
Sulfate	580	100	5.1	mg/L	EPA 300.0		100	08/19/16 12:16	08/23/16 22:36	6080559	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Arsenic	0.0054	0.0050	0.0016	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Barium	0.113	0.0100	0.0004	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Boron	22.0	1.00	0.0642	mg/L	EPA 6020B		10	08/24/16 09:10	08/25/16 13:28	6080645	KLH
Cadmium	0.0009	0.0010	0.00007	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Calcium	730	50.0	3.11	mg/L	EPA 6020B		100	08/24/16 09:10	08/25/16 13:22	6080645	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Cobalt	0.0021	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Molybdenum	0.0034	0.0100	0.0017	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Selenium	0.0023	0.0100	0.0010	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Lithium	0.0061	0.0500	0.0021	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:22	6080645	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/22/16 14:15	08/23/16 16:17	6080565	CSW



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 26, 2016

Report No.: AZH0646

Project: CCR Event

Client ID: Dup-3

Lab Number ID: AZH0646-05

Date/Time Sampled: 8/18/2016 12:00:00AM

Date/Time Received: 8/19/2016 9:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	254	25	10	mg/L	SM 2540 C		1	08/22/16 12:15	08/22/16 12:15	6080582	JPT
<b>Inorganic Anions</b>											
Chloride	8.2	0.25	0.01	mg/L	EPA 300.0		1	08/19/16 12:16	08/19/16 19:30	6080559	RLC
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	08/19/16 12:16	08/19/16 19:30	6080559	RLC
Sulfate	68	5.0	0.26	mg/L	EPA 300.0		5	08/19/16 12:16	08/23/16 22:56	6080559	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Barium	0.0496	0.0100	0.0004	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Boron	0.213	0.100	0.0064	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Calcium	38.2	2.50	0.155	mg/L	EPA 6020B		5	08/24/16 09:10	08/25/16 13:33	6080645	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Molybdenum	0.0023	0.0100	0.0017	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 14:27	6080645	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/22/16 14:15	08/23/16 16:20	6080565	CSW



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Attention: Mr. Joju Abraham

August 26, 2016

**Report No.: AZH0646**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080582 - SM 2540 C</b>											
<b>Blank (6080582-BLK1)</b>						Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6080582-BS1)</b>						Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	377	25	10	mg/L	400.00		94	84-108			
<b>Duplicate (6080582-DUP1)</b>						Source: AZH0537-05 Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	869	25	10	mg/L		853			2	10	
<b>Duplicate (6080582-DUP2)</b>						Source: AZH0583-03 Prepared & Analyzed: 08/22/16					
Total Dissolved Solids	1280	25	10	mg/L		1260			0.9	10	



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**Report No.: AZH0646**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080559 - EPA 300.0</b>											
<b>Blank (6080559-BLK1)</b>						Prepared & Analyzed: 08/19/16					
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 (6080559-BS1)</b>						Prepared & Analyzed: 08/19/16					
Chloride	10.4	0.25	0.01	mg/L	10.010		104	90-110			
Fluoride	10.6	0.30	0.02	mg/L	10.010		105	90-110			
Sulfate	10.3	1.0	0.05	mg/L	10.010		103	90-110			
<b>Matrix Spike (6080559-MS1)</b>						Source: AZH0536-01 Prepared & Analyzed: 08/19/16					
Chloride	28.2	0.25	0.01	mg/L	10.010	19.9	83	90-110			QM-05
Fluoride	10.1	0.30	0.02	mg/L	10.010	0.09	100	90-110			
Sulfate	98.0	1.0	0.05	mg/L	10.010	98.3	NR	90-110			QM-05
<b>Matrix Spike (6080559-MS2)</b>						Source: AZH0646-03 Prepared & Analyzed: 08/19/16					
Chloride	17.0	0.25	0.01	mg/L	10.010	6.94	101	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.010	0.09	104	90-110			
Sulfate	68.4	1.0	0.05	mg/L	10.010	65.3	30	90-110			QM-05
<b>Matrix Spike Dup (6080559-MSD1)</b>						Source: AZH0536-01 Prepared & Analyzed: 08/19/16					
Chloride	28.2	0.25	0.01	mg/L	10.010	19.9	83	90-110	0.1	15	QM-05
Fluoride	10.1	0.30	0.02	mg/L	10.010	0.09	100	90-110	0.2	15	
Sulfate	98.0	1.0	0.05	mg/L	10.010	98.3	NR	90-110	0.04	15	QM-05





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August 26, 2016

**Report No.: AZH0646**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080565 - EPA 7470A</b>											
<b>Blank (6080565-BLK1)</b>						Prepared: 08/22/16 Analyzed: 08/23/16					
Mercury	ND	0.00020	0.00013	mg/L							
<b>LCS (6080565-BS1)</b>						Prepared: 08/22/16 Analyzed: 08/23/16					
Mercury	0.00248	0.00050	0.00013	mg/L	2.5000E-3		99	80-120			
<b>Matrix Spike (6080565-MS1)</b>						Source: AZH0646-02 Prepared: 08/22/16 Analyzed: 08/23/16					
Mercury	0.00210	0.00050	0.00013	mg/L	2.5000E-3	ND	84	75-125			
<b>Matrix Spike Dup (6080565-MSD1)</b>						Source: AZH0646-02 Prepared: 08/22/16 Analyzed: 08/23/16					
Mercury	0.00199	0.00050	0.00013	mg/L	2.5000E-3	ND	79	75-125	5	20	
<b>Post Spike (6080565-PS1)</b>						Source: AZH0646-02 Prepared: 08/22/16 Analyzed: 08/23/16					
Mercury	1.35			ug/L	1.6667	0.0141	80	80-120			
<b>Batch 6080645 - EPA 3005A</b>											
<b>Blank (6080645-BLK1)</b>						Prepared & Analyzed: 08/24/16					
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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Attention: Mr. Joju Abraham

August 26, 2016

**Report No.: AZH0646**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080645 - EPA 3005A</b>											
<b>LCS (6080645-BS1)</b>						Prepared & Analyzed: 08/24/16					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000		102	80-120			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000		104	80-120			
Barium	0.0968	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.0991	0.0030	0.00008	mg/L	0.10000		99	80-120			
Boron	1.04	0.100	0.0064	mg/L	1.0000		104	80-120			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000		104	80-120			
Calcium	1.01	0.500	0.0311	mg/L	1.0000		101	80-120			
Chromium	0.104	0.0100	0.0009	mg/L	0.10000		104	80-120			
Cobalt	0.0998	0.0100	0.0005	mg/L	0.10000		100	80-120			
Copper	0.0990	0.0050	0.0005	mg/L	0.10000		99	80-120			
Lead	0.103	0.0050	0.0001	mg/L	0.10000		103	80-120			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000		103	80-120			
Nickel	0.101	0.0050	0.0006	mg/L	0.10000		101	80-120			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120			
Silver	0.101	0.0050	0.0005	mg/L	0.10000		101	80-120			
Thallium	0.105	0.0010	0.0002	mg/L	0.10000		105	80-120			
Vanadium	0.103	0.0100	0.0071	mg/L	0.10000		103	80-120			
Zinc	0.102	0.0100	0.0021	mg/L	0.10000		102	80-120			
Lithium	0.0983	0.0500	0.0021	mg/L	0.10000		98	80-120			
<b>Matrix Spike (6080645-MS1)</b>											
				<b>Source: AZH0681-01</b>		Prepared & Analyzed: 08/24/16					
Antimony	0.105	0.0030	0.0008	mg/L	0.10000	ND	105	75-125			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	ND	104	75-125			
Barium	0.147	0.0100	0.0004	mg/L	0.10000	0.0354	111	75-125			
Beryllium	0.104	0.0030	0.00008	mg/L	0.10000	ND	104	75-125			
Boron	1.10	0.100	0.0064	mg/L	1.0000	0.0226	108	75-125			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125			
Calcium	30.0	2.50	0.155	mg/L	1.0000	28.5	147	75-125			QM-02
Chromium	0.107	0.0100	0.0009	mg/L	0.10000	ND	107	75-125			
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125			
Copper	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125			
Lead	0.0988	0.0050	0.0001	mg/L	0.10000	ND	99	75-125			
Molybdenum	0.116	0.0100	0.0017	mg/L	0.10000	0.0053	110	75-125			
Nickel	0.104	0.0050	0.0006	mg/L	0.10000	ND	104	75-125			
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125			
Silver	0.101	0.0050	0.0005	mg/L	0.10000	ND	101	75-125			
Thallium	0.100	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	0.102	0.0100	0.0021	mg/L	0.10000	ND	102	75-125			
Lithium	0.0998	0.0500	0.0021	mg/L	0.10000	ND	100	75-125			



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Attention: Mr. Joju Abraham

August 26, 2016

**Report No.: AZH0646**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080645 - EPA 3005A</b>											
<b>Matrix Spike Dup (6080645-MSD1)</b>			<b>Source: AZH0681-01</b>			<b>Prepared &amp; Analyzed: 08/24/16</b>					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000	ND	104	75-125	1	20	
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	ND	106	75-125	2	20	
Barium	0.141	0.0100	0.0004	mg/L	0.10000	0.0354	106	75-125	4	20	
Beryllium	0.102	0.0030	0.00008	mg/L	0.10000	ND	102	75-125	2	20	
Boron	1.04	0.100	0.0064	mg/L	1.0000	0.0226	102	75-125	5	20	
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000	ND	104	75-125	1	20	
Calcium	29.2	2.50	0.155	mg/L	1.0000	28.5	62	75-125	3	20	QM-02
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	ND	108	75-125	1	20	
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125	0.3	20	
Copper	0.0994	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	3	20	
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125	2	20	
Molybdenum	0.114	0.0100	0.0017	mg/L	0.10000	0.0053	109	75-125	1	20	
Nickel	0.103	0.0050	0.0006	mg/L	0.10000	ND	103	75-125	0.9	20	
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	ND	103	75-125	2	20	
Silver	0.103	0.0050	0.0005	mg/L	0.10000	ND	103	75-125	2	20	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125	2	20	
Vanadium	0.106	0.0100	0.0071	mg/L	0.10000	ND	106	75-125	0.2	20	
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	ND	106	75-125	3	20	
Lithium	0.104	0.0500	0.0021	mg/L	0.10000	ND	104	75-125	4	20	
<b>Post Spike (6080645-PS1)</b>			<b>Source: AZH0681-01</b>			<b>Prepared &amp; Analyzed: 08/24/16</b>					
Antimony	89.4			ug/L	100.00	0.404	89	80-120			
Arsenic	105			ug/L	100.00	0.555	105	80-120			
Barium	137			ug/L	100.00	35.4	102	80-120			
Beryllium	102			ug/L	100.00	0.0176	102	80-120			
Boron	1060			ug/L	1000.0	22.6	104	80-120			
Cadmium	103			ug/L	100.00	0.0081	103	80-120			
Calcium	29900			ug/L	1000.0	28500	132	80-120			QM-02
Chromium	108			ug/L	100.00	0.153	107	80-120			
Cobalt	102			ug/L	100.00	0.292	102	80-120			
Copper	104			ug/L	100.00	0.315	104	80-120			
Lead	98.2			ug/L	100.00	0.0146	98	80-120			
Molybdenum	107			ug/L	100.00	5.27	102	80-120			
Nickel	103			ug/L	100.00	0.456	102	80-120			
Selenium	98.8			ug/L	100.00	0.0372	99	80-120			
Silver	95.7			ug/L	100.00	0.0032	96	80-120			
Thallium	99.7			ug/L	100.00	0.0856	100	80-120			
Vanadium	108			ug/L	100.00	0.639	107	80-120			
Zinc	103			ug/L	100.00	1.90	101	80-120			
Lithium	99.1			ug/L	100.00	1.70	97	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

August 26, 2016

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## Legend

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### 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

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

PAGE: 1 OF 1

CLIENT NAME					ANALYSIS REQUESTED					L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER					CONTAINER TYPE	P	A	G						
REPORT TO:					# of									
REQUESTED COMPLETION DATE:					C O N T A I N E R S  ↓									
PROJECT NAME/STATE														
PROJECT #:														
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION									
8/18/16	1210	GW		✓	BGWC-22	3	1	1	1					
8/18/16	1400	GW		*	BGWC-23	3	1	1	1					
8/18/16	1035	GW		*	BGWC-21	4	1	1	2					
8/18/16	1402	GW		*	BGWC-24	3	1	1	1					
8/18/16	/	GW		*	Dup-3	3	1	1	1					

SAMPLED BY AND TITLE		DATE/TIME	RELINQUISHED BY	DATE/TIME	FOR LAB USE ONLY	
RECEIVED BY		DATE/TIME	RELINQUISHED BY	DATE/TIME	LAB #:	
RECEIVED BY LAB		DATE/TIME	SAMPLE SHIPPED VIA	DATE/TIME	Entered into LIMS:	
Checked:		Temperature	Custody Seal:	# of Coolers	Cooler ID:	Tracking #:
Yes No NA	Yes No NA	Temp	Intact Broken Not Present	1	R116	809573380672



**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: 8/26/2016 12:05:45PM**

**Attn:** Mr. Joju Abraham  
**Client:** Georgia Power  
**Project:** CCR Event  
**Date Received:** 08/19/16 09:15

**Work Order:** AZH0646  
**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 5                      **#Containers:** 16  
**Minimum Temp(C):** 2.0              **Maximum Temp(C):** 2.0              **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:**



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

September 28, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193748

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on August 22, 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 Bowen Ash Pond CCR  
Pace Project No.: 30193748

### 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 Bowen Ash Pond CCR  
Pace Project No.: 30193748

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30193748001	BGWC-22	Water	08/18/16 12:10	08/22/16 09:20
30193748002	BGWC-23	Water	08/18/16 14:00	08/22/16 09:20
30193748003	BGWC-21	Water	08/18/16 10:35	08/22/16 09:20
30193748004	BGWC-24	Water	08/18/16 14:02	08/22/16 09:20
30193748005	Dup-3	Water	08/18/16 00:01	08/22/16 09:20

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**SAMPLE ANALYTE COUNT**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193748

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30193748001	BGWC-22	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193748002	BGWC-23	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193748003	BGWC-21	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193748004	BGWC-24	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193748005	Dup-3	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

**REPORT OF LABORATORY ANALYSIS**

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193748

Sample: <b>BGWC-22</b>		Lab ID: <b>30193748001</b>	Collected: 08/18/16 12:10	Received: 08/22/16 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>1.21 ± 0.292 (0.252)</b> C:88% T:NA	pCi/L	08/29/16 11:15	13982-63-3	
Radium-228	EPA 9320	<b>1.26 ± 0.424 (0.577)</b> C:75% T:86%	pCi/L	09/09/16 02:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.47 ± 0.716 (0.829)</b>	pCi/L	09/12/16 14:22	7440-14-4	

Sample: <b>BGWC-23</b>		Lab ID: <b>30193748002</b>	Collected: 08/18/16 14:00	Received: 08/22/16 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>0.830 ± 0.226 (0.181)</b> C:80% T:NA	pCi/L	08/29/16 11:41	13982-63-3	
Radium-228	EPA 9320	<b>1.05 ± 0.430 (0.683)</b> C:74% T:82%	pCi/L	09/09/16 02:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.88 ± 0.656 (0.864)</b>	pCi/L	09/12/16 14:22	7440-14-4	

Sample: <b>BGWC-21</b>		Lab ID: <b>30193748003</b>	Collected: 08/18/16 10:35	Received: 08/22/16 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>0.0889 ± 0.113 (0.237)</b> C:76% T:NA	pCi/L	08/29/16 11:41	13982-63-3	
Radium-228	EPA 9320	<b>0.351 ± 0.313 (0.616)</b> C:78% T:79%	pCi/L	09/09/16 02:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.440 ± 0.426 (0.853)</b>	pCi/L	09/12/16 14:22	7440-14-4	

Sample: <b>BGWC-24</b>		Lab ID: <b>30193748004</b>	Collected: 08/18/16 14:02	Received: 08/22/16 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>1.30 ± 0.283 (0.144)</b> C:90% T:NA	pCi/L	08/29/16 14:19	13982-63-3	
Radium-228	EPA 9320	<b>1.37 ± 0.433 (0.559)</b> C:78% T:86%	pCi/L	09/09/16 02:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.67 ± 0.716 (0.703)</b>	pCi/L	09/12/16 14:22	7440-14-4	

Sample: <b>Dup-3</b>		Lab ID: <b>30193748005</b>	Collected: 08/18/16 00:01	Received: 08/22/16 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>0.263 ± 0.260 (0.515)</b> C:81% T:NA	pCi/L	09/10/16 11:04	13982-63-3	
Radium-228	EPA 9320	<b>1.18 ± 0.532 (0.852)</b> C:82% T:78%	pCi/L	09/23/16 12:41	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193748

Sample: Dup-3 Lab ID: 30193748005 Collected: 08/18/16 00:01 Received: 08/22/16 09:20 Matrix: Water  
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	1.44 ± 0.792 (1.37)	pCi/L	09/23/16 15:52	7440-14-4	

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193748

---

QC Batch:	233804	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30193748005		

---

METHOD BLANK:	1146438	Matrix:	Water
Associated Lab Samples:	30193748005		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.493 ± 0.318 (0.580) C:77% T:84%	pCi/L	09/23/16 12:40	

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 Bowen Ash Pond CCR  
 Pace Project No.: 30193748

---

QC Batch: 232325 Analysis Method: EPA 9315  
 QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
 Associated Lab Samples: 30193748005

---

METHOD BLANK: 1138696 Matrix: Water  
 Associated Lab Samples: 30193748005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.257 ± 0.225 (0.422) C:92% T:NA	pCi/L	09/10/16 11:08	

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 Bowen Ash Pond CCR  
 Pace Project No.: 30193748

---

QC Batch: 230890 Analysis Method: EPA 9315  
 QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
 Associated Lab Samples: 30193748001, 30193748002, 30193748003, 30193748004

---

METHOD BLANK: 1131393 Matrix: Water  
 Associated Lab Samples: 30193748001, 30193748002, 30193748003, 30193748004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.00894 ± 0.0524 (0.131) C:100% T:NA	pCi/L	08/29/16 10:58	

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 Bowen Ash Pond CCR  
 Pace Project No.: 30193748

---

QC Batch: 230995 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30193748001, 30193748002, 30193748003, 30193748004

---

METHOD BLANK: 1131807 Matrix: Water  
 Associated Lab Samples: 30193748001, 30193748002, 30193748003, 30193748004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.396 ± 0.387 (0.780) C:83% T:77%	pCi/L	09/09/16 02:23	

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 Bowen Ash Pond CCR  
Pace Project No.: 30193748

### 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, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED										L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER					CONTAINER TYPE:														
REPORT TO:					PRESERVATION:														
REQUESTED COMPLETION DATE:					# of														
CLIENT NAME: <u>Southern Company Services</u> CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B10185</u> <u>Atlanta, GA 30308</u> REPORT TO: <u>Jon Abraham</u> REQUESTED COMPLETION DATE: <u>404-506-7234</u> PROJECT NAME/STATE: <u>Plant Board New Pacer</u> PROJECT #:					CONTAINER TYPE: <u>P</u> PRESERVATION: <u>3 7 6</u> # of C O N T A I N E R S ↓ <u>Methods App. 10/15/15</u> <u>EPA 822-D, EPA 147-D</u> <u>C1, F, S, H, EPA 300</u> <u>IDS BN75HX</u> <u>Revised 2/26/15</u> <u>SWS-B46 9/15/15</u>										P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER		1 - HCl, ≤6°C 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C 3 - HNO <sub>3</sub> 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen		
Collection DATE Collection TIME MATRIX CODE* C O M P G R A B SAMPLE IDENTIFICATION					*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				
8/18/16 1210 GW 8/18/16 1400 GW 8/18/16 1035 GW 8/18/16 1402 GW 8/18/16 / GW					3 3 4 3 3 1 1 1 1 1 1 1 2 1 1										001 002 003 004 005				
SAMPLED BY AND TITLE: <u>Karen E. Hill</u> DATE/TIME: <u>8/18/16 @ 1500</u> RECEIVED BY: <u>Kit B. Hill</u> DATE/TIME: <u>8/18/16 @ 1525</u> RELINQUISHED BY: <u>Kevin Johnson</u> DATE/TIME: <u>8/18/16 @ 1525</u> RELINQUISHED BY: <u>Kit B. Hill to FedEx</u> DATE/TIME: <u>8/18/16 @ 1610</u>					FOR LAB USE ONLY LAB #: Entered into LIMS: Tracking #:										WO#: 30193748  30193748				
RECEIVED BY LAB: <u>Charles Hunt</u> DATE/TIME: <u>8/19/16 0915</u> SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS Checked: Yes No NA Yes No NA Temperature: <u>36</u> Min. Max. Custody Seal: Intact Broken Not Present # of Coolers: Cooler ID:					Intact Broken Not Present # of Coolers: Cooler ID:														

received: Karen E. Hill 8/22/16 0920

9 of 17

# Sample Condition Upon Receipt Pittsburgh



Client Name: Pace Georgia Project # 30193748

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 0812 5098 5714

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

Thermometer Used NIA Type of Ice: Wet Blue None

Cooler Temperature Observed Temp NIA °C Correction Factor: NIA °C Final Temp: NIA °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KJK 8/22/16

Comments:	Yes	No	N/A	
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/Analysis Matrix: <u>WT</u>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used: -Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	10.
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>pH &lt; 2</u>
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>KJK</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>KJK</u> Date: <u>8/22/16</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-226  
Analyst: WRR  
Date: 8/29/2016  
Worklist: 31045  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1131393
MB concentration:	0.009
M/B Counting Uncertainty:	0.052
MB MDC:	0.131
MB Numerical Performance Indicator:	0.33
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS31045	LCSD31045
Count Date:	8/29/2016		
Spike I.D.:	16-026		
Spike Concentration (pCi/mL):	44.678		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.502		
Target Conc. (pCi/L, g, F):	8.892		
Uncertainty (Calculated):	0.418		
Result (pCi/L, g, F):	7.006		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.488		
Numerical Performance Indicator:	-5.75		
Percent Recovery:	78.79%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30193249002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30193249002DUP	
Sample Result (pCi/L, g, F):	0.113	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.102	
Sample Duplicate Result (pCi/L, g, F):	0.176	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.112	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.825	30193249002
Duplicate RPD:	44.06%	30193249002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Emile Oapad*



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: WRR  
Date: 9/9/2016  
Worklist: 31262  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1138696	
MB concentration:	0.257	
M/B Counting Uncertainty:	0.222	
MB MDC:	0.422	
MB Numerical Performance Indicator:	2.27	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
LCS/LCSD (Y or N)?	N	
LCS31262	LCSD31262	
Count Date:	9/10/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.678	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.500	
Target Conc. (pCi/L, g, F):	8.928	
Uncertainty (Calculated):	0.420	
Result (pCi/L, g, F):	7.038	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.942	
Numerical Performance Indicator:	-3.59	
Percent Recovery:	78.83%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30194831002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30194831002DUP	
Sample Result (pCi/L, g, F):	0.261	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.230	
Sample Duplicate Result (pCi/L, g, F):	0.024	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.254	
Are sample and/or duplicate results below MDC? See Below ##		
Duplicate Numerical Performance Indicator:	1.357	30194831002
Duplicate RPD:	166.19%	30194831002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*L.M.C. Capital*



## Quality Control Sample Performance Assessment

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

Test: Ra-228  
Analyst: JLW  
Date: 8/29/2016  
Worklist: 31072  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1131807
MB concentration:	0.396
M/B Counting Uncertainty:	0.381
MB MDC:	0.780
MB Numerical Performance Indicator:	2.04
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	N
	LCS31072	LCS/D31072
Count Date:	9/9/2016	
Spike I.D.:	16-025	
Spike Concentration (pCi/mL):	25.721	
Volume Used (mL):	0.20	
Alliquot Volume (L, g, F):	0.814	
Target Conc. (pCi/L, g, F):	6.318	
Uncertainty (Calculated):	0.455	
Result (pCi/L, g, F):	7.823	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.639	
Numerical Performance Indicator:	3.76	
Percent Recovery:	123.82%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment
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):
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:

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30193748003
Duplicate Sample I.D.:	30193748003DUP
Sample Result (pCi/L, g, F):	0.351
Sample Result Counting Uncertainty (pCi/L, g, F):	0.307
Sample Duplicate Result (pCi/L, g, F):	0.071
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.258
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	1.371
Duplicate RPD:	132.89%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Fail***

Matrix Spike/Matrix Spike Duplicate Sample Assessment
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:

## 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.

*LMPL*  
*Calzed*



## Quality Control Sample Performance Assessment

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

Test: Ra-228  
Analyst: JLW  
Date: 9/14/2016  
Worklist: 31282  
Matrix: DW

Method Blank Assessment		
MB Sample ID		1138978
MB concentration:		0.619
M/B Counting Uncertainty:		0.390
MB MDC:		0.768
MB Numerical Performance Indicator:		3.11
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		
	LCS (Y or N)?	N
	LCS31282	LCS31282
Count Date:	9/16/2016	
Spike I.D.:	16-025	
Spike Concentration (pCi/mL):	25.659	
Volume Used (mL):	0.30	
Aliquot Volume (L, g, F):	0.806	
Target Conc. (pCi/L, g, F):	9.546	
Uncertainty (Calculated):	0.687	
Result (pCi/L, g, F):	9.811	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.983	
Numerical Performance Indicator:	0.43	
Percent Recovery:	102.78%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30194831002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30194831002DUP	
Sample Result (pCi/L, g, F):	1.058	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.535	
Sample Duplicate Result (pCi/L, g, F):	0.953	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.486	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.285	30194831002
Duplicate RPD:	10.46%	30194831002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*Ampr apud*



**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: AZH0681**

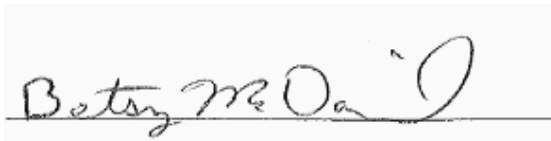
**August 29, 2016**

**Project: CCR Event**

**Project #: Plant Bowen Ash Pond**

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:



Project Manager

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All test results relate only to the samples analyzed.





**PACE ANALYTICAL SERVICES, INC.**

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Environmental Monitoring & Laboratory Analysis  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 29, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-26	AZH0681-01	Ground Water	08/19/16 11:55	08/22/16 09:20
BGWA-27	AZH0681-02	Ground Water	08/19/16 12:52	08/22/16 09:20
BGWA-28	AZH0681-03	Ground Water	08/19/16 10:12	08/22/16 09:20



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 29, 2016

**Report No.:** AZH0681

**Project:** CCR Event

**Client ID:** BGWA-26

**Lab Number ID:** AZH0681-01

**Date/Time Sampled:** 8/19/2016 11:55:00AM

**Date/Time Received:** 8/22/2016 9:20:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Barium	0.0354	0.0100	0.0004	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Boron	0.0226	0.100	0.0064	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Calcium	28.5	2.50	0.155	mg/L	EPA 6020B		5	08/24/16 09:10	08/25/16 13:39	6080645	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Molybdenum	0.0053	0.0100	0.0017	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:02	6080645	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/25/16 09:45	08/25/16 14:44	6080680	CSW



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 29, 2016

**Report No.:** AZH0681

**Project:** CCR Event

**Client ID:** BGWA-27

**Lab Number ID:** AZH0681-02

**Date/Time Sampled:** 8/19/2016 12:52:00PM

**Date/Time Received:** 8/22/2016 9:20:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Barium	0.0383	0.0100	0.0004	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Boron	0.0175	0.100	0.0064	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Calcium	36.3	2.50	0.155	mg/L	EPA 6020B		5	08/24/16 09:10	08/25/16 13:56	6080645	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:08	6080645	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/25/16 09:45	08/25/16 14:46	6080680	CSW



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 29, 2016

**Report No.:** AZH0681

**Project:** CCR Event

**Client ID:** BGWA-28

**Lab Number ID:** AZH0681-03

**Date/Time Sampled:** 8/19/2016 10:12:00AM

**Date/Time Received:** 8/22/2016 9:20:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Barium	0.0548	0.0100	0.0004	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Boron	0.0690	0.100	0.0064	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Calcium	40.5	2.50	0.155	mg/L	EPA 6020B		5	08/24/16 09:10	08/25/16 14:02	6080645	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Molybdenum	0.0018	0.0100	0.0017	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:13	6080645	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/25/16 09:45	08/25/16 14:49	6080680	CSW



**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

August 29, 2016

**Report No.: AZH0681**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080645 - EPA 3005A</b>											
<b>Blank (6080645-BLK1)</b>						Prepared & Analyzed: 08/24/16					
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							
<b>LCS (6080645-BS1)</b>						Prepared & Analyzed: 08/24/16					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000		102	80-120			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000		104	80-120			
Barium	0.0968	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.0991	0.0030	0.00008	mg/L	0.10000		99	80-120			
Boron	1.04	0.100	0.0064	mg/L	1.0000		104	80-120			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000		104	80-120			
Calcium	1.01	0.500	0.0311	mg/L	1.0000		101	80-120			
Chromium	0.104	0.0100	0.0009	mg/L	0.10000		104	80-120			
Cobalt	0.0998	0.0100	0.0005	mg/L	0.10000		100	80-120			
Copper	0.0990	0.0050	0.0005	mg/L	0.10000		99	80-120			
Lead	0.103	0.0050	0.0001	mg/L	0.10000		103	80-120			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000		103	80-120			
Nickel	0.101	0.0050	0.0006	mg/L	0.10000		101	80-120			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120			
Silver	0.101	0.0050	0.0005	mg/L	0.10000		101	80-120			
Thallium	0.105	0.0010	0.0002	mg/L	0.10000		105	80-120			
Vanadium	0.103	0.0100	0.0071	mg/L	0.10000		103	80-120			
Zinc	0.102	0.0100	0.0021	mg/L	0.10000		102	80-120			
Lithium	0.0983	0.0500	0.0021	mg/L	0.10000		98	80-120			



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 29, 2016

**Report No.: AZH0681**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080645 - EPA 3005A</b>											
<b>Matrix Spike (6080645-MS1)</b>			<b>Source: AZH0681-01</b>			<b>Prepared &amp; Analyzed: 08/24/16</b>					
Antimony	0.105	0.0030	0.0008	mg/L	0.10000	ND	105	75-125			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	ND	104	75-125			
Barium	0.147	0.0100	0.0004	mg/L	0.10000	0.0354	111	75-125			
Beryllium	0.104	0.0030	0.00008	mg/L	0.10000	ND	104	75-125			
Boron	1.10	0.100	0.0064	mg/L	1.0000	0.0226	108	75-125			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125			
Calcium	30.0	2.50	0.155	mg/L	1.0000	28.5	147	75-125			QM-02
Chromium	0.107	0.0100	0.0009	mg/L	0.10000	ND	107	75-125			
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125			
Copper	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125			
Lead	0.0988	0.0050	0.0001	mg/L	0.10000	ND	99	75-125			
Molybdenum	0.116	0.0100	0.0017	mg/L	0.10000	0.0053	110	75-125			
Nickel	0.104	0.0050	0.0006	mg/L	0.10000	ND	104	75-125			
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125			
Silver	0.101	0.0050	0.0005	mg/L	0.10000	ND	101	75-125			
Thallium	0.100	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	0.102	0.0100	0.0021	mg/L	0.10000	ND	102	75-125			
Lithium	0.0998	0.0500	0.0021	mg/L	0.10000	ND	100	75-125			
<b>Matrix Spike Dup (6080645-MSD1)</b>			<b>Source: AZH0681-01</b>			<b>Prepared &amp; Analyzed: 08/24/16</b>					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000	ND	104	75-125	1	20	
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	ND	106	75-125	2	20	
Barium	0.141	0.0100	0.0004	mg/L	0.10000	0.0354	106	75-125	4	20	
Beryllium	0.102	0.0030	0.00008	mg/L	0.10000	ND	102	75-125	2	20	
Boron	1.04	0.100	0.0064	mg/L	1.0000	0.0226	102	75-125	5	20	
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000	ND	104	75-125	1	20	
Calcium	29.2	2.50	0.155	mg/L	1.0000	28.5	62	75-125	3	20	QM-02
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	ND	108	75-125	1	20	
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125	0.3	20	
Copper	0.0994	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	3	20	
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125	2	20	
Molybdenum	0.114	0.0100	0.0017	mg/L	0.10000	0.0053	109	75-125	1	20	
Nickel	0.103	0.0050	0.0006	mg/L	0.10000	ND	103	75-125	0.9	20	
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	ND	103	75-125	2	20	
Silver	0.103	0.0050	0.0005	mg/L	0.10000	ND	103	75-125	2	20	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125	2	20	
Vanadium	0.106	0.0100	0.0071	mg/L	0.10000	ND	106	75-125	0.2	20	
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	ND	106	75-125	3	20	
Lithium	0.104	0.0500	0.0021	mg/L	0.10000	ND	104	75-125	4	20	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 29, 2016

**Report No.: AZH0681**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080645 - EPA 3005A</b>											
<b>Post Spike (6080645-PS1)</b>				<b>Source: AZH0681-01</b>			<b>Prepared &amp; Analyzed: 08/24/16</b>				
Antimony	89.4			ug/L	100.00	0.404	89	80-120			
Arsenic	105			ug/L	100.00	0.555	105	80-120			
Barium	137			ug/L	100.00	35.4	102	80-120			
Beryllium	102			ug/L	100.00	0.0176	102	80-120			
Boron	1060			ug/L	1000.0	22.6	104	80-120			
Cadmium	103			ug/L	100.00	0.0081	103	80-120			
Calcium	29900			ug/L	1000.0	28500	132	80-120			QM-02
Chromium	108			ug/L	100.00	0.153	107	80-120			
Cobalt	102			ug/L	100.00	0.292	102	80-120			
Copper	104			ug/L	100.00	0.315	104	80-120			
Lead	98.2			ug/L	100.00	0.0146	98	80-120			
Molybdenum	107			ug/L	100.00	5.27	102	80-120			
Nickel	103			ug/L	100.00	0.456	102	80-120			
Selenium	98.8			ug/L	100.00	0.0372	99	80-120			
Silver	95.7			ug/L	100.00	0.0032	96	80-120			
Thallium	99.7			ug/L	100.00	0.0856	100	80-120			
Vanadium	108			ug/L	100.00	0.639	107	80-120			
Zinc	103			ug/L	100.00	1.90	101	80-120			
Lithium	99.1			ug/L	100.00	1.70	97	80-120			

**Batch 6080680 - EPA 7470A**

<b>Blank (6080680-BLK1)</b>				<b>Prepared &amp; Analyzed: 08/25/16</b>							
Mercury	ND	0.00050	0.00013	mg/L							
<b>LCS (6080680-BS1)</b>				<b>Prepared &amp; Analyzed: 08/25/16</b>							
Mercury	0.00224	0.00050	0.00013	mg/L	2.5000E-3		89	80-120			



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 29, 2016

**Report No.: AZH0681**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080680 - EPA 7470A</b>											
<b>Matrix Spike (6080680-MS1)</b>			<b>Source: AZH0681-03</b>			<b>Prepared &amp; Analyzed: 08/25/16</b>					
Mercury	0.00229	0.00050	0.00013	mg/L	2.5000E-3	ND	92	75-125			
<b>Matrix Spike Dup (6080680-MSD1)</b>			<b>Source: AZH0681-03</b>			<b>Prepared &amp; Analyzed: 08/25/16</b>					
Mercury	0.00219	0.00050	0.00013	mg/L	2.5000E-3	ND	88	75-125	5	20	
<b>Post Spike (6080680-PS1)</b>			<b>Source: AZH0681-03</b>			<b>Prepared &amp; Analyzed: 08/25/16</b>					
Mercury	1.51			ug/L	1.6667	0.00654	90	80-120			





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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 29, 2016

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## Legend

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### 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

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

CLIENT NAME: Southern Company Services					ANALYSIS REQUESTED					LAB NUMBER	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd B10185 Atlanta, GA 30308 404-506-7239					CONTAINER TYPE	P	P	P						P - PLASTIC	1 - HCl, ≤6°C
REPORT TO: Julie Abraham					PRESERVATION	3	7	3					A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REQUESTED COMPLETION DATE:					# of								G - CLEAR GLASS	3 - HNO <sub>3</sub>	
PROJECT NAME/STATE: Plant Bowen Ash Pond CCR					C								V - VOA VIAL	4 - NaOH, ≤6°C	
PROJECT #:					CONTAINERS								S - STERILE	5 - NaOH/ZnAc, ≤6°C	
Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAB	SAMPLE IDENTIFICATION								O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
														7 - ≤6°C not frozen	
8/19/16	1155	6W		X	B6WA-26	3	X	1	1				*MATRIX CODES:		
8/19/16	1252	6W		X	B6WA-27	3	X	1	1				DW - DRINKING WATER	S - SOIL	
8/19/16	1612	6W		X	B6WA-28	3	X	1	1			WW - WASTEWATER	SL - SLUDGE		
												GW - GROUNDWATER	SD - SOLID		
												SW - SURFACE WATER	A - AIR		
												ST - STORM WATER	L - LIQUID		
												W - WATER	P - PRODUCT		
REMARKS/ADDITIONAL INFORMATION															

SAMPLED BY AND TITLE: Kerest H... / Robert... / Kevin...		DATE/TIME: 8/19/16 1428	RELINQUISHED BY: Fore... 8/19/16 1428		DATE/TIME:	FOR LAB USE ONLY	
RECEIVED BY:		DATE/TIME:	RELINQUISHED BY:		DATE/TIME:	LAB #: AZH0681	
RECEIVED BY/AB: M. Kalman		DATE/TIME: 08/22/16 0920	SAMPLE SHIPPED VIA: UPS (Fed-Ex) USPS COURIER CLIENT OTHER FS		Entered into LIMS: MR		
Checked: Yes No NA	Ice: Yes No NA	Temperature: 13°C Min 13°C Max	Custody Seal: Intact Broken Not Present		# of Coolers:	Tracking #: 8095 23380661	

Melted



# 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: 8/29/2016 2:38:44PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 08/22/16 09:20

Work Order: AZH0681

Logged In By: Mohammad M. Rahman

### OBSERVATIONS

#Samples: 3

#Containers: 9

Minimum Temp(C): 13.0

Maximum Temp(C): 13.0

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	NO
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	NO
Preservation Confirmed	YES

### **Comments:**

The ice had melted prior to arrival. Consequently, the TDS/F/Cl and SO4 were received out of temperature compliance. The client was notified and the Lab was instructed to cancel the TDS/F/Cl and SO4. MMR



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

September 21, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193882

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on August 23, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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 Bowen Ash Pond CCR  
Pace Project No.: 30193882

### 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 Bowen Ash Pond CCR  
Pace Project No.: 30193882

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30193882001	BGWA-26	Water	08/19/16 11:55	08/23/16 09:40
30193882002	BGWA-27	Water	08/19/16 12:52	08/23/16 09:40
30193882003	BGWA-28	Water	08/19/16 10:12	08/23/16 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193882

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30193882001	BGWA-26	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193882002	BGWA-27	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30193882003	BGWA-28	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30193882

Sample: BGWA-26		Lab ID: 30193882001	Collected: 08/19/16 11:55	Received: 08/23/16 09:40	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.199 ± 0.205 (0.401)</b>		pCi/L	09/10/16 11:04	13982-63-3	
		<b>C:91% T:NA</b>					
Radium-228	EPA 9320	<b>-0.0105 ± 0.415 (0.924)</b>		pCi/L	09/14/16 02:50	15262-20-1	
		<b>C:77% T:63%</b>					
Total Radium	Total Radium Calculation	<b>0.199 ± 0.620 (1.33)</b>		pCi/L	09/20/16 10:15	7440-14-4	

Sample: BGWA-27		Lab ID: 30193882002	Collected: 08/19/16 12:52	Received: 08/23/16 09:40	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.122 ± 0.217 (0.490)</b>		pCi/L	09/10/16 11:05	13982-63-3	
		<b>C:68% T:NA</b>					
Radium-228	EPA 9320	<b>0.539 ± 0.495 (0.987)</b>		pCi/L	09/16/16 11:14	15262-20-1	
		<b>C:71% T:56%</b>					
Total Radium	Total Radium Calculation	<b>0.661 ± 0.712 (1.48)</b>		pCi/L	09/20/16 10:15	7440-14-4	

Sample: BGWA-28		Lab ID: 30193882003	Collected: 08/19/16 10:12	Received: 08/23/16 09:40	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0942 ± 0.182 (0.418)</b>		pCi/L	09/10/16 11:05	13982-63-3	
		<b>C:75% T:NA</b>					
Radium-228	EPA 9320	<b>0.658 ± 0.399 (0.727)</b>		pCi/L	09/14/16 02:36	15262-20-1	
		<b>C:76% T:68%</b>					
Total Radium	Total Radium Calculation	<b>0.752 ± 0.581 (1.15)</b>		pCi/L	09/20/16 10:15	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193882

---

QC Batch:	232325	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30193882001, 30193882002, 30193882003		

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 Bowen Ash Pond CCR  
 Pace Project No.: 30193882

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QC Batch: 232397 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30193882001, 30193882002, 30193882003

---

METHOD BLANK: 1138978 Matrix: Water  
 Associated Lab Samples: 30193882001, 30193882002, 30193882003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.619 ± 0.406 (0.768) C:79% T:72%	pCi/L	09/16/16 10:55	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30193882

### 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, PEACHTREE CORNERS, GA  
(770) 734-4200 : FAX (770) 734-4201



CLIENT NAME:				ANALYSIS REQUESTED												L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:				CONTAINER TYPE	P	P	P													
REPORT TO:		CC:		PRESERVATION:	3	7	3													
REQUESTED COMPLETION DATE:		PO #:		# of																
PROJECT NAME/STATE:				CONTAINERS													*MATRIX CODES:			
PROJECT #:																				
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION												REMARKS/ADDITIONAL INFORMATION			
8/19/16	1155	6W	X		3	X	1	1										001		
8/19/16	1252	6W	X		3	X	1	1										002		
8/19/16	1012	6W	X		3	X	1	1										003		
SAMPLED BY AND TITLE:				DATE/TIME:	RELINQUISHED BY:				DATE/TIME:	FOR LAB USE ONLY										
RECEIVED BY:				DATE/TIME:	RELINQUISHED BY:				DATE/TIME:	LAB #:										
RECEIVED BY LAB:				DATE/TIME:	SAMPLE SHIPPED VIA:				Entered into LIMS:											
pH checked:				Ice:	Temperature:	Custody Seal:				# of Coolers:	Cooler ID:									
Yes No NA				Yes No NA	Min: Max:	Intact Broken Not Present														

Sample Condition Upon Receipt Pittsburgh

30193882



Client Name: Pace GA Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
 Tracking #: 6812 5098 6250

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: RTB 8/23/16

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/Analysis Matrix: <u>WT</u>	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		X	10.
Containers Intact:	X			11.
Filtered volume received for Dissolved tests			X	12.
All containers needing preservation have been checked.	X			13.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>pH&lt;2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>8/23/16</u> Date/time of preservation: <u>RTB</u>
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			X	14.
Trip Blank Present:			X	15.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>RTB</u> Date: <u>8/23/16</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



Test: Ra-226  
Analyst: WRR  
Date: 9/9/2016  
Worklist: 31262  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1138696	
MB concentration:	0.257	
M/B Counting Uncertainty:	0.222	
MB MDC:	0.422	
MB Numerical Performance Indicator:	2.27	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCSD31262	LCSD31262
Count Date:	9/10/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.678	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.500	
Target Conc. (pCi/L, g, F):	8.928	
Uncertainty (Calculated):	0.420	
Result (pCi/L, g, F):	7.038	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.942	
Numerical Performance Indicator:	-3.59	
Percent Recovery:	78.83%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30194831002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30194831002DUP	
Sample Result (pCi/L, g, F):	0.261	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.230	
Sample Duplicate Result (pCi/L, g, F):	0.024	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.254	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.357	30194831002
Duplicate RPD:	166.19%	30194831002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Capitol*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 9/14/2016  
Worklist: 31282  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1138978	
MB concentration:	0.619	
M/B Counting Uncertainty:	0.390	
MB MDC:	0.768	
MB Numerical Performance Indicator:	3.11	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS31282	LCS31282
Count Date:	9/16/2016	
Spike I.D.:	16-025	
Spike Concentration (pCi/mL):	25.659	
Volume Used (mL):	0.30	
Aliquot Volume (L, g, F):	0.806	
Target Conc. (pCi/L, g, F):	9.546	
Uncertainty (Calculated):	0.687	
Result (pCi/L, g, F):	9.811	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.983	
Numerical Performance Indicator:	0.43	
Percent Recovery:	102.78%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment
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):
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:

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30194831002
Duplicate Sample I.D.:	30194831002DUP
Sample Result (pCi/L, g, F):	1.058
Sample Result Counting Uncertainty (pCi/L, g, F):	0.535
Sample Duplicate Result (pCi/L, g, F):	0.953
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.486
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	0.285
Duplicate RPD:	10.46%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass

Matrix Spike/Matrix Spike Duplicate Sample Assessment
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:

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

Comments:



**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: AZH0698**

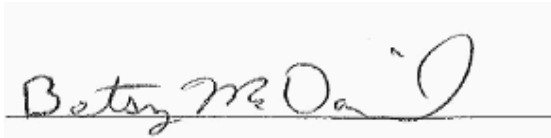
**August 30, 2016**

**Project: CCR Event**

**Project #: Plant Bowen Ash Pond**

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:



Project Manager

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All test results relate only to the samples analyzed.





**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 30, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-29	AZH0698-01	Ground Water	08/22/16 10:20	08/23/16 08:05
BGWA-28	AZH0698-02	Ground Water	08/22/16 14:45	08/23/16 08:05
BGWA-27	AZH0698-03	Ground Water	08/22/16 14:27	08/23/16 08:05
BGWA-26	AZH0698-04	Ground Water	08/22/16 15:40	08/23/16 08:05



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 30, 2016

Report No.: AZH0698

Project: CCR Event

Client ID: BGWA-29

Lab Number ID: AZH0698-01

Date/Time Sampled: 8/22/2016 10:20:00AM

Date/Time Received: 8/23/2016 8:05:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	121	25	10	mg/L	SM 2540 C		1	08/24/16 15:25	08/24/16 15:25	6080668	JPT
<b>Inorganic Anions</b>											
Chloride	4.2	0.25	0.01	mg/L	EPA 300.0		1	08/23/16 16:11	08/29/16 20:03	6080785	RLC
Fluoride	0.04	0.30	0.02	mg/L	EPA 300.0	J	1	08/23/16 16:11	08/23/16 17:45	6080651	RLC
Sulfate	4.2	1.0	0.05	mg/L	EPA 300.0		1	08/23/16 16:11	08/23/16 17:45	6080651	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Barium	0.0094	0.0100	0.0004	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Boron	0.0132	0.100	0.0064	mg/L	EPA 6020B	J	1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Calcium	21.4	2.50	0.155	mg/L	EPA 6020B		5	08/24/16 09:10	08/24/16 15:25	6080645	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	08/24/16 09:10	08/24/16 15:19	6080645	KLH
Mercury	ND	0.00050	0.00013	mg/L	EPA 7470A		1	08/25/16 09:45	08/25/16 15:00	6080680	CSW



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 30, 2016

**Report No.:** AZH0698

**Project:** CCR Event

**Client ID:** BGWA-28

**Lab Number ID:** AZH0698-02

**Date/Time Sampled:** 8/22/2016 2:45:00PM

**Date/Time Received:** 8/23/2016 8:05:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	245	25	10	mg/L	SM 2540 C		1	08/24/16 15:25	08/24/16 15:25	6080668	JPT
<b>Inorganic Anions</b>											
Chloride	17	0.25	0.01	mg/L	EPA 300.0		1	08/23/16 16:11	08/29/16 20:24	6080785	RLC
Fluoride	0.04	0.30	0.02	mg/L	EPA 300.0	J	1	08/23/16 16:11	08/23/16 18:06	6080651	RLC
Sulfate	15	1.0	0.05	mg/L	EPA 300.0		1	08/23/16 16:11	08/23/16 18:06	6080651	RLC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 30, 2016

**Report No.:** AZH0698

**Project:** CCR Event

**Client ID:** BGWA-27

**Lab Number ID:** AZH0698-03

**Date/Time Sampled:** 8/22/2016 2:27:00PM

**Date/Time Received:** 8/23/2016 8:05:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	206	25	10	mg/L	SM 2540 C		1	08/24/16 15:25	08/24/16 15:25	6080668	JPT
<b>Inorganic Anions</b>											
Chloride	13	0.25	0.01	mg/L	EPA 300.0		1	08/23/16 16:11	08/29/16 20:44	6080785	RLC
Fluoride	0.03	0.30	0.02	mg/L	EPA 300.0	J	1	08/23/16 16:11	08/23/16 18:27	6080651	RLC
Sulfate	7.6	1.0	0.05	mg/L	EPA 300.0		1	08/23/16 16:11	08/23/16 18:27	6080651	RLC



**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

August 30, 2016

**Report No.:** AZH0698

**Project:** CCR Event

**Client ID:** BGWA-26

**Lab Number ID:** AZH0698-04

**Date/Time Sampled:** 8/22/2016 3:40:00PM

**Date/Time Received:** 8/23/2016 8:05:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	180	25	10	mg/L	SM 2540 C		1	08/24/16 15:25	08/24/16 15:25	6080668	JPT
<b>Inorganic Anions</b>											
Chloride	6.8	0.25	0.01	mg/L	EPA 300.0		1	08/23/16 16:11	08/29/16 21:46	6080785	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	08/23/16 16:11	08/23/16 19:09	6080651	RLC
Sulfate	15	1.0	0.05	mg/L	EPA 300.0		1	08/23/16 16:11	08/23/16 19:09	6080651	RLC



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August 30, 2016

**Report No.: AZH0698**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080668 - SM 2540 C</b>											
<b>Blank (6080668-BLK1)</b>						Prepared & Analyzed: 08/24/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6080668-BS1)</b>						Prepared & Analyzed: 08/24/16					
Total Dissolved Solids	407	25	10	mg/L	400.00		102	84-108			
<b>Duplicate (6080668-DUP1)</b>						Prepared & Analyzed: 08/24/16					
				<b>Source: AZH0698-01</b>							
Total Dissolved Solids	120	25	10	mg/L		121			0.8	10	



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August 30, 2016

**Report No.: AZH0698**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080651 - EPA 300.0</b>											
<b>Blank (6080651-BLK1)</b>						Prepared & Analyzed: 08/23/16					
Chloride	0.34	0.25	0.01	mg/L							
Fluoride	ND	0.10	0.02	mg/L							
Sulfate	ND	1.0	0.05	mg/L							
<b>LCS (6080651-BS1)</b>						Prepared & Analyzed: 08/23/16					
Chloride	10.3	1.0	1.0	mg/L	10.010		103	90-110			B
Fluoride	10.4	0.10	0.10	mg/L	10.010		104	90-110			
Sulfate	10.2	5.0	5.0	mg/L	10.010		102	90-110			
<b>Matrix Spike (6080651-MS1)</b>						Source: AZH0698-03 Prepared & Analyzed: 08/23/16					
Chloride	22.6	1.0	1.0	mg/L	10.010	13.2	94	90-110			B
Fluoride	10.5	0.10	0.10	mg/L	10.010	0.03	105	90-110			
Sulfate	17.1	5.0	5.0	mg/L	10.010	7.57	95	90-110			
<b>Batch 6080785 - EPA 300.0</b>											
<b>Blank (6080785-BLK1)</b>						Prepared: 08/23/16 Analyzed: 08/29/16					
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 (6080785-BS1)</b>						Prepared: 08/23/16 Analyzed: 08/29/16					
Chloride	10.2	0.25	0.01	mg/L	10.010		102	90-110			
Fluoride	10.6	0.30	0.02	mg/L	10.010		106	90-110			
Sulfate	10.3	1.0	0.05	mg/L	10.010		103	90-110			
<b>Matrix Spike (6080785-MS1)</b>						Source: AZH0698-03RE1 Prepared: 08/23/16 Analyzed: 08/29/16					
Chloride	22.6	0.25	0.01	mg/L	10.010	13.1	95	90-110			
Fluoride	10.6	0.30	0.02	mg/L	10.010	0.02	105	90-110			
Sulfate	17.2	1.0	0.05	mg/L	10.010	7.56	96	90-110			



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Attention: Mr. Joju Abraham

August 30, 2016

**Report No.: AZH0698**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080785 - EPA 300.0</b>											
<b>Matrix Spike Dup (6080785-MSD1)</b>		<b>Source: AZH0698-03RE1</b>				<b>Prepared: 08/23/16 Analyzed: 08/29/16</b>					
Chloride	22.5	0.25	0.01	mg/L	10.010	13.1	94	90-110	0.03	15	
Fluoride	10.6	0.30	0.02	mg/L	10.010	0.02	106	90-110	0.1	15	
Sulfate	17.1	1.0	0.05	mg/L	10.010	7.56	96	90-110	0.3	15	





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August 30, 2016

**Report No.: AZH0698**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080645 - EPA 3005A</b>											
<b>Blank (6080645-BLK1)</b>						Prepared & Analyzed: 08/24/16					
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							
<b>LCS (6080645-BS1)</b>						Prepared & Analyzed: 08/24/16					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000		102	80-120			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000		104	80-120			
Barium	0.0968	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.0991	0.0030	0.00008	mg/L	0.10000		99	80-120			
Boron	1.04	0.100	0.0064	mg/L	1.0000		104	80-120			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000		104	80-120			
Calcium	1.01	0.500	0.0311	mg/L	1.0000		101	80-120			
Chromium	0.104	0.0100	0.0009	mg/L	0.10000		104	80-120			
Cobalt	0.0998	0.0100	0.0005	mg/L	0.10000		100	80-120			
Copper	0.0990	0.0050	0.0005	mg/L	0.10000		99	80-120			
Lead	0.103	0.0050	0.0001	mg/L	0.10000		103	80-120			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000		103	80-120			
Nickel	0.101	0.0050	0.0006	mg/L	0.10000		101	80-120			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120			
Silver	0.101	0.0050	0.0005	mg/L	0.10000		101	80-120			
Thallium	0.105	0.0010	0.0002	mg/L	0.10000		105	80-120			
Vanadium	0.103	0.0100	0.0071	mg/L	0.10000		103	80-120			
Zinc	0.102	0.0100	0.0021	mg/L	0.10000		102	80-120			
Lithium	0.0983	0.0500	0.0021	mg/L	0.10000		98	80-120			



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Attention: Mr. Joju Abraham

August 30, 2016

**Report No.: AZH0698**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080645 - EPA 3005A</b>											
<b>Matrix Spike (6080645-MS1)</b>			<b>Source: AZH0681-01</b>			<b>Prepared &amp; Analyzed: 08/24/16</b>					
Antimony	0.105	0.0030	0.0008	mg/L	0.10000	ND	105	75-125			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	ND	104	75-125			
Barium	0.147	0.0100	0.0004	mg/L	0.10000	0.0354	111	75-125			
Beryllium	0.104	0.0030	0.00008	mg/L	0.10000	ND	104	75-125			
Boron	1.10	0.100	0.0064	mg/L	1.0000	0.0226	108	75-125			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125			
Calcium	30.0	2.50	0.155	mg/L	1.0000	28.5	147	75-125			QM-02
Chromium	0.107	0.0100	0.0009	mg/L	0.10000	ND	107	75-125			
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125			
Copper	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125			
Lead	0.0988	0.0050	0.0001	mg/L	0.10000	ND	99	75-125			
Molybdenum	0.116	0.0100	0.0017	mg/L	0.10000	0.0053	110	75-125			
Nickel	0.104	0.0050	0.0006	mg/L	0.10000	ND	104	75-125			
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125			
Silver	0.101	0.0050	0.0005	mg/L	0.10000	ND	101	75-125			
Thallium	0.100	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	0.102	0.0100	0.0021	mg/L	0.10000	ND	102	75-125			
Lithium	0.0998	0.0500	0.0021	mg/L	0.10000	ND	100	75-125			
<b>Matrix Spike Dup (6080645-MSD1)</b>			<b>Source: AZH0681-01</b>			<b>Prepared &amp; Analyzed: 08/24/16</b>					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000	ND	104	75-125	1	20	
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	ND	106	75-125	2	20	
Barium	0.141	0.0100	0.0004	mg/L	0.10000	0.0354	106	75-125	4	20	
Beryllium	0.102	0.0030	0.00008	mg/L	0.10000	ND	102	75-125	2	20	
Boron	1.04	0.100	0.0064	mg/L	1.0000	0.0226	102	75-125	5	20	
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000	ND	104	75-125	1	20	
Calcium	29.2	2.50	0.155	mg/L	1.0000	28.5	62	75-125	3	20	QM-02
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	ND	108	75-125	1	20	
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125	0.3	20	
Copper	0.0994	0.0050	0.0005	mg/L	0.10000	ND	99	75-125	3	20	
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125	2	20	
Molybdenum	0.114	0.0100	0.0017	mg/L	0.10000	0.0053	109	75-125	1	20	
Nickel	0.103	0.0050	0.0006	mg/L	0.10000	ND	103	75-125	0.9	20	
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	ND	103	75-125	2	20	
Silver	0.103	0.0050	0.0005	mg/L	0.10000	ND	103	75-125	2	20	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125	2	20	
Vanadium	0.106	0.0100	0.0071	mg/L	0.10000	ND	106	75-125	0.2	20	
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	ND	106	75-125	3	20	
Lithium	0.104	0.0500	0.0021	mg/L	0.10000	ND	104	75-125	4	20	



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Attention: Mr. Joju Abraham

August 30, 2016

**Report No.: AZH0698**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080645 - EPA 3005A</b>											
<b>Post Spike (6080645-PS1)</b>				<b>Source: AZH0681-01</b>			<b>Prepared &amp; Analyzed: 08/24/16</b>				
Antimony	89.4			ug/L	100.00	0.404	89	80-120			
Arsenic	105			ug/L	100.00	0.555	105	80-120			
Barium	137			ug/L	100.00	35.4	102	80-120			
Beryllium	102			ug/L	100.00	0.0176	102	80-120			
Boron	1060			ug/L	1000.0	22.6	104	80-120			
Cadmium	103			ug/L	100.00	0.0081	103	80-120			
Calcium	29900			ug/L	1000.0	28500	132	80-120			QM-02
Chromium	108			ug/L	100.00	0.153	107	80-120			
Cobalt	102			ug/L	100.00	0.292	102	80-120			
Copper	104			ug/L	100.00	0.315	104	80-120			
Lead	98.2			ug/L	100.00	0.0146	98	80-120			
Molybdenum	107			ug/L	100.00	5.27	102	80-120			
Nickel	103			ug/L	100.00	0.456	102	80-120			
Selenium	98.8			ug/L	100.00	0.0372	99	80-120			
Silver	95.7			ug/L	100.00	0.0032	96	80-120			
Thallium	99.7			ug/L	100.00	0.0856	100	80-120			
Vanadium	108			ug/L	100.00	0.639	107	80-120			
Zinc	103			ug/L	100.00	1.90	101	80-120			
Lithium	99.1			ug/L	100.00	1.70	97	80-120			

**Batch 6080680 - EPA 7470A**

<b>Blank (6080680-BLK1)</b>				<b>Prepared &amp; Analyzed: 08/25/16</b>							
Mercury	ND	0.00050	0.00013	mg/L							
<b>LCS (6080680-BS1)</b>				<b>Prepared &amp; Analyzed: 08/25/16</b>							
Mercury	0.00224	0.00050	0.00013	mg/L	2.5000E-3		89	80-120			



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Attention: Mr. Joju Abraham

August 30, 2016

**Report No.: AZH0698**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6080680 - EPA 7470A</b>											
<b>Matrix Spike (6080680-MS1)</b>			<b>Source: AZH0681-03</b>			<b>Prepared &amp; Analyzed: 08/25/16</b>					
Mercury	0.00229	0.00050	0.00013	mg/L	2.5000E-3	ND	92	75-125			
<b>Matrix Spike Dup (6080680-MSD1)</b>			<b>Source: AZH0681-03</b>			<b>Prepared &amp; Analyzed: 08/25/16</b>					
Mercury	0.00219	0.00050	0.00013	mg/L	2.5000E-3	ND	88	75-125	5	20	
<b>Post Spike (6080680-PS1)</b>			<b>Source: AZH0681-03</b>			<b>Prepared &amp; Analyzed: 08/25/16</b>					
Mercury	1.51			ug/L	1.6667	0.00654	90	80-120			



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 30, 2016

## 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

- 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** Analyte was detected in the associated method blank at a level equal to or greater than the reporting limit. Sample values reported as greater than the reporting limit 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



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

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>				ANALYSIS REQUESTED				L A B  I J D  N U M B E R  ↓	CONTAINER TYPE	PRESERVATION
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308 404-506-7239</u>				CONTAINER TYPE: <u>P</u>	<u>7</u>	<u>3</u>				
REPORT TO: <u>Joju Abraham</u> CC:				# of						
REQUESTED COMPLETION DATE:				PO #:						
PROJECT NAME/STATE: <u>Plant Boker - Ash Pond CLR</u>										
PROJECT #:										
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	CONTAINERS				
8/12/16	1020	GW	X	X	B6WA-29	3	1	1	1	1
8/22/16	1445	GW	X	X	B6WA-28	1				2
8/22/16	1427	GW	X	X	B6WA-27	1				3
8/22/16	1540	GW	X	X	B6WA-26	1				4
SAMPLED BY AND TITLE: <u>Robert Mull Forecrest Harb</u>				DATE/TIME: <u>8/22/16 16:30</u>	RELINQUISHED BY: <u>Robert Mull</u>	DATE/TIME: <u>8/25/16 0805</u>	FOR LAB USE ONLY			
RECEIVED BY: <u>Mr Abraham</u>				DATE/TIME: <u>08/23/16 0805</u>	RELINQUISHED BY:	DATE/TIME:	LAB #: <u>AZH0698</u>			
RECEIVED BY LAB: <u>Mr Abraham</u>				DATE/TIME: <u>08/23/16 0805</u>	SAMPLE SHIPPED VIA:	DATE/TIME:	Entered into LIMS: <u>MR</u>			
Checked: <u>Yes</u> No NA <u>Yes</u> No NA				Temperature: <u>32</u> Min: <u>32</u> Max:	Custody Seal: <u>Intact</u> Broken Not Present	# of Coolers: <u>0</u>	Tracking #: <u>MR</u>			

5 OF 15



# 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: 8/30/2016 3:41:31PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 08/23/16 08:05

Work Order: AZH0698

Logged In By: Mohammad M. Rahman

### OBSERVATIONS

#Samples: 4

#Containers: 6

Minimum Temp(C): 3.0

Maximum Temp(C): 3.0

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:



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

September 21, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30194124

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on August 24, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI 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 Bowen Ash Pond CCR  
Pace Project No.: 30194124

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

### SAMPLE SUMMARY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30194124

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30194124001	BGWA-29	Water	08/22/16 10:20	08/24/16 10:30

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30194124

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30194124001	BGWA-29	EPA 9315	WRR	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30194124

Sample: **BGWA-29** Lab ID: **30194124001** Collected: 08/22/16 10:20 Received: 08/24/16 10:30 Matrix: Water  
 PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>-0.00209 ± 0.169 (0.456)</b> <b>C:100% T:NA</b>	pCi/L	09/10/16 11:05	13982-63-3	
Radium-228	EPA 9320	<b>0.356 ± 0.523 (1.10)</b> <b>C:67% T:57%</b>	pCi/L	09/16/16 10:56	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.356 ± 0.692 (1.56)</b>	pCi/L	09/20/16 10:15	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30194124

---

QC Batch:	232325	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30194124001		

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 Bowen Ash Pond CCR  
 Pace Project No.: 30194124

---

QC Batch: 232397	Analysis Method: EPA 9320
QC Batch Method: EPA 9320	Analysis Description: 9320 Radium 228
Associated Lab Samples: 30194124001	

---

METHOD BLANK: 1138978	Matrix: Water
Associated Lab Samples: 30194124001	

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.619 ± 0.406 (0.768) C:79% T:72%	pCi/L	09/16/16 10:55	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30194124

### 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, PEACHTREE CORI
(770) 734-4200 : FAX (770) 734-4201



Form containing client information (Southern Company Services), analysis requested details, sample identification table with columns for date, time, matrix code, and sample ID, and a bottom section for lab use only including dates, times, and shipping information.



Sample Condition Upon Receipt Pittsburgh

30194124



Client Name: Pace Georgia Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5098 6445

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

Thermometer Used NIA Type of Ice: Wet Blue None

Cooler Temperature Observed Temp NIA °C Correction Factor: NIA °C Final Temp: NIA °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KAK 8/24/16

Comments:	Yes	No	N/A	
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:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID/Analysis Matrix: <u>W-T</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed
				Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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 type="checkbox"/>	<input type="checkbox"/>	Initial when completed:
				Date:

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



Test: Ra-226  
Analyst: WRR  
Date: 9/9/2016  
Worklist: 31262  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1138696	
MB concentration:	0.257	
M/B Counting Uncertainty:	0.222	
MB MDC:	0.422	
MB Numerical Performance Indicator:	2.27	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCSD31262	LCSD31262
Count Date:	9/10/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.678	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.500	
Target Conc. (pCi/L, g, F):	8.928	
Uncertainty (Calculated):	0.420	
Result (pCi/L, g, F):	7.038	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.942	
Numerical Performance Indicator:	-3.59	
Percent Recovery:	78.83%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30194831002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30194831002DUP	
Sample Result (pCi/L, g, F):	0.261	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.230	
Sample Duplicate Result (pCi/L, g, F):	0.024	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.254	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.357	30194831002
Duplicate RPD:	166.19%	30194831002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Capitol*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 9/14/2016  
Worklist: 31282  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1138978	
MB concentration:	0.619	
M/B Counting Uncertainty:	0.390	
MB MDC:	0.768	
MB Numerical Performance Indicator:	3.11	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS/D (Y or N)?	N
	LCS31282	LCS/D31282
Count Date:	9/16/2016	
Spike I.D.:	16-025	
Spike Concentration (pCi/mL):	25.659	
Volume Used (mL):	0.30	
Aliquot Volume (L, g, F):	0.806	
Target Conc. (pCi/L, g, F):	9.546	
Uncertainty (Calculated):	0.687	
Result (pCi/L, g, F):	9.811	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.983	
Numerical Performance Indicator:	0.43	
Percent Recovery:	102.78%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30194831002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30194831002DUP	
Sample Result (pCi/L, g, F):	1.058	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.535	
Sample Duplicate Result (pCi/L, g, F):	0.953	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.486	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.285	30194831002
Duplicate RPD:	10.46%	30194831002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:



**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: AZJ0020**

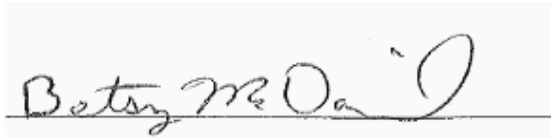
**October 14, 2016**

**Project: CCR Event**

**Project #: Plant Bowen**

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:



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

October 14, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-1	AZJ0020-01	Ground Water	10/03/16 13:05	10/04/16 08:15
BGWA-4	AZJ0020-02	Ground Water	10/03/16 14:05	10/04/16 08:15
BGWA-3	AZJ0020-03	Ground Water	10/03/16 10:32	10/04/16 08:15
BGWA-5	AZJ0020-04	Ground Water	10/03/16 13:45	10/04/16 08:15
BGWA-2	AZJ0020-05	Ground Water	10/03/16 11:36	10/04/16 08:15
Dup-1	AZJ0020-06	Ground Water	10/03/16 00:00	10/04/16 08:15



**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

October 14, 2016

Report No.: AZJ0020

Project: CCR Event

Client ID: BGWA-1

Lab Number ID: AZJ0020-01

Date/Time Sampled: 10/3/2016 1:05:00PM

Date/Time Received: 10/4/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	565	25	10	mg/L	SM 2540 C		1	10/06/16 13:05	10/06/16 13:05	6100132	JPT
<b>Inorganic Anions</b>											
Chloride	99	2.5	0.14	mg/L	EPA 300.0	B-01	10	10/06/16 10:24	10/11/16 12:58	6100097	RLC
Fluoride	0.19	0.30	0.02	mg/L	EPA 300.0	J	1	10/06/16 10:24	10/07/16 16:48	6100097	RNB
Sulfate	68	10	0.51	mg/L	EPA 300.0	B-01	10	10/06/16 10:24	10/11/16 12:58	6100097	RLC
<b>Metals, Total</b>											
Antimony	0.0011	0.0030	0.0008	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Barium	0.124	0.0100	0.0004	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Boron	1.57	0.100	0.0064	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Calcium	82.0	25.0	1.55	mg/L	EPA 6020B		50	10/07/16 09:15	10/10/16 13:35	6100146	CSW
Chromium	0.0010	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Selenium	0.0054	0.0100	0.0010	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 13:54	6100146	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/07/16 09:55	10/07/16 13:42	6100148	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

October 14, 2016

Report No.: AZJ0020

Project: CCR Event

Client ID: BGWA-4

Lab Number ID: AZJ0020-02

Date/Time Sampled: 10/3/2016 2:05:00PM

Date/Time Received: 10/4/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	904	25	10	mg/L	SM 2540 C		1	10/06/16 13:05	10/06/16 13:05	6100132	JPT
<b>Inorganic Anions</b>											
Chloride	210	1.2	0.07	mg/L	EPA 300.0	B-01	5	10/06/16 10:24	10/07/16 17:31	6100097	RNB
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	10/06/16 10:24	10/07/16 17:09	6100097	RNB
Sulfate	75	5.0	0.26	mg/L	EPA 300.0	B-01	5	10/06/16 10:24	10/07/16 17:31	6100097	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Arsenic	0.0046	0.0050	0.0016	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Barium	0.0541	0.0100	0.0004	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Boron	2.72	0.100	0.0064	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Calcium	114	50.0	3.11	mg/L	EPA 6020B		100	10/07/16 09:15	10/10/16 13:40	6100146	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Molybdenum	0.0023	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Selenium	0.0034	0.0100	0.0010	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:42	6100146	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/07/16 09:55	10/07/16 13:44	6100148	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 14, 2016

Report No.: AZJ0020

Project: CCR Event

Client ID: BGWA-3

Lab Number ID: AZJ0020-03

Date/Time Sampled: 10/3/2016 10:32:00AM

Date/Time Received: 10/4/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	457	25	10	mg/L	SM 2540 C		1	10/06/16 13:05	10/06/16 13:05	6100132	JPT
<b>Inorganic Anions</b>											
Chloride	87	1.2	0.07	mg/L	EPA 300.0	B-01	5	10/06/16 10:24	10/07/16 17:52	6100097	RNB
Fluoride	0.13	0.30	0.02	mg/L	EPA 300.0	J	1	10/06/16 10:24	10/07/16 18:13	6100097	RNB
Sulfate	58	5.0	0.26	mg/L	EPA 300.0	B-01	5	10/06/16 10:24	10/07/16 17:52	6100097	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Barium	0.0138	0.0100	0.0004	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Boron	0.718	0.100	0.0064	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Calcium	62.5	5.00	0.311	mg/L	EPA 6020B		10	10/07/16 09:15	10/10/16 13:46	6100146	CSW
Chromium	0.0020	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Selenium	0.0050	0.0100	0.0010	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:48	6100146	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/07/16 09:55	10/07/16 13:46	6100148	MTC





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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 14, 2016

Report No.: AZJ0020

Project: CCR Event

Client ID: BGWA-5

Lab Number ID: AZJ0020-04

Date/Time Sampled: 10/3/2016 1:45:00PM

Date/Time Received: 10/4/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	940	25	10	mg/L	SM 2540 C		1	10/06/16 13:05	10/06/16 13:05	6100132	JPT
<b>Inorganic Anions</b>											
Chloride	240	2.5	0.14	mg/L	EPA 300.0	B-01	10	10/06/16 10:24	10/07/16 18:34	6100097	RNB
Fluoride	0.44	0.30	0.02	mg/L	EPA 300.0		1	10/06/16 10:24	10/07/16 18:55	6100097	RNB
Sulfate	160	10	0.51	mg/L	EPA 300.0	B-01	10	10/06/16 10:24	10/07/16 18:34	6100097	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Barium	0.0426	0.0100	0.0004	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Boron	3.21	0.100	0.0064	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Calcium	135	50.0	3.11	mg/L	EPA 6020B		100	10/07/16 09:15	10/10/16 13:52	6100146	CSW
Chromium	0.0017	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Selenium	0.0140	0.0100	0.0010	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:54	6100146	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 13:02	6100198	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 14, 2016

Report No.: AZJ0020

Project: CCR Event

Client ID: BGWA-2

Lab Number ID: AZJ0020-05

Date/Time Sampled: 10/3/2016 11:36:00AM

Date/Time Received: 10/4/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	201	25	10	mg/L	SM 2540 C		1	10/06/16 13:05	10/06/16 13:05	6100132	JPT
<b>Inorganic Anions</b>											
Chloride	2.5	0.25	0.01	mg/L	EPA 300.0	B-01	1	10/06/16 10:24	10/07/16 13:36	6100097	RNB
Fluoride	0.11	0.30	0.02	mg/L	EPA 300.0	J	1	10/06/16 10:24	10/07/16 13:36	6100097	RNB
Sulfate	5.7	1.0	0.05	mg/L	EPA 300.0	B-01	1	10/06/16 10:24	10/07/16 13:36	6100097	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Barium	0.191	0.0100	0.0004	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Boron	0.0226	0.100	0.0064	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Calcium	34.1	2.50	0.155	mg/L	EPA 6020B		5	10/07/16 09:15	10/10/16 13:58	6100146	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 15:59	6100146	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 13:04	6100198	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 14, 2016

Report No.: AZJ0020

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AZJ0020-06

Date/Time Sampled: 10/3/2016 12:00:00AM

Date/Time Received: 10/4/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	448	25	10	mg/L	SM 2540 C		1	10/06/16 13:05	10/06/16 13:05	6100132	JPT
<b>Inorganic Anions</b>											
Chloride	82	2.5	0.14	mg/L	EPA 300.0	B-01	10	10/06/16 10:24	10/11/16 13:19	6100097	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	10/06/16 10:24	10/07/16 19:17	6100097	RNB
Sulfate	56	10	0.51	mg/L	EPA 300.0	B-01	10	10/06/16 10:24	10/11/16 13:19	6100097	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Barium	0.0135	0.0100	0.0004	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Boron	0.723	0.100	0.0064	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Calcium	68.0	5.00	0.311	mg/L	EPA 6020B		10	10/07/16 09:15	10/10/16 14:03	6100146	CSW
Chromium	0.0023	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Selenium	0.0053	0.0100	0.0010	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:05	6100146	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 13:07	6100198	MTC



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October 14, 2016

**Report No.: AZJ0020**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100132 - SM 2540 C</b>											
<b>Blank (6100132-BLK1)</b>						Prepared & Analyzed: 10/06/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6100132-BS1)</b>						Prepared & Analyzed: 10/06/16					
Total Dissolved Solids	395	25	10	mg/L	400.00		99	84-108			
<b>Duplicate (6100132-DUP1)</b>						Prepared & Analyzed: 10/06/16					
						Source: AZJ0020-02					
Total Dissolved Solids	883	25	10	mg/L		904			2	10	



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**Report No.: AZJ0020**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100097 - EPA 300.0</b>											
<b>Blank (6100097-BLK1)</b>						Prepared: 10/06/16 Analyzed: 10/07/16					
Chloride	0.03	0.25	0.01	mg/L							J
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	0.09	1.0	0.05	mg/L							J
<b>LCS (6100097-BS1)</b>						Prepared: 10/06/16 Analyzed: 10/07/16					
Chloride	9.57	0.25	0.01	mg/L	10.010		96	90-110			
Fluoride	10.4	0.30	0.02	mg/L	10.020		103	90-110			
Sulfate	9.79	1.0	0.05	mg/L	10.020		98	90-110			
<b>Matrix Spike (6100097-MS1)</b>						<b>Source: AZJ0020-05</b> Prepared: 10/06/16 Analyzed: 10/07/16					
Chloride	11.4	0.25	0.01	mg/L	10.010	2.52	89	90-110			QM-05
Fluoride	10.1	0.30	0.02	mg/L	10.020	0.11	99	90-110			
Sulfate	14.8	1.0	0.05	mg/L	10.020	5.74	90	90-110			
<b>Matrix Spike Dup (6100097-MSD1)</b>						<b>Source: AZJ0020-05</b> Prepared: 10/06/16 Analyzed: 10/07/16					
Chloride	12.2	0.25	0.01	mg/L	10.010	2.52	96	90-110	6	15	
Fluoride	10.9	0.30	0.02	mg/L	10.020	0.11	108	90-110	8	15	
Sulfate	15.5	1.0	0.05	mg/L	10.020	5.74	98	90-110	5	15	



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**Report No.: AZJ0020**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100146 - EPA 3005A</b>											
<b>Blank (6100146-BLK1)</b>						Prepared & Analyzed: 10/07/16					
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							
<b>LCS (6100146-BS1)</b>						Prepared & Analyzed: 10/07/16					
Antimony	0.105	0.0030	0.0008	mg/L	0.10000		105	80-120			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000		101	80-120			
Barium	0.0978	0.0100	0.0004	mg/L	0.10000		98	80-120			
Beryllium	0.103	0.0030	0.00008	mg/L	0.10000		103	80-120			
Boron	1.02	0.100	0.0064	mg/L	1.0000		102	80-120			
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000		102	80-120			
Calcium	1.03	0.500	0.0311	mg/L	1.0000		103	80-120			
Chromium	0.106	0.0100	0.0009	mg/L	0.10000		106	80-120			
Cobalt	0.0987	0.0100	0.0005	mg/L	0.10000		99	80-120			
Copper	0.0999	0.0050	0.0005	mg/L	0.10000		100	80-120			
Lead	0.104	0.0050	0.0001	mg/L	0.10000		104	80-120			
Molybdenum	0.105	0.0100	0.0017	mg/L	0.10000		105	80-120			
Nickel	0.101	0.0050	0.0006	mg/L	0.10000		101	80-120			
Selenium	0.104	0.0100	0.0010	mg/L	0.10000		104	80-120			
Silver	0.101	0.0050	0.0005	mg/L	0.10000		101	80-120			
Thallium	0.103	0.0010	0.0002	mg/L	0.10000		103	80-120			
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000		108	80-120			
Zinc	0.114	0.0100	0.0021	mg/L	0.10000		114	80-120			
Lithium	0.107	0.0500	0.0021	mg/L	0.10000		107	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

October 14, 2016

**Report No.: AZJ0020**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100146 - EPA 3005A</b>											
<b>Matrix Spike (6100146-MS1)</b>			<b>Source: AZJ0020-01</b>			<b>Prepared &amp; Analyzed: 10/07/16</b>					
Antimony	0.107	0.0030	0.0008	mg/L	0.10000	0.0011	105	75-125			
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	ND	106	75-125			
Barium	0.215	0.0100	0.0004	mg/L	0.10000	0.124	91	75-125			
Beryllium	0.110	0.0030	0.00008	mg/L	0.10000	ND	110	75-125			
Boron	2.33	0.100	0.0064	mg/L	1.0000	1.57	75	75-125			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125			
Calcium	85.0	25.0	1.55	mg/L	1.0000	82.0	301	75-125			QM-02
Chromium	0.110	0.0100	0.0009	mg/L	0.10000	0.0010	109	75-125			
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Copper	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125			
Lead	0.103	0.0050	0.0001	mg/L	0.10000	ND	103	75-125			
Molybdenum	0.114	0.0100	0.0017	mg/L	0.10000	ND	114	75-125			
Nickel	0.106	0.0050	0.0006	mg/L	0.10000	0.0008	105	75-125			
Selenium	0.110	0.0100	0.0010	mg/L	0.10000	0.0054	104	75-125			
Silver	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125			
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125			
Vanadium	0.110	0.0100	0.0071	mg/L	0.10000	ND	110	75-125			
Zinc	0.116	0.0100	0.0021	mg/L	0.10000	0.0037	112	75-125			
Lithium	0.114	0.0500	0.0021	mg/L	0.10000	ND	114	75-125			
<b>Matrix Spike Dup (6100146-MSD1)</b>			<b>Source: AZJ0020-01</b>			<b>Prepared &amp; Analyzed: 10/07/16</b>					
Antimony	0.106	0.0030	0.0008	mg/L	0.10000	0.0011	105	75-125	0.9	20	
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	ND	104	75-125	2	20	
Barium	0.213	0.0100	0.0004	mg/L	0.10000	0.124	89	75-125	1	20	
Beryllium	0.108	0.0030	0.00008	mg/L	0.10000	ND	108	75-125	2	20	
Boron	2.37	0.100	0.0064	mg/L	1.0000	1.57	79	75-125	2	20	
Cadmium	0.0995	0.0010	0.00007	mg/L	0.10000	ND	99	75-125	3	20	
Calcium	79.5	25.0	1.55	mg/L	1.0000	82.0	NR	75-125	7	20	QM-02
Chromium	0.110	0.0100	0.0009	mg/L	0.10000	0.0010	109	75-125	0.4	20	
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125	0.2	20	
Copper	0.101	0.0050	0.0005	mg/L	0.10000	ND	101	75-125	2	20	
Lead	0.0989	0.0050	0.0001	mg/L	0.10000	ND	99	75-125	4	20	
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000	ND	109	75-125	4	20	
Nickel	0.104	0.0050	0.0006	mg/L	0.10000	0.0008	103	75-125	2	20	
Selenium	0.108	0.0100	0.0010	mg/L	0.10000	0.0054	102	75-125	2	20	
Silver	0.0979	0.0050	0.0005	mg/L	0.10000	ND	98	75-125	4	20	
Thallium	0.0989	0.0010	0.0002	mg/L	0.10000	ND	99	75-125	4	20	
Vanadium	0.111	0.0100	0.0071	mg/L	0.10000	ND	111	75-125	0.3	20	
Zinc	0.112	0.0100	0.0021	mg/L	0.10000	0.0037	108	75-125	4	20	
Lithium	0.111	0.0500	0.0021	mg/L	0.10000	ND	111	75-125	3	20	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 14, 2016

**Report No.: AZJ0020**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100146 - EPA 3005A</b>											
<b>Post Spike (6100146-PS1)</b>				<b>Source: AZJ0020-01</b>			<b>Prepared &amp; Analyzed: 10/07/16</b>				
Antimony	103			ug/L	100.00	1.05	102	80-120			
Arsenic	105			ug/L	100.00	0.503	105	80-120			
Barium	216			ug/L	100.00	124	91	80-120			
Beryllium	106			ug/L	100.00	0.0224	106	80-120			
Boron	2380			ug/L	1000.0	1570	81	80-120			
Cadmium	101			ug/L	100.00	0.0031	101	80-120			
Calcium	79200			ug/L	1000.0	82000	NR	80-120			QM-02
Chromium	114			ug/L	100.00	0.994	113	80-120			
Cobalt	105			ug/L	100.00	0.164	105	80-120			
Copper	103			ug/L	100.00	0.109	103	80-120			
Lead	99.5			ug/L	100.00	0.0535	99	80-120			
Molybdenum	110			ug/L	100.00	0.892	109	80-120			
Nickel	106			ug/L	100.00	0.802	105	80-120			
Selenium	108			ug/L	100.00	5.42	103	80-120			
Silver	101			ug/L	100.00	0.0188	101	80-120			
Thallium	101			ug/L	100.00	0.181	101	80-120			
Vanadium	112			ug/L	100.00	0.669	111	80-120			
Zinc	111			ug/L	100.00	3.72	108	80-120			
Lithium	107			ug/L	100.00	0.481	106	80-120			

**Batch 6100148 - EPA 7470A**

<b>Blank (6100148-BLK1)</b>				<b>Prepared &amp; Analyzed: 10/07/16</b>							
Mercury	ND	0.00020	0.000041	mg/L							
<b>LCS (6100148-BS1)</b>				<b>Prepared &amp; Analyzed: 10/07/16</b>							
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

October 14, 2016

**Report No.: AZJ0020**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100148 - EPA 7470A</b>											
<b>Duplicate (6100148-DUP1)</b>			<b>Source: AZI0791-03</b>			Prepared & Analyzed: 10/07/16					
Mercury	ND	0.00050	0.000041	mg/L		ND				20	
<b>Matrix Spike (6100148-MS1)</b>			<b>Source: AZJ0138-03</b>			Prepared & Analyzed: 10/07/16					
Mercury	0.00244	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125			
<b>Matrix Spike Dup (6100148-MSD1)</b>			<b>Source: AZJ0138-03</b>			Prepared & Analyzed: 10/07/16					
Mercury	0.00243	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125	0.5	20	
<b>Post Spike (6100148-PS1)</b>			<b>Source: AZJ0138-03</b>			Prepared & Analyzed: 10/07/16					
Mercury	1.70			ug/L	1.6667	0.0104	101	80-120			
<b>Batch 6100198 - EPA 7470A</b>											
<b>Blank (6100198-BLK1)</b>						Prepared & Analyzed: 10/10/16					
Mercury	ND	0.00030	0.000041	mg/L							
<b>LCS (6100198-BS1)</b>						Prepared & Analyzed: 10/10/16					
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			
<b>Matrix Spike (6100198-MS1)</b>			<b>Source: AZJ0020-04</b>			Prepared & Analyzed: 10/10/16					
Mercury	0.00241	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125			
<b>Matrix Spike Dup (6100198-MSD1)</b>			<b>Source: AZJ0020-04</b>			Prepared & Analyzed: 10/10/16					
Mercury	0.00249	0.00050	0.000041	mg/L	2.5000E-3	ND	100	75-125	3	20	
<b>Post Spike (6100198-PS1)</b>			<b>Source: AZJ0020-04</b>			Prepared & Analyzed: 10/10/16					
Mercury	1.77			ug/L	1.6667	0.00728	106	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 14, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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

CLIENT NAME:		ANALYSIS REQUESTED		CONTAINER TYPE	PRESERVATION
Southwest Company Services					
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:		PRESERVATION:	CONTAINER TYPE
2-1 Ralph McGill Blvd SE 310185 Atlanta, GA 30308		3 4 3 0			
REPORT TO:		CONTAINERS	# of	C	O
John Abraham					
REQUESTED COMPLETION DATE:		N	D	A	M
GR 1068498					
PROJECT NAME/STATE:		E	R	N	U
Plant Bunker Add Pond CCR					
PROJECT #:		E	R	N	U
Collection DATE	Collection TIME				
10/3/16	1305	GW		X	BGWA-1
10/2/16	1405	GW		X	BGWA-4
10/3/16	1032	GW		V	BGWA-3
10/3/16	1345	GW		A	BGWA-5
10/3/16	1136	GW		X	BGWA-2
10/3/16	-	GW		X	Rep-1

SAMPLED BY AND TITLE:		DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	FOR LAB USE ONLY
Robert M. Hill / Environmental Scientist		10/3/16 @ 1500	Robert M. Hill	10/3/16 @ 1515	LAB #: A2J0020
RECEIVED BY: Robert M. Hill		DATE/TIME: 10/3/16 1515	RELINQUISHED BY: Robert M. Hill	DATE/TIME: 10/4/16 0815	Entered into LIMS: AR
RECEIVED BY LAB: M. Salaman		DATE/TIME: 10/04/16 0815	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS		Tracking #:
Collected: Yes	Ice: Yes	Temperature: 2°C Min 2°C Max	Seal: Intact	# of Coolers: 1	Container ID:





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

October 31, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198147

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on October 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

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

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198147

### 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 Bowen Ash Pond CCR  
Pace Project No.: 30198147

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30198147001	BGWA-1	Water	10/03/16 13:05	10/05/16 10:20
30198147002	BGWA-4	Water	10/03/16 14:05	10/05/16 10:20
30198147003	BGWA-3	Water	10/03/16 10:32	10/05/16 10:20
30198147004	BGWA-5	Water	10/03/16 13:45	10/05/16 10:20
30198147005	BGWA-2	Water	10/03/16 11:36	10/05/16 10:20
30198147006	Dup-1	Water	10/03/16 00:01	10/05/16 10:20

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30198147

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30198147001	BGWA-1	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198147002	BGWA-4	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198147003	BGWA-3	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198147004	BGWA-5	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198147005	BGWA-2	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198147006	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: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30198147

Sample: BGWA-1		Lab ID: 30198147001	Collected: 10/03/16 13:05	Received: 10/05/16 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>0.858 ± 0.310 (0.266)</b> C:86% T:NA	pCi/L	10/23/16 14:24	13982-63-3	
Radium-228	EPA 9320	<b>0.653 ± 0.349 (0.616)</b> C:76% T:89%	pCi/L	10/25/16 11:37	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.51 ± 0.659 (0.882)</b>	pCi/L	10/27/16 11:11	7440-14-4	

Sample: BGWA-4		Lab ID: 30198147002	Collected: 10/03/16 14:05	Received: 10/05/16 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>0.267 ± 0.189 (0.310)</b> C:90% T:NA	pCi/L	10/23/16 14:24	13982-63-3	
Radium-228	EPA 9320	<b>1.32 ± 0.530 (0.853)</b> C:69% T:86%	pCi/L	10/25/16 11:38	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.59 ± 0.719 (1.16)</b>	pCi/L	10/27/16 11:11	7440-14-4	

Sample: BGWA-3		Lab ID: 30198147003	Collected: 10/03/16 10:32	Received: 10/05/16 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>0.201 ± 0.170 (0.301)</b> C:91% T:NA	pCi/L	10/23/16 14:24	13982-63-3	
Radium-228	EPA 9320	<b>1.105 ± 0.455 (1.04)</b> C:68% T:86%	pCi/L	10/25/16 14:53	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.306 ± 0.625 (1.34)</b>	pCi/L	10/27/16 11:11	7440-14-4	

Sample: BGWA-5		Lab ID: 30198147004	Collected: 10/03/16 13:45	Received: 10/05/16 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>0.440 ± 0.220 (0.278)</b> C:88% T:NA	pCi/L	10/23/16 14:25	13982-63-3	
Radium-228	EPA 9320	<b>0.595 ± 0.411 (0.792)</b> C:65% T:87%	pCi/L	10/25/16 11:38	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.04 ± 0.631 (1.07)</b>	pCi/L	10/27/16 11:11	7440-14-4	

Sample: BGWA-2		Lab ID: 30198147005	Collected: 10/03/16 11:36	Received: 10/05/16 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>0.540 ± 0.238 (0.287)</b> C:89% T:NA	pCi/L	10/23/16 14:25	13982-63-3	
Radium-228	EPA 9320	<b>0.275 ± 0.394 (0.847)</b> C:64% T:79%	pCi/L	10/25/16 11:38	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30198147

<b>Sample: BGWA-2</b>		<b>Lab ID: 30198147005</b>	Collected: 10/03/16 11:36	Received: 10/05/16 10:20	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>0.815 ± 0.632 (1.13)</b>	pCi/L	10/27/16 11:11	7440-14-4	

<b>Sample: Dup-1</b>		<b>Lab ID: 30198147006</b>	Collected: 10/03/16 00:01	Received: 10/05/16 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>0.398 ± 0.237 (0.372)</b> C:82% T:NA	pCi/L	10/23/16 14:25	13982-63-3	
Radium-228	EPA 9320	<b>0.0715 ± 0.325 (0.742)</b> C:69% T:84%	pCi/L	10/25/16 11:38	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.470 ± 0.562 (1.11)</b>	pCi/L	10/27/16 11:11	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30198147

---

QC Batch: 236794 Analysis Method: EPA 9315  
 QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
 Associated Lab Samples: 30198147001, 30198147002, 30198147003, 30198147004, 30198147005, 30198147006

---

METHOD BLANK: 1163882 Matrix: Water  
 Associated Lab Samples: 30198147001, 30198147002, 30198147003, 30198147004, 30198147005, 30198147006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0557 ± 0.0963 (0.214) C:93% T:NA	pCi/L	10/23/16 14:23	

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 Bowen Ash Pond CCR  
 Pace Project No.: 30198147

---

QC Batch: 236796 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30198147001, 30198147002, 30198147003, 30198147004, 30198147005, 30198147006

---

METHOD BLANK: 1163884 Matrix: Water  
 Associated Lab Samples: 30198147001, 30198147002, 30198147003, 30198147004, 30198147005, 30198147006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.100 ± 0.361 (0.864) C:62% T:85%	pCi/L	10/25/16 11:36	

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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## QUALIFIERS

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198147

### 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, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:				ANALYSIS REQUESTED												L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:				CONTAINER TYPE:																
REPORT TO:				# of													D W - S O I L	*MATRIX CODES:		
REQUESTED COMPLETION DATE:				C O N T A I N E R S  ↓														REMARKS/ADDITIONAL INFORMATION		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION															
10/3/16	1305	GW		X	BGWA-1	3													001	
10/2/16	1405	GW		X	BGWA-4	3													002	
10/3/16	1032	GW		W	BGWA-3	4													003	
10/3/16	1345	GW		X	BGWA-5	3													004	
10/3/16	1136	GW		X	BGWA-2	3													005	
10/3/16	-	GW		X	Rep-1	3													006	
												WO#: 30198147								
SAMPLED BY AND TITLE: <u>Robert M. Wall / Environmental Scientist</u>				DATE/TIME: <u>10/3/16 @ 1500</u>				RELINQUISHED BY: <u>Kevin Johnson</u>				DATE/TIME: <u>10/3/16 @ 1515</u>				LAB #:		FOR LAB USE ONLY		
RECEIVED BY: <u>Robert M. Wall</u>				DATE/TIME: <u>10/3/16 1515</u>				RELINQUISHED BY: <u>Robert M. Wall</u>				DATE/TIME: <u>10/14/16 0815</u>				Entered into LIMS:				
RECEIVED BY LAB: <u>[Signature]</u>				DATE/TIME: <u>10-5-16 / 1020</u>				SAMPLE SHIPPED VIA:				CLIENT OTHER FS				Tracking #:				
pH checked: Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>				Ice: Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>				Temperature: Min: Max:				Custody Seal: Intact <input type="checkbox"/> Broken <input type="checkbox"/> Not Present <input type="checkbox"/>				# of Coolers: Cooler ID:				

Page 10 of 13

Sample Condition Upon Receipt Pittsburgh



30198147

Client Name: Southern Company Services

Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6A12 4099 6012

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 \_\_\_\_\_ °C    Correction Factor: \_\_\_\_\_ °C    Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ML 10-5-16

Comments:	Yes	No	N/A	
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/Analysis    Matrix: <u>wt</u>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	10. <u>1/2 Gal's</u>
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>PH &lt; 2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>ML</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>8mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Rad Aqueous Samples Screened > 0.5 mrem/hr	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>ML</u> Date: <u>10-5-16</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



Test: Ra-226  
Analyst: LAL  
Date: 10/22/2016  
Worklist: 31916  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1163882	
MB concentration:	0.056	
M/B Counting Uncertainty:	0.096	
MB MDC:	0.214	
MB Numerical Performance Indicator:	1.14	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCS/D (Y or N)?	N
	LCS31916	LCS/D31916
Count Date:	10/23/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.675	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.503	
Target Conc. (pCi/L, g, F):	8.874	
Uncertainty (Calculated):	0.417	
Result (pCi/L, g, F):	8.215	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.770	
Numerical Performance Indicator:	-1.47	
Percent Recovery:	92.58%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30197905003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30197905003DUP	
Sample Result (pCi/L, g, F):	0.325	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.186	
Sample Duplicate Result (pCi/L, g, F):	0.196	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.185	
Are sample and/or duplicate results below MDC? See Below ##		
Duplicate Numerical Performance Indicator:	0.962	
Duplicate RPD:	49.41%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LAL 10/23/16*





### Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 10/19/2016  
Worklist: 31918  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1163884	
MB concentration:	-0.100	
M/B Counting Uncertainty:	0.360	
MB MDC:	0.864	
MB Numerical Performance Indicator:	-0.54	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCS/D (Y or N)?	N
	LCS31918		LCS/D31918
Count Date:	10/25/2016		
Spike I.D.:	16-025		
Spike Concentration (pCi/mL):	25.330		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.805		
Target Conc. (pCi/L, g, F):	6.294		
Uncertainty (Calculated):	0.453		
Result (pCi/L, g, F):	6.127		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.737		
Numerical Performance Indicator:	-0.38		
Percent Recovery:	97.35%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30197905003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30197905003DUP	
Sample Result (pCi/L, g, F):	0.094	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.368	
Sample Duplicate Result (pCi/L, g, F):	0.841	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.385	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.678	30197905003
Duplicate RPD:	159.86%	30197905003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Handwritten signature and date: JLW 10/31/16*



**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: AZJ0081**

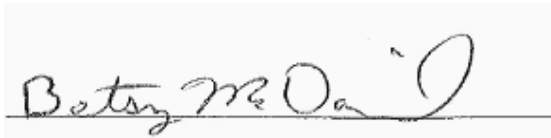
**October 13, 2016**

**Project: CCR Event**

**Project #: Plant Bowen**

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:



Project Manager

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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

October 13, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-26	AZJ0081-01	Ground Water	10/04/16 11:00	10/05/16 08:04
BGWA-29	AZJ0081-02	Ground Water	10/04/16 13:20	10/05/16 08:04
BGWA-28	AZJ0081-03	Ground Water	10/04/16 13:27	10/05/16 08:04
BGWA-6	AZJ0081-04	Ground Water	10/04/16 10:00	10/05/16 08:04
BGWC-8	AZJ0081-05	Ground Water	10/04/16 14:20	10/05/16 08:04
BGWA-27	AZJ0081-06	Ground Water	10/04/16 11:52	10/05/16 08:04



**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

October 13, 2016

Report No.: AZJ0081

Project: CCR Event

Client ID: BGWA-26

Lab Number ID: AZJ0081-01

Date/Time Sampled: 10/4/2016 11:00:00AM

Date/Time Received: 10/5/2016 8:04:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	182	25	10	mg/L	SM 2540 C		1	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	9.9	0.25	0.01	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 16:05	6100256	RLC
Fluoride	0.16	0.30	0.02	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 16:05	6100256	RLC
Sulfate	48	1.0	0.05	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 16:05	6100256	RLC
<b>Metals, Total</b>											
Antimony	0.0009	0.0030	0.0008	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Arsenic	0.0018	0.0050	0.0016	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Barium	0.0391	0.0100	0.0004	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Boron	0.0150	0.100	0.0064	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Calcium	23.0	2.50	0.155	mg/L	EPA 6020B		5	10/06/16 12:10	10/10/16 18:18	6100143	KLH
Chromium	0.0022	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Molybdenum	0.0080	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Lithium	0.0026	0.0500	0.0021	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 15:57	6100143	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 13:57	6100199	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

October 13, 2016

Report No.: AZJ0081

Project: CCR Event

Client ID: BGWA-29

Lab Number ID: AZJ0081-02

Date/Time Sampled: 10/4/2016 1:20:00PM

Date/Time Received: 10/5/2016 8:04:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	95	25	10	mg/L	SM 2540 C		1	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	2.1	0.25	0.01	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 16:26	6100256	RLC
Fluoride	0.06	0.30	0.02	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 16:26	6100256	RLC
Sulfate	6.4	1.0	0.05	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 16:26	6100256	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Barium	0.0188	0.0100	0.0004	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Boron	0.0065	0.100	0.0064	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Calcium	20.9	2.50	0.155	mg/L	EPA 6020B		5	10/06/16 12:10	10/10/16 16:55	6100143	KLH
Chromium	0.0013	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:03	6100143	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 13:59	6100199	MTC



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 13, 2016

Report No.: AZJ0081

Project: CCR Event

Client ID: BGWA-28

Lab Number ID: AZJ0081-03

Date/Time Sampled: 10/4/2016 1:27:00PM

Date/Time Received: 10/5/2016 8:04:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	213	25	10	mg/L	SM 2540 C		1	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	17	0.25	0.01	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 17:30	6100256	RLC
Fluoride	0.05	0.30	0.02	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 17:30	6100256	RLC
Sulfate	14	1.0	0.05	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 17:30	6100256	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Barium	0.0906	0.0100	0.0004	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Boron	0.0663	0.100	0.0064	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Calcium	45.5	5.00	0.311	mg/L	EPA 6020B		10	10/06/16 12:10	10/10/16 18:24	6100143	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Molybdenum	0.0019	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:09	6100143	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 14:02	6100199	MTC



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Attention: Mr. Joju Abraham

October 13, 2016

Report No.: AZJ0081

Project: CCR Event

Client ID: BGWA-6

Lab Number ID: AZJ0081-04

Date/Time Sampled: 10/4/2016 10:00:00AM

Date/Time Received: 10/5/2016 8:04:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	245	25	10	mg/L	SM 2540 C		1	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	5.6	0.25	0.01	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 17:51	6100256	RLC
Fluoride	0.06	0.30	0.02	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 17:51	6100256	RLC
Sulfate	20	1.0	0.05	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 17:51	6100256	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Barium	0.0137	0.0100	0.0004	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Boron	0.0145	0.100	0.0064	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Calcium	51.4	5.00	0.311	mg/L	EPA 6020B		10	10/06/16 12:10	10/10/16 18:29	6100143	KLH
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:14	6100143	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 14:04	6100199	MTC



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Attention: Mr. Joju Abraham

October 13, 2016

Report No.: AZJ0081

Project: CCR Event

Client ID: BGWC-8

Lab Number ID: AZJ0081-05

Date/Time Sampled: 10/4/2016 2:20:00PM

Date/Time Received: 10/5/2016 8:04:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	186	25	10	mg/L	SM 2540 C		1	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	2.3	0.25	0.01	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 18:12	6100256	RLC
Fluoride	0.07	0.30	0.02	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 18:12	6100256	RLC
Sulfate	40	1.0	0.05	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 18:12	6100256	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Barium	0.0316	0.0100	0.0004	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Boron	0.177	0.100	0.0064	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Calcium	39.7	5.00	0.311	mg/L	EPA 6020B		10	10/06/16 12:10	10/10/16 18:35	6100143	KLH
Chromium	0.0015	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Molybdenum	0.0052	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:20	6100143	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 14:06	6100199	MTC





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Attention: Mr. Joju Abraham

October 13, 2016

Report No.: AZJ0081

Project: CCR Event

Client ID: BGWA-27

Lab Number ID: AZJ0081-06

Date/Time Sampled: 10/4/2016 11:52:00AM

Date/Time Received: 10/5/2016 8:04:00AM

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	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	14	0.25	0.01	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 18:34	6100256	RLC
Fluoride	0.03	0.30	0.02	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 18:34	6100256	RLC
Sulfate	8.2	1.0	0.05	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 18:34	6100256	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Barium	0.0389	0.0100	0.0004	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Boron	0.0113	0.100	0.0064	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Calcium	41.2	5.00	0.311	mg/L	EPA 6020B		10	10/06/16 12:10	10/10/16 18:41	6100143	KLH
Chromium	0.0010	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Selenium	0.0015	0.0100	0.0010	mg/L	EPA 6020B	J	1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/06/16 12:10	10/10/16 16:40	6100143	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 14:14	6100199	MTC



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Attention: Mr. Joju Abraham

October 13, 2016

**Report No.: AZJ0081**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100249 - SM 2540 C</b>											
<b>Blank (6100249-BLK1)</b>						Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	ND	10	10	mg/L							
<b>LCS (6100249-BS1)</b>						Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	371	10	10	mg/L	400.00		93	84-108			
<b>Duplicate (6100249-DUP1)</b>						Source: AZJ0081-01RE1 Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	185	10	10	mg/L		182			2	10	
<b>Duplicate (6100249-DUP2)</b>						Source: AZJ0213-02RE1 Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	524	10	10	mg/L		524			0	10	



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Attention: Mr. Joju Abraham

October 13, 2016

**Report No.: AZJ0081**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100256 - EPA 300.0</b>											
<b>Blank (6100256-BLK1)</b>						Prepared: 10/10/16 Analyzed: 10/11/16					
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 (6100256-BS1)</b>						Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	9.64	0.25	0.01	mg/L	10.010		96	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		100	90-110			
Sulfate	9.80	1.0	0.05	mg/L	10.020		98	90-110			
<b>Matrix Spike (6100256-MS1)</b>						Source: AZJ0081-02 Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	12.0	0.25	0.01	mg/L	10.010	2.14	99	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.020	0.06	104	90-110			
Sulfate	15.9	1.0	0.05	mg/L	10.020	6.36	95	90-110			
<b>Matrix Spike (6100256-MS2)</b>						Source: AZJ0213-01 Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	20.3	0.25	0.01	mg/L	10.010	11.1	92	90-110			
Fluoride	10.9	0.30	0.02	mg/L	10.020	0.17	107	90-110			
Sulfate	277	1.0	0.05	mg/L	10.020	292	NR	90-110			QM-02
<b>Matrix Spike Dup (6100256-MSD1)</b>						Source: AZJ0081-02 Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	12.0	0.25	0.01	mg/L	10.010	2.14	98	90-110	0.3	15	
Fluoride	10.5	0.30	0.02	mg/L	10.020	0.06	104	90-110	0.2	15	
Sulfate	15.8	1.0	0.05	mg/L	10.020	6.36	95	90-110	0.08	15	



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Attention: Mr. Joju Abraham

October 13, 2016

**Report No.: AZJ0081**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100143 - EPA 3005A</b>											
<b>Blank (6100143-BLK1)</b>						Prepared: 10/06/16 Analyzed: 10/10/16					
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							
<b>LCS (6100143-BS1)</b>						Prepared: 10/06/16 Analyzed: 10/10/16					
Antimony	0.101	0.0030	0.0008	mg/L	0.10000		101	80-120			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000		101	80-120			
Barium	0.0970	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.103	0.0030	0.00008	mg/L	0.10000		103	80-120			
Boron	1.12	0.100	0.0064	mg/L	1.0000		112	80-120			
Cadmium	0.0969	0.0010	0.00007	mg/L	0.10000		97	80-120			
Calcium	1.05	0.500	0.0311	mg/L	1.0000		105	80-120			
Chromium	0.110	0.0100	0.0009	mg/L	0.10000		110	80-120			
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Copper	0.103	0.0050	0.0005	mg/L	0.10000		103	80-120			
Lead	0.102	0.0050	0.0001	mg/L	0.10000		102	80-120			
Molybdenum	0.102	0.0100	0.0017	mg/L	0.10000		102	80-120			
Nickel	0.104	0.0050	0.0006	mg/L	0.10000		104	80-120			
Selenium	0.103	0.0100	0.0010	mg/L	0.10000		103	80-120			
Silver	0.104	0.0050	0.0005	mg/L	0.10000		104	80-120			
Thallium	0.103	0.0010	0.0002	mg/L	0.10000		103	80-120			
Vanadium	0.111	0.0100	0.0071	mg/L	0.10000		111	80-120			
Zinc	0.108	0.0100	0.0021	mg/L	0.10000		108	80-120			
Lithium	0.101	0.0500	0.0021	mg/L	0.10000		101	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

October 13, 2016

**Report No.: AZJ0081**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100143 - EPA 3005A</b>											
<b>Matrix Spike (6100143-MS1)</b>			<b>Source: AZJ0081-01</b>			<b>Prepared: 10/06/16 Analyzed: 10/10/16</b>					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000	0.0009	104	75-125			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	0.0018	102	75-125			
Barium	0.137	0.0100	0.0004	mg/L	0.10000	0.0391	98	75-125			
Beryllium	0.100	0.0030	0.00008	mg/L	0.10000	ND	100	75-125			
Boron	1.07	0.100	0.0064	mg/L	1.0000	0.0150	106	75-125			
Cadmium	0.0997	0.0010	0.00007	mg/L	0.10000	ND	100	75-125			
Calcium	23.8	2.50	0.155	mg/L	1.0000	23.0	85	75-125			
Chromium	0.110	0.0100	0.0009	mg/L	0.10000	0.0022	108	75-125			
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Copper	0.100	0.0050	0.0005	mg/L	0.10000	ND	100	75-125			
Lead	0.0997	0.0050	0.0001	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.112	0.0100	0.0017	mg/L	0.10000	0.0080	104	75-125			
Nickel	0.103	0.0050	0.0006	mg/L	0.10000	0.0009	102	75-125			
Selenium	0.109	0.0100	0.0010	mg/L	0.10000	ND	109	75-125			
Silver	0.103	0.0050	0.0005	mg/L	0.10000	ND	103	75-125			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125			
Vanadium	0.112	0.0100	0.0071	mg/L	0.10000	ND	112	75-125			
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	0.0026	102	75-125			
Lithium	0.0998	0.0500	0.0021	mg/L	0.10000	0.0026	97	75-125			
<b>Matrix Spike Dup (6100143-MSD1)</b>			<b>Source: AZJ0081-01</b>			<b>Prepared: 10/06/16 Analyzed: 10/10/16</b>					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000	0.0009	103	75-125	0.9	20	
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	0.0018	104	75-125	2	20	
Barium	0.139	0.0100	0.0004	mg/L	0.10000	0.0391	100	75-125	1	20	
Beryllium	0.102	0.0030	0.00008	mg/L	0.10000	ND	102	75-125	2	20	
Boron	1.04	0.100	0.0064	mg/L	1.0000	0.0150	103	75-125	3	20	
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125	0.9	20	
Calcium	23.7	2.50	0.155	mg/L	1.0000	23.0	70	75-125	0.6	20	QM-02
Chromium	0.111	0.0100	0.0009	mg/L	0.10000	0.0022	109	75-125	1	20	
Cobalt	0.0988	0.0100	0.0005	mg/L	0.10000	ND	99	75-125	4	20	
Copper	0.0997	0.0050	0.0005	mg/L	0.10000	ND	100	75-125	0.4	20	
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125	0.9	20	
Molybdenum	0.111	0.0100	0.0017	mg/L	0.10000	0.0080	103	75-125	1	20	
Nickel	0.101	0.0050	0.0006	mg/L	0.10000	0.0009	100	75-125	2	20	
Selenium	0.104	0.0100	0.0010	mg/L	0.10000	ND	104	75-125	5	20	
Silver	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125	0.7	20	
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125	0.3	20	
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125	3	20	
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	0.0026	103	75-125	1	20	
Lithium	0.104	0.0500	0.0021	mg/L	0.10000	0.0026	102	75-125	4	20	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 13, 2016

**Report No.: AZJ0081**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100143 - EPA 3005A</b>											
<b>Post Spike (6100143-PS1)</b>				<b>Source: AZJ0081-01</b>				<b>Prepared: 10/06/16 Analyzed: 10/10/16</b>			
Antimony	97.9			ug/L	100.00	0.946	97	80-120			
Arsenic	102			ug/L	100.00	1.84	100	80-120			
Barium	137			ug/L	100.00	39.1	98	80-120			
Beryllium	99.6			ug/L	100.00	0.0268	100	80-120			
Boron	1020			ug/L	1000.0	15.0	101	80-120			
Cadmium	96.4			ug/L	100.00	-0.0253	96	80-120			
Calcium	22700			ug/L	1000.0	23000	NR	80-120			QM-02
Chromium	111			ug/L	100.00	2.15	108	80-120			
Cobalt	104			ug/L	100.00	0.104	104	80-120			
Copper	102			ug/L	100.00	0.117	102	80-120			
Lead	98.7			ug/L	100.00	0.0475	99	80-120			
Molybdenum	111			ug/L	100.00	8.01	103	80-120			
Nickel	102			ug/L	100.00	0.888	102	80-120			
Selenium	100			ug/L	100.00	-0.471	101	80-120			
Silver	101			ug/L	100.00	0.0248	101	80-120			
Thallium	103			ug/L	100.00	0.118	102	80-120			
Vanadium	110			ug/L	100.00	0.0924	110	80-120			
Zinc	107			ug/L	100.00	2.58	105	80-120			
Lithium	96.6			ug/L	100.00	2.60	94	80-120			

**Batch 6100199 - EPA 7470A**

<b>Blank (6100199-BLK1)</b>				<b>Prepared &amp; Analyzed: 10/10/16</b>							
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6100199-BS1)</b>				<b>Prepared &amp; Analyzed: 10/10/16</b>							
Mercury	0.00245	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

October 13, 2016

**Report No.: AZJ0081**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100199 - EPA 7470A</b>											
<b>Matrix Spike (6100199-MS1)</b>			<b>Source: AZJ0081-05</b>			<b>Prepared &amp; Analyzed: 10/10/16</b>					
Mercury	0.00247	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125			
<b>Matrix Spike Dup (6100199-MSD1)</b>			<b>Source: AZJ0081-05</b>			<b>Prepared &amp; Analyzed: 10/10/16</b>					
Mercury	0.00247	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125	0.2	20	
<b>Post Spike (6100199-PS1)</b>			<b>Source: AZJ0081-05</b>			<b>Prepared &amp; Analyzed: 10/10/16</b>					
Mercury	1.74			ug/L	1.6667	0.00437	104	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 13, 2016

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## Legend

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### 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

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

PAGE: 1 OF 2

Form containing client information, analysis requested details, sample identification table, and chain of custody signatures and dates.

16 OF 16



# 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: 10/13/2016 4:00:06PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 10/05/16 08:04

Work Order: AZJ0081

Logged In By: Charles Hawks

### OBSERVATIONS

#Samples: 6

#Containers: 18

Minimum Temp(C): 3.0

Maximum Temp(C): 3.0

Custody Seal(s) Used: 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 03, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198274

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on October 06, 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,  
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## CERTIFICATIONS

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198274

### 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 Bowen Ash Pond CCR  
Pace Project No.: 30198274

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30198274001	BGWA-26	Water	10/04/16 11:00	10/06/16 09:50
30198274002	BGWA-29	Water	10/04/16 13:20	10/06/16 09:50
30198274003	BGWA-28	Water	10/04/16 13:27	10/06/16 09:50
30198274004	BGWA-6	Water	10/04/16 10:00	10/06/16 09:50
30198274005	BGWC-8	Water	10/04/16 14:20	10/06/16 09:50
30198274006	BGWA-27	Water	10/04/16 11:52	10/06/16 09:50

### REPORT OF LABORATORY ANALYSIS

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**SAMPLE ANALYTE COUNT**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30198274

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30198274001	BGWA-26	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198274002	BGWA-29	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198274003	BGWA-28	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198274004	BGWA-6	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198274005	BGWC-8	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198274006	BGWA-27	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: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30198274

Sample: BGWA-26		Lab ID: 30198274001	Collected: 10/04/16 11:00	Received: 10/06/16 09:50	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.200 ± 0.192 (0.368)</b> C:76% T:NA	pCi/L	10/23/16 14:25	13982-63-3	
Radium-228	EPA 9320	<b>0.137 ± 0.410 (0.922)</b> C:63% T:80%	pCi/L	10/25/16 11:38	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.337 ± 0.602 (1.29)</b>	pCi/L	11/01/16 11:46	7440-14-4	

Sample: BGWA-29		Lab ID: 30198274002	Collected: 10/04/16 13:20	Received: 10/06/16 09:50	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0737 ± 0.133 (0.303)</b> C:92% T:NA	pCi/L	10/23/16 14:25	13982-63-3	
Radium-228	EPA 9320	<b>0.00969 ± 0.280 (0.652)</b> C:77% T:87%	pCi/L	10/25/16 11:39	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.0834 ± 0.413 (0.955)</b>	pCi/L	11/01/16 11:46	7440-14-4	

Sample: BGWA-28		Lab ID: 30198274003	Collected: 10/04/16 13:27	Received: 10/06/16 09:50	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.264 ± 0.208 (0.372)</b> C:80% T:NA	pCi/L	10/23/16 14:25	13982-63-3	
Radium-228	EPA 9320	<b>-0.0770 ± 0.338 (0.805)</b> C:69% T:82%	pCi/L	10/25/16 11:39	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.264 ± 0.546 (1.18)</b>	pCi/L	11/01/16 11:46	7440-14-4	

Sample: BGWA-6		Lab ID: 30198274004	Collected: 10/04/16 10:00	Received: 10/06/16 09:50	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0283 ± 0.128 (0.326)</b> C:84% T:NA	pCi/L	10/23/16 14:25	13982-63-3	
Radium-228	EPA 9320	<b>0.203 ± 0.320 (0.692)</b> C:69% T:88%	pCi/L	10/25/16 11:39	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.231 ± 0.448 (1.02)</b>	pCi/L	11/01/16 11:46	7440-14-4	

Sample: BGWC-8		Lab ID: 30198274005	Collected: 10/04/16 14:20	Received: 10/06/16 09:50	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0236 ± 0.125 (0.317)</b> C:95% T:NA	pCi/L	10/23/16 14:25	13982-63-3	
Radium-228	EPA 9320	<b>0.456 ± 0.433 (0.886)</b> C:70% T:74%	pCi/L	10/25/16 11:39	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30198274

<b>Sample: BGWC-8</b>		<b>Lab ID: 30198274005</b>	Collected: 10/04/16 14:20	Received: 10/06/16 09:50	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>0.480 ± 0.558 (1.20)</b>	pCi/L	11/01/16 11:46	7440-14-4	

<b>Sample: BGWA-27</b>		<b>Lab ID: 30198274006</b>	Collected: 10/04/16 11:52	Received: 10/06/16 09:50	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.297 ± 0.177 (0.248)</b> C:88% T:NA	pCi/L	10/23/16 14:25	13982-63-3	
Radium-228	EPA 9320	<b>0.169 ± 0.401 (0.892)</b> C:62% T:83%	pCi/L	10/25/16 11:39	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.466 ± 0.578 (1.14)</b>	pCi/L	11/01/16 11:46	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: Plant Bowen Ash Pond CCR  
 Pace Project No.: 30198274

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QC Batch: 236794 Analysis Method: EPA 9315  
 QC Batch Method: EPA 9315 Analysis Description: 9315 Total Radium  
 Associated Lab Samples: 30198274001, 30198274002, 30198274003, 30198274004, 30198274005, 30198274006

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METHOD BLANK: 1163882 Matrix: Water  
 Associated Lab Samples: 30198274001, 30198274002, 30198274003, 30198274004, 30198274005, 30198274006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0557 ± 0.0963 (0.214) C:93% T:NA	pCi/L	10/23/16 14:23	

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 Bowen Ash Pond CCR  
 Pace Project No.: 30198274

---

QC Batch: 236796 Analysis Method: EPA 9320  
 QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
 Associated Lab Samples: 30198274001, 30198274002, 30198274003, 30198274004, 30198274005, 30198274006

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METHOD BLANK: 1163884 Matrix: Water  
 Associated Lab Samples: 30198274001, 30198274002, 30198274003, 30198274004, 30198274005, 30198274006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.100 ± 0.361 (0.864) C:62% T:85%	pCi/L	10/25/16 11:36	

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.

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## QUALIFIERS

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198274

### 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, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED					L A B  J D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION					
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:													
REPORT TO:					PRESERVATION:													
REQUESTED COMPLETION DATE:					# of													
PROJECT NAME/STATE:					C O N T A I N E R S  ↓													
PROJECT #:																		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B		SAMPLE IDENTIFICATION					*MATRIX CODES:							
10/4/16	1100	GW		X		BGWA-26	3	1	1		1							Level III Data Package 001
10/4/16	1320	GW		X		BGWA-29	3	1	1		1							Level III Data Package 002
10/4/16	1327	GW		X		BGWA-28	3	1	1	1							Level III Data Package 003	
10/4/16	1000	GW		X		BGWA-6	3	1	1	1							Level III Data Package 004	
10/4/16	1420	GW		X		BGWC-8	3	1	1	1							Level III Data Package 005	
10/4/16	1152	GW		X		BGWA-27	3	1	1	1							Level III Data Package 006	
WO#: 30198274																		
SAMPLED BY AND TITLE: <i>Kenn Steinhilber</i> DATE/TIME: <i>10/4/16 @ 1505</i>					RELINQUISHED BY: <i>Kenn Steinhilber</i>					DATE/TIME: <i>10/5/16 @ 0804</i>		FOR LAB USE ONLY						
RECEIVED BY: <i>R. B. Pace</i> DATE/TIME: <i>10/6/16 0950</i>					RECEIVED BY:					DATE/TIME:		LAB #:						
RECEIVED BY LAB: <i>[Signature]</i> DATE/TIME:					SAMPLE SHIPPED VIA:							Entered into LIMS:						
pH checked: Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Ice: Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>					Temperature: Min: Max:					UPS <input type="checkbox"/> FED-EX <input type="checkbox"/> USPS <input type="checkbox"/> COURIER <input type="checkbox"/> CLIENT <input type="checkbox"/> OTHER <input type="checkbox"/> FS <input type="checkbox"/>		Tracking #:						
					Custody Seal: Intact <input type="checkbox"/> Broken <input type="checkbox"/> Not Present <input type="checkbox"/>					# of Coolers		Cooler ID:						

Page 10 of 13

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace GA Project # 30198274

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5099 6402

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: RTB 10/6/16

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/Analysis 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.
Filtered volume received for Dissolved tests			X	12.
All containers needing preservation have been checked.	X			13.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>pH &lt; 2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>10/6/16</u> Date/time of preservation: <u>RTB</u>
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			X	14.
Trip Blank Present:			X	15.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>RTB</u> Date: <u>10/6/16</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

Test: Ra-226  
Analyst: LAL  
Date: 10/22/2016  
Worklist: 31916  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1163882	
MB concentration:	0.056	
M/B Counting Uncertainty:	0.096	
MB MDC:	0.214	
MB Numerical Performance Indicator:	1.14	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCSD31916	LCSD31916
Count Date:	10/23/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.675	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.503	
Target Conc. (pCi/L, g, F):	8.874	
Uncertainty (Calculated):	0.417	
Result (pCi/L, g, F):	8.215	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.770	
Numerical Performance Indicator:	-1.47	
Percent Recovery:	92.58%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30197905003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30197905003DUP	
Sample Result (pCi/L, g, F):	0.325	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.186	
Sample Duplicate Result (pCi/L, g, F):	0.196	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.185	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.962	30197905003
Duplicate RPD:	49.41%	30197905003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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



## Quality Control Sample Performance Assessment

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

Test: Ra-228  
Analyst: JLW  
Date: 10/19/2016  
Worklist: 31918  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1163884
MB concentration:	-0.100
M/B Counting Uncertainty:	0.360
MB MDC:	0.864
MB Numerical Performance Indicator:	-0.54
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS (Y or N)?	N
	LCS31918		LCS31918
Count Date:	10/25/2016		
Spike I.D.:	16-025		
Spike Concentration (pCi/mL):	25.330		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.805		
Target Conc. (pCi/L, g, F):	6.294		
Uncertainty (Calculated):	0.453		
Result (pCi/L, g, F):	6.127		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.737		
Numerical Performance Indicator:	-0.38		
Percent Recovery:	97.35%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30197905003	
Duplicate Sample I.D.:	30197905003DUP	
Sample Result (pCi/L, g, F):	0.094	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.388	
Sample Duplicate Result (pCi/L, g, F):	0.841	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.385	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.678	30197905003
Duplicate RPD:	159.86%	30197905003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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, 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: AZJ0138**

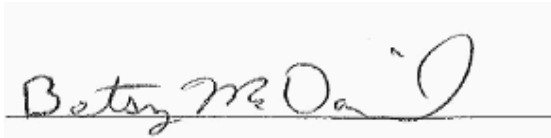
**October 14, 2016**

**Project: CCR Event**

**Project #: Plant Bowen**

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:



Project Manager

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All test results relate only to the samples analyzed.





**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

October 14, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-11	AZJ0138-01	Ground Water	10/05/16 15:05	10/06/16 08:01
BGWC-9	AZJ0138-02	Ground Water	10/05/16 14:19	10/06/16 08:01
Dup-2	AZJ0138-03	Ground Water	10/05/16 00:00	10/06/16 08:01
FBL 100516	AZJ0138-04	Water	10/05/16 16:00	10/06/16 08:01
EQBL 100516	AZJ0138-05	Water	10/05/16 16:10	10/06/16 08:01



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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

October 14, 2016

Report No.: AZJ0138

Project: CCR Event

Client ID: BGWC-11

Lab Number ID: AZJ0138-01

Date/Time Sampled: 10/5/2016 3:05:00PM

Date/Time Received: 10/6/2016 8:01:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	246	25	10	mg/L	SM 2540 C		1	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	9.7	0.25	0.01	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 18:55	6100256	RLC
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 18:55	6100256	RLC
Sulfate	85	10	0.51	mg/L	EPA 300.0		10	10/10/16 18:33	10/13/16 14:02	6100256	RNB
<b>Metals, Total</b>											
Antimony	0.0014	0.0030	0.0008	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Arsenic	0.0036	0.0050	0.0016	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Barium	0.0204	0.0100	0.0004	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Boron	0.210	0.100	0.0064	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Calcium	39.6	2.50	0.155	mg/L	EPA 6020B		5	10/07/16 09:15	10/10/16 14:09	6100146	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Molybdenum	0.0032	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:11	6100146	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/07/16 09:55	10/07/16 13:58	6100148	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

October 14, 2016

Report No.: AZJ0138

Project: CCR Event

Client ID: BGWC-9

Lab Number ID: AZJ0138-02

Date/Time Sampled: 10/5/2016 2:19:00PM

Date/Time Received: 10/6/2016 8:01:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	376	25	10	mg/L	SM 2540 C		1	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	36	0.25	0.01	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 21:03	6100256	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 21:03	6100256	RLC
Sulfate	120	10	0.51	mg/L	EPA 300.0		10	10/10/16 18:33	10/13/16 14:24	6100256	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Arsenic	0.0020	0.0050	0.0016	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Barium	0.0289	0.0100	0.0004	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Boron	0.659	0.100	0.0064	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Calcium	66.7	5.00	0.311	mg/L	EPA 6020B		10	10/07/16 09:15	10/10/16 14:55	6100146	CSW
Chromium	0.0020	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Lead	0.0005	0.0050	0.0001	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Molybdenum	0.0032	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Selenium	0.0017	0.0100	0.0010	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:16	6100146	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/07/16 09:55	10/07/16 14:01	6100148	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

October 14, 2016

Report No.: AZJ0138

Project: CCR Event

Client ID: Dup-2

Lab Number ID: AZJ0138-03

Date/Time Sampled: 10/5/2016 12:00:00AM

Date/Time Received: 10/6/2016 8:01:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	389	25	10	mg/L	SM 2540 C		1	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	36	0.25	0.01	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 21:24	6100256	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 21:24	6100256	RLC
Sulfate	120	10	0.51	mg/L	EPA 300.0		10	10/10/16 18:33	10/13/16 13:39	6100256	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Arsenic	0.0023	0.0050	0.0016	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Barium	0.0298	0.0100	0.0004	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Boron	0.665	0.100	0.0064	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Calcium	71.7	5.00	0.311	mg/L	EPA 6020B		10	10/07/16 09:15	10/10/16 15:01	6100146	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Cobalt	0.0005	0.0100	0.0005	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Lead	0.0005	0.0050	0.0001	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Molybdenum	0.0032	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Selenium	0.0018	0.0100	0.0010	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:22	6100146	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/07/16 09:55	10/07/16 14:03	6100148	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 14, 2016

Report No.: AZJ0138

Project: CCR Event

Client ID: FBL 100516

Lab Number ID: AZJ0138-04

Date/Time Sampled: 10/5/2016 4:00:00PM

Date/Time Received: 10/6/2016 8:01:00AM

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	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 21:45	6100256	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 21:45	6100256	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 21:45	6100256	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Chromium	0.0027	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:28	6100146	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/07/16 09:55	10/07/16 14:05	6100148	MTC



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Attention: Mr. Joju Abraham

October 14, 2016

Report No.: AZJ0138

Project: CCR Event

Client ID: EQBL 100516

Lab Number ID: AZJ0138-05

Date/Time Sampled: 10/5/2016 4:10:00PM

Date/Time Received: 10/6/2016 8:01:00AM

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	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 22:06	6100256	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 22:06	6100256	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 22:06	6100256	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Boron	ND	0.100	0.0064	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/07/16 09:15	10/07/16 16:34	6100146	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/07/16 09:55	10/07/16 14:08	6100148	MTC



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October 14, 2016

**Report No.: AZJ0138**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100166 - SM 2540 C</b>											
<b>Blank (6100166-BLK1)</b>						Prepared & Analyzed: 10/07/16					
Total Dissolved Solids	ND	10	10	mg/L							
<b>LCS (6100166-BS1)</b>						Prepared & Analyzed: 10/07/16					
Total Dissolved Solids	314	10	10	mg/L	400.00		78	84-108			QL-05
<b>Duplicate (6100166-DUP1)</b>						Source: AZJ0081-01 Prepared & Analyzed: 10/07/16					
Total Dissolved Solids	213	10	10	mg/L		257			19	10	QR-03
<b>Duplicate (6100166-DUP2)</b>						Source: AZJ0213-02 Prepared & Analyzed: 10/07/16					
Total Dissolved Solids	500	10	10	mg/L		598			18	10	QR-03
<b>Batch 6100249 - SM 2540 C</b>											
<b>Blank (6100249-BLK1)</b>						Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	ND	10	10	mg/L							
<b>LCS (6100249-BS1)</b>						Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	371	10	10	mg/L	400.00		93	84-108			
<b>Duplicate (6100249-DUP1)</b>						Source: AZJ0081-01RE1 Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	185	10	10	mg/L		182			2	10	
<b>Duplicate (6100249-DUP2)</b>						Source: AZJ0213-02RE1 Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	524	10	10	mg/L		524			0	10	



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**Report No.: AZJ0138**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100256 - EPA 300.0</b>											
<b>Blank (6100256-BLK1)</b>						Prepared: 10/10/16 Analyzed: 10/11/16					
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 (6100256-BS1)</b>						Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	9.64	0.25	0.01	mg/L	10.010		96	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		100	90-110			
Sulfate	9.80	1.0	0.05	mg/L	10.020		98	90-110			
<b>Matrix Spike (6100256-MS1)</b>						Source: AZJ0081-02 Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	12.0	0.25	0.01	mg/L	10.010	2.14	99	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.020	0.06	104	90-110			
Sulfate	15.9	1.0	0.05	mg/L	10.020	6.36	95	90-110			
<b>Matrix Spike (6100256-MS2)</b>						Source: AZJ0213-01 Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	20.3	0.25	0.01	mg/L	10.010	11.1	92	90-110			
Fluoride	10.9	0.30	0.02	mg/L	10.020	0.17	107	90-110			
Sulfate	277	1.0	0.05	mg/L	10.020	292	NR	90-110			QM-02
<b>Matrix Spike Dup (6100256-MSD1)</b>						Source: AZJ0081-02 Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	12.0	0.25	0.01	mg/L	10.010	2.14	98	90-110	0.3	15	
Fluoride	10.5	0.30	0.02	mg/L	10.020	0.06	104	90-110	0.2	15	
Sulfate	15.8	1.0	0.05	mg/L	10.020	6.36	95	90-110	0.08	15	





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October 14, 2016

**Report No.: AZJ0138**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100146 - EPA 3005A</b>											
<b>Blank (6100146-BLK1)</b>						Prepared & Analyzed: 10/07/16					
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							
<b>LCS (6100146-BS1)</b>						Prepared & Analyzed: 10/07/16					
Antimony	0.105	0.0030	0.0008	mg/L	0.10000		105	80-120			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000		101	80-120			
Barium	0.0978	0.0100	0.0004	mg/L	0.10000		98	80-120			
Beryllium	0.103	0.0030	0.00008	mg/L	0.10000		103	80-120			
Boron	1.02	0.100	0.0064	mg/L	1.0000		102	80-120			
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000		102	80-120			
Calcium	1.03	0.500	0.0311	mg/L	1.0000		103	80-120			
Chromium	0.106	0.0100	0.0009	mg/L	0.10000		106	80-120			
Cobalt	0.0987	0.0100	0.0005	mg/L	0.10000		99	80-120			
Copper	0.0999	0.0050	0.0005	mg/L	0.10000		100	80-120			
Lead	0.104	0.0050	0.0001	mg/L	0.10000		104	80-120			
Molybdenum	0.105	0.0100	0.0017	mg/L	0.10000		105	80-120			
Nickel	0.101	0.0050	0.0006	mg/L	0.10000		101	80-120			
Selenium	0.104	0.0100	0.0010	mg/L	0.10000		104	80-120			
Silver	0.101	0.0050	0.0005	mg/L	0.10000		101	80-120			
Thallium	0.103	0.0010	0.0002	mg/L	0.10000		103	80-120			
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000		108	80-120			
Zinc	0.114	0.0100	0.0021	mg/L	0.10000		114	80-120			
Lithium	0.107	0.0500	0.0021	mg/L	0.10000		107	80-120			



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**Report No.: AZJ0138**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100146 - EPA 3005A</b>											
<b>Matrix Spike (6100146-MS1)</b>			<b>Source: AZJ0020-01</b>			<b>Prepared &amp; Analyzed: 10/07/16</b>					
Antimony	0.107	0.0030	0.0008	mg/L	0.10000	0.0011	105	75-125			
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	ND	106	75-125			
Barium	0.215	0.0100	0.0004	mg/L	0.10000	0.124	91	75-125			
Beryllium	0.110	0.0030	0.00008	mg/L	0.10000	ND	110	75-125			
Boron	2.33	0.100	0.0064	mg/L	1.0000	1.57	75	75-125			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125			
Calcium	85.0	25.0	1.55	mg/L	1.0000	82.0	301	75-125			QM-02
Chromium	0.110	0.0100	0.0009	mg/L	0.10000	0.0010	109	75-125			
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Copper	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125			
Lead	0.103	0.0050	0.0001	mg/L	0.10000	ND	103	75-125			
Molybdenum	0.114	0.0100	0.0017	mg/L	0.10000	ND	114	75-125			
Nickel	0.106	0.0050	0.0006	mg/L	0.10000	0.0008	105	75-125			
Selenium	0.110	0.0100	0.0010	mg/L	0.10000	0.0054	104	75-125			
Silver	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125			
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125			
Vanadium	0.110	0.0100	0.0071	mg/L	0.10000	ND	110	75-125			
Zinc	0.116	0.0100	0.0021	mg/L	0.10000	0.0037	112	75-125			
Lithium	0.114	0.0500	0.0021	mg/L	0.10000	ND	114	75-125			
<b>Matrix Spike Dup (6100146-MSD1)</b>			<b>Source: AZJ0020-01</b>			<b>Prepared &amp; Analyzed: 10/07/16</b>					
Antimony	0.106	0.0030	0.0008	mg/L	0.10000	0.0011	105	75-125	0.9	20	
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	ND	104	75-125	2	20	
Barium	0.213	0.0100	0.0004	mg/L	0.10000	0.124	89	75-125	1	20	
Beryllium	0.108	0.0030	0.00008	mg/L	0.10000	ND	108	75-125	2	20	
Boron	2.37	0.100	0.0064	mg/L	1.0000	1.57	79	75-125	2	20	
Cadmium	0.0995	0.0010	0.00007	mg/L	0.10000	ND	99	75-125	3	20	
Calcium	79.5	25.0	1.55	mg/L	1.0000	82.0	NR	75-125	7	20	QM-02
Chromium	0.110	0.0100	0.0009	mg/L	0.10000	0.0010	109	75-125	0.4	20	
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125	0.2	20	
Copper	0.101	0.0050	0.0005	mg/L	0.10000	ND	101	75-125	2	20	
Lead	0.0989	0.0050	0.0001	mg/L	0.10000	ND	99	75-125	4	20	
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000	ND	109	75-125	4	20	
Nickel	0.104	0.0050	0.0006	mg/L	0.10000	0.0008	103	75-125	2	20	
Selenium	0.108	0.0100	0.0010	mg/L	0.10000	0.0054	102	75-125	2	20	
Silver	0.0979	0.0050	0.0005	mg/L	0.10000	ND	98	75-125	4	20	
Thallium	0.0989	0.0010	0.0002	mg/L	0.10000	ND	99	75-125	4	20	
Vanadium	0.111	0.0100	0.0071	mg/L	0.10000	ND	111	75-125	0.3	20	
Zinc	0.112	0.0100	0.0021	mg/L	0.10000	0.0037	108	75-125	4	20	
Lithium	0.111	0.0500	0.0021	mg/L	0.10000	ND	111	75-125	3	20	



**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

October 14, 2016

**Report No.: AZJ0138**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100146 - EPA 3005A</b>											
<b>Post Spike (6100146-PS1)</b>				<b>Source: AZJ0020-01</b>			<b>Prepared &amp; Analyzed: 10/07/16</b>				
Antimony	103			ug/L	100.00	1.05	102	80-120			
Arsenic	105			ug/L	100.00	0.503	105	80-120			
Barium	216			ug/L	100.00	124	91	80-120			
Beryllium	106			ug/L	100.00	0.0224	106	80-120			
Boron	2380			ug/L	1000.0	1570	81	80-120			
Cadmium	101			ug/L	100.00	0.0031	101	80-120			
Calcium	79200			ug/L	1000.0	82000	NR	80-120			QM-02
Chromium	114			ug/L	100.00	0.994	113	80-120			
Cobalt	105			ug/L	100.00	0.164	105	80-120			
Copper	103			ug/L	100.00	0.109	103	80-120			
Lead	99.5			ug/L	100.00	0.0535	99	80-120			
Molybdenum	110			ug/L	100.00	0.892	109	80-120			
Nickel	106			ug/L	100.00	0.802	105	80-120			
Selenium	108			ug/L	100.00	5.42	103	80-120			
Silver	101			ug/L	100.00	0.0188	101	80-120			
Thallium	101			ug/L	100.00	0.181	101	80-120			
Vanadium	112			ug/L	100.00	0.669	111	80-120			
Zinc	111			ug/L	100.00	3.72	108	80-120			
Lithium	107			ug/L	100.00	0.481	106	80-120			

**Batch 6100148 - EPA 7470A**

<b>Blank (6100148-BLK1)</b>				<b>Prepared &amp; Analyzed: 10/07/16</b>							
Mercury	ND	0.00020	0.000041	mg/L							
<b>LCS (6100148-BS1)</b>				<b>Prepared &amp; Analyzed: 10/07/16</b>							
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

October 14, 2016

**Report No.: AZJ0138**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100148 - EPA 7470A</b>											
<b>Duplicate (6100148-DUP1)</b>			<b>Source: AZI0791-03</b>			<b>Prepared &amp; Analyzed: 10/07/16</b>					
Mercury	ND	0.00050	0.000041	mg/L		ND				20	
<b>Matrix Spike (6100148-MS1)</b>			<b>Source: AZJ0138-03</b>			<b>Prepared &amp; Analyzed: 10/07/16</b>					
Mercury	0.00244	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125			
<b>Matrix Spike Dup (6100148-MSD1)</b>			<b>Source: AZJ0138-03</b>			<b>Prepared &amp; Analyzed: 10/07/16</b>					
Mercury	0.00243	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125	0.5	20	
<b>Post Spike (6100148-PS1)</b>			<b>Source: AZJ0138-03</b>			<b>Prepared &amp; Analyzed: 10/07/16</b>					
Mercury	1.70			ug/L	1.6667	0.0104	101	80-120			



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 14, 2016

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## Legend

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### 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

- 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.
- QL-05** Laboratory Control Sample recovery outside control limits. See Case Narrative.
- 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, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED					LAB NUMBER	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:						P- PLASTIC	1- HCl, ≤6°C	A- AMBER GLASS	2- H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REPORT TO:					PRESERVATION:					G- CLEAR GLASS	3- HNO <sub>3</sub>	V- VOA VIAL	4- NaOH, ≤6°C	S- STERILE	5- NaOH/ZnAc, ≤8°C
REQUESTED COMPLETION DATE:					# of					O- OTHER	6- Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	*MATRIX CODES:			
PROJECT NAME/STATE:					CONTAINERS	↓					OW- DRINKING WATER	S- SOIL			
PROJECT #:						↓					WW- WASTEWATER	SL- SLUDGE			
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION					GW- GROUNDWATER	SD- SOLID				
												SW- SURFACE WATER	A- AIR		
												ST- STORM WATER	L- LIQUID		
												W- WATER	P- PRODUCT		
													REMARKS/ADDITIONAL INFORMATION		
10/5/16	1805	GW		X	BEUC-11	3	1	1	1						
10/5/16	1419	GW		X	BEUC-9	3	1	1	2						
10/5/16	-	GW		X	Dip-2	3	1	1	1						
10/5/16	1600	W		X	E08L100516	3	1	1	1						
10/5/16	1610	W		X	E08L100516	3	1	1	1						
SAMPLED BY AND TITLE:					RELINQUISHED BY:					DATE/TIME:		FOR LAB USE ONLY			
RECEIVED BY:					RELINQUISHED BY:					DATE/TIME:		LAB #:			
RECEIVED BY LAB:					SAMPLE SHIPPED VIA:					DATE/TIME:		Entered into LIMS:			
Checked:					Custody Seal:					DATE/TIME:		Tracking #:			
Temperature:					# of Coolers:					Cooler ID:					
Min: Max:					Intact Broken: Not Present										



**PACE ANALYTICAL SERVICES, INC.**

Environmental Monitoring & Laboratory Analysis  
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**LOG-IN CHECKLIST**

**Printed: 10/14/2016 8:27:07AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 10/06/16 08:01

**Work Order:** AZJ0138

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 16

**Minimum Temp(C):** 2.0

**Maximum Temp(C):** 2.0

**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:**

November 16, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198504

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on October 07, 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 Bowen Ash Pond CCR  
Pace Project No.: 30198504

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198504

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30198504001	BGWC-11	Water	10/05/16 15:05	10/07/16 09:35
30198504002	BGWC-9	Water	10/05/16 14:19	10/07/16 09:35
30198504003	Dup-2	Water	10/05/16 00:01	10/07/16 09:35
30198504004	FBL100516	Water	10/05/16 16:00	10/07/16 09:35
30198504005	EQBL100516	Water	10/05/16 16:10	10/07/16 09:35

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198504

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30198504001	BGWC-11	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198504002	BGWC-9	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198504003	Dup-2	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198504004	FBL100516	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198504005	EQBL100516	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: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198504

Sample: <b>BGWC-11</b>		Lab ID: <b>30198504001</b>	Collected: 10/05/16 15:05	Received: 10/07/16 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.143 ± 0.148 (0.276)</b> C:72% T:NA	pCi/L	10/23/16 14:26	13982-63-3		
Radium-228	EPA 9320	<b>-0.00715 ± 0.334 (0.779)</b> C:77% T:74%	pCi/L	10/25/16 11:39	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.143 ± 0.482 (1.06)</b>	pCi/L	11/01/16 11:53	7440-14-4		

Sample: <b>BGWC-9</b>		Lab ID: <b>30198504002</b>	Collected: 10/05/16 14:19	Received: 10/07/16 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.233 ± 0.178 (0.312)</b> C:88% T:NA	pCi/L	10/23/16 14:26	13982-63-3		
Radium-228	EPA 9320	<b>0.712 ± 0.409 (0.742)</b> C:71% T:87%	pCi/L	11/07/16 12:11	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.945 ± 0.587 (1.05)</b>	pCi/L	11/08/16 15:40	7440-14-4		

Sample: <b>Dup-2</b>		Lab ID: <b>30198504003</b>	Collected: 10/05/16 00:01	Received: 10/07/16 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.198 ± 0.168 (0.310)</b> C:90% T:NA	pCi/L	10/23/16 14:26	13982-63-3		
Radium-228	EPA 9320	<b>0.250 ± 0.368 (0.793)</b> C:62% T:80%	pCi/L	11/07/16 15:29	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.448 ± 0.536 (1.10)</b>	pCi/L	11/08/16 15:40	7440-14-4		

Sample: <b>FBL100516</b>		Lab ID: <b>30198504004</b>	Collected: 10/05/16 16:00	Received: 10/07/16 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.0779 ± 0.151 (0.347)</b> C:86% T:NA	pCi/L	10/23/16 14:26	13982-63-3		
Radium-228	EPA 9320	<b>0.0962 ± 0.366 (0.832)</b> C:66% T:77%	pCi/L	11/07/16 15:29	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.174 ± 0.517 (1.18)</b>	pCi/L	11/08/16 15:40	7440-14-4		

Sample: <b>EQBL100516</b>		Lab ID: <b>30198504005</b>	Collected: 10/05/16 16:10	Received: 10/07/16 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.131 ± 0.190 (0.416)</b> C:84% T:NA	pCi/L	10/23/16 14:27	13982-63-3		
Radium-228	EPA 9320	<b>0.0321 ± 0.274 (0.639)</b> C:73% T:80%	pCi/L	11/07/16 15:31	15262-20-1		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198504

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**Sample: EQBL100516**      **Lab ID: 30198504005**      Collected: 10/05/16 16:10      Received: 10/07/16 09:35      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>0.163 ± 0.464 (1.06)</b>	pCi/L	11/08/16 15:40	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198504

QC Batch: 236797 Analysis Method: EPA 9320

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

Associated Lab Samples: 30198504002, 30198504003, 30198504004, 30198504005

METHOD BLANK: 1163885 Matrix: Water

Associated Lab Samples: 30198504002, 30198504003, 30198504004, 30198504005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.589 ± 0.374 (0.694) C:70% T:87%	pCi/L	11/07/16 12:11	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198504

QC Batch: 236796

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30198504001

METHOD BLANK: 1163884

Matrix: Water

Associated Lab Samples: 30198504001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.100 ± 0.361 (0.864) C:62% T:85%	pCi/L	10/25/16 11:36	

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: Plant Bowen Ash Pond CCR

Pace Project No.: 30198504

QC Batch: 236795

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30198504001, 30198504002, 30198504003, 30198504004, 30198504005

METHOD BLANK: 1163883

Matrix: Water

Associated Lab Samples: 30198504001, 30198504002, 30198504003, 30198504004, 30198504005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0446 ± 0.0724 (0.264) C:92% T:NA	pCi/L	10/23/16 14:19	

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198504

### 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#: 30198504



30198504



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

CHAIN OF CUSTODY RECORD

CLIENT NAME:					ANALYSIS REQUESTED										L A B  I D N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:	PRESERVATION:										P - PLASTIC	1 - HCl, ≤6°C		
REPORT TO:					# of								A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C					
REQUESTED COMPLETION DATE:					C O N T A I N E R S  ↓								G - CLEAR GLASS	3 - HNO <sub>3</sub>					
PROJECT NAME/STATE:															V - VOA VIAL	4 - NaOH, ≤6°C			
PROJECT #:															S - STERILE	5 - NaOH/ZnAc, ≤6°C			
															O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C			
															*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				
10/5/16	1505	GW		X	Bow-11	3													001
10/5/16	1419	GW		X	Bow-9	3													002
10/5/16	-	GW		X	Dip-2	3													003
10/5/16	1600	W		X	FRL160516	3													004
10/5/16	1610	W		X	EORL160516	3													005

SAMPLED BY AND TITLE:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		FOR LAB USE ONLY	
RECEIVED BY:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		LAB #:	
RECEIVED BY LAB:		DATE/TIME:		SAMPLE SHIPPED VIA:		DATE/TIME:		Entered into LIMS:	
pH checked:		Ice:		Temperature:		Custody Seal:		Tracking #:	
Yes No NA		Yes No NA		Min: Max:		Intact Broken Not Present			
						# of Coolers Cooler ID:			

Sample Condition Upon Receipt Pittsburgh

30198504



Client Name: Pace Georgia Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 681250996814

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

Thermometer Used NIA Type of Ice: Wet Blue None

Cooler Temperature Observed Temp NIA °C Correction Factor: NIA °C Final Temp: NIA °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KK 10-7-16

Comments:	Yes	No	N/A		
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:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.	
-Includes date/time/ID/Analysis Matrix: <u>W4</u>					
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.	
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.	
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>PH &lt; 2</u>	
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>KK</u>	Date/time of preservation
Lot # of added preservative					
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.	
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.	
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>KK</u>	Date: <u>10-7-16</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-228  
Analyst: JLW  
Date: 10/19/2016  
Worklist: 31919  
Matrix: DW

Method Blank Assessment		
MB Sample ID	1163885	
MB concentration:	0.589	
M/B Counting Uncertainty:	0.359	
MB MDC:	0.694	
MB Numerical Performance Indicator:	3.21	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCS/D (Y or N)?	N
		LCS31919	LCS031919
Count Date:	11/7/2016		
Spike I.D.:	16-025		
Spike Concentration (pCi/mL):	25.222		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.802		
Target Conc. (pCi/L, g, F):	6.290		
Uncertainty (Calculated):	0.453		
Result (pCi/L, g, F):	8.283		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.001		
Numerical Performance Indicator:	3.56		
Percent Recovery:	131.69%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30198504002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30198504002DUP	
Sample Result (pCi/L, g, F):	0.712	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.388	
Sample Duplicate Result (pCi/L, g, F):	1.166	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.397	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.605	30198504002
Duplicate RPD:	48.41%	30198504002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*LJW*  
*dupres*



## Quality Control Sample Performance Assessment

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

Test: Ra-228  
Analyst: JLW  
Date: 10/19/2016  
Worklist: 31918  
Matrix: DW

Method Blank Assessment		
MB Sample ID	1163884	
MB concentration:	-0.100	
M/B Counting Uncertainty:	0.360	
MB MDC:	0.864	
MB Numerical Performance Indicator:	-0.54	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
	LCS31918		LCSD31918
Count Date:	10/25/2016		
Spike I.D.:	16-025		
Spike Concentration (pCi/mL):	25.330		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.805		
Target Conc. (pCi/L, g, F):	6.294		
Uncertainty (Calculated):	0.453		
Result (pCi/L, g, F):	6.127		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.737		
Numerical Performance Indicator:	-0.38		
Percent Recovery:	97.35%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30197905003	
Duplicate Sample I.D.:	30197905003DUP	
Sample Result (pCi/L, g, F):	0.094	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.388	
Sample Duplicate Result (pCi/L, g, F):	0.841	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.385	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.678	30197905003
Duplicate RPD:	159.86%	30197905003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Handwritten signature/initials*



## Quality Control Sample Performance Assessment

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

Test: Ra-226  
Analyst: LAL  
Date: 10/22/2016  
Worklist: 31917  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1163883
MB concentration:	-0.045
M/B Counting Uncertainty:	0.072
MB MDC:	0.264
MB Numerical Performance Indicator:	-1.21
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS31917	LCSD31917
Count Date:	10/24/2016		
Spike I.D.:	16-026		
Spike Concentration (pCi/mL):	44.675		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.508		
Target Conc. (pCi/L, g, F):	8.800		
Uncertainty (Calculated):	0.414		
Result (pCi/L, g, F):	6.997		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.672		
Numerical Performance Indicator:	-4.48		
Percent Recovery:	79.51%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30198504002	
Duplicate Sample I.D.	30198504002DUP	
Sample Result (pCi/L, g, F):	0.233	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.175	
Sample Duplicate Result (pCi/L, g, F):	-0.046	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.134	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	2.484	30198504002
Duplicate RPD:	298.18%	30198504002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LAL*  
*Quinn*



**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: AZJ0213**

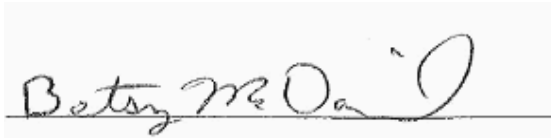
**October 17, 2016**

**Project: CCR Event**

**Project #: Plant Bowen**

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:



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

October 17, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-7	AZJ0213-01	Ground Water	10/06/16 09:50	10/07/16 08:01
BGWC-12	AZJ0213-02	Ground Water	10/06/16 14:44	10/07/16 08:01
FBL100616	AZJ0213-03	Water	10/06/16 16:15	10/07/16 08:01
EQBL100616	AZJ0213-04	Water	10/06/16 16:25	10/07/16 08:01





**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

October 17, 2016

Report No.: AZJ0213

Project: CCR Event

Client ID: BGWC-7

Lab Number ID: AZJ0213-01

Date/Time Sampled: 10/6/2016 9:50:00AM

Date/Time Received: 10/7/2016 8:01:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	906	25	10	mg/L	SM 2540 C		1	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	11	0.25	0.01	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 22:28	6100256	RLC
Fluoride	0.17	0.30	0.02	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 22:28	6100256	RLC
Sulfate	440	10	0.51	mg/L	EPA 300.0		10	10/10/16 18:33	10/13/16 19:47	6100256	RNB
<b>Metals, Total</b>											
Antimony	0.0015	0.0030	0.0008	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Barium	0.0404	0.0100	0.0004	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Boron	2.06	1.00	0.0642	mg/L	EPA 6020B		10	10/11/16 09:00	10/13/16 10:21	6100247	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Calcium	147	50.0	3.11	mg/L	EPA 6020B		100	10/11/16 09:00	10/13/16 10:15	6100247	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Molybdenum	0.0117	0.0100	0.0017	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Lithium	0.0102	0.0500	0.0021	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 22:22	6100247	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 13:24	6100198	MTC



**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

October 17, 2016

Report No.: AZJ0213

Project: CCR Event

Client ID: BGWC-12

Lab Number ID: AZJ0213-02

Date/Time Sampled: 10/6/2016 2:44:00PM

Date/Time Received: 10/7/2016 8:01:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	524	25	10	mg/L	SM 2540 C		1	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	41	0.25	0.01	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 23:10	6100256	RLC
Fluoride	0.06	0.30	0.02	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 23:10	6100256	RLC
Sulfate	200	10	0.51	mg/L	EPA 300.0		10	10/10/16 18:33	10/13/16 20:09	6100256	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Barium	0.0308	0.0100	0.0004	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Boron	0.863	0.100	0.0064	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Calcium	78.7	5.00	0.311	mg/L	EPA 6020B		10	10/11/16 09:00	10/13/16 10:27	6100247	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:28	6100247	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 13:26	6100198	MTC



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 17, 2016

Report No.: AZJ0213

Project: CCR Event

Client ID: FBL100616

Lab Number ID: AZJ0213-03

Date/Time Sampled: 10/6/2016 4:15:00PM

Date/Time Received: 10/7/2016 8:01:00AM

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	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	0.05	0.25	0.01	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 23:31	6100256	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 23:31	6100256	RLC
Sulfate	0.06	1.0	0.05	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 23:31	6100256	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Boron	0.0102	0.100	0.0064	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Calcium	0.0379	0.500	0.0311	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:34	6100247	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 13:28	6100198	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 17, 2016

Report No.: AZJ0213

Project: CCR Event

Client ID: EQBL100616

Lab Number ID: AZJ0213-04

Date/Time Sampled: 10/6/2016 4:25:00PM

Date/Time Received: 10/7/2016 8:01:00AM

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	10/11/16 11:25	10/11/16 11:25	6100249	JPT
<b>Inorganic Anions</b>											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	10/10/16 18:33	10/11/16 23:52	6100256	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 23:52	6100256	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	10/10/16 18:33	10/11/16 23:52	6100256	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Boron	0.0069	0.100	0.0064	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:39	6100247	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/10/16 09:35	10/10/16 13:31	6100198	MTC



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October 17, 2016

**Report No.: AZJ0213**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100166 - SM 2540 C</b>											
<b>Blank (6100166-BLK1)</b>						Prepared & Analyzed: 10/07/16					
Total Dissolved Solids	ND	10	10	mg/L							
<b>LCS (6100166-BS1)</b>						Prepared & Analyzed: 10/07/16					
Total Dissolved Solids	314	10	10	mg/L	400.00		78	84-108			QL-05
<b>Duplicate (6100166-DUP1)</b>						Source: AZJ0081-01 Prepared & Analyzed: 10/07/16					
Total Dissolved Solids	213	10	10	mg/L		257			19	10	QR-03
<b>Duplicate (6100166-DUP2)</b>						Source: AZJ0213-02 Prepared & Analyzed: 10/07/16					
Total Dissolved Solids	500	10	10	mg/L		598			18	10	QR-03
<b>Batch 6100249 - SM 2540 C</b>											
<b>Blank (6100249-BLK1)</b>						Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	ND	10	10	mg/L							
<b>LCS (6100249-BS1)</b>						Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	371	10	10	mg/L	400.00		93	84-108			
<b>Duplicate (6100249-DUP1)</b>						Source: AZJ0081-01RE1 Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	185	10	10	mg/L		182			2	10	
<b>Duplicate (6100249-DUP2)</b>						Source: AZJ0213-02RE1 Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	524	10	10	mg/L		524			0	10	



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October 17, 2016

**Report No.: AZJ0213**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100256 - EPA 300.0</b>											
<b>Blank (6100256-BLK1)</b>						Prepared: 10/10/16 Analyzed: 10/11/16					
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 (6100256-BS1)</b>						Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	9.64	0.25	0.01	mg/L	10.010		96	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		100	90-110			
Sulfate	9.80	1.0	0.05	mg/L	10.020		98	90-110			
<b>Matrix Spike (6100256-MS1)</b>						Source: AZJ0081-02 Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	12.0	0.25	0.01	mg/L	10.010	2.14	99	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.020	0.06	104	90-110			
Sulfate	15.9	1.0	0.05	mg/L	10.020	6.36	95	90-110			
<b>Matrix Spike (6100256-MS2)</b>						Source: AZJ0213-01 Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	20.3	0.25	0.01	mg/L	10.010	11.1	92	90-110			
Fluoride	10.9	0.30	0.02	mg/L	10.020	0.17	107	90-110			
Sulfate	277	1.0	0.05	mg/L	10.020	292	NR	90-110			QM-02
<b>Matrix Spike Dup (6100256-MSD1)</b>						Source: AZJ0081-02 Prepared: 10/10/16 Analyzed: 10/11/16					
Chloride	12.0	0.25	0.01	mg/L	10.010	2.14	98	90-110	0.3	15	
Fluoride	10.5	0.30	0.02	mg/L	10.020	0.06	104	90-110	0.2	15	
Sulfate	15.8	1.0	0.05	mg/L	10.020	6.36	95	90-110	0.08	15	



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**Report No.: AZJ0213**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100198 - EPA 7470A</b>											
<b>Blank (6100198-BLK1)</b>						Prepared & Analyzed: 10/10/16					
Mercury	ND	0.00030	0.000041	mg/L							
<b>LCS (6100198-BS1)</b>						Prepared & Analyzed: 10/10/16					
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			
<b>Matrix Spike (6100198-MS1)</b>						Source: AZJ0020-04 Prepared & Analyzed: 10/10/16					
Mercury	0.00241	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125			
<b>Matrix Spike Dup (6100198-MSD1)</b>						Source: AZJ0020-04 Prepared & Analyzed: 10/10/16					
Mercury	0.00249	0.00050	0.000041	mg/L	2.5000E-3	ND	100	75-125	3	20	
<b>Post Spike (6100198-PS1)</b>						Source: AZJ0020-04 Prepared & Analyzed: 10/10/16					
Mercury	1.77			ug/L	1.6667	0.00728	106	80-120			
<b>Batch 6100247 - EPA 3005A</b>											
<b>Blank (6100247-BLK1)</b>						Prepared: 10/11/16 Analyzed: 10/12/16					
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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Attention: Mr. Joju Abraham

October 17, 2016

**Report No.: AZJ0213**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100247 - EPA 3005A</b>											
<b>LCS (6100247-BS1)</b>						Prepared: 10/11/16 Analyzed: 10/12/16					
Antimony	0.113	0.0030	0.0008	mg/L	0.10000		113	80-120			
Arsenic	0.103	0.0050	0.0016	mg/L	0.10000		103	80-120			
Barium	0.102	0.0100	0.0004	mg/L	0.10000		102	80-120			
Beryllium	0.0978	0.0030	0.00008	mg/L	0.10000		98	80-120			
Boron	0.995	0.100	0.0064	mg/L	1.0000		100	80-120			
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000		105	80-120			
Calcium	0.970	0.500	0.0311	mg/L	1.0000		97	80-120			
Chromium	0.106	0.0100	0.0009	mg/L	0.10000		106	80-120			
Cobalt	0.106	0.0100	0.0005	mg/L	0.10000		106	80-120			
Copper	0.106	0.0050	0.0005	mg/L	0.10000		106	80-120			
Lead	0.104	0.0050	0.0001	mg/L	0.10000		104	80-120			
Molybdenum	0.105	0.0100	0.0017	mg/L	0.10000		105	80-120			
Nickel	0.104	0.0050	0.0006	mg/L	0.10000		104	80-120			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120			
Silver	0.106	0.0050	0.0005	mg/L	0.10000		106	80-120			
Thallium	0.104	0.0010	0.0002	mg/L	0.10000		104	80-120			
Vanadium	0.102	0.0100	0.0071	mg/L	0.10000		102	80-120			
Zinc	0.107	0.0100	0.0021	mg/L	0.10000		107	80-120			
Lithium	0.0966	0.0500	0.0021	mg/L	0.10000		97	80-120			
<b>Matrix Spike (6100247-MS1)</b>											
				<b>Source: AZJ0247-01</b>		Prepared: 10/11/16 Analyzed: 10/12/16					
Antimony	0.118	0.0030	0.0008	mg/L	0.10000	ND	118	75-125			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	ND	104	75-125			
Barium	0.150	0.0100	0.0004	mg/L	0.10000	0.0427	107	75-125			
Beryllium	0.0997	0.0030	0.00008	mg/L	0.10000	ND	100	75-125			
Boron	2.23	0.100	0.0064	mg/L	1.0000	1.33	89	75-125			
Cadmium	0.106	0.0010	0.00007	mg/L	0.10000	0.0008	105	75-125			
Calcium	83.3	25.0	1.55	mg/L	1.0000	84.7	NR	75-125			QM-02
Chromium	0.107	0.0100	0.0009	mg/L	0.10000	0.0011	106	75-125			
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	0.0005	103	75-125			
Copper	0.0999	0.0050	0.0005	mg/L	0.10000	ND	100	75-125			
Lead	0.104	0.0050	0.0001	mg/L	0.10000	ND	104	75-125			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000	ND	108	75-125			
Nickel	0.105	0.0050	0.0006	mg/L	0.10000	0.0015	103	75-125			
Selenium	0.0989	0.0100	0.0010	mg/L	0.10000	ND	99	75-125			
Silver	0.105	0.0050	0.0005	mg/L	0.10000	ND	105	75-125			
Thallium	0.105	0.0010	0.0002	mg/L	0.10000	ND	105	75-125			
Vanadium	0.109	0.0100	0.0071	mg/L	0.10000	ND	109	75-125			
Zinc	0.108	0.0100	0.0021	mg/L	0.10000	0.0045	103	75-125			
Lithium	0.101	0.0500	0.0021	mg/L	0.10000	ND	101	75-125			





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Attention: Mr. Joju Abraham

October 17, 2016

**Report No.: AZJ0213**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100247 - EPA 3005A</b>											
<b>Matrix Spike Dup (6100247-MSD1)</b>			<b>Source: AZJ0247-01</b>			<b>Prepared: 10/11/16 Analyzed: 10/12/16</b>					
Antimony	0.116	0.0030	0.0008	mg/L	0.10000	ND	116	75-125	1	20	
Arsenic	0.107	0.0050	0.0016	mg/L	0.10000	ND	107	75-125	3	20	
Barium	0.150	0.0100	0.0004	mg/L	0.10000	0.0427	108	75-125	0.5	20	
Beryllium	0.0949	0.0030	0.00008	mg/L	0.10000	ND	95	75-125	5	20	
Boron	2.13	0.100	0.0064	mg/L	1.0000	1.33	79	75-125	5	20	
Cadmium	0.107	0.0010	0.00007	mg/L	0.10000	0.0008	106	75-125	0.5	20	
Calcium	91.5	25.0	1.55	mg/L	1.0000	84.7	673	75-125	9	20	QM-02
Chromium	0.109	0.0100	0.0009	mg/L	0.10000	0.0011	108	75-125	2	20	
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	0.0005	103	75-125	0.03	20	
Copper	0.103	0.0050	0.0005	mg/L	0.10000	ND	103	75-125	3	20	
Lead	0.102	0.0050	0.0001	mg/L	0.10000	ND	102	75-125	2	20	
Molybdenum	0.110	0.0100	0.0017	mg/L	0.10000	ND	110	75-125	2	20	
Nickel	0.107	0.0050	0.0006	mg/L	0.10000	0.0015	106	75-125	3	20	
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	2	20	
Silver	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125	3	20	
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	ND	104	75-125	1	20	
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125	0.6	20	
Zinc	0.112	0.0100	0.0021	mg/L	0.10000	0.0045	108	75-125	4	20	
Lithium	0.0979	0.0500	0.0021	mg/L	0.10000	ND	98	75-125	3	20	
<b>Post Spike (6100247-PS1)</b>			<b>Source: AZJ0247-01</b>			<b>Prepared: 10/11/16 Analyzed: 10/12/16</b>					
Antimony	108			ug/L	100.00	0.164	107	80-120			
Arsenic	105			ug/L	100.00	0.173	105	80-120			
Barium	146			ug/L	100.00	42.7	103	80-120			
Beryllium	100			ug/L	100.00	0.0200	100	80-120			
Boron	2290			ug/L	1000.0	1330	95	80-120			
Cadmium	103			ug/L	100.00	0.750	103	80-120			
Calcium	92200			ug/L	1000.0	84700	751	80-120			QM-02
Chromium	105			ug/L	100.00	1.05	104	80-120			
Cobalt	100			ug/L	100.00	0.537	99	80-120			
Copper	102			ug/L	100.00	0.337	102	80-120			
Lead	102			ug/L	100.00	0.0647	102	80-120			
Molybdenum	105			ug/L	100.00	0.278	105	80-120			
Nickel	103			ug/L	100.00	1.50	102	80-120			
Selenium	99.5			ug/L	100.00	-0.644	100	80-120			
Silver	101			ug/L	100.00	0.0030	101	80-120			
Thallium	102			ug/L	100.00	0.113	102	80-120			
Vanadium	108			ug/L	100.00	0.301	108	80-120			
Zinc	109			ug/L	100.00	4.49	104	80-120			
Lithium	99.8			ug/L	100.00	0.206	100	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

October 17, 2016

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## Legend

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### 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

- 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.
- QL-05** Laboratory Control Sample recovery outside control limits. See Case Narrative.
- 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, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 · FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED					L A B  I D N U M B E R  ↓	CONTAINER TYPE		PRESERVATION						
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE	P	P	P											
Southern Company Services											P - PLASTIC	1 - HCl, ≤5°C							
241 Ralph McGill Blvd SE B101E											A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤5°C							
Atlanta GA 30308											G - CLEAR GLASS	3 - HNO <sub>3</sub>							
REPORT TO: Julie Abraham											V - VOA VIAL	4 - NaOH, ≤5°C							
REQUESTED COMPLETION DATE:											S - STERILE	5 - NaOH/ZnAc, ≤5°C							
PROJECT NAME/STATE: Plant Bowen											D - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤5°C							
Ash Pond CER											7 - ≤5°C not frozen								
PROJECT #:											*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 O M P	G R A B	SAMPLE IDENTIFICATION	# of													
10/6/16	0950	GW		✓	BGWC-7	3								1					
10/6/16	1444	GW		✗	BGWC-12	3								2					
10/6/16	1615	W		✗	FBL100616	3								3					
10/6/16	1625	W		✓	EQBL100616	3								4					
SAMPLED BY AND TITLE:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:				
S. Matthews/Henrietta					10/6/16 1700					[Signature]					10/6/16 1710				
RECEIVED BY:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:				
[Signature]					10/6/16 @ 1710					[Signature]					10/7/16 @ 0901				
RECEIVED BY LAB:					DATE/TIME:					SAMPLE SHIPPED VIA:					FOR LAB USE ONLY				
Mike Nguyen					10/07/16 0801					UPS FED-EX USPS COURIER CLIENT OTHER FS					LAB #: AZJ0213				
Temp checked:					Temperature:					Custody Seal:					Tracking #:				
Yes No NA					1°C Min 1°C Max					Intact Broken Not Present					Entered into LIMS (H)				

13 OF 13



# 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: 10/17/2016 3:18:27PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 10/07/16 08:01

Work Order: AZJ0213

Logged In By: Charles Hawks

### OBSERVATIONS

#Samples: 4

#Containers: 12

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:

November 16, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198714

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on October 10, 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 Bowen Ash Pond CCR

Pace Project No.: 30198714

### 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 Bowen Ash Pond CCR

Pace Project No.: 30198714

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30198714001	BGWC-7	Water	10/06/16 09:50	10/10/16 09:45
30198714002	BGWC-12	Water	10/06/16 14:44	10/10/16 09:45
30198714003	FBL100616	Water	10/06/16 16:15	10/10/16 09:45
30198714004	EQBL100616	Water	10/06/16 16:25	10/10/16 09:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198714

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30198714001	BGWC-7	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198714002	BGWC-12	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198714003	FBL100616	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198714004	EQBL100616	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: Plant Bowen Ash Pond CCR

Pace Project No.: 30198714

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.574 ± 0.257 (0.338)</b> C:90% T:NA	pCi/L	10/23/16 15:52	13982-63-3	
Radium-228		EPA 9320	<b>1.86 ± 0.647 (0.956)</b> C:70% T:82%	pCi/L	11/07/16 11:37	15262-20-1	
Total Radium		Total Radium Calculation	<b>2.43 ± 0.904 (1.29)</b>	pCi/L	11/08/16 15:40	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>-0.0702 ± 0.0746 (0.291)</b> C:91% T:NA	pCi/L	10/23/16 15:52	13982-63-3	
Radium-228		EPA 9320	<b>1.57 ± 0.694 (1.20)</b> C:68% T:78%	pCi/L	11/07/16 11:37	15262-20-1	
Total Radium		Total Radium Calculation	<b>1.57 ± 0.769 (1.49)</b>	pCi/L	11/08/16 15:40	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>-0.0357 ± 0.0755 (0.267)</b> C:84% T:NA	pCi/L	10/23/16 15:52	13982-63-3	
Radium-228		EPA 9320	<b>1.49 ± 0.619 (1.03)</b> C:67% T:86%	pCi/L	11/07/16 11:37	15262-20-1	
Total Radium		Total Radium Calculation	<b>1.49 ± 0.695 (1.30)</b>	pCi/L	11/08/16 15:40	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>-0.0652 ± 0.0624 (0.268)</b> C:88% T:NA	pCi/L	10/23/16 15:52	13982-63-3	
Radium-228		EPA 9320	<b>0.496 ± 0.397 (0.770)</b> C:65% T:76%	pCi/L	11/07/16 16:10	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.496 ± 0.459 (1.04)</b>	pCi/L	11/08/16 15:40	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198714

QC Batch: 236797 Analysis Method: EPA 9320

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

Associated Lab Samples: 30198714001, 30198714002, 30198714003, 30198714004

METHOD BLANK: 1163885 Matrix: Water

Associated Lab Samples: 30198714001, 30198714002, 30198714003, 30198714004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.589 ± 0.374 (0.694) C:70% T:87%	pCi/L	11/07/16 12:11	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198714

---

QC Batch:	236795	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30198714001, 30198714002, 30198714003, 30198714004		

---

METHOD BLANK:	1163883	Matrix:	Water
Associated Lab Samples:	30198714001, 30198714002, 30198714003, 30198714004		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0446 ± 0.0724 (0.264) C:92% T:NA	pCi/L	10/23/16 14:19	

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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## QUALIFIERS

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198714

### 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, 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 McGill Blvd SE B10185  
Atlanta GA 30308  
 REPORT TO: Jojo Abraham CC: Mania Padilla  
Heath McLenette  
 REQUESTED COMPLETION DATE: PO #: GPC10624198  
 PROJECT NAME/STATE: Plant Bowen  
Ash Pond CCR  
 PROJECT #:

# of	ANALYSIS REQUESTED						
	CONTAINER TYPE:	P	P	P			
	PRESERVATION:	3	7	3			
CONTAINERS							
	Metals App III + IV						
	CPA 6020 + EPA 7470						
	Cl, F, SO <sub>4</sub> CPA 300						
	TDS SM 2540C						
	Radium 226 + 228						
	SW - 846 4315 + 9320						

LAB	CONTAINER TYPE	PRESERVATION
		P - PLASTIC
	A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C
	G - CLEAR GLASS	3 - HNO <sub>3</sub>
	V - VOA VIAL	4 - NaOH, ≤6°C
	S - STERILE	5 - NaOH/ZnAc, ≤6°C
	O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C
		7 - ≤6°C not frozen
*MATRIX CODES:		
	DW - DRINKING WATER	S - SOIL
	WW - WASTEWATER	SL - SLUDGE
	GW - GROUNDWATER	SD - SOLID
	SW - SURFACE WATER	A - AIR
	ST - STORM WATER	L - LIQUID
	W - WATER	P - PRODUCT
REMARKS/ADDITIONAL INFORMATION		
		001
		002
		003
		004

WO#: 30198714



SAMPLED BY AND TITLE: Ernest Howard/Klein Stinson DATE/TIME: 10/6/16 1700  
 RECEIVED BY: Kenneth Stinson DATE/TIME: 10/6/16 @ 1710  
 RECEIVED BY LAB: Mike Nguyen DATE/TIME:

RELINQUISHED BY: [Signature] DATE/TIME: 10/6/16 1710  
 RELINQUISHED BY: Kenneth Stinson DATE/TIME: 10/7/16 @ 0801  
 SAMPLE SHIPPED VIA:  
 UPS FED-EX USPS COURIER CLIENT OTHER FS  
 Custody Seal: Intact Broken Not Present # of Coolers: Cooler ID:

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

pH checked: Yes No NA Ice: Yes No NA Temperature: Min: Max:

received: Klein E. Hill 10-10-16 0945

Sample Condition Upon Receipt Pittsburgh



30198714

Client Name: Pace Georgia Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5099 7063

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

Thermometer Used NIA Type of Ice: Wet Blue None

Cooler Temperature Observed Temp NIA °C Correction Factor: NIA °C Final Temp: NIA °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KH 10-11-16

Comments:	Yes	No	N/A	
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/Analysis Matrix: <u>WT</u>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	10.
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>PH &lt; 2</u>
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>KH</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>KH</u> Date: <u>10-11-16</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

Test: Ra-228  
Analyst: JLW  
Date: 10/19/2016  
Worklist: 31919  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1163885	
MB concentration:	0.589	
M/B Counting Uncertainty:	0.359	
MB MDC:	0.694	
MB Numerical Performance Indicator:	3.21	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
	LCS31919		LCSD31919
Count Date:	11/7/2016		
Spike I.D.:	16-025		
Spike Concentration (pCi/mL):	25.222		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.802		
Target Conc. (pCi/L, g, F):	6.290		
Uncertainty (Calculated):	0.453		
Result (pCi/L, g, F):	8.283		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.001		
Numerical Performance Indicator:	3.56		
Percent Recovery:	131.69%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30198504002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30198504002DUP	
Sample Result (pCi/L, g, F):	0.712	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.388	
Sample Duplicate Result (pCi/L, g, F):	1.166	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.397	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.605	30198504002
Duplicate RPD:	48.41%	30198504002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*LMM*  
*Dupre*



## Quality Control Sample Performance Assessment

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

Test: Ra-226  
Analyst: LAL  
Date: 10/22/2016  
Worklist: 31917  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1163883
MB concentration:	-0.045
M/B Counting Uncertainty:	0.072
MB MDC:	0.264
MB Numerical Performance Indicator:	-1.21
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS31917	LCSD31917
Count Date:	10/24/2016		
Spike I.D.:	18-026		
Spike Concentration (pCi/mL):	44.675		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.508		
Target Conc. (pCi/L, g, F):	8.800		
Uncertainty (Calculated):	0.414		
Result (pCi/L, g, F):	6.997		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.672		
Numerical Performance Indicator:	-4.48		
Percent Recovery:	79.51%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30198504002	
Duplicate Sample I.D.:	30198504002DUP	
Sample Result (pCi/L, g, F):	0.233	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.175	
Sample Duplicate Result (pCi/L, g, F):	-0.046	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.134	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	2.484	30198504002
Duplicate RPD:	298.18%	30198504002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LAL*  
*Ref: [Signature]*





**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: AZJ0247**

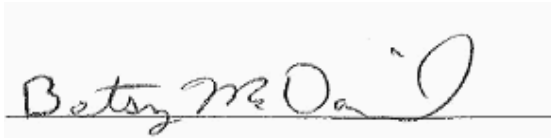
**October 17, 2016**

**Project: CCR Event**

**Project #: Plant Bowen**

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:



Project Manager

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All test results relate only to the samples analyzed.



**PACE ANALYTICAL SERVICES, INC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 17, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-18	AZJ0247-01	Ground Water	10/07/16 12:20	10/07/16 16:10
BGWC-16	AZJ0247-02	Ground Water	10/07/16 10:50	10/07/16 16:10
BGWC-14	AZJ0247-03	Ground Water	10/07/16 11:40	10/07/16 16:10
BGWC-10	AZJ0247-04	Ground Water	10/07/16 10:11	10/07/16 16:10
BGWC-19	AZJ0247-05	Ground Water	10/07/16 12:50	10/07/16 16:10
BGWC-17	AZJ0247-06	Ground Water	10/07/16 10:42	10/07/16 16:10
Dup-3	AZJ0247-07	Ground Water	10/07/16 00:00	10/07/16 16:10



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 17, 2016

Report No.: AZJ0247

Project: CCR Event

Client ID: BGWC-18

Lab Number ID: AZJ0247-01

Date/Time Sampled: 10/7/2016 12:20:00PM

Date/Time Received: 10/7/2016 4:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	823	25	10	mg/L	SM 2540 C		1	10/11/16 09:30	10/11/16 09:30	6100244	JPT
<b>Inorganic Anions</b>											
Chloride	72	2.5	0.14	mg/L	EPA 300.0	B-01	10	10/13/16 10:37	10/15/16 18:14	6100356	RLC
Fluoride	0.16	0.30	0.02	mg/L	EPA 300.0	J	1	10/13/16 10:37	10/14/16 05:38	6100356	RLC
Sulfate	140	10	0.51	mg/L	EPA 300.0		10	10/13/16 10:37	10/15/16 18:14	6100356	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Barium	0.0427	0.0100	0.0004	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Boron	1.33	0.100	0.0064	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Cadmium	0.0008	0.0010	0.00007	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Calcium	84.7	25.0	1.55	mg/L	EPA 6020B		50	10/11/16 09:00	10/13/16 10:32	6100247	CSW
Chromium	0.0011	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Cobalt	0.0005	0.0100	0.0005	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 22:45	6100247	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 12:22	6100334	DDN



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 17, 2016

Report No.: AZJ0247

Project: CCR Event

Client ID: BGWC-16

Lab Number ID: AZJ0247-02

Date/Time Sampled: 10/7/2016 10:50:00AM

Date/Time Received: 10/7/2016 4:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	617	25	10	mg/L	SM 2540 C		1	10/11/16 09:30	10/11/16 09:30	6100244	JPT
<b>Inorganic Anions</b>											
Chloride	44	0.25	0.01	mg/L	EPA 300.0	B-01	1	10/13/16 10:37	10/14/16 06:46	6100356	RLC
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	10/13/16 10:37	10/14/16 06:46	6100356	RLC
Sulfate	260	10	0.51	mg/L	EPA 300.0		10	10/13/16 10:37	10/15/16 18:35	6100356	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Barium	0.0295	0.0100	0.0004	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Boron	1.49	0.100	0.0064	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Cadmium	0.0012	0.0010	0.00007	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Calcium	103	25.0	1.55	mg/L	EPA 6020B		50	10/11/16 09:00	10/13/16 10:38	6100247	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Cobalt	0.0043	0.0100	0.0005	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Thallium	0.0002	0.0010	0.0002	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:02	6100247	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 12:24	6100334	DDN



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 17, 2016

Report No.: AZJ0247

Project: CCR Event

Client ID: BGWC-14

Lab Number ID: AZJ0247-03

Date/Time Sampled: 10/7/2016 11:40:00AM

Date/Time Received: 10/7/2016 4:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	716	25	10	mg/L	SM 2540 C		1	10/11/16 09:30	10/11/16 09:30	6100244	JPT
<b>Inorganic Anions</b>											
Chloride	37	0.25	0.01	mg/L	EPA 300.0	B-01	1	10/13/16 10:37	10/14/16 07:09	6100356	RLC
Fluoride	0.13	0.30	0.02	mg/L	EPA 300.0	J	1	10/13/16 10:37	10/14/16 07:09	6100356	RLC
Sulfate	180	10	0.51	mg/L	EPA 300.0		10	10/13/16 10:37	10/15/16 18:55	6100356	RLC
<b>Metals, Total</b>											
Antimony	0.0018	0.0030	0.0008	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Barium	0.0764	0.0100	0.0004	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Boron	0.785	0.100	0.0064	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Calcium	85.7	25.0	1.55	mg/L	EPA 6020B		50	10/11/16 09:00	10/13/16 10:44	6100247	CSW
Chromium	0.0014	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Molybdenum	0.0072	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:08	6100247	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 12:27	6100334	DDN



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 17, 2016

Report No.: AZJ0247

Project: CCR Event

Client ID: BGWC-10

Lab Number ID: AZJ0247-04

Date/Time Sampled: 10/7/2016 10:11:00AM

Date/Time Received: 10/7/2016 4:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	513	25	10	mg/L	SM 2540 C		1	10/11/16 09:30	10/11/16 09:30	6100244	JPT
<b>Inorganic Anions</b>											
Chloride	21	0.25	0.01	mg/L	EPA 300.0	B-01	1	10/13/16 10:37	10/14/16 07:32	6100356	RLC
Fluoride	0.17	0.30	0.02	mg/L	EPA 300.0	J	1	10/13/16 10:37	10/14/16 07:32	6100356	RLC
Sulfate	110	5.0	0.26	mg/L	EPA 300.0		5	10/13/16 10:37	10/15/16 19:16	6100356	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Arsenic	0.0074	0.0050	0.0016	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Barium	0.0631	0.0100	0.0004	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Boron	0.492	0.100	0.0064	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Calcium	52.6	5.00	0.311	mg/L	EPA 6020B		10	10/11/16 09:00	10/13/16 10:50	6100247	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Molybdenum	0.0032	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:14	6100247	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 12:34	6100334	DDN



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 17, 2016

Report No.: AZJ0247

Project: CCR Event

Client ID: BGWC-19

Lab Number ID: AZJ0247-05

Date/Time Sampled: 10/7/2016 12:50:00PM

Date/Time Received: 10/7/2016 4:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	621	25	10	mg/L	SM 2540 C		1	10/11/16 09:30	10/11/16 09:30	6100244	JPT
<b>Inorganic Anions</b>											
Chloride	41	0.25	0.01	mg/L	EPA 300.0	B-01	1	10/13/16 10:37	10/14/16 13:49	6100356	RLC
Fluoride	0.07	0.30	0.02	mg/L	EPA 300.0	J	1	10/13/16 10:37	10/14/16 13:49	6100356	RLC
Sulfate	150	10	0.51	mg/L	EPA 300.0		10	10/13/16 10:37	10/15/16 19:57	6100356	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Barium	0.0427	0.0100	0.0004	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Boron	0.868	0.100	0.0064	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Cadmium	0.0001	0.0010	0.00007	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Calcium	70.2	5.00	0.311	mg/L	EPA 6020B		10	10/11/16 09:00	10/13/16 11:07	6100247	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:20	6100247	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 12:36	6100334	DDN



**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

October 17, 2016

Report No.: AZJ0247

Project: CCR Event

Client ID: BGWC-17

Lab Number ID: AZJ0247-06

Date/Time Sampled: 10/7/2016 10:42:00AM

Date/Time Received: 10/7/2016 4:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	533	25	10	mg/L	SM 2540 C		1	10/11/16 09:30	10/11/16 09:30	6100244	JPT
<b>Inorganic Anions</b>											
Chloride	38	0.25	0.01	mg/L	EPA 300.0	B-01	1	10/13/16 10:37	10/14/16 14:10	6100356	RLC
Fluoride	0.14	0.30	0.02	mg/L	EPA 300.0	J	1	10/13/16 10:37	10/14/16 14:10	6100356	RLC
Sulfate	150	10	0.51	mg/L	EPA 300.0		10	10/13/16 10:37	10/15/16 20:18	6100356	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Barium	0.0225	0.0100	0.0004	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Boron	1.76	0.100	0.0064	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Cadmium	0.0002	0.0010	0.00007	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Calcium	71.0	5.00	0.311	mg/L	EPA 6020B		10	10/11/16 09:00	10/13/16 11:13	6100247	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:25	6100247	CSW
Mercury	0.00014	0.00050	0.000041	mg/L	EPA 7470A	J	1	10/13/16 09:00	10/13/16 12:39	6100334	DDN





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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 17, 2016

Report No.: AZJ0247

Project: CCR Event

Client ID: Dup-3

Lab Number ID: AZJ0247-07

Date/Time Sampled: 10/7/2016 12:00:00AM

Date/Time Received: 10/7/2016 4:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	488	25	10	mg/L	SM 2540 C		1	10/11/16 09:30	10/11/16 09:30	6100244	JPT
<b>Inorganic Anions</b>											
Chloride	38	0.25	0.01	mg/L	EPA 300.0	B-01	1	10/13/16 10:37	10/14/16 07:56	6100356	RLC
Fluoride	0.13	0.30	0.02	mg/L	EPA 300.0	J	1	10/13/16 10:37	10/14/16 07:56	6100356	RLC
Sulfate	150	10	0.51	mg/L	EPA 300.0		10	10/13/16 10:37	10/15/16 19:37	6100356	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Barium	0.0218	0.0100	0.0004	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Boron	1.71	0.100	0.0064	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Cadmium	0.0002	0.0010	0.00007	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Calcium	70.3	5.00	0.311	mg/L	EPA 6020B		10	10/11/16 09:00	10/13/16 11:18	6100247	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Lead	0.0001	0.0050	0.0001	mg/L	EPA 6020B	J	1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/11/16 09:00	10/12/16 23:31	6100247	CSW
Mercury	0.00014	0.00050	0.000041	mg/L	EPA 7470A	J	1	10/13/16 09:00	10/13/16 12:41	6100334	DDN



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Attention: Mr. Joju Abraham

October 17, 2016

**Report No.: AZJ0247**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100244 - SM 2540 C</b>											
<b>Blank (6100244-BLK1)</b>						Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6100244-BS1)</b>						Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	352	25	10	mg/L	400.00		88	84-108			
<b>Duplicate (6100244-DUP1)</b>						Prepared & Analyzed: 10/11/16					
Total Dissolved Solids	456	25	10	mg/L		513			12	10	QR-03



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October 17, 2016

**Report No.: AZJ0247**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100356 - EPA 300.0</b>											
<b>Blank (6100356-BLK1)</b>						Prepared: 10/13/16 Analyzed: 10/14/16					
Chloride	0.13	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 (6100356-BS1)</b>						Prepared: 10/13/16 Analyzed: 10/14/16					
Chloride	10.2	0.25	0.01	mg/L	10.010		102	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.020		104	90-110			
Sulfate	10.1	1.0	0.05	mg/L	10.020		101	90-110			
<b>Matrix Spike (6100356-MS1)</b>						<b>Source: AZJ0247-01</b> Prepared: 10/13/16 Analyzed: 10/14/16					
Chloride	72.4	0.25	0.01	mg/L	10.010	70.2	22	90-110			QM-05
Fluoride	10.2	0.30	0.02	mg/L	10.020	0.16	100	90-110			
Sulfate	123	1.0	0.05	mg/L	10.020	126	NR	90-110			QM-05
<b>Matrix Spike Dup (6100356-MSD1)</b>						<b>Source: AZJ0247-01</b> Prepared: 10/13/16 Analyzed: 10/14/16					
Chloride	71.9	0.25	0.01	mg/L	10.010	70.2	17	90-110	0.6	15	QM-05
Fluoride	10.4	0.30	0.02	mg/L	10.020	0.16	102	90-110	2	15	
Sulfate	123	1.0	0.05	mg/L	10.020	126	NR	90-110	0.04	15	QM-05



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October 17, 2016

**Report No.: AZJ0247**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100247 - EPA 3005A</b>											
<b>Blank (6100247-BLK1)</b>						Prepared: 10/11/16 Analyzed: 10/12/16					
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							
<b>LCS (6100247-BS1)</b>						Prepared: 10/11/16 Analyzed: 10/12/16					
Antimony	0.113	0.0030	0.0008	mg/L	0.10000		113	80-120			
Arsenic	0.103	0.0050	0.0016	mg/L	0.10000		103	80-120			
Barium	0.102	0.0100	0.0004	mg/L	0.10000		102	80-120			
Beryllium	0.0978	0.0030	0.00008	mg/L	0.10000		98	80-120			
Boron	0.995	0.100	0.0064	mg/L	1.0000		100	80-120			
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000		105	80-120			
Calcium	0.970	0.500	0.0311	mg/L	1.0000		97	80-120			
Chromium	0.106	0.0100	0.0009	mg/L	0.10000		106	80-120			
Cobalt	0.106	0.0100	0.0005	mg/L	0.10000		106	80-120			
Copper	0.106	0.0050	0.0005	mg/L	0.10000		106	80-120			
Lead	0.104	0.0050	0.0001	mg/L	0.10000		104	80-120			
Molybdenum	0.105	0.0100	0.0017	mg/L	0.10000		105	80-120			
Nickel	0.104	0.0050	0.0006	mg/L	0.10000		104	80-120			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120			
Silver	0.106	0.0050	0.0005	mg/L	0.10000		106	80-120			
Thallium	0.104	0.0010	0.0002	mg/L	0.10000		104	80-120			
Vanadium	0.102	0.0100	0.0071	mg/L	0.10000		102	80-120			
Zinc	0.107	0.0100	0.0021	mg/L	0.10000		107	80-120			
Lithium	0.0966	0.0500	0.0021	mg/L	0.10000		97	80-120			



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October 17, 2016

**Report No.: AZJ0247**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100247 - EPA 3005A</b>											
<b>Matrix Spike (6100247-MS1)</b>			<b>Source: AZJ0247-01</b>			<b>Prepared: 10/11/16 Analyzed: 10/12/16</b>					
Antimony	0.118	0.0030	0.0008	mg/L	0.10000	ND	118	75-125			
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	ND	104	75-125			
Barium	0.150	0.0100	0.0004	mg/L	0.10000	0.0427	107	75-125			
Beryllium	0.0997	0.0030	0.00008	mg/L	0.10000	ND	100	75-125			
Boron	2.23	0.100	0.0064	mg/L	1.0000	1.33	89	75-125			
Cadmium	0.106	0.0010	0.00007	mg/L	0.10000	0.0008	105	75-125			
Calcium	83.3	25.0	1.55	mg/L	1.0000	84.7	NR	75-125			QM-02
Chromium	0.107	0.0100	0.0009	mg/L	0.10000	0.0011	106	75-125			
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	0.0005	103	75-125			
Copper	0.0999	0.0050	0.0005	mg/L	0.10000	ND	100	75-125			
Lead	0.104	0.0050	0.0001	mg/L	0.10000	ND	104	75-125			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000	ND	108	75-125			
Nickel	0.105	0.0050	0.0006	mg/L	0.10000	0.0015	103	75-125			
Selenium	0.0989	0.0100	0.0010	mg/L	0.10000	ND	99	75-125			
Silver	0.105	0.0050	0.0005	mg/L	0.10000	ND	105	75-125			
Thallium	0.105	0.0010	0.0002	mg/L	0.10000	ND	105	75-125			
Vanadium	0.109	0.0100	0.0071	mg/L	0.10000	ND	109	75-125			
Zinc	0.108	0.0100	0.0021	mg/L	0.10000	0.0045	103	75-125			
Lithium	0.101	0.0500	0.0021	mg/L	0.10000	ND	101	75-125			
<b>Matrix Spike Dup (6100247-MSD1)</b>			<b>Source: AZJ0247-01</b>			<b>Prepared: 10/11/16 Analyzed: 10/12/16</b>					
Antimony	0.116	0.0030	0.0008	mg/L	0.10000	ND	116	75-125	1	20	
Arsenic	0.107	0.0050	0.0016	mg/L	0.10000	ND	107	75-125	3	20	
Barium	0.150	0.0100	0.0004	mg/L	0.10000	0.0427	108	75-125	0.5	20	
Beryllium	0.0949	0.0030	0.00008	mg/L	0.10000	ND	95	75-125	5	20	
Boron	2.13	0.100	0.0064	mg/L	1.0000	1.33	79	75-125	5	20	
Cadmium	0.107	0.0010	0.00007	mg/L	0.10000	0.0008	106	75-125	0.5	20	
Calcium	91.5	25.0	1.55	mg/L	1.0000	84.7	673	75-125	9	20	QM-02
Chromium	0.109	0.0100	0.0009	mg/L	0.10000	0.0011	108	75-125	2	20	
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	0.0005	103	75-125	0.03	20	
Copper	0.103	0.0050	0.0005	mg/L	0.10000	ND	103	75-125	3	20	
Lead	0.102	0.0050	0.0001	mg/L	0.10000	ND	102	75-125	2	20	
Molybdenum	0.110	0.0100	0.0017	mg/L	0.10000	ND	110	75-125	2	20	
Nickel	0.107	0.0050	0.0006	mg/L	0.10000	0.0015	106	75-125	3	20	
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	2	20	
Silver	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125	3	20	
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	ND	104	75-125	1	20	
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125	0.6	20	
Zinc	0.112	0.0100	0.0021	mg/L	0.10000	0.0045	108	75-125	4	20	
Lithium	0.0979	0.0500	0.0021	mg/L	0.10000	ND	98	75-125	3	20	



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Attention: Mr. Joju Abraham

October 17, 2016

**Report No.: AZJ0247**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100247 - EPA 3005A</b>											
<b>Post Spike (6100247-PS1)</b>				<b>Source: AZJ0247-01</b>				Prepared: 10/11/16 Analyzed: 10/12/16			
Antimony	108			ug/L	100.00	0.164	107	80-120			
Arsenic	105			ug/L	100.00	0.173	105	80-120			
Barium	146			ug/L	100.00	42.7	103	80-120			
Beryllium	100			ug/L	100.00	0.0200	100	80-120			
Boron	2290			ug/L	1000.0	1330	95	80-120			
Cadmium	103			ug/L	100.00	0.750	103	80-120			
Calcium	92200			ug/L	1000.0	84700	751	80-120			QM-02
Chromium	105			ug/L	100.00	1.05	104	80-120			
Cobalt	100			ug/L	100.00	0.537	99	80-120			
Copper	102			ug/L	100.00	0.337	102	80-120			
Lead	102			ug/L	100.00	0.0647	102	80-120			
Molybdenum	105			ug/L	100.00	0.278	105	80-120			
Nickel	103			ug/L	100.00	1.50	102	80-120			
Selenium	99.5			ug/L	100.00	-0.644	100	80-120			
Silver	101			ug/L	100.00	0.0030	101	80-120			
Thallium	102			ug/L	100.00	0.113	102	80-120			
Vanadium	108			ug/L	100.00	0.301	108	80-120			
Zinc	109			ug/L	100.00	4.49	104	80-120			
Lithium	99.8			ug/L	100.00	0.206	100	80-120			

**Batch 6100334 - EPA 7470A**

<b>Blank (6100334-BLK1)</b>				Prepared & Analyzed: 10/13/16							
Mercury	ND	0.00030	0.000041	mg/L							
<b>LCS (6100334-BS1)</b>				Prepared & Analyzed: 10/13/16							
Mercury	0.00243	0.00050	0.000041	mg/L	2.5000E-3	97	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

October 17, 2016

**Report No.: AZJ0247**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100334 - EPA 7470A</b>											
<b>Duplicate (6100334-DUP1)</b>			<b>Source: AZJ0123-07RE1</b>			<b>Prepared &amp; Analyzed: 10/13/16</b>					
Mercury	0.0128	0.00250	0.00020	mg/L		0.0128			0.06	20	
<b>Matrix Spike (6100334-MS1)</b>			<b>Source: AZJ0273-08</b>			<b>Prepared &amp; Analyzed: 10/13/16</b>					
Mercury	0.00246	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125			
<b>Matrix Spike Dup (6100334-MSD1)</b>			<b>Source: AZJ0273-08</b>			<b>Prepared &amp; Analyzed: 10/13/16</b>					
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125	0.8	20	
<b>Post Spike (6100334-PS1)</b>			<b>Source: AZJ0273-08</b>			<b>Prepared &amp; Analyzed: 10/13/16</b>					
Mercury	1.72			ug/L	1.6667	0.0171	102	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 17, 2016

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## Legend

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### 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

- 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).
- 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



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					CONTAINER TYPE	PRESERVATION													
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					PRESERVATION:																			
Southern Company Services										P	1 - HCl, ≤6°C													
241 Rapid Meck Blvd SE 310185										3	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C													
Atlanta, GA 30308										7	3 - HNO <sub>3</sub>													
REPORT TO: Jon Amstutz										3	4 - NaOH, ≤6°C													
REQUESTED COMPLETION DATE:											5 - NaOH/ZnAc, ≤6°C													
PROJECT NAME/STATE: Plant Bowen And Pond CR											6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C													
PROJECT #:											7 - ≤6°C not frozen													
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of																		
10/7/16	1220	GW		X	Bowoc-18	3	1	1	1															
10/7/16	1050	GW		Y	Bowoc-16	3	1	1	1															
10/7/16	1140	GW		X	Bowoc-14	2	1	1																
10/7/16	1011	GW		X	Bowoc-10	3	1	1	1															
10/7/16	1250	GW		Y	Bowoc-19	3	1	1	1															
10/7/16	1042	GW		X	Bowoc-17	4	1	1	2															
10/7/16	-	GW		X	Dup-3	3	1	1	1															
SAMPLED BY AND TITLE: Kevin Stimpert					DATE/TIME: 10/7/16 @ 1345					RELINQUISHED BY: Kevin Stimpert					DATE/TIME: 10/7/16 @ 1350					LAB #: AZ 50247				
RECEIVED BY: [Signature]					DATE/TIME: 10/7/16 1350					RECEIVED BY: [Signature]					DATE/TIME: 10/7/16 1610					Entered into LIMS: [Signature]				
RECEIVED BY LAB: Charles Hanks					DATE/TIME: 10/7/16 1610					SAMPLE SHIPPED VIA: CLIENT					OTHER FS					Tracking #:				
Checked: Yes No NA					Temperature: 5°C Min 5°C Max					Quality Seal: Intact Broken Not Present					# of Coolers					Cooler ID:				

17 OF 17



# 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: 10/17/2016 4:21:14PM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 10/07/16 16:10

Work Order: AZJ0247

Logged In By: Charles Hawks

### OBSERVATIONS

#Samples: 7

#Containers: 21

Minimum Temp(C): 5.0

Maximum Temp(C): 5.0

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:

November 16, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198712

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on October 10, 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 Bowen Ash Pond CCR  
Pace Project No.: 30198712

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198712

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30198712001	BGWC-18	Water	10/07/16 12:20	10/10/16 09:45
30198712002	BGWC-16	Water	10/07/16 10:50	10/10/16 09:45
30198712003	BGWC-10	Water	10/07/16 10:11	10/10/16 09:45
30198712004	BGWC-19	Water	10/07/16 12:50	10/10/16 09:45
30198712005	BGWC-17	Water	10/07/16 10:42	10/10/16 09:45
30198712006	DUP-3	Water	10/07/16 00:01	10/10/16 09:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198712

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30198712001	BGWC-18	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198712002	BGWC-16	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198712003	BGWC-10	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198712004	BGWC-19	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198712005	BGWC-17	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198712006	DUP-3	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: Plant Bowen Ash Pond CCR

Pace Project No.: 30198712

Sample: <b>BGWC-18</b>		Lab ID: <b>30198712001</b>	Collected: 10/07/16 12:20	Received: 10/10/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.124 ± 0.126 (0.227)</b>		pCi/L	10/23/16 15:52	13982-63-3	
		<b>C:86% T:NA</b>					
Radium-228	EPA 9320	<b>0.327 ± 0.334 (0.686)</b>		pCi/L	11/07/16 15:30	15262-20-1	
		<b>C:64% T:85%</b>					
Total Radium	Total Radium Calculation	<b>0.451 ± 0.460 (0.913)</b>		pCi/L	11/08/16 15:40	7440-14-4	

Sample: <b>BGWC-16</b>		Lab ID: <b>30198712002</b>	Collected: 10/07/16 10:50	Received: 10/10/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.174 ± 0.142 (0.228)</b>		pCi/L	10/23/16 15:52	13982-63-3	
		<b>C:85% T:NA</b>					
Radium-228	EPA 9320	<b>0.311 ± 0.388 (0.821)</b>		pCi/L	11/07/16 15:30	15262-20-1	
		<b>C:62% T:80%</b>					
Total Radium	Total Radium Calculation	<b>0.485 ± 0.530 (1.05)</b>		pCi/L	11/08/16 15:40	7440-14-4	

Sample: <b>BGWC-10</b>		Lab ID: <b>30198712003</b>	Collected: 10/07/16 10:11	Received: 10/10/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.535 ± 0.243 (0.257)</b>		pCi/L	10/23/16 15:52	13982-63-3	
		<b>C:79% T:NA</b>					
Radium-228	EPA 9320	<b>2.28 ± 0.664 (0.699)</b>		pCi/L	11/07/16 12:10	15262-20-1	
		<b>C:70% T:80%</b>					
Total Radium	Total Radium Calculation	<b>2.82 ± 0.907 (0.956)</b>		pCi/L	11/08/16 15:40	7440-14-4	

Sample: <b>BGWC-19</b>		Lab ID: <b>30198712004</b>	Collected: 10/07/16 12:50	Received: 10/10/16 09:45	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 ± 0.188 (0.299)</b>		pCi/L	10/23/16 15:52	13982-63-3	
		<b>C:85% T:NA</b>					
Radium-228	EPA 9320	<b>1.69 ± 0.577 (0.781)</b>		pCi/L	11/07/16 12:10	15262-20-1	
		<b>C:73% T:80%</b>					
Total Radium	Total Radium Calculation	<b>1.97 ± 0.765 (1.08)</b>		pCi/L	11/08/16 15:40	7440-14-4	

Sample: <b>BGWC-17</b>		Lab ID: <b>30198712005</b>	Collected: 10/07/16 10:42	Received: 10/10/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0906 ± 0.119 (0.244)</b>		pCi/L	10/23/16 15:52	13982-63-3	
		<b>C:84% T:NA</b>					
Radium-228	EPA 9320	<b>0.783 ± 0.454 (0.823)</b>		pCi/L	11/07/16 12:11	15262-20-1	
		<b>C:69% T:81%</b>					

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198712

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	<b>0.874 ± 0.573 (1.07)</b>	pCi/L	11/08/16 15:40	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.110 ± 0.121 (0.232)</b> C:91% T:NA	pCi/L	10/23/16 15:52	13982-63-3	
Radium-228	EPA 9320	<b>1.23 ± 0.483 (0.729)</b> C:79% T:80%	pCi/L	11/07/16 12:10	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.34 ± 0.604 (0.961)</b>	pCi/L	11/08/16 15:40	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198712

---

QC Batch:	236797	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30198712001, 30198712002, 30198712003, 30198712004, 30198712005, 30198712006		

---

METHOD BLANK:	1163885	Matrix:	Water
Associated Lab Samples:	30198712001, 30198712002, 30198712003, 30198712004, 30198712005, 30198712006		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.589 ± 0.374 (0.694) C:70% T:87%	pCi/L	11/07/16 12:11	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198712

QC Batch: 236795

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30198712001, 30198712002, 30198712003, 30198712004, 30198712005, 30198712006

METHOD BLANK: 1163883

Matrix: Water

Associated Lab Samples: 30198712001, 30198712002, 30198712003, 30198712004, 30198712005, 30198712006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0446 ± 0.0724 (0.264) C:92% T:NA	pCi/L	10/23/16 14:19	

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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## QUALIFIERS

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198712

### 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, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:						ANALYSIS REQUESTED										CONTAINER TYPE		PRESERVATION	
Southern Company Services						CONTAINER TYPE:		3		7		W							
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:						PRESERVATION:													
241 Rapid Mountain Blvd SE B10185						# of													
Atlanta, GA 30308						CONTAINERS		↓											
REPORT TO:			CC: Maria Padilla																
John Abraham			Hector McClinton																
REQUESTED COMPLETION DATE:			PO #:																
			GPC10684198																
PROJECT NAME/STATE:																			
Plant Bowen And Pond CCR																			
PROJECT #:																			
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of													
10/7/16	1220	GW		X	BGWC-18	3													
10/7/16	1050	GW		Y	BGWC-16	3													
10/7/16	1140	GW		X	BGWC-14	2													
10/7/16	1011	GW		X	BGWC-10	3													
10/7/16	1250	GW		X	BGWC-19	3													
10/7/16	1042	GW		X	BGWC-17	4													
10/7/16	-	GW		X	Dup-3	3													

WO#: 30198712

SAMPLED BY AND TITLE: Kevin Stegeman		DATE/TIME: 10/7/16 @ 1345		RELINQUISHED BY: Kevin Stegeman		DATE/TIME: 10/7/16 @ 1350		FOR LAB USE ONLY	
RECEIVED BY: [Signature]		DATE/TIME: 10/7/16 1350		RELINQUISHED BY:		DATE/TIME:		LAB #:	
RECEIVED BY LAB: Charles Hank		DATE/TIME:		SAMPLE SHIPPED VIA:		CLIENT OTHER FS		Entered into LIMS:	
pH checked: Yes No NA		Temperature: Min: Max:		Custody Seal: Intact Broken Not Present		# of Coolers		Cooler ID:	

received: Kevin E. Hill 10-10-16 0945

# Sample Condition Upon Receipt Pittsburgh



Client Name: Pace Georgia

Project # 30198712

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5099 7063

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

Thermometer Used NIA Type of Ice: Wet Blue None

Cooler Temperature Observed Temp NIA °C Correction Factor: NIA °C Final Temp: NIA °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KH 10-11-16

**Comments:**

	Yes	No	N/A	
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:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>PH &lt; 2</u>
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>KH</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>KH</u> Date: <u>10-11-16</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

Test: Ra-228  
Analyst: JLW  
Date: 10/19/2016  
Worklist: 31919  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1163885	
MB concentration:	0.589	
M/B Counting Uncertainty:	0.359	
MB MDC:	0.694	
MB Numerical Performance Indicator:	3.21	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS31919	LCS31919
Count Date:	11/7/2016		
Spike I.D.:	16-025		
Spike Concentration (pCi/mL):	25.222		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.802		
Target Conc. (pCi/L, g, F):	6.290		
Uncertainty (Calculated):	0.453		
Result (pCi/L, g, F):	8.283		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.001		
Numerical Performance Indicator:	3.56		
Percent Recovery:	131.69%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30198504002	
Duplicate Sample I.D.:	30198504002DUP	
Sample Result (pCi/L, g, F):	0.712	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.388	
Sample Duplicate Result (pCi/L, g, F):	1.166	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.397	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.605	30198504002
Duplicate RPD:	48.41%	30198504002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*JLW*  
*cupreth*

## Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: LAL  
Date: 10/22/2016  
Worklist: 31917  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1163883
MB concentration:	-0.045
M/B Counting Uncertainty:	0.072
MB MDC:	0.264
MB Numerical Performance Indicator:	-1.21
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS31917	LCS31917
Count Date:	10/24/2016		
Spike I.D.:	16-026		
Spike Concentration (pCi/mL):	44.675		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.508		
Target Conc. (pCi/L, g, F):	8.800		
Uncertainty (Calculated):	0.414		
Result (pCi/L, g, F):	6.997		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.672		
Numerical Performance Indicator:	-4.48		
Percent Recovery:	79.51%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30198504002	
Duplicate Sample I.D.:	30198504002DUP	
Sample Result (pCi/L, g, F):	0.233	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.175	
Sample Duplicate Result (pCi/L, g, F):	-0.046	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.134	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	2.484	30198504002
Duplicate RPD:	298.18%	30198504002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LAL*  
*Duplicate*



**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: AZJ0273**

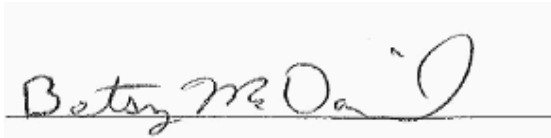
**October 19, 2016**

**Project: CCR Event**

**Project #: Plant Bowen**

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:



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

October 19, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-22	AZJ0273-01	Ground Water	10/10/16 11:40	10/11/16 08:15
FBL101016	AZJ0273-02	Water	10/10/16 13:05	10/11/16 08:15
EQBL101016	AZJ0273-03	Water	10/10/16 13:10	10/11/16 08:15
BGWC-24	AZJ0273-04	Ground Water	10/10/16 11:42	10/11/16 08:15
BGWC-23	AZJ0273-05	Ground Water	10/10/16 10:05	10/11/16 08:15
BGWC-21	AZJ0273-06	Ground Water	10/10/16 13:44	10/11/16 08:15
BGWC-20	AZJ0273-07	Ground Water	10/10/16 11:05	10/11/16 08:15
BGWC-25	AZJ0273-08	Ground Water	10/10/16 13:41	10/11/16 08:15



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

Report No.: AZJ0273

Project: CCR Event

Client ID: BGWC-22

Lab Number ID: AZJ0273-01

Date/Time Sampled: 10/10/2016 11:40:00AM

Date/Time Received: 10/11/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2130	25	10	mg/L	SM 2540 C		1	10/13/16 13:25	10/13/16 13:25	6100350	JPT
<b>Inorganic Anions</b>											
Chloride	480	25	1.4	mg/L	EPA 300.0		100	10/15/16 12:35	10/18/16 10:56	6100406	RNB
Fluoride	0.32	0.30	0.02	mg/L	EPA 300.0		1	10/15/16 12:35	10/15/16 20:39	6100406	RLC
Sulfate	650	100	5.1	mg/L	EPA 300.0		100	10/15/16 12:35	10/18/16 10:56	6100406	RNB
<b>Metals, Total</b>											
Antimony	0.0021	0.0030	0.0008	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Arsenic	0.0020	0.0050	0.0016	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Barium	0.0954	0.0100	0.0004	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Boron	9.46	5.00	0.321	mg/L	EPA 6020B		50	10/12/16 10:20	10/14/16 16:12	6100306	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Calcium	375	25.0	1.55	mg/L	EPA 6020B		50	10/12/16 10:20	10/14/16 16:12	6100306	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Cobalt	0.0110	0.0100	0.0005	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Molybdenum	0.0712	0.0100	0.0017	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Thallium	0.0006	0.0010	0.0002	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Lithium	0.0137	0.0500	0.0021	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:38	6100306	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 12:43	6100334	DDN



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

Report No.: AZJ0273

Project: CCR Event

Client ID: FBL101016

Lab Number ID: AZJ0273-02

Date/Time Sampled: 10/10/2016 1:05:00PM

Date/Time Received: 10/11/2016 8:15:00AM

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	10/13/16 13:25	10/13/16 13:25	6100350	JPT
<b>Inorganic Anions</b>											
Chloride	0.09	0.25	0.01	mg/L	EPA 300.0	J	1	10/15/16 12:35	10/15/16 20:59	6100406	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	10/15/16 12:35	10/15/16 20:59	6100406	RLC
Sulfate	0.08	1.0	0.05	mg/L	EPA 300.0	J	1	10/15/16 12:35	10/15/16 20:59	6100406	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Boron	0.0332	0.100	0.0064	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:44	6100306	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 12:48	6100334	DDN



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

Report No.: AZJ0273

Project: CCR Event

Client ID: EQBL101016

Lab Number ID: AZJ0273-03

Date/Time Sampled: 10/10/2016 1:10:00PM

Date/Time Received: 10/11/2016 8:15:00AM

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	10/13/16 13:25	10/13/16 13:25	6100350	JPT
<b>Inorganic Anions</b>											
Chloride	0.07	0.25	0.01	mg/L	EPA 300.0	J	1	10/15/16 12:35	10/15/16 21:20	6100406	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	10/15/16 12:35	10/15/16 21:20	6100406	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	10/15/16 12:35	10/15/16 21:20	6100406	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Boron	0.0146	0.100	0.0064	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Calcium	0.197	0.500	0.0311	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:49	6100306	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 12:51	6100334	DDN



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

Report No.: AZJ0273

Project: CCR Event

Client ID: BGWC-24

Lab Number ID: AZJ0273-04

Date/Time Sampled: 10/10/2016 11:42:00AM

Date/Time Received: 10/11/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	3850	25	10	mg/L	SM 2540 C		1	10/13/16 13:25	10/13/16 13:25	6100350	JPT
<b>Inorganic Anions</b>											
Chloride	1400	25	1.4	mg/L	EPA 300.0		100	10/15/16 12:35	10/18/16 11:17	6100406	RNB
Fluoride	0.30	0.30	0.02	mg/L	EPA 300.0		1	10/15/16 12:35	10/15/16 23:03	6100406	RLC
Sulfate	520	100	5.1	mg/L	EPA 300.0		100	10/15/16 12:35	10/18/16 11:17	6100406	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Arsenic	0.0079	0.0050	0.0016	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Barium	0.0888	0.0100	0.0004	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Boron	18.1	1.00	0.0642	mg/L	EPA 6020B		10	10/12/16 10:20	10/14/16 16:23	6100306	CSW
Cadmium	0.0017	0.0010	0.00007	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Calcium	680	50.0	3.11	mg/L	EPA 6020B		100	10/12/16 10:20	10/14/16 16:17	6100306	CSW
Chromium	0.0009	0.0100	0.0009	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Cobalt	0.0018	0.0100	0.0005	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Molybdenum	0.0047	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Selenium	0.0040	0.0100	0.0010	mg/L	EPA 6020B	B-01, J	1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Thallium	0.0003	0.0010	0.0002	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Lithium	0.0060	0.0500	0.0021	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 13:55	6100306	CSW
Mercury	0.00004	0.00050	0.000041	mg/L	EPA 7470A	J	1	10/13/16 09:00	10/13/16 12:53	6100334	DDN



**PACE ANALYTICAL SERVICES, INC.**

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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

Report No.: AZJ0273

Project: CCR Event

Client ID: BGWC-23

Lab Number ID: AZJ0273-05

Date/Time Sampled: 10/10/2016 10:05:00AM

Date/Time Received: 10/11/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1640	25	10	mg/L	SM 2540 C		1	10/13/16 13:25	10/13/16 13:25	6100350	JPT
<b>Inorganic Anions</b>											
Chloride	390	25	1.4	mg/L	EPA 300.0		100	10/15/16 12:35	10/18/16 11:38	6100406	RNB
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	10/15/16 12:35	10/15/16 23:24	6100406	RLC
Sulfate	460	100	5.1	mg/L	EPA 300.0		100	10/15/16 12:35	10/18/16 11:38	6100406	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Arsenic	0.0021	0.0050	0.0016	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Barium	0.0839	0.0100	0.0004	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Boron	6.13	1.00	0.0642	mg/L	EPA 6020B		10	10/12/16 10:20	10/14/16 16:34	6100306	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Calcium	296	25.0	1.55	mg/L	EPA 6020B		50	10/12/16 10:20	10/14/16 16:29	6100306	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Molybdenum	0.0134	0.0100	0.0017	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Lithium	0.0093	0.0500	0.0021	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 14:01	6100306	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 12:55	6100334	DDN



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

Report No.: AZJ0273

Project: CCR Event

Client ID: BGWC-21

Lab Number ID: AZJ0273-06

Date/Time Sampled: 10/10/2016 1:44:00PM

Date/Time Received: 10/11/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	239	25	10	mg/L	SM 2540 C		1	10/13/16 13:25	10/13/16 13:25	6100350	JPT
<b>Inorganic Anions</b>											
Chloride	7.1	0.25	0.01	mg/L	EPA 300.0		1	10/15/16 12:35	10/16/16 00:26	6100406	RLC
Fluoride	0.04	0.30	0.02	mg/L	EPA 300.0	J	1	10/15/16 12:35	10/16/16 00:26	6100406	RLC
Sulfate	57	5.0	0.26	mg/L	EPA 300.0		5	10/15/16 12:35	10/18/16 13:24	6100406	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Barium	0.0433	0.0100	0.0004	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Boron	0.130	0.100	0.0064	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Calcium	37.5	2.50	0.155	mg/L	EPA 6020B		5	10/12/16 10:20	10/14/16 16:40	6100306	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Molybdenum	0.0025	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Selenium	0.0010	0.0100	0.0010	mg/L	EPA 6020B	B-01, J	1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:24	6100306	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 12:58	6100334	DDN



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

Report No.: AZJ0273

Project: CCR Event

Client ID: BGWC-20

Lab Number ID: AZJ0273-07

Date/Time Sampled: 10/10/2016 11:05:00AM

Date/Time Received: 10/11/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1110	25	10	mg/L	SM 2540 C		1	10/13/16 13:25	10/13/16 13:25	6100350	JPT
<b>Inorganic Anions</b>											
Chloride	140	25	1.4	mg/L	EPA 300.0		100	10/15/16 12:35	10/18/16 13:46	6100406	RNB
Fluoride	0.06	0.30	0.02	mg/L	EPA 300.0	J	1	10/15/16 12:35	10/16/16 00:46	6100406	RLC
Sulfate	600	100	5.1	mg/L	EPA 300.0		100	10/15/16 12:35	10/18/16 13:46	6100406	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Barium	0.0288	0.0100	0.0004	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Boron	3.00	0.500	0.0321	mg/L	EPA 6020B		5	10/12/16 10:20	10/14/16 17:03	6100306	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Calcium	198	25.0	1.55	mg/L	EPA 6020B		50	10/12/16 10:20	10/14/16 16:46	6100306	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Molybdenum	0.0136	0.0100	0.0017	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Lithium	0.0194	0.0500	0.0021	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 14:29	6100306	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 13:05	6100334	DDN





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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

Report No.: AZJ0273

Project: CCR Event

Client ID: BGWC-25

Lab Number ID: AZJ0273-08

Date/Time Sampled: 10/10/2016 1:41:00PM

Date/Time Received: 10/11/2016 8:15:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	196	25	10	mg/L	SM 2540 C		1	10/13/16 13:25	10/13/16 13:25	6100350	JPT
<b>Inorganic Anions</b>											
Chloride	3.5	0.25	0.01	mg/L	EPA 300.0		1	10/15/16 12:35	10/16/16 01:07	6100406	RLC
Fluoride	0.10	0.30	0.02	mg/L	EPA 300.0	J	1	10/15/16 12:35	10/16/16 01:07	6100406	RLC
Sulfate	10	1.0	0.05	mg/L	EPA 300.0		1	10/15/16 12:35	10/16/16 01:07	6100406	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Arsenic	0.0026	0.0050	0.0016	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Barium	0.0283	0.0100	0.0004	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Boron	0.0305	0.100	0.0064	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Calcium	41.0	2.50	0.155	mg/L	EPA 6020B		5	10/12/16 10:20	10/12/16 15:15	6100306	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Molybdenum	0.0029	0.0100	0.0017	mg/L	EPA 6020B	J	1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	10/12/16 10:20	10/12/16 14:35	6100306	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	10/13/16 09:00	10/13/16 13:07	6100334	DDN



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Attention: Mr. Joju Abraham

October 19, 2016

**Report No.: AZJ0273**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100350 - SM 2540 C</b>											
<b>Blank (6100350-BLK1)</b>						Prepared & Analyzed: 10/13/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6100350-BS1)</b>						Prepared & Analyzed: 10/13/16					
Total Dissolved Solids	381	25	10	mg/L	400.00		95	84-108			
<b>Duplicate (6100350-DUP1)</b>						Prepared & Analyzed: 10/13/16					
						Source: AZJ0273-07					
Total Dissolved Solids	1120	25	10	mg/L		1110			0.8	10	



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Attention: Mr. Joju Abraham

October 19, 2016

**Report No.: AZJ0273**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100406 - EPA 300.0</b>											
<b>Blank (6100406-BLK1)</b>						Prepared & Analyzed: 10/15/16					
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 (6100406-BS1)</b>						Prepared & Analyzed: 10/15/16					
Chloride	9.97	0.25	0.01	mg/L	10.010		100	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		101	90-110			
Sulfate	9.98	1.0	0.05	mg/L	10.020		100	90-110			
<b>Matrix Spike (6100406-MS1)</b>						Source: AZJ0273-05 Prepared & Analyzed: 10/15/16					
Chloride	148	0.25	0.01	mg/L	10.010	224	NR	90-110			QM-05
Fluoride	10.4	0.30	0.02	mg/L	10.020	0.09	103	90-110			
Sulfate	274	1.0	0.05	mg/L	10.020	288	NR	90-110			QM-05
<b>Matrix Spike Dup (6100406-MSD1)</b>						Source: AZJ0273-05 Prepared: 10/15/16 Analyzed: 10/16/16					
Chloride	151	0.25	0.01	mg/L	10.010	224	NR	90-110	2	15	QM-05
Fluoride	10.5	0.30	0.02	mg/L	10.020	0.09	103	90-110	0.6	15	
Sulfate	274	1.0	0.05	mg/L	10.020	288	NR	90-110	0.005	15	QM-05



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**Report No.: AZJ0273**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100306 - EPA 3005A</b>											
<b>Blank (6100306-BLK1)</b>						Prepared & Analyzed: 10/12/16					
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	0.0014	0.0100	0.0010	mg/L							J
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							
<b>Blank (6100306-BLK2)</b>						Prepared & Analyzed: 10/13/16					
Antimony	ND	0.0030	0.0008	mg/L							
Arsenic	ND	0.0050	0.0016	mg/L							
Barium	ND	0.0050	0.0004	mg/L							
Beryllium	ND	0.0005	0.00008	mg/L							
Boron	ND	0.0400	0.0064	mg/L							
Cadmium	ND	0.0005	0.00007	mg/L							
Calcium	ND	0.100	0.0311	mg/L							
Cobalt	ND	0.0050	0.0005	mg/L							
Copper	ND	0.0050	0.0005	mg/L							
Lead	ND	0.0010	0.0001	mg/L							
Molybdenum	ND	0.0100	0.0017	mg/L							
Nickel	ND	0.0050	0.0006	mg/L							
Selenium	ND	0.0050	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							



**PACE ANALYTICAL SERVICES, INC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

**Report No.: AZJ0273**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100306 - EPA 3005A</b>											
<b>LCS (6100306-BS1)</b>						Prepared & Analyzed: 10/12/16					
Antimony	0.0944	0.0030	0.0008	mg/L	0.10000		94	80-120			
Arsenic	0.0978	0.0050	0.0016	mg/L	0.10000		98	80-120			
Barium	0.0941	0.0100	0.0004	mg/L	0.10000		94	80-120			
Beryllium	0.104	0.0030	0.00008	mg/L	0.10000		104	80-120			
Boron	1.07	0.100	0.0064	mg/L	1.0000		107	80-120			
Cadmium	0.0992	0.0010	0.00007	mg/L	0.10000		99	80-120			
Calcium	1.06	0.500	0.0311	mg/L	1.0000		106	80-120			
Chromium	0.0988	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	0.0932	0.0050	0.0005	mg/L	0.10000		93	80-120			
Lead	0.0995	0.0050	0.0001	mg/L	0.10000		100	80-120			
Molybdenum	0.102	0.0100	0.0017	mg/L	0.10000		102	80-120			
Nickel	0.0980	0.0050	0.0006	mg/L	0.10000		98	80-120			
Selenium	0.0936	0.0100	0.0010	mg/L	0.10000		94	80-120			
Silver	0.100	0.0050	0.0005	mg/L	0.10000		100	80-120			
Thallium	0.101	0.0010	0.0002	mg/L	0.10000		101	80-120			
Vanadium	0.0984	0.0100	0.0071	mg/L	0.10000		98	80-120			
Zinc	0.102	0.0100	0.0021	mg/L	0.10000		102	80-120			
Lithium	0.107	0.0500	0.0021	mg/L	0.10000		107	80-120			
<b>LCS (6100306-BS2)</b>						Prepared & Analyzed: 10/13/16					
Antimony	0.0912	0.0050	0.0008	mg/L	0.10000		91	80-120			
Arsenic	0.108	0.0050	0.0016	mg/L	0.10000		108	80-120			
Barium	0.107	0.0050	0.0004	mg/L	0.10000		107	80-120			
Beryllium	0.105	0.0005	0.00008	mg/L	0.10000		105	80-120			
Boron	1.10	0.0400	0.0064	mg/L	1.0000		110	80-120			
Cadmium	0.111	0.0005	0.00007	mg/L	0.10000		111	80-120			
Calcium	1.10	0.100	0.0311	mg/L	1.0000		110	80-120			
Cobalt	0.101	0.0050	0.0005	mg/L	0.10000		101	80-120			
Copper	0.104	0.0050	0.0005	mg/L	0.10000		104	80-120			
Lead	0.102	0.0010	0.0001	mg/L	0.10000		102	80-120			
Molybdenum	0.0885	0.0100	0.0017	mg/L	0.10000		89	80-120			
Nickel	0.107	0.0050	0.0006	mg/L	0.10000		107	80-120			
Selenium	0.109	0.0050	0.0010	mg/L	0.10000		109	80-120			
Silver	0.102	0.0050	0.0005	mg/L	0.10000		102	80-120			
Thallium	0.105	0.0010	0.0002	mg/L	0.10000		105	80-120			
Vanadium	0.0994	0.0100	0.0071	mg/L	0.10000		99	80-120			
Zinc	0.110	0.0100	0.0021	mg/L	0.10000		110	80-120			
Lithium	0.102	0.0500	0.0021	mg/L	0.10000		102	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

October 19, 2016

**Report No.: AZJ0273**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100306 - EPA 3005A</b>											
<b>Matrix Spike (6100306-MS1)</b>			<b>Source: AZJ0273-06</b>			<b>Prepared &amp; Analyzed: 10/12/16</b>					
Antimony	0.101	0.0030	0.0008	mg/L	0.10000	ND	101	75-125			
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125			
Barium	0.142	0.0100	0.0004	mg/L	0.10000	0.0433	98	75-125			
Beryllium	0.101	0.0030	0.00008	mg/L	0.10000	ND	101	75-125			
Boron	1.15	0.100	0.0064	mg/L	1.0000	0.130	102	75-125			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125			
Calcium	39.9	2.50	0.155	mg/L	1.0000	37.5	244	75-125			QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125			
Cobalt	0.0984	0.0100	0.0005	mg/L	0.10000	ND	98	75-125			
Copper	0.0973	0.0050	0.0005	mg/L	0.10000	ND	97	75-125			
Lead	0.102	0.0050	0.0001	mg/L	0.10000	ND	102	75-125			
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000	0.0025	107	75-125			
Nickel	0.0998	0.0050	0.0006	mg/L	0.10000	ND	100	75-125			
Selenium	0.0990	0.0100	0.0010	mg/L	0.10000	0.0010	98	75-125			
Silver	0.103	0.0050	0.0005	mg/L	0.10000	ND	103	75-125			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125			
Vanadium	0.103	0.0100	0.0071	mg/L	0.10000	ND	103	75-125			
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	ND	105	75-125			
Lithium	0.0996	0.0500	0.0021	mg/L	0.10000	ND	100	75-125			
<b>Matrix Spike Dup (6100306-MSD1)</b>			<b>Source: AZJ0273-06</b>			<b>Prepared &amp; Analyzed: 10/12/16</b>					
Antimony	0.0988	0.0030	0.0008	mg/L	0.10000	ND	99	75-125	2	20	
Arsenic	0.100	0.0050	0.0016	mg/L	0.10000	ND	100	75-125	2	20	
Barium	0.137	0.0100	0.0004	mg/L	0.10000	0.0433	94	75-125	3	20	
Beryllium	0.0971	0.0030	0.00008	mg/L	0.10000	ND	97	75-125	4	20	
Boron	1.12	0.100	0.0064	mg/L	1.0000	0.130	99	75-125	3	20	
Cadmium	0.100	0.0010	0.00007	mg/L	0.10000	ND	100	75-125	2	20	
Calcium	37.3	2.50	0.155	mg/L	1.0000	37.5	NR	75-125	7	20	QM-02
Chromium	0.102	0.0100	0.0009	mg/L	0.10000	ND	102	75-125	2	20	
Cobalt	0.0979	0.0100	0.0005	mg/L	0.10000	ND	98	75-125	0.4	20	
Copper	0.0957	0.0050	0.0005	mg/L	0.10000	ND	96	75-125	2	20	
Lead	0.0980	0.0050	0.0001	mg/L	0.10000	ND	98	75-125	4	20	
Molybdenum	0.105	0.0100	0.0017	mg/L	0.10000	0.0025	103	75-125	4	20	
Nickel	0.0997	0.0050	0.0006	mg/L	0.10000	ND	100	75-125	0.09	20	
Selenium	0.0958	0.0100	0.0010	mg/L	0.10000	0.0010	95	75-125	3	20	
Silver	0.0995	0.0050	0.0005	mg/L	0.10000	ND	100	75-125	4	20	
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125	1	20	
Vanadium	0.101	0.0100	0.0071	mg/L	0.10000	ND	101	75-125	1	20	
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	ND	105	75-125	0.1	20	
Lithium	0.0998	0.0500	0.0021	mg/L	0.10000	ND	100	75-125	0.2	20	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

**Report No.: AZJ0273**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100306 - EPA 3005A</b>											
<b>Post Spike (6100306-PS1)</b>			<b>Source: AZJ0273-06</b>			<b>Prepared &amp; Analyzed: 10/12/16</b>					
Antimony	86.7			ug/L	100.00	0.285	86	80-120			
Arsenic	102			ug/L	100.00	1.40	101	80-120			
Barium	139			ug/L	100.00	43.3	96	80-120			
Beryllium	99.8			ug/L	100.00	0.0052	100	80-120			
Boron	1190			ug/L	1000.0	130	106	80-120			
Cadmium	99.9			ug/L	100.00	-0.0123	100	80-120			
Calcium	39200			ug/L	1000.0	37500	170	80-120			QM-02
Chromium	104			ug/L	100.00	0.810	103	80-120			
Cobalt	97.3			ug/L	100.00	0.308	97	80-120			
Copper	95.4			ug/L	100.00	0.102	95	80-120			
Lead	98.2			ug/L	100.00	0.0393	98	80-120			
Molybdenum	107			ug/L	100.00	2.47	104	80-120			
Nickel	97.9			ug/L	100.00	0.336	98	80-120			
Selenium	100			ug/L	100.00	1.02	99	80-120			
Silver	98.5			ug/L	100.00	0.0051	98	80-120			
Thallium	99.8			ug/L	100.00	0.0926	100	80-120			
Vanadium	104			ug/L	100.00	0.188	104	80-120			
Zinc	102			ug/L	100.00	1.17	101	80-120			
Lithium	103			ug/L	100.00	0.252	102	80-120			

**Batch 6100334 - EPA 7470A**

<b>Blank (6100334-BLK1)</b>					<b>Prepared &amp; Analyzed: 10/13/16</b>						
Mercury	ND	0.00030	0.000041	mg/L							
<b>LCS (6100334-BS1)</b>					<b>Prepared &amp; Analyzed: 10/13/16</b>						
Mercury	0.00243	0.00050	0.000041	mg/L	2.5000E-3		97	80-120			



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

**Report No.: AZJ0273**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6100334 - EPA 7470A</b>											
<b>Duplicate (6100334-DUP1)</b>			<b>Source: AZJ0123-07RE1</b>			<b>Prepared &amp; Analyzed: 10/13/16</b>					
Mercury	0.0128	0.00250	0.00020	mg/L		0.0128			0.06	20	
<b>Matrix Spike (6100334-MS1)</b>			<b>Source: AZJ0273-08</b>			<b>Prepared &amp; Analyzed: 10/13/16</b>					
Mercury	0.00246	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125			
<b>Matrix Spike Dup (6100334-MSD1)</b>			<b>Source: AZJ0273-08</b>			<b>Prepared &amp; Analyzed: 10/13/16</b>					
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125	0.8	20	
<b>Post Spike (6100334-PS1)</b>			<b>Source: AZJ0273-08</b>			<b>Prepared &amp; Analyzed: 10/13/16</b>					
Mercury	1.72			ug/L	1.6667	0.0171	102	80-120			





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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 19, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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			LAB NUMBER	CONTAINER TYPE		PRESERVATION		
SOUTHERN COMPANY SERVICES			CONTAINER TYPE:	P	P		P	P - PLASTIC	1 - HCl, ≤6°C		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:			PRESERVATION:	F	3		3	A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
241 RALPH MCGILL BLVD SE 810185 ATLANTA, GA 30308			# of CONTAINERS	↓				G - CLEAR GLASS	3 - HNO <sub>3</sub>		
REPORT TO:		CC:	METALS APP III & IV EPA 6020, EPA 7470					V - VOA VIAL	4 - NaOH, ≤6°C		
JOJO ABRAHAM		MARIA PADILLA	C1, F, 504 EPA 300					S - STERILE	5 - NaOH/ZnAc, ≤6°C		
REQUESTED COMPLETION DATE:		PO #:	TDS					O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C		
		GPC10684198	RADIUM 226 & 228					*MATRIX CODES:			
PROJECT NAME/STATE:			SW - 846 9310 & 9320								
PROJECT #:			METALS APP III & IV EPA 6020, EPA 7470					WW - WASTEWATER	SL - SLUDGE		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION		GW - GROUNDWATER	SO - SOLID			
10/10/16	1140	GW	X		BGWC-22		SW - SURFACE WATER	A - AIR			
10/10/16	1305	W	X		FBL101016		ST - STORM WATER	L - LIQUID			
10/10/16	1310	W	X		EQFL101016		W - WATER	P - PRODUCT			
10/10/16	1142	GW	X		BGWC-24		REMARKS/ADDITIONAL INFORMATION				
10/10/16	1005	GW	X		BGWC-23						
10/10/16	1344	GW	X		BGWC-21						
10/10/16	1105	GW	X		BGWC-20						
10/10/16	1341	GW	X		BGWC-25						

SAMPLED BY AND TITLE: JOJO ABRAHAM FORREST HOWARD ROBERT WILL MICHAEL		DATE/TIME: 10/10/16 @ 1430	RELINQUISHED BY: [Signature]	DATE/TIME: 10/10/16 @ 1445	FOR LAB USE ONLY
RECEIVED BY: [Signature]		DATE/TIME: 10/10/16 1445	RELINQUISHED BY: [Signature]	DATE/TIME: 10/10/16 0815	LAB #: A270273
RECEIVED BY LAB: [Signature]		DATE/TIME: 10/11/16 0815	SAMPLE SHIPPED VIA: UPS, FEDEX, USPS, COURIER, CLIENT, OTHER, FS	Entered Into LIMS: [Signature]	
PH checked: [Yes/No]		Temperature: 1°C Min, 1°C Max	Custody Seal: [Intact/Broken]	# of Coolers: [ ]	Tracking #: [ ]



# 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: 10/19/2016 8:54:43AM

Attn: Mr. Joju Abraham

Client: Georgia Power

Project: CCR Event

Date Received: 10/11/16 08:15

Work Order: AZJ0273

Logged In By: Mohammad M. Rahman

### OBSERVATIONS

#Samples: 8

#Containers: 24

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:

November 22, 2016

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198888

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on October 12, 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 Bowen Ash Pond CCR

Pace Project No.: 30198888

### 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 Bowen Ash Pond CCR

Pace Project No.: 30198888

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30198888001	BGWC-22	Water	10/10/16 11:40	10/12/16 10:45
30198888002	FBL101016	Water	10/10/16 13:05	10/12/16 10:45
30198888003	EQBL101016	Water	10/10/16 13:10	10/12/16 10:45
30198888004	BGWC-24	Water	10/10/16 11:42	10/12/16 10:45
30198888005	BGWC-23	Water	10/10/16 10:05	10/12/16 10:45
30198888006	BGWC-21	Water	10/10/16 13:44	10/12/16 10:45
30198888007	BGWC-20	Water	10/10/16 11:05	10/12/16 10:45
30198888008	BGWC-25	Water	10/10/16 13:41	10/12/16 10:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198888

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30198888001	BGWC-22	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30198888002	FBL101016	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30198888003	EQBL101016	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30198888004	BGWC-24	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30198888005	BGWC-23	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30198888006	BGWC-21	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30198888007	BGWC-20	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30198888008	BGWC-25	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 Bowen Ash Pond CCR

Pace Project No.: 30198888

Sample: <b>BGWC-22</b>		Lab ID: <b>30198888001</b>	Collected: 10/10/16 11:40	Received: 10/12/16 10:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.09 ± 0.333 (0.214)</b>		pCi/L	10/23/16 15:56	13982-63-3	
		<b>C:93% T:NA</b>					
Radium-228	EPA 9320	<b>1.02 ± 0.480 (0.803)</b>		pCi/L	11/07/16 15:55	15262-20-1	
		<b>C:66% T:81%</b>					
Total Radium	Total Radium Calculation	<b>2.11 ± 0.813 (1.02)</b>		pCi/L	11/10/16 14:29	7440-14-4	

Sample: <b>FBL101016</b>		Lab ID: <b>30198888002</b>	Collected: 10/10/16 13:05	Received: 10/12/16 10:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0515 ± 0.147 (0.357)</b>		pCi/L	10/23/16 15:56	13982-63-3	
		<b>C:90% T:NA</b>					
Radium-228	EPA 9320	<b>0.321 ± 0.354 (0.737)</b>		pCi/L	11/07/16 16:10	15262-20-1	
		<b>C:70% T:86%</b>					
Total Radium	Total Radium Calculation	<b>0.373 ± 0.501 (1.09)</b>		pCi/L	11/10/16 14:29	7440-14-4	

Sample: <b>EQBL101016</b>		Lab ID: <b>30198888003</b>	Collected: 10/10/16 13:10	Received: 10/12/16 10:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.102 ± 0.122 (0.242)</b>		pCi/L	10/23/16 15:56	13982-63-3	
		<b>C:90% T:NA</b>					
Radium-228	EPA 9320	<b>0.430 ± 0.418 (0.856)</b>		pCi/L	11/07/16 16:10	15262-20-1	
		<b>C:68% T:77%</b>					
Total Radium	Total Radium Calculation	<b>0.532 ± 0.540 (1.10)</b>		pCi/L	11/10/16 14:29	7440-14-4	

Sample: <b>BGWC-24</b>		Lab ID: <b>30198888004</b>	Collected: 10/10/16 11:42	Received: 10/12/16 10:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.40 ± 0.404 (0.307)</b>		pCi/L	10/23/16 15:56	13982-63-3	
		<b>C:87% T:NA</b>					
Radium-228	EPA 9320	<b>2.06 ± 0.616 (0.706)</b>		pCi/L	11/07/16 15:55	15262-20-1	
		<b>C:75% T:76%</b>					
Total Radium	Total Radium Calculation	<b>3.46 ± 1.02 (1.01)</b>		pCi/L	11/10/16 14:29	7440-14-4	

Sample: <b>BGWC-23</b>		Lab ID: <b>30198888005</b>	Collected: 10/10/16 10:05	Received: 10/12/16 10:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.617 ± 0.264 (0.323)</b>		pCi/L	10/23/16 15:57	13982-63-3	
		<b>C:90% T:NA</b>					
Radium-228	EPA 9320	<b>0.867 ± 0.432 (0.734)</b>		pCi/L	11/07/16 15:55	15262-20-1	
		<b>C:68% T:83%</b>					

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR  
Pace Project No.: 30198888

Sample: <b>BGWC-23</b>		Lab ID: <b>30198888005</b>	Collected: 10/10/16 10:05	Received: 10/12/16 10:45	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>1.48 ± 0.696 (1.06)</b>		pCi/L	11/10/16 14:29	7440-14-4	

Sample: <b>BGWC-21</b>		Lab ID: <b>30198888006</b>	Collected: 10/10/16 13:44	Received: 10/12/16 10:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.216 ± 0.184 (0.308)</b> C:86% T:NA		pCi/L	11/04/16 08:24	13982-63-3	
Radium-228	EPA 9320	<b>0.717 ± 0.373 (0.661)</b> C:81% T:93%		pCi/L	11/07/16 16:10	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.933 ± 0.557 (0.969)</b>		pCi/L	11/10/16 14:29	7440-14-4	

Sample: <b>BGWC-20</b>		Lab ID: <b>30198888007</b>	Collected: 10/10/16 11:05	Received: 10/12/16 10:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.532 ± 0.264 (0.324)</b> C:93% T:NA		pCi/L	11/04/16 08:24	13982-63-3	
Radium-228	EPA 9320	<b>0.412 ± 0.493 (1.00)</b> C:73% T:80%		pCi/L	11/19/16 19:42	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.944 ± 0.757 (1.32)</b>		pCi/L	11/21/16 15:06	7440-14-4	

Sample: <b>BGWC-25</b>		Lab ID: <b>30198888008</b>	Collected: 10/10/16 13:41	Received: 10/12/16 10:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.167 ± 0.176 (0.337)</b> C:92% T:NA		pCi/L	11/04/16 08:24	13982-63-3	
Radium-228	EPA 9320	<b>0.865 ± 0.552 (1.02)</b> C:74% T:76%		pCi/L	11/19/16 19:42	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.03 ± 0.728 (1.36)</b>		pCi/L	11/21/16 15:06	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198888

QC Batch: 236797 Analysis Method: EPA 9320

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

Associated Lab Samples: 30198888001, 30198888002, 30198888003, 30198888004, 30198888005, 30198888006

METHOD BLANK: 1163885 Matrix: Water

Associated Lab Samples: 30198888001, 30198888002, 30198888003, 30198888004, 30198888005, 30198888006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.589 ± 0.374 (0.694) C:70% T:87%	pCi/L	11/07/16 12:11	

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.

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198888

QC Batch: 238842 Analysis Method: EPA 9315

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

Associated Lab Samples: 30198888006, 30198888007, 30198888008

METHOD BLANK: 1173698 Matrix: Water

Associated Lab Samples: 30198888006, 30198888007, 30198888008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0138 ± 0.0910 (0.293) C:93% T:NA	pCi/L	11/04/16 08:24	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198888

QC Batch: 239879

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30198888007, 30198888008

METHOD BLANK: 1178545

Matrix: Water

Associated Lab Samples: 30198888007, 30198888008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.825 ± 0.519 (0.961) C:66% T:85%	pCi/L	11/19/16 19:42	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198888

QC Batch: 236795

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30198888001, 30198888002, 30198888003, 30198888004, 30198888005

METHOD BLANK: 1163883

Matrix: Water

Associated Lab Samples: 30198888001, 30198888002, 30198888003, 30198888004, 30198888005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0446 ± 0.0724 (0.264) C:92% T:NA	pCi/L	10/23/16 14:19	

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## QUALIFIERS

Project: Plant Bowen Ash Pond CCR

Pace Project No.: 30198888

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

CHAIN OF CUSTODY RECORD

CLIENT NAME: SOUTHERN COMPANY SERVICES					ANALYSIS REQUESTED										LAB ID NUMBER	CONTAINER TYPE		PRESERVATION																																														
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 RALPH MCGILL BLVD SE 810185 ATLANTA, GA 30328					CONTAINER TYPE: P P P PRESERVATION: 2 3 3											P - PLASTIC	1 - HCl, ≤6°C																																															
REPORT TO: JOJO ABRAHAM		CC: MARIA PADILLA HEATH MCCORKLE			CONTAINERS ↓ METALS APP III & IV EPA 6020, EPA 7470 Cl, F, SO4 EPA 320 TDS SM 2540C RADIUM 226 & 228 SW - 846 9316 & 9320 METALS APP. III & IV EPA 6020, EPA 7470	LAB ID NUMBER ↓	A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C																																																								
REQUESTED COMPLETION DATE:		PO#: GPC10684198					G - CLEAR GLASS	3 - HNO <sub>3</sub>																																																								
PROJECT NAME/STATE: PLANT BOWEN ASH POND CCR							V - VOA VIAL	4 - NaOH, ≤6°C																																																								
PROJECT #:							S - STERILE	5 - NaOH/ZnAc, ≤6°C																																																								
<table border="1"> <thead> <tr> <th>Collection DATE</th> <th>Collection TIME</th> <th>MATRIX CODE*</th> <th>C O M P</th> <th>G R A B</th> <th>SAMPLE IDENTIFICATION</th> </tr> </thead> <tbody> <tr><td>10/10/16</td><td>1140</td><td>GW</td><td></td><td>X</td><td>BGWC-22</td></tr> <tr><td>10/10/16</td><td>1305</td><td>W</td><td></td><td>X</td><td>FBL101016</td></tr> <tr><td>10/10/16</td><td>1310</td><td>W</td><td></td><td>X</td><td>EQBL101016</td></tr> <tr><td>10/10/16</td><td>1142</td><td>GW</td><td></td><td>X</td><td>BGWC-24</td></tr> <tr><td>10/10/16</td><td>1005</td><td>GW</td><td></td><td>X</td><td>BGWC-23</td></tr> <tr><td>10/10/16</td><td>1344</td><td>GW</td><td></td><td>X</td><td>BGWC-21</td></tr> <tr><td>10/10/16</td><td>1105</td><td>GW</td><td></td><td>X</td><td>BGWC-20</td></tr> <tr><td>10/10/16</td><td>1341</td><td>GW</td><td></td><td>X</td><td>BGWC-25</td></tr> </tbody> </table>							Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	10/10/16	1140		GW		X	BGWC-22	10/10/16	1305	W		X	FBL101016	10/10/16	1310	W		X	EQBL101016	10/10/16	1142	GW		X	BGWC-24	10/10/16	1005	GW		X	BGWC-23	10/10/16	1344	GW		X	BGWC-21	10/10/16	1105	GW		X	BGWC-20	10/10/16	1341	GW		X	BGWC-25	O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
							Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION																																																				
10/10/16	1140	GW		X			BGWC-22																																																									
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10/10/16	1341	GW		X	BGWC-25																																																											
					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																																																											
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SAMPLED BY AND TITLE: KEVIN STEPHENSON FORREST HOWARD ROBERT MULL MICHAEL					DATE/TIME: 10/10/16 @ 1430					RELINQUISHED BY: <i>[Signature]</i>					DATE/TIME: 10/10/16 @ 1445																																																	
RECEIVED BY: <i>[Signature]</i>					DATE/TIME: 10/10/16 1445					RECEIVED BY: <i>[Signature]</i>					DATE/TIME: 10/11/16 0815																																																	
RECEIVED BY LAB: <i>[Signature]</i>					DATE/TIME: 10-12-16 1045					SAMPLE SHIPPED VIA:					LAB #:																																																	
Checked: Yes No NA					Ice: Yes No NA					Temperature: Min Max					Entered into LIMS:																																																	
										UPS <input checked="" type="checkbox"/> FED-EX <input checked="" type="checkbox"/> USPS <input type="checkbox"/> COURIER <input type="checkbox"/> CLIENT <input type="checkbox"/> OTHER FS <input type="checkbox"/>					Tracking #:																																																	
										Custody Seal: Intact Broken Not Present					# of Coolers Cooler ID:																																																	

WO#: 30198888



30198888

Sample Condition Upon Receipt Pittsburgh

30198888



Client Name: Pace Georgia Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5099 7420

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

Thermometer Used NIA Type of Ice: Wet Blue None

Cooler Temperature Observed Temp NIA °C Correction Factor: NIA °C Final Temp: NIA °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: KH 10-12-16

Comments:

	Yes	No	N/A	
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:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>PH &lt; 2</u>
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>KH</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>KH</u> Date: <u>10-12-16</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

Test: Ra-226  
Analyst: LAL  
Date: 10/22/2016  
Worklist: 31917  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1163883	
MB concentration:	-0.045	
M/B Counting Uncertainty:	0.072	
MB MDC:	0.264	
MB Numerical Performance Indicator:	-1.21	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS/D (Y or N)?	N
	LCS31917	LCSD31917
Count Date:	10/24/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.675	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.508	
Target Conc. (pCi/L, g, F):	8.800	
Uncertainty (Calculated):	0.414	
Result (pCi/L, g, F):	6.997	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.672	
Numerical Performance Indicator:	-4.48	
Percent Recovery:	79.51%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30198504002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30198504002DUP	
Sample Result (pCi/L, g, F):	0.233	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.175	
Sample Duplicate Result (pCi/L, g, F):	-0.046	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.134	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	2.484	30198504002
Duplicate RPD:	298.18%	30198504002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LAL*  
*Quipa*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 10/19/2016  
Worklist: 31919  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1163885	
MB concentration:	0.589	
M/B Counting Uncertainty:	0.359	
MB MDC:	0.694	
MB Numerical Performance Indicator:	3.21	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS31919	LCS31919
Count Date:	11/7/2016	
Spike I.D.:	16-025	
Spike Concentration (pCi/mL):	25.222	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.802	
Target Conc. (pCi/L, g, F):	6.290	
Uncertainty (Calculated):	0.453	
Result (pCi/L, g, F):	8.283	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.001	
Numerical Performance Indicator:	3.56	
Percent Recovery:	131.69%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30198504002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30198504002DUP	
Sample Result (pCi/L, g, F):	0.712	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.388	
Sample Duplicate Result (pCi/L, g, F):	1.166	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.397	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.605	30198504002
Duplicate RPD:	48.41%	30198504002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*JLW*  
*Output*

## Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: JC2  
Date: 11/3/2016  
Worklist: 32221  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1173698
MB concentration:	-0.014
M/B Counting Uncertainty:	0.091
MB MDC:	0.293
MB Numerical Performance Indicator:	-0.30
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS/D (Y or N)?	N
	LCS32221	LCS/D32221
Count Date:	11/4/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.675	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.502	
Target Conc. (pCi/L, g, F):	8.897	
Uncertainty (Calculated):	0.419	
Result (pCi/L, g, F):	8.029	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.830	
Numerical Performance Indicator:	-1.83	
Percent Recovery:	90.24%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30199878004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30199878004DUP	
Sample Result (pCi/L, g, F):	0.172	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.182	
Sample Duplicate Result (pCi/L, g, F):	0.078	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.133	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.820	30199878004
Duplicate RPD:	75.48%	30199878004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 11/16/2016  
Worklist: 32404  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1178545	
MB concentration:	0.825	
M/B Counting Uncertainty:	0.498	
MB MDC:	0.961	
MB Numerical Performance Indicator:	3.25	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS32404	LCSD32404
Count Date:	11/19/2016		
Spike I.D.:	16-027		
Spike Concentration (pCi/mL):	26.037		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.803		
Target Conc. (pCi/L, g, F):	6.489		
Uncertainty (Calculated):	0.467		
Result (pCi/L, g, F):	6.876		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.889		
Numerical Performance Indicator:	0.75		
Percent Recovery:	105.96%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30199878004	
Duplicate Sample I.D.:	30199878004DUP	
Sample Result (pCi/L, g, F):	1.237	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.569	
Sample Duplicate Result (pCi/L, g, F):	1.514	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.603	
Are sample and/or duplicate results below MDC? See Below ##		
Duplicate Numerical Performance Indicator:	-0.655	30199878004
Duplicate RPD:	20.15%	30199878004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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: AAA0285**

**January 19, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

January 19, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-26	AAA0285-01	Ground Water	01/10/17 12:32	01/11/17 08:14
BGWA-27	AAA0285-02	Ground Water	01/10/17 11:50	01/11/17 08:14
BGWA-28	AAA0285-03	Ground Water	01/10/17 11:00	01/11/17 08:14
BGWA-29	AAA0285-04	Ground Water	01/10/17 10:16	01/11/17 08:14





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

January 19, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAA0285

**Project:** CCR Event

**Client ID:** BGWA-26

**Lab Number ID:** AAA0285-01

**Date/Time Sampled:** 1/10/2017 12:32:00PM

**Date/Time Received:** 1/11/2017 8:14:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	186	25	10	mg/L	SM 2540 C		1	01/11/17 12:58	01/11/17 12:58	7010241	JPT
<b>Inorganic Anions</b>											
Chloride	6.7	0.25	0.01	mg/L	EPA 300.0		1	01/13/17 08:53	01/14/17 07:53	7010303	RLC
Fluoride	0.34	0.30	0.02	mg/L	EPA 300.0		1	01/13/17 08:53	01/14/17 07:53	7010303	RLC
Sulfate	36	1.0	0.05	mg/L	EPA 300.0	B-01	1	01/13/17 08:53	01/14/17 07:53	7010303	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Arsenic	0.0018	0.0050	0.0016	mg/L	EPA 6020B	J	1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Barium	0.0380	0.0100	0.0004	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Boron	0.0111	0.0400	0.0064	mg/L	EPA 6020B	J	1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Calcium	23.5	5.00	0.311	mg/L	EPA 6020B		10	01/16/17 11:10	01/18/17 13:03	7010326	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Molybdenum	0.0054	0.0100	0.0017	mg/L	EPA 6020B	J	1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Lithium	0.0022	0.0500	0.0021	mg/L	EPA 6020B	J	1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	01/12/17 10:30	01/12/17 14:09	7010238	MTC



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 Atlanta GA, 30339

January 19, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0285

Project: CCR Event

Client ID: BGWA-27

Lab Number ID: AAA0285-02

Date/Time Sampled: 1/10/2017 11:50:00AM

Date/Time Received: 1/11/2017 8:14:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	218	25	10	mg/L	SM 2540 C		1	01/11/17 12:58	01/11/17 12:58	7010241	JPT
<b>Inorganic Anions</b>											
Chloride	14	0.25	0.01	mg/L	EPA 300.0		1	01/13/17 08:53	01/14/17 08:14	7010303	RLC
Fluoride	0.11	0.30	0.02	mg/L	EPA 300.0	J	1	01/13/17 08:53	01/14/17 08:14	7010303	RLC
Sulfate	8.8	1.0	0.05	mg/L	EPA 300.0	B-01	1	01/13/17 08:53	01/14/17 08:14	7010303	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Barium	0.0388	0.0100	0.0004	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Boron	0.0123	0.0400	0.0064	mg/L	EPA 6020B	J	1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Calcium	41.8	25.0	1.55	mg/L	EPA 6020B		50	01/16/17 11:10	01/17/17 18:03	7010326	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	01/12/17 10:30	01/12/17 14:12	7010238	MTC





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 Atlanta GA, 30339

January 19, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAA0285

**Project:** CCR Event

**Client ID:** BGWA-28

**Lab Number ID:** AAA0285-03

**Date/Time Sampled:** 1/10/2017 11:00:00AM

**Date/Time Received:** 1/11/2017 8:14:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	225	25	10	mg/L	SM 2540 C		1	01/11/17 12:58	01/11/17 12:58	7010241	JPT
<b>Inorganic Anions</b>											
Chloride	17	0.25	0.01	mg/L	EPA 300.0		1	01/13/17 08:53	01/14/17 08:35	7010303	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	01/13/17 08:53	01/14/17 08:35	7010303	RLC
Sulfate	12	1.0	0.05	mg/L	EPA 300.0	B-01	1	01/13/17 08:53	01/14/17 08:35	7010303	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Barium	0.167	0.0100	0.0004	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Boron	0.0745	0.0400	0.0064	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Calcium	42.6	25.0	1.55	mg/L	EPA 6020B		50	01/12/17 12:15	01/16/17 18:42	7010268	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Molybdenum	0.0018	0.0100	0.0017	mg/L	EPA 6020B	J	1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Selenium	0.0014	0.0100	0.0010	mg/L	EPA 6020B	J	1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	01/12/17 10:30	01/12/17 14:19	7010238	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

January 19, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0285

Project: CCR Event

Client ID: BGWA-29

Lab Number ID: AAA0285-04

Date/Time Sampled: 1/10/2017 10:16:00AM

Date/Time Received: 1/11/2017 8:14:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	115	25	10	mg/L	SM 2540 C		1	01/11/17 12:58	01/11/17 12:58	7010241	JPT
<b>Inorganic Anions</b>											
Chloride	1.6	0.25	0.01	mg/L	EPA 300.0		1	01/13/17 08:53	01/14/17 08:56	7010303	RLC
Fluoride	0.03	0.30	0.02	mg/L	EPA 300.0	J	1	01/13/17 08:53	01/14/17 08:56	7010303	RLC
Sulfate	4.5	1.0	0.05	mg/L	EPA 300.0	B-01	1	01/13/17 08:53	01/14/17 08:56	7010303	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Barium	0.0306	0.0100	0.0004	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Cadmium	0.00009	0.0010	0.00007	mg/L	EPA 6020B	J	1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Calcium	20.4	5.00	0.311	mg/L	EPA 6020B		10	01/12/17 12:15	01/17/17 15:27	7010268	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	01/12/17 10:30	01/12/17 14:21	7010238	MTC



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January 19, 2017

**Report No.: AAA0285**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010241 - SM 2540 C</b>											
<b>Blank (7010241-BLK1)</b>						Prepared & Analyzed: 01/11/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7010241-BS1)</b>						Prepared & Analyzed: 01/11/17					
Total Dissolved Solids	403	25	10	mg/L	400.00		101	84-108			
<b>Duplicate (7010241-DUP1)</b>						Source: AAA0285-03 Prepared & Analyzed: 01/11/17					
Total Dissolved Solids	228	25	10	mg/L		225			1	10	



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January 19, 2017

**Report No.: AAA0285**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010303 - EPA 300.0</b>											
<b>Blank (7010303-BLK1)</b>						Prepared: 01/13/17 Analyzed: 01/14/17					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	0.12	1.0	0.05	mg/L							J
<b>LCS (7010303-BS1)</b>						Prepared: 01/13/17 Analyzed: 01/14/17					
Chloride	10.4	0.25	0.01	mg/L	10.010		104	90-110			
Fluoride	10.7	0.30	0.02	mg/L	10.020		107	90-110			
Sulfate	10.7	1.0	0.05	mg/L	10.020		106	90-110			
<b>Matrix Spike (7010303-MS1)</b>						Source: AAA0261-01 Prepared: 01/13/17 Analyzed: 01/14/17					
Chloride	12.3	0.25	0.01	mg/L	10.010	2.52	98	90-110			
Fluoride	10.3	0.30	0.02	mg/L	10.020	0.02	102	90-110			
Sulfate	11.8	1.0	0.05	mg/L	10.020	1.93	99	90-110			
<b>Matrix Spike Dup (7010303-MSD1)</b>						Source: AAA0261-01 Prepared: 01/13/17 Analyzed: 01/14/17					
Chloride	12.3	0.25	0.01	mg/L	10.010	2.52	98	90-110	0.3	15	
Fluoride	10.3	0.30	0.02	mg/L	10.020	0.02	102	90-110	0	15	
Sulfate	11.9	1.0	0.05	mg/L	10.020	1.93	99	90-110	0.4	15	



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**Report No.: AAA0285**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010238 - EPA 7470A</b>											
<b>Blank (7010238-BLK1)</b> Prepared & Analyzed: 01/12/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7010238-BS1)</b> Prepared & Analyzed: 01/12/17											
Mercury	0.00240	0.00050	0.000041	mg/L	2.5000E-3		96	80-120			
<b>Matrix Spike (7010238-MS1)</b> Source: AAA0285-01 Prepared & Analyzed: 01/12/17											
Mercury	0.00243	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125			
<b>Matrix Spike Dup (7010238-MSD1)</b> Source: AAA0285-01 Prepared & Analyzed: 01/12/17											
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125	2	20	
<b>Post Spike (7010238-PS1)</b> Source: AAA0285-01 Prepared & Analyzed: 01/12/17											
Mercury	1.78			ug/L	1.6667	0.00235	107	80-120			
<b>Batch 7010268 - EPA 3005A</b>											
<b>Blank (7010268-BLK1)</b> Prepared: 01/12/17 Analyzed: 01/16/17											
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	0.0008	0.0250	0.0005	mg/L							J
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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Attention: Mr. Joju Abraham

January 19, 2017

**Report No.: AAA0285**

**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 7010268 - EPA 3005A**

**LCS (7010268-BS1)**

Prepared: 01/12/17 Analyzed: 01/16/17

Antimony	0.108	0.0030	0.0008	mg/L	0.10000		108	80-120			
Arsenic	0.103	0.0050	0.0016	mg/L	0.10000		103	80-120			
Barium	0.101	0.0100	0.0004	mg/L	0.10000		101	80-120			
Beryllium	0.107	0.0030	0.00008	mg/L	0.10000		107	80-120			
Boron	0.967	0.0400	0.0064	mg/L	1.0000		97	80-120			
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000		105	80-120			
Calcium	1.04	0.500	0.0311	mg/L	1.0000		104	80-120			
Chromium	0.101	0.0100	0.0009	mg/L	0.10000		101	80-120			
Cobalt	0.0981	0.0100	0.0005	mg/L	0.10000		98	80-120			
Copper	0.0994	0.0250	0.0005	mg/L	0.10000		99	80-120			
Lead	0.0992	0.0050	0.0001	mg/L	0.10000		99	80-120			
Molybdenum	0.105	0.0100	0.0017	mg/L	0.10000		105	80-120			
Nickel	0.109	0.0100	0.0006	mg/L	0.10000		109	80-120			
Selenium	0.106	0.0100	0.0010	mg/L	0.10000		106	80-120			
Silver	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Thallium	0.101	0.0010	0.0002	mg/L	0.10000		101	80-120			
Vanadium	0.104	0.0100	0.0071	mg/L	0.10000		104	80-120			
Zinc	0.106	0.0100	0.0021	mg/L	0.10000		106	80-120			
Lithium	0.103	0.0500	0.0021	mg/L	0.10000		103	80-120			

**Matrix Spike (7010268-MS1)**

Source: AAA0261-03

Prepared: 01/12/17 Analyzed: 01/16/17

Antimony	0.108	0.0030	0.0008	mg/L	0.10000	ND	108	75-125			
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125			
Barium	0.115	0.0100	0.0004	mg/L	0.10000	0.0135	101	75-125			
Beryllium	0.106	0.0030	0.00008	mg/L	0.10000	ND	106	75-125			
Boron	0.964	0.0400	0.0064	mg/L	1.0000	ND	96	75-125			
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000	0.0002	105	75-125			
Calcium	29.1	25.0	1.55	mg/L	1.0000	27.6	153	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	ND	107	75-125			
Copper	0.105	0.0250	0.0005	mg/L	0.10000	ND	105	75-125			
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125			
Molybdenum	0.102	0.0100	0.0017	mg/L	0.10000	ND	102	75-125			
Nickel	0.111	0.0100	0.0006	mg/L	0.10000	ND	111	75-125			
Selenium	0.105	0.0100	0.0010	mg/L	0.10000	ND	105	75-125			
Silver	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Thallium	0.105	0.0010	0.0002	mg/L	0.10000	ND	105	75-125			
Vanadium	0.113	0.0100	0.0071	mg/L	0.10000	ND	113	75-125			
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	ND	105	75-125			
Lithium	0.109	0.0500	0.0021	mg/L	0.10000	ND	109	75-125			



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Attention: Mr. Joju Abraham

January 19, 2017

**Report No.: AAA0285**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010268 - EPA 3005A</b>											
<b>Matrix Spike Dup (7010268-MSD1)</b>			<b>Source: AAA0261-03</b>			<b>Prepared: 01/12/17 Analyzed: 01/16/17</b>					
Antimony	0.110	0.0030	0.0008	mg/L	0.10000	ND	110	75-125	2	20	
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	ND	101	75-125	1	20	
Barium	0.117	0.0100	0.0004	mg/L	0.10000	0.0135	103	75-125	1	20	
Beryllium	0.108	0.0030	0.00008	mg/L	0.10000	ND	108	75-125	3	20	
Boron	0.965	0.0400	0.0064	mg/L	1.0000	ND	96	75-125	0.1	20	
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000	0.0002	104	75-125	0.5	20	
Calcium	28.1	25.0	1.55	mg/L	1.0000	27.6	50	75-125	4	20	QM-02
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	ND	108	75-125	0.6	20	
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	3	20	
Copper	0.0990	0.0250	0.0005	mg/L	0.10000	ND	99	75-125	6	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	0.8	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	4	20	
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	ND	105	75-125	6	20	
Selenium	0.0963	0.0100	0.0010	mg/L	0.10000	ND	96	75-125	9	20	
Silver	0.0995	0.0100	0.0005	mg/L	0.10000	ND	99	75-125	3	20	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125	2	20	
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125	5	20	
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	ND	105	75-125	0.6	20	
Lithium	0.109	0.0500	0.0021	mg/L	0.10000	ND	109	75-125	0.5	20	
<b>Post Spike (7010268-PS1)</b>											
<b>Source: AAA0261-03</b>			<b>Prepared: 01/12/17 Analyzed: 01/16/17</b>								
Antimony	104			ug/L	100.00	0.501	103	80-120			
Arsenic	104			ug/L	100.00	0.616	104	80-120			
Barium	117			ug/L	100.00	13.5	103	80-120			
Beryllium	107			ug/L	100.00	0.0260	107	80-120			
Boron	966			ug/L	1000.0	3.42	96	80-120			
Cadmium	108			ug/L	100.00	0.153	108	80-120			
Calcium	28000			ug/L	1000.0	27600	38	80-120			QM-02
Chromium	109			ug/L	100.00	0.537	108	80-120			
Cobalt	107			ug/L	100.00	0.0216	107	80-120			
Copper	102			ug/L	100.00	0.231	102	80-120			
Lead	101			ug/L	100.00	0.0322	101	80-120			
Molybdenum	109			ug/L	100.00	0.446	109	80-120			
Nickel	110			ug/L	100.00	0.151	110	80-120			
Selenium	104			ug/L	100.00	0.0190	104	80-120			
Silver	104			ug/L	100.00	0.0035	104	80-120			
Thallium	104			ug/L	100.00	0.0334	104	80-120			
Vanadium	112			ug/L	100.00	-0.774	112	80-120			
Zinc	108			ug/L	100.00	1.50	106	80-120			
Lithium	108			ug/L	100.00	0.598	107	80-120			



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January 19, 2017

**Report No.: AAA0285**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010326 - EPA 3005A</b>											
<b>Blank (7010326-BLK1)</b>						Prepared: 01/16/17 Analyzed: 01/17/17					
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							
<b>LCS (7010326-BS1)</b>						Prepared: 01/16/17 Analyzed: 01/17/17					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000		102	80-120			
Arsenic	0.100	0.0050	0.0016	mg/L	0.10000		100	80-120			
Barium	0.0974	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.0993	0.0030	0.00008	mg/L	0.10000		99	80-120			
Boron	0.985	0.0400	0.0064	mg/L	1.0000		99	80-120			
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000		102	80-120			
Calcium	1.02	0.500	0.0311	mg/L	1.0000		102	80-120			
Chromium	0.102	0.0100	0.0009	mg/L	0.10000		102	80-120			
Cobalt	0.0996	0.0100	0.0005	mg/L	0.10000		100	80-120			
Copper	0.0958	0.0250	0.0005	mg/L	0.10000		96	80-120			
Lead	0.0981	0.0050	0.0001	mg/L	0.10000		98	80-120			
Molybdenum	0.0994	0.0100	0.0017	mg/L	0.10000		99	80-120			
Nickel	0.101	0.0100	0.0006	mg/L	0.10000		101	80-120			
Selenium	0.100	0.0100	0.0010	mg/L	0.10000		100	80-120			
Silver	0.0999	0.0100	0.0005	mg/L	0.10000		100	80-120			
Thallium	0.0981	0.0010	0.0002	mg/L	0.10000		98	80-120			
Vanadium	0.101	0.0100	0.0071	mg/L	0.10000		101	80-120			
Zinc	0.0962	0.0100	0.0021	mg/L	0.10000		96	80-120			
Lithium	0.0983	0.0500	0.0021	mg/L	0.10000		98	80-120			





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January 19, 2017

**Report No.: AAA0285**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010326 - EPA 3005A</b>											
<b>Matrix Spike (7010326-MS1)</b>			<b>Source: AAA0446-03</b>			<b>Prepared: 01/16/17 Analyzed: 01/17/17</b>					
Antimony	0.101	0.0030	0.0008	mg/L	0.10000	ND	101	75-125			
Arsenic	0.100	0.0050	0.0016	mg/L	0.10000	ND	100	75-125			
Barium	0.115	0.0100	0.0004	mg/L	0.10000	0.0150	100	75-125			
Beryllium	0.101	0.0030	0.00008	mg/L	0.10000	ND	101	75-125			
Boron	0.983	0.0400	0.0064	mg/L	1.0000	ND	98	75-125			
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	0.0001	101	75-125			
Calcium	33.5	25.0	1.55	mg/L	1.0000	31.2	227	75-125			QM-02
Chromium	0.105	0.0100	0.0009	mg/L	0.10000	ND	105	75-125			
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Copper	0.0969	0.0250	0.0005	mg/L	0.10000	ND	97	75-125			
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125			
Molybdenum	0.104	0.0100	0.0017	mg/L	0.10000	ND	104	75-125			
Nickel	0.103	0.0100	0.0006	mg/L	0.10000	ND	103	75-125			
Selenium	0.0978	0.0100	0.0010	mg/L	0.10000	ND	98	75-125			
Silver	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125			
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125			
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125			
Zinc	0.102	0.0100	0.0021	mg/L	0.10000	ND	102	75-125			
Lithium	0.101	0.0500	0.0021	mg/L	0.10000	ND	101	75-125			
<b>Matrix Spike Dup (7010326-MSD1)</b>			<b>Source: AAA0446-03</b>			<b>Prepared: 01/16/17 Analyzed: 01/17/17</b>					
Antimony	0.109	0.0030	0.0008	mg/L	0.10000	ND	109	75-125	7	20	
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125	2	20	
Barium	0.117	0.0100	0.0004	mg/L	0.10000	0.0150	102	75-125	2	20	
Beryllium	0.0979	0.0030	0.00008	mg/L	0.10000	ND	98	75-125	3	20	
Boron	0.984	0.0400	0.0064	mg/L	1.0000	ND	98	75-125	0.2	20	
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000	0.0001	102	75-125	1	20	
Calcium	34.0	25.0	1.55	mg/L	1.0000	31.2	280	75-125	2	20	QM-02
Chromium	0.109	0.0100	0.0009	mg/L	0.10000	ND	109	75-125	4	20	
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	1	20	
Copper	0.0980	0.0250	0.0005	mg/L	0.10000	ND	98	75-125	1	20	
Lead	0.0994	0.0050	0.0001	mg/L	0.10000	ND	99	75-125	2	20	
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000	ND	103	75-125	1	20	
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	ND	105	75-125	1	20	
Selenium	0.0988	0.0100	0.0010	mg/L	0.10000	ND	99	75-125	1	20	
Silver	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125	1	20	
Thallium	0.100	0.0010	0.0002	mg/L	0.10000	ND	100	75-125	3	20	
Vanadium	0.111	0.0100	0.0071	mg/L	0.10000	ND	111	75-125	3	20	
Zinc	0.102	0.0100	0.0021	mg/L	0.10000	ND	102	75-125	0.1	20	
Lithium	0.103	0.0500	0.0021	mg/L	0.10000	ND	103	75-125	1	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

January 19, 2017

**Report No.: AAA0285**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010326 - EPA 3005A</b>											
<b>Post Spike (7010326-PS1)</b>			<b>Source: AAA0446-03</b>			<b>Prepared: 01/16/17 Analyzed: 01/17/17</b>					
Antimony	98.3			ug/L	100.00	0.463	98	80-120			
Arsenic	102			ug/L	100.00	0.438	102	80-120			
Barium	118			ug/L	100.00	15.0	103	80-120			
Beryllium	96.2			ug/L	100.00	0.0139	96	80-120			
Boron	1000			ug/L	1000.0	2.54	100	80-120			
Cadmium	97.0			ug/L	100.00	0.148	97	80-120			
Calcium	34400			ug/L	1000.0	31200	320	80-120			QM-02
Chromium	106			ug/L	100.00	0.645	105	80-120			
Cobalt	103			ug/L	100.00	0.0295	103	80-120			
Copper	99.1			ug/L	100.00	0.206	99	80-120			
Lead	99.9			ug/L	100.00	0.0602	100	80-120			
Molybdenum	103			ug/L	100.00	0.299	103	80-120			
Nickel	101			ug/L	100.00	0.180	101	80-120			
Selenium	104			ug/L	100.00	-0.392	104	80-120			
Silver	101			ug/L	100.00	0.0010	101	80-120			
Thallium	100			ug/L	100.00	0.0051	100	80-120			
Vanadium	108			ug/L	100.00	-1.49	108	80-120			
Zinc	102			ug/L	100.00	0.822	101	80-120			
Lithium	99.5			ug/L	100.00	0.568	99	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

January 19, 2017

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## Legend

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### 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

- 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



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										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION				
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:	P	P	P														
Southern Company Services													P - PLASTIC	1 - HCl, ≤6°C					
241 Ralph McGill Blvd SE B10125													A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C					
Atlanta GA 30308													G - CLEAR GLASS	3 - HNO <sub>3</sub>					
REPORT TO:	CC: Maria Padilla Heath McErkelt												V - VOA VIAL	4 - NaOH, ≤6°C					
REQUESTED COMPLETION DATE:	PO#: GPC1068498												S - STERILE	5 - NaOH/ZnAc, ≤6°C					
PROJECT NAME/STATE: Plant Bowen CCR Ash Pond													O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C					
PROJECT #:													*MATRIX CODES:						
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of													
1/10/17	1232	GW		X	BGWA-26	3													
1/10/17	1150	GW		X	BGWA-27	3													
1/10/17	1100	GW		X	BGWA-28	3													
1/10/17	1016	GW		X	BGWA-29	3													
SAMPLED BY AND TITLE:		DATE/TIME:		RELINQUISHED BY:				DATE/TIME:		LAB #:		FOR LAB USE ONLY							
Ernest Howard / Kevin Stevenson		1/10/17 1530		Ernest Howard				1/11/17 0814		AAA0285									
RECEIVED BY:		DATE/TIME:		RELINQUISHED BY:				DATE/TIME:		Entered into LIMS:									
Ernest Howard		1-11-17 0814								MR									
RECEIVED BY LAB:		DATE/TIME:		SAMPLE SHIPPED VIA:				Tracking #:											
Ernest Howard		1-11-17 0814		UPS FED-EX USPS COURIER CLIENT OTHER FS															
Checked: No NA Yes No NA		Temperature: 21.4		Custody Seal: Intact Broken Not Present				Cooler ID:											
		Min: Max:																	

Page 16 of 17



**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: 1/11/2017 10:17:39AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 01/11/17 08:14

**Work Order:** AAA0285

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 4

**#Containers:** 12

**Minimum Temp(C):** 1.4

**Maximum Temp(C):** 1.4

**Custody Seal(s) Used:** 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:**

February 09, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30207810

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on January 12, 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  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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

Project: Plant Bowen

Pace Project No.: 30207810

### 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 Bowen

Pace Project No.: 30207810

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30207810001	BGWA-26	Water	01/10/17 12:32	01/12/17 09:40
30207810002	BGWA-27	Water	01/10/17 11:50	01/12/17 09:40
30207810003	BGWA-28	Water	01/10/17 11:00	01/12/17 09:40
30207810004	BGWA-29	Water	01/10/17 10:16	01/12/17 09:40

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30207810

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30207810001	BGWA-26	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30207810002	BGWA-27	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30207810003	BGWA-28	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30207810004	BGWA-29	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 Bowen  
Pace Project No.: 30207810

**Sample: BGWA-26**      **Lab ID: 30207810001**      Collected: 01/10/17 12:32      Received: 01/12/17 09:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Comments: • Low volume, client notified

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.154 ± 0.159 (0.306)</b> C:89% T:NA	pCi/L	01/22/17 12:53	13982-63-3	
Radium-228	EPA 9320	<b>0.804 ± 0.480 (0.908)</b> C:81% T:81%	pCi/L	02/07/17 12:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.958 ± 0.639 (1.21)</b>	pCi/L	02/08/17 15:41	7440-14-4	

**Sample: BGWA-27**      **Lab ID: 30207810002**      Collected: 01/10/17 11:50      Received: 01/12/17 09:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Comments: • Low volume, client notified

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.301 ± 0.196 (0.323)</b> C:96% T:NA	pCi/L	01/22/17 12:53	13982-63-3	
Radium-228	EPA 9320	<b>0.388 ± 0.368 (0.753)</b> C:80% T:86%	pCi/L	02/07/17 12:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.689 ± 0.564 (1.08)</b>	pCi/L	02/08/17 15:41	7440-14-4	

**Sample: BGWA-28**      **Lab ID: 30207810003**      Collected: 01/10/17 11:00      Received: 01/12/17 09:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Comments: • Low volume, client notified

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.191 ± 0.248 (0.521)</b> C:92% T:NA	pCi/L	01/22/17 12:53	13982-63-3	
Radium-228	EPA 9320	<b>0.595 ± 0.410 (0.789)</b> C:72% T:88%	pCi/L	02/07/17 12:15	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.786 ± 0.658 (1.31)</b>	pCi/L	02/08/17 15:41	7440-14-4	

**Sample: BGWA-29**      **Lab ID: 30207810004**      Collected: 01/10/17 10:16      Received: 01/12/17 09:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Comments: • Low volume, client notified

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>-0.0482 ± 0.116 (0.334)</b> C:95% T:NA	pCi/L	01/22/17 12:53	13982-63-3	
Radium-228	EPA 9320	<b>0.0240 ± 0.362 (0.835)</b> C:76% T:83%	pCi/L	02/07/17 12:15	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.0240 ± 0.478 (1.17)</b>	pCi/L	02/08/17 15:41	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30207810

QC Batch: 246909

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30207810001, 30207810002, 30207810003, 30207810004

METHOD BLANK: 1214154

Matrix: Water

Associated Lab Samples: 30207810001, 30207810002, 30207810003, 30207810004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.245 ± 0.436 (0.952) C:77% T:67%	pCi/L	02/07/17 12:14	

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

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30207810

QC Batch: 246911 Analysis Method: EPA 9315

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

Associated Lab Samples: 30207810001, 30207810002, 30207810003, 30207810004

METHOD BLANK: 1214156 Matrix: Water

Associated Lab Samples: 30207810001, 30207810002, 30207810003, 30207810004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0107 ± 0.0613 (0.153) C:95% T:NA	pCi/L	01/22/17 12:53	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen

Pace Project No.: 30207810

### 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: AAA0285

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 2/3/2017

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

WO#: 30207810



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWA-26	G	1/10/2017 12:32	AAA0285-01	GW	1				X	001
2	BGWA-27	G	1/10/2017 11:50	AAA0285-02	GW	1				X	002
3	BGWA-28	G	1/10/2017 11:00	AAA0285-03	GW	1				X	003
4	BGWA-29	G	1/10/2017 10:16	AAA0285-04	GW	1				X	004
5											
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			Alyssa B. Mudd Pace	1/17/17 0940	
2					
3					

Cooler Temperature on Receipt <u>N/A</u> °C	Custody Seal <u>Y</u> or <u>N</u>	Received on Ice <u>Y</u> or <u>N</u>	Sample Intact <u>Y</u> or <u>N</u>
---	-----------------------------------	--------------------------------------	------------------------------------

\*\*\*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.

30207810

9431

CHAIN OF CUSTODY RECORD



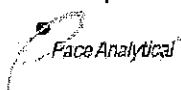
Pace Analytical Services, Inc  
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
(770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED										L A B I D N U M B E R ↓	CONTAINER TYPE		PRESERVATION										
Southern Company Services					CONTAINER TYPE:	P	P	P										P - PLASTIC	1 - HCl, ≤6°C									
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B101ES Atlanta GA 30308					PRESERVATION:	3	7	3										A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤8°C									
REPORT TO: Juju Abraham					# of													G - CLEAR GLASS	3 - HNO <sub>3</sub>									
REQUESTED COMPLETION DATE:					C O N T A I N E R S ↓	Metals APP III + IV EPA 6026 + EPA 7470 C1, F, SO <sub>4</sub> CPA 300 TDS SW 2540C Radium 226 + 228 SW-846 9315 + 9326											V - VOA VIAL	4 - NaOH, ≤6°C										
PROJECT NAME/STATE: Plant Bowen CCR Ash Pond																											S - STERILE	5 - NaOH/ZnAc, ≤6°C
PROJECT #:																											O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B												SAMPLE IDENTIFICATION												*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																												
1/10/17	1232	GW		X	B6WA-26	3	1	1	1										1									
1/10/17	1150	GW		X	B6WA-27	3	1	1	1										2									
1/10/17	1100	GW		X	B6WA-28	3	1	1	1										3									
1/10/17	1016	GW		X	B6WA-29	3	1	1	1										4									

SAMPLED BY AND TITLE: Farrist Blawie/Kenn Stevenson		DATE/TIME: 1/10/17 1530	RELINQUISHED BY: Fernest Howard	DATE/TIME: 1/11/17 0814	FOR LAB USE ONLY	
RECEIVED BY: Sherron Hooper		DATE/TIME: SLN 01-11-17 F1117 0814	RELINQUISHED BY:	DATE/TIME:	LAB #: AAA0285	Entered into LIMS: MR
RECEIVED BY LAB: Sherron Hooper		DATE/TIME: 1-11-17 0814	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER ES		Tracking #:	
pH checked: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		Temperature: 21.4 Min: Max:	Custody Seal: Intact Broken Not Present		Cooler ID:	

Sample Condition Upon Receipt Pittsburgh



Client Name: PAGEA

Project # 30207810

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 081251016200

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ARM 1/12/17

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>NT</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):	/			7.
Rush Turn Around Time Requested:	/			8.
Sufficient Volume:	/			9. <u>low volume</u>
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.
All containers needing preservation are found to be in compliance with EPA recommendation.	/			<u>DHLZ</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>ARM</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>ARM</u> Date: <u>1/12/17</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

Test: Ra-226  
Analyst: LAL  
Date: 1/20/2017  
Worklist: 33614  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1214156
MB concentration:	0.011
M/B Counting Uncertainty:	0.061
MB MDC:	0.153
MB Numerical Performance Indicator:	0.34
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS33614	LCSD33614
Count Date:	1/22/2017	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.671	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.502	
Target Conc. (pCi/L, g, F):	8.898	
Uncertainty (Calculated):	0.419	
Result (pCi/L, g, F):	8.161	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.543	
Numerical Performance Indicator:	-2.11	
Percent Recovery:	91.71%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30208060001	
Duplicate Sample I.D.:	30208060001DUP	
Sample Result (pCi/L, g, F):	0.125	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.094	
Sample Duplicate Result (pCi/L, g, F):	0.111	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.087	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.222	
Duplicate RPD:	12.30%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*Handwritten signature/initials: LAL 1/20/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 1/21/2017  
Worklist: 33612  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1214154	
MB concentration:	0.245	
M/B Counting Uncertainty:	0.433	
MB MDC:	0.952	
MB Numerical Performance Indicator:	1.11	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS33612	LCS33612
Count Date:	2/7/2017		
Spike I.D.:	16-027		
Spike Concentration (pCi/mL):	25.362		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.805		
Target Conc. (pCi/L, g, F):	6.303		
Uncertainty (Calculated):	0.454		
Result (pCi/L, g, F):	4.970		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.627		
Numerical Performance Indicator:	-3.38		
Percent Recovery:	78.84%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30208060001	
Duplicate Sample I.D.:	30208060001DUP	
Sample Result (pCi/L, g, F):	0.265	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.333	
Sample Duplicate Result (pCi/L, g, F):	0.535	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.434	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.967	30208060001
Duplicate RPD:	67.46%	30208060001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Handwritten signature/initials*



**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: AZK0855**

**December 13, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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:

  
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

December 13, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-2	AZK0855-01	Ground Water	11/29/16 12:20	11/30/16 08:02
BGWA-4	AZK0855-02	Ground Water	11/29/16 12:54	11/30/16 08:02
BGWA-1	AZK0855-03	Ground Water	11/29/16 14:25	11/30/16 08:02
FBL112916	AZK0855-04	Water	11/29/16 14:55	11/30/16 08:02
EQBL112916	AZK0855-05	Water	11/29/16 15:05	11/30/16 08:02
Dup-1	AZK0855-06	Ground Water	11/29/16 00:00	11/30/16 08:02



**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

December 13, 2016

Attention: Mr. Joju Abraham

Report No.: AZK0855

Project: CCR Event

Client ID: BGWA-2

Lab Number ID: AZK0855-01

Date/Time Sampled: 11/29/2016 12:20:00PM

Date/Time Received: 11/30/2016 8:02:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	109	25	10	mg/L	SM 2540 C		1	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	2.6	0.25	0.01	mg/L	EPA 300.0		1	11/30/16 08:54	11/30/16 13:46	6110695	RLC
Fluoride	0.11	0.30	0.02	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 13:46	6110695	RLC
Sulfate	5.2	1.0	0.05	mg/L	EPA 300.0		1	11/30/16 08:54	11/30/16 13:46	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Arsenic	0.0023	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Barium	0.201	0.100	0.0044	mg/L	EPA 6020B		10	12/02/16 08:55	12/06/16 12:06	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Boron	0.0085	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Calcium	29.7	5.00	0.311	mg/L	EPA 6020B	B-01	10	12/02/16 08:55	12/06/16 12:06	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	B-01, J	1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Molybdenum	0.0022	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:10	6120036	MTC





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 13, 2016

Attention: Mr. Joju Abraham

Report No.: AZK0855

Project: CCR Event

Client ID: BGWA-4

Lab Number ID: AZK0855-02

Date/Time Sampled: 11/29/2016 12:54:00PM

Date/Time Received: 11/30/2016 8:02:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	669	25	10	mg/L	SM 2540 C		1	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	230	1.2	0.07	mg/L	EPA 300.0		5	11/30/16 08:54	12/13/16 09:50	6110695	RLC
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 15:50	6110695	RLC
Sulfate	81	5.0	0.26	mg/L	EPA 300.0		5	11/30/16 08:54	12/13/16 09:50	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Arsenic	0.0051	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Barium	0.0553	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Boron	2.87	2.00	0.321	mg/L	EPA 6020B		50	12/02/16 08:55	12/06/16 12:11	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Calcium	112	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 12:11	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Selenium	0.0028	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:12	6120036	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 13, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZK0855

**Project:** CCR Event

**Client ID:** BGWA-1

**Lab Number ID:** AZK0855-03

**Date/Time Sampled:** 11/29/2016 2:25:00PM

**Date/Time Received:** 11/30/2016 8:02:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	624	25	10	mg/L	SM 2540 C		1	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	170	2.5	0.14	mg/L	EPA 300.0		10	11/30/16 08:54	11/30/16 23:45	6110695	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 16:11	6110695	RLC
Sulfate	100	10	0.51	mg/L	EPA 300.0		10	11/30/16 08:54	11/30/16 23:45	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Barium	0.153	0.0500	0.0022	mg/L	EPA 6020B		5	12/02/16 08:55	12/06/16 18:15	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Boron	2.83	2.00	0.321	mg/L	EPA 6020B		50	12/02/16 08:55	12/06/16 12:17	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Calcium	112	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 12:17	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Selenium	0.0056	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:15	6120036	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

December 13, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZK0855  
**Client ID:** FBL112916  
**Date/Time Sampled:** 11/29/2016 2:55:00PM  
**Matrix:** Water

**Project:** CCR Event  
**Lab Number ID:** AZK0855-04  
**Date/Time Received:** 11/30/2016 8:02:00AM

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	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	0.10	0.25	0.01	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 16:31	6110695	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	11/30/16 08:54	11/30/16 16:31	6110695	RLC
Sulfate	0.06	1.0	0.05	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 16:31	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Boron	0.0119	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:17	6120036	MTC





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 Atlanta GA, 30339

December 13, 2016

Attention: Mr. Joju Abraham

Report No.: AZK0855

Project: CCR Event

Client ID: EQBL112916

Lab Number ID: AZK0855-05

Date/Time Sampled: 11/29/2016 3:05:00PM

Date/Time Received: 11/30/2016 8:02:00AM

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	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	0.07	0.25	0.01	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 16:52	6110695	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	11/30/16 08:54	11/30/16 16:52	6110695	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	11/30/16 08:54	11/30/16 16:52	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Beryllium	0.0004	0.0030	0.00008	mg/L	EPA 6020B	B-01, J	1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:19	6120036	MTC



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December 13, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZK0855

**Project:** CCR Event

**Client ID:** Dup-1

**Lab Number ID:** AZK0855-06

**Date/Time Sampled:** 11/29/2016 12:00:00AM

**Date/Time Received:** 11/30/2016 8:02:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	626	25	10	mg/L	SM 2540 C		1	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	250	2.5	0.14	mg/L	EPA 300.0		10	11/30/16 08:54	12/01/16 01:49	6110695	RLC
Fluoride	0.10	0.30	0.02	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 17:13	6110695	RLC
Sulfate	87	10	0.51	mg/L	EPA 300.0		10	11/30/16 08:54	12/01/16 01:49	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Arsenic	0.0050	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Barium	0.0550	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Boron	3.17	2.00	0.321	mg/L	EPA 6020B		50	12/02/16 08:55	12/06/16 12:34	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Calcium	118	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 12:34	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Selenium	0.0031	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:22	6120036	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

December 13, 2016

**Report No.: AZK0855**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6110705 - SM 2540 C</b>											
<b>Blank (6110705-BLK1)</b>						Prepared & Analyzed: 11/30/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6110705-BS1)</b>						Prepared & Analyzed: 11/30/16					
Total Dissolved Solids	371	25	10	mg/L	400.00		93	84-108			
<b>Duplicate (6110705-DUP1)</b>						Source: AZK0782-01 Prepared & Analyzed: 11/30/16					
Total Dissolved Solids	118	25	10	mg/L		116			2	10	
<b>Duplicate (6110705-DUP2)</b>						Source: AZK0850-03 Prepared & Analyzed: 11/30/16					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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Attention: Mr. Joju Abraham

December 13, 2016

**Report No.: AZK0855**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6110695 - EPA 300.0</b>											
<b>Blank (6110695-BLK1)</b>						Prepared & Analyzed: 11/30/16					
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 (6110695-BS1)</b>						Prepared & Analyzed: 11/30/16					
Chloride	10.4	0.25	0.01	mg/L	10.010		104	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		101	90-110			
Sulfate	10.2	1.0	0.05	mg/L	10.020		102	90-110			
<b>Matrix Spike (6110695-MS1)</b>						Source: AZK0850-02 Prepared & Analyzed: 11/30/16					
Chloride	16.8	0.25	0.01	mg/L	10.010	6.68	101	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.020	0.03	104	90-110			
Sulfate	111	1.0	0.05	mg/L	10.020	113	NR	90-110			QM-02
<b>Matrix Spike (6110695-MS2)</b>						Source: AZK0855-01 Prepared & Analyzed: 11/30/16					
Chloride	13.1	0.25	0.01	mg/L	10.010	2.56	105	90-110			
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.11	106	90-110			
Sulfate	15.1	1.0	0.05	mg/L	10.020	5.18	99	90-110			
<b>Matrix Spike Dup (6110695-MSD1)</b>						Source: AZK0850-02 Prepared & Analyzed: 11/30/16					
Chloride	16.9	0.25	0.01	mg/L	10.010	6.68	102	90-110	0.7	15	
Fluoride	10.6	0.30	0.02	mg/L	10.020	0.03	106	90-110	2	15	
Sulfate	111	1.0	0.05	mg/L	10.020	113	NR	90-110	0.3	15	QM-02



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Attention: Mr. Joju Abraham

December 13, 2016

**Report No.: AZK0855**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Blank (6120022-BLK1)</b>											
						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							
<b>LCS (6120022-BS1)</b>											
						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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Attention: Mr. Joju Abraham

December 13, 2016

**Report No.: AZK0855**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Matrix Spike (6120022-MS1)</b>			<b>Source: AZK0850-01</b>				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			QM-02
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			
<b>Matrix Spike Dup (6120022-MSD1)</b>			<b>Source: AZK0850-01</b>				Prepared: 12/02/16 Analyzed: 12/05/16				
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	0.0014	102	75-125	3	20	
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125	0.2	20	
Barium	0.148	0.0500	0.0022	mg/L	0.10000	0.0529	95	75-125	2	20	
Beryllium	0.0888	0.0030	0.00008	mg/L	0.10000	ND	89	75-125	6	20	
Boron	0.915	0.0400	0.0064	mg/L	1.0000	0.0095	91	75-125	3	20	
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125	1	20	
Calcium	10.7	2.50	0.155	mg/L	1.0000	9.47	121	75-125	1	20	
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125	0.08	20	
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	0.0036	98	75-125	0.5	20	
Copper	0.103	0.0250	0.0005	mg/L	0.10000	0.0010	102	75-125	3	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	1	20	
Molybdenum	0.102	0.0100	0.0017	mg/L	0.10000	ND	102	75-125	2	20	
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	0.0039	101	75-125	0.6	20	
Selenium	0.102	0.0100	0.0010	mg/L	0.10000	ND	102	75-125	3	20	
Silver	0.0995	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	1	20	
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125	1	20	
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125	1	20	
Zinc	0.104	0.0100	0.0021	mg/L	0.10000	0.0028	101	75-125	0.9	20	
Lithium	0.0897	0.0500	0.0021	mg/L	0.10000	ND	90	75-125	7	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

December 13, 2016

**Report No.: AZK0855**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Post Spike (6120022-PS1)</b>			<b>Source: AZK0850-01</b>			<b>Prepared: 12/02/16 Analyzed: 12/05/16</b>					
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**

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



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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 13, 2016

**Report No.: AZK0855**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120036 - EPA 7470A</b>											
<b>Matrix Spike (6120036-MS1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	0.00249	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125			
<b>Matrix Spike Dup (6120036-MSD1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125	0.4	20	
<b>Post Spike (6120036-PS1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	1.73			ug/L	1.6667	0.0118	103	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

December 13, 2016

## 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

- 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



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

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED										L A B  I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE Bldg 85</u> <u>Atlanta, GA 30308</u>					CONTAINER TYPE:	P	P	P											
REPORT TO: <u>Joie Abraham</u>					PRESERVATION:														
REQUESTED COMPLETION DATE:					# of														
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond</u>					CONTAINERS	<u>Mutals AM III + IV</u> <u>EPA 1010 X EPA 7470</u> <u>CIF, SO4 EPA 300</u> <u>TPS SM 2500</u> <u>Potium 2763228</u> <u>SO-246 9315 + 9320</u>					*MATRIX CODES:								
PROJECT #:											DW - DRINKING WATER S - SOIL				WW - WASTEWATER SL - SLUDGE				
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION											REMARKS/ADDITIONAL INFORMATION			
11/29/16	1220	GW		X	B6WA-2	3	1	1	1										1
11/29/16	1254	GW		X	B6WA-4	4	1	1	2										2
11/29/16	1425	GW		X	B6WA-1	3	1	1	1										3
11/29/16	1455	U		X	FBL 112916	3	1	1	1										4
11/29/16	1505	W		X	EQBL 112916	3	1	1	1										5
11/29/16	---	GW		X	Dup-1	3	1	1	1										6
SAMPLED BY AND TITLE: <u>Robert Mull/Revin Stephenson</u>					DATE/TIME: <u>11/29/16 1528</u>					RELINQUISHED BY: <u>Dee Bell</u>					DATE/TIME: <u>11/30/16 0802</u>				
RECEIVED BY:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:				
RECEIVED BY LAB: <u>M. A. Arman</u>					DATE/TIME: <u>11/30/16 0802</u>					SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER <u>CLIENT</u> OTHER FS					LAB #: <u>AZK0855</u>				
pH Checked: <u>Yes</u> No NA <u>Yes</u> No NA					Temperature: <u>1°C</u> Min: <u>1°C</u> Max:					Custody Seal: <u>Broken</u> Not Present					# of Coolers: <u>0</u> Cooler ID:				
															Tracking #: <u>NR</u>				



**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: 12/13/2016 4:45:36PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 11/30/16 08:02

**Work Order:** AZK0855

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 6

**#Containers:** 19

**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:**

January 04, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204007

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 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 Bowen  
Pace Project No.: 30204007

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen

Pace Project No.: 30204007

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204007001	BGWA-2	Water	11/29/16 12:20	12/01/16 10:20
30204007002	BGWA-4	Water	11/29/16 12:54	12/01/16 10:20
30204007003	BGWA-1	Water	11/29/16 14:25	12/01/16 10:20
30204007004	FBL 112916	Water	11/29/16 14:55	12/01/16 10:20
30204007005	EQBL 112916	Water	11/29/16 15:05	12/01/16 10:20
30204007006	Dup-1	Water	11/29/16 00:00	12/01/16 10:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen  
Pace Project No.: 30204007

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204007001	BGWA-2	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204007002	BGWA-4	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204007003	BGWA-1	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204007004	FBL 112916	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204007005	EQBL 112916	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204007006	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: Plant Bowen  
Pace Project No.: 30204007

Sample: <b>BGWA-2</b>		Lab ID: <b>30204007001</b>	Collected: 11/29/16 12:20	Received: 12/01/16 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>0.427 ± 0.224 (0.346)</b> C:91% T:NA	pCi/L	12/12/16 07:56	13982-63-3		
Radium-228	EPA 9320	<b>0.460 ± 0.301 (0.557)</b> C:75% T:91%	pCi/L	12/30/16 12:04	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.887 ± 0.525 (0.903)</b>	pCi/L	01/04/17 15:07	7440-14-4		

Sample: <b>BGWA-4</b>		Lab ID: <b>30204007002</b>	Collected: 11/29/16 12:54	Received: 12/01/16 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>0.725 ± 0.257 (0.207)</b> C:88% T:NA	pCi/L	12/12/16 07:57	13982-63-3		
Radium-228	EPA 9320	<b>0.198 ± 0.281 (0.603)</b> C:97% T:79%	pCi/L	12/30/16 11:18	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.923 ± 0.538 (0.810)</b>	pCi/L	01/04/17 15:07	7440-14-4		

Sample: <b>BGWA-1</b>		Lab ID: <b>30204007003</b>	Collected: 11/29/16 14:25	Received: 12/01/16 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>1.49 ± 0.398 (0.284)</b> C:88% T:NA	pCi/L	12/12/16 07:57	13982-63-3		
Radium-228	EPA 9320	<b>0.290 ± 0.393 (0.840)</b> C:68% T:88%	pCi/L	12/30/16 11:18	15262-20-1		
Total Radium	Total Radium Calculation	<b>1.78 ± 0.791 (1.12)</b>	pCi/L	01/04/17 15:07	7440-14-4		

Sample: <b>FBL 112916</b>		Lab ID: <b>30204007004</b>	Collected: 11/29/16 14:55	Received: 12/01/16 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>0.00781 ± 0.0981 (0.266)</b> C:87% T:NA	pCi/L	12/12/16 07:57	13982-63-3		
Radium-228	EPA 9320	<b>0.158 ± 0.375 (0.835)</b> C:64% T:86%	pCi/L	12/30/16 11:19	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.166 ± 0.473 (1.10)</b>	pCi/L	01/04/17 15:07	7440-14-4		

Sample: <b>EQBL 112916</b>		Lab ID: <b>30204007005</b>	Collected: 11/29/16 15:05	Received: 12/01/16 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>0.0556 ± 0.101 (0.229)</b> C:87% T:NA	pCi/L	12/12/16 08:10	13982-63-3		
Radium-228	EPA 9320	<b>-0.138 ± 0.424 (0.998)</b> C:65% T:90%	pCi/L	12/30/16 11:19	15262-20-1		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen  
Pace Project No.: 30204007

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	<b>0.0556 ± 0.525 (1.23)</b>	pCi/L	01/04/17 15:07	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.312 ± 0.192 (0.317)</b> C:92% T:NA	pCi/L	12/12/16 07:57	13982-63-3	
Radium-228	EPA 9320	<b>0.533 ± 0.408 (0.801)</b> C:66% T:86%	pCi/L	12/30/16 11:19	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.845 ± 0.600 (1.12)</b>	pCi/L	01/04/17 15:23	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204007

QC Batch: 242765

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204007001

METHOD BLANK: 1193274

Matrix: Water

Associated Lab Samples: 30204007001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.941 ± 0.448 (0.737) C:59% T:89%	pCi/L	12/30/16 12:03	

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 Bowen

Pace Project No.: 30204007

QC Batch: 242577

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204007001, 30204007002, 30204007003, 30204007004, 30204007005, 30204007006

METHOD BLANK: 1192328

Matrix: Water

Associated Lab Samples: 30204007001, 30204007002, 30204007003, 30204007004, 30204007005, 30204007006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0984 ± 0.107 (0.203) C:96% T:NA	pCi/L	12/12/16 08:25	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen

Pace Project No.: 30204007

### 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#: 30204007



30204007



Chain of Custody

Workorder: AZK0855

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 12/30/2016

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																
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total							LAB USE ONLY	
						HNO3												
1	BGWA-2	G	11/29/2016 12:20	AZK0855-01	GW	1					X							001
2	BGWA-4	G	11/29/2016 12:54	AZK0855-02	GW	2					X							002
3	BGWA-1	G	11/29/2016 14:25	AZK0855-03	GW	1					X							003
4	FBL 112916	G	11/29/2016 14:55	AZK0855-04	W	1					X							004
5	EQBL 112916	G	11/29/2016 15:05	AZK0855-05	W	1					X							005
6	Dup-1	G	11/29/2016 0:00	AZK0855-06	GW	1					X							006
7																		
8																		
9																		
10																		
Transfers	Released By	Date/Time	Received By	Date/Time	Comments													
1			<i>[Signature]</i>	12-7-16 10:26														
2																		
3																		

Cooler Temperature on Receipt <u>NA</u> °C	Custody Seal Y or <u>N</u>	Received on Ice Y or <u>N</u>	Sample Intact <u>Y</u> 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 Services, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED					CONTAINER TYPE	PRESERVATION											
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE Bldg 15</u> <u>Atlanta, GA 30308</u>					CONTAINER TYPE: P	P	P															
REPORT TO: <u>Joan Abraham</u>					CC: <u>Marin Padilla</u>					LAB	PRESERVATION											
REQUESTED COMPLETION DATE:					PO #: <u>GPC 10684198</u>							A	PRESERVATION									
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond</u>					# of	C	O	N	T	A	I			D	N	U	M	B	E	R	I	N
Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAB								SAMPLE IDENTIFICATION	↓									
11/29/16	1220	GW	X		B6WA-2	3																
11/29/16	1254	GW	X		B6WA-4	4																
11/29/16	1425	GW	X		B6WA-1	3																
11/29/16	1455	U	X		FBL 112916	3																
11/29/16	1505	W	X		EQBL 112916	3																
11/29/16	---	GW	X		Dup-1	3																

SAMPLED BY AND TITLE: <u>Robert M. Hill / Kevin Stephenson</u>		DATE/TIME: <u>11/29/16 1528</u>	RELINQUISHED BY: <u>Robert M. Hill</u>	DATE/TIME: <u>11/30/16 0802</u>	FOR LAB USE ONLY
RECEIVED BY: <u>Maatman</u>		DATE/TIME: <u>11/30/16 0802</u>	RECEIVED BY:	DATE/TIME:	LAB #: <u>AZK0855</u>
RECEIVED BY LAB: <u>Maatman</u>		DATE/TIME: <u>11/30/16 0802</u>	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS		Entered into LIMS: <u>NO</u>
Temperature: Min: <u>1°C</u> Max: <u>1°C</u>		Custody Seal: Intact Broken Not Present		# of Coolers	Cooler ID:

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace GA

Project # 30204007

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 68125100 6829

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: MLD-01-16

Comments:	Yes	No	N/A	
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/Analysis    Matrix: <u>W+</u>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" 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.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>PH &lt; 2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>ML</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Rad Aqueous Samples Screened > 0.5 mrem/hr	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>ML</u> Date: <u>12-01-16</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

Test: Ra-226  
Analyst: LAL  
Date: 12/9/2016  
Worklist: 32847  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID		1192328
MB concentration:		0.098
M/B Counting Uncertainty:		0.106
MB MDC:		0.203
MB Numerical Performance Indicator:		1.83
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS32847	LCS32847
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):	0.501	
Target Conc. (pCi/L, g, F):	8.909	
Uncertainty (Calculated):	0.419	
Result (pCi/L, g, F):	7.414	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.730	
Numerical Performance Indicator:	-3.48	
Percent Recovery:	83.22%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30204007002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30204007002DUP	
Sample Result (pCi/L, g, F):	0.725	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.234	
Sample Duplicate Result (pCi/L, g, F):	0.561	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.221	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.997	30204007002
Duplicate RPD:	25.45%	30204007002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Handwritten signature and date: LAL 12/14/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/13/2016  
Worklist: 32880  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1193274	
MB concentration:	0.941	
M/B Counting Uncertainty:	0.415	
MB MDC:	0.737	
MB Numerical Performance Indicator:	4.44	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	See Comment*	

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS32880	LCS32880
Count Date:	12/30/2016		
Spike I.D.:	16-027		
Spike Concentration (pCi/mL):	25.690		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.810		
Target Conc. (pCi/L, g, F):	6.340		
Uncertainty (Calculated):	0.456		
Result (pCi/L, g, F):	7.513		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.821		
Numerical Performance Indicator:	2.45		
Percent Recovery:	118.51%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
	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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30203642004	Enter Duplicate
Duplicate Sample I.D.:	30203642004DUP	sample IDs if
Sample Result (pCi/L, g, F):	-0.130	other than
Sample Result Counting Uncertainty (pCi/L, g, F):	0.283	LCS/LCSD in
Sample Duplicate Result (pCi/L, g, F):	0.350	the space below.
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.346	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.103	30203642004
Duplicate RPD:	437.77%	30203642004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
	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:	

## 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.

*Handwritten signature/initials*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/13/2016  
Worklist: 32881  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1193275	
MB concentration:	0.289	
M/B Counting Uncertainty:	0.344	
MB MDC:	0.734	
MB Numerical Performance Indicator:	1.64	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS32881	LCS032881
Count Date:	12/30/2016	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.690	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.802	
Target Conc. (pCi/L, g, F):	6.403	
Uncertainty (Calculated):	0.461	
Result (pCi/L, g, F):	5.764	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.691	
Numerical Performance Indicator:	-1.51	
Percent Recovery:	90.02%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30204007002	Enter Duplicate
Duplicate Sample I.D.:	30204007002DUP	sample IDs if
Sample Result (pCi/L, g, F):	0.198	other than
Sample Result Counting Uncertainty (pCi/L, g, F):	0.278	LCS/LCSD in
Sample Duplicate Result (pCi/L, g, F):	0.830	the space below.
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.472	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.258	30204007002
Duplicate RPD:	122.84%	30204007002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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: AZL0002**

**December 14, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-3	AZL0002-01	Ground Water	11/30/16 10:18	12/01/16 08:00
BGWA-5	AZL0002-02	Ground Water	11/30/16 11:14	12/01/16 08:00



**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

December 14, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0002

Project: CCR Event

Client ID: BGWA-3

Lab Number ID: AZL0002-01

Date/Time Sampled: 11/30/2016 10:18:00AM

Date/Time Received: 12/1/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	406	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	85	0.50	0.03	mg/L	EPA 300.0		2	12/02/16 16:34	12/10/16 18:21	6120091	RNB
Fluoride	0.16	0.30	0.02	mg/L	EPA 300.0	J	1	12/02/16 16:34	12/10/16 18:42	6120091	RNB
Sulfate	58	2.0	0.10	mg/L	EPA 300.0		2	12/02/16 16:34	12/10/16 18:21	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 15:50	6120022	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Barium	0.0159	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Boron	0.681	0.0400	0.0064	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Calcium	61.8	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 12:39	6120022	CSW
Chromium	0.0010	0.0100	0.0009	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Selenium	0.0050	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:29	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

December 14, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0002

Project: CCR Event

Client ID: BGWA-5

Lab Number ID: AZL0002-02

Date/Time Sampled: 11/30/2016 11:14:00AM

Date/Time Received: 12/1/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	763	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	250	2.5	0.14	mg/L	EPA 300.0		10	12/02/16 16:34	12/13/16 10:11	6120091	RLC
Fluoride	0.11	0.30	0.02	mg/L	EPA 300.0	J	1	12/02/16 16:34	12/10/16 19:24	6120091	RNB
Sulfate	150	10	0.51	mg/L	EPA 300.0		10	12/02/16 16:34	12/13/16 10:11	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 15:55	6120022	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Barium	0.0466	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Boron	3.73	0.400	0.0642	mg/L	EPA 6020B		10	12/02/16 08:55	12/06/16 18:22	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Calcium	131	50.0	3.11	mg/L	EPA 6020B	B-01	100	12/02/16 08:55	12/06/16 12:45	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Selenium	0.0145	0.0100	0.0010	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:31	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.: AZL0002**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120057 - SM 2540 C</b>											
<b>Blank (6120057-BLK1)</b>						Prepared & Analyzed: 12/02/16					
Total Dissolved Solids	16	25	10	mg/L							B-01, J
<b>LCS (6120057-BS1)</b>						Prepared & Analyzed: 12/02/16					
Total Dissolved Solids	419	25	10	mg/L	400.00		105	84-108			
<b>Duplicate (6120057-DUP1)</b>						Source: AZL0033-04 Prepared & Analyzed: 12/02/16					
Total Dissolved Solids	4020	25	10	mg/L		3970			1	10	B-01
<b>Duplicate (6120057-DUP2)</b>						Source: AZL0033-06 Prepared & Analyzed: 12/02/16					
Total Dissolved Solids	37	25	10	mg/L		66			56	10	B-01, QR-03





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December 14, 2016

**Report No.: AZL0002**

**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>						Prepared & Analyzed: 12/02/16					
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>						Prepared & Analyzed: 12/02/16					
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>						Source: AZL0002-02 Prepared & Analyzed: 12/02/16					
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>						Source: AZL0037-01 Prepared: 12/02/16 Analyzed: 12/03/16					
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>						Source: AZL0002-02 Prepared & Analyzed: 12/02/16					
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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Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0002**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Blank (6120022-BLK1)</b>						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							

<b>LCS (6120022-BS1)</b>						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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Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0002**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Matrix Spike (6120022-MS1)</b>			<b>Source: AZK0850-01</b>				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			QM-02
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			
<b>Matrix Spike Dup (6120022-MSD1)</b>			<b>Source: AZK0850-01</b>				Prepared: 12/02/16 Analyzed: 12/05/16				
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	0.0014	102	75-125	3	20	
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125	0.2	20	
Barium	0.148	0.0500	0.0022	mg/L	0.10000	0.0529	95	75-125	2	20	
Beryllium	0.0888	0.0030	0.00008	mg/L	0.10000	ND	89	75-125	6	20	
Boron	0.915	0.0400	0.0064	mg/L	1.0000	0.0095	91	75-125	3	20	
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125	1	20	
Calcium	10.7	2.50	0.155	mg/L	1.0000	9.47	121	75-125	1	20	
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125	0.08	20	
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	0.0036	98	75-125	0.5	20	
Copper	0.103	0.0250	0.0005	mg/L	0.10000	0.0010	102	75-125	3	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	1	20	
Molybdenum	0.102	0.0100	0.0017	mg/L	0.10000	ND	102	75-125	2	20	
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	0.0039	101	75-125	0.6	20	
Selenium	0.102	0.0100	0.0010	mg/L	0.10000	ND	102	75-125	3	20	
Silver	0.0995	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	1	20	
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125	1	20	
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125	1	20	
Zinc	0.104	0.0100	0.0021	mg/L	0.10000	0.0028	101	75-125	0.9	20	
Lithium	0.0897	0.0500	0.0021	mg/L	0.10000	ND	90	75-125	7	20	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0002**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Post Spike (6120022-PS1)</b>			<b>Source: AZK0850-01</b>			<b>Prepared: 12/02/16 Analyzed: 12/05/16</b>					
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**

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



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Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0002**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120036 - EPA 7470A</b>											
<b>Matrix Spike (6120036-MS1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	0.00249	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125			
<b>Matrix Spike Dup (6120036-MSD1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125	0.4	20	
<b>Post Spike (6120036-PS1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	1.73			ug/L	1.6667	0.0118	103	80-120			



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED								L A B I D N U M B E R ↓	CONTAINER TYPE		PRESERVATION						
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Raven M<sup>th</sup> 11 Blvd SE Bldg 85 Atlanta GA 30308</u>					CONTAINER TYPE: <u>3 7 3</u>									P	P	P	P	P	P	P	P	
REPORT TO: <u>Joia Abraham</u>					PRESERVATION: <u>3 7 3</u>									# of								
REQUESTED COMPLETION DATE:					C O N T A I N E R S ↓																	
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond CLR</u>					MUTUAL MP: III & IV EPA 6020 & EPA 7170 Cl. F. 504 EPA 300 TDS SM 2540L Dissium 270 & 208 SW-846 9315 & 9310																	
PROJECT #:																						
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION																	
<u>11/30/16</u>	<u>1018</u>	<u>GW</u>		<u>X</u>	<u>BGWA-3</u>			<u>3</u>											<u>1</u>			
<u>11/30/16</u>	<u>1114</u>	<u>GW</u>		<u>X</u>	<u>BGWA-5</u>			<u>3</u>											<u>2</u>			
SAMPLED BY AND TITLE: <u>Robert Mull / Kevin Stephenson</u>					DATE/TIME: <u>11/30/16 1730</u>			RELINQUISHED BY: <u>Robert Mull</u>			DATE/TIME: <u>12/1/16 0800</u>			FOR LAB USE ONLY								
RECEIVED BY:					DATE/TIME:			RELINQUISHED BY:			DATE/TIME:			LAB #: <u>A2L0002</u>								
CHECKED BY LAB: <u>Rahman</u>					DATE/TIME: <u>12/01/16 0800</u>			SAMPLE SHIPPED VIA: <u>CLIENT</u>			OTHER: <u>FS</u>			Entered Into LIMS: <u>MR</u>								
Checked: No NA <input checked="" type="checkbox"/> Yes No NA					Temperature: <u>1°C</u> Min: <u>1°C</u> Max:			Custody Seal: <input checked="" type="checkbox"/> Intact Broken Not Present			# of Coolers: <u>0</u>			Cooler ID:								

Page 12 of 13



**PACE ANALYTICAL SERVICES, INC.**

Environmental Monitoring & Laboratory Analysis  
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**LOG-IN CHECKLIST**

**Printed: 12/14/2016 11:36:36AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/01/16 08:00

**Work Order:** AZL0002

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 2

**#Containers:** 6

**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:**



January 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204305

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 Bowen

Pace Project No.: 30204305

### 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 Bowen

Pace Project No.: 30204305

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204305001	BGWA-3	Water	11/30/16 10:18	12/05/16 09:45
30204305002	BGWA-5	Water	11/30/16 11:14	12/05/16 09:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30204305

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204305001	BGWA-3	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204305002	BGWA-5	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 Bowen

Pace Project No.: 30204305

Sample: <b>BGWA-3</b>		Lab ID: <b>30204305001</b>	Collected: 11/30/16 10:18	Received: 12/05/16 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.272 ± 0.162 (0.235)</b> C:93% T:NA	pCi/L	12/12/16 09:39	13982-63-3	
Radium-228	EPA 9320	<b>0.721 ± 0.460 (0.863)</b> C:68% T:77%	pCi/L	01/08/17 13:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.993 ± 0.622 (1.10)</b>	pCi/L	01/11/17 15:36	7440-14-4	

Sample: <b>BGWA-5</b>		Lab ID: <b>30204305002</b>	Collected: 11/30/16 11:14	Received: 12/05/16 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.688 ± 0.269 (0.291)</b> C:74% T:NA	pCi/L	12/12/16 09:39	13982-63-3	
Radium-228	EPA 9320	<b>0.725 ± 0.467 (0.876)</b> C:66% T:74%	pCi/L	01/08/17 13:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.41 ± 0.736 (1.17)</b>	pCi/L	01/11/17 15:36	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204305

QC Batch: 242578

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204305001, 30204305002

METHOD BLANK: 1192329

Matrix: Water

Associated Lab Samples: 30204305001, 30204305002

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.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204305

QC Batch: 243002

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204305001, 30204305002

METHOD BLANK: 1195278

Matrix: Water

Associated Lab Samples: 30204305001, 30204305002

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 Bowen

Pace Project No.: 30204305

### 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#: 30204305



30204305

Chain of Custody



Workorder: AZL0002

Workorder Name: Plant Bowen

Owner Received Date: 12/1/2016

Results Requested By: 12/30/2016

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWA-3	G	11/30/2016 10:18	AZL0002-01	W	1				X	001
2	BGWA -5	G	11/30/2016 11:14	AZL0002-02	w	1				X	002
3											
4											
5											
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			Karen Hill	12-5-14 0445	
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 COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

30204305

CHAIN OF CUSTODY RECORD

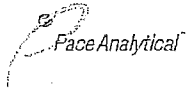


Pace Analytical Services, Inc
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
(770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

Form containing client information (Southern Company Services), analysis requested details, container types, matrix codes, collection dates (11/30/16), and signatures of Robert Mull and Kevin Stecherson.

Sample Condition Upon Receipt Pittsburgh



30204305

Client Name: Pace Georgia Project # \_\_\_\_\_

Courier:  Fed Ex  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:	<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/Analysis Matrix: <u>Wt</u>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	10.
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>pH &lt; 2</u>
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>KH</u> Date/time of preservation: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>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



Test: Ra-226  
Analyst: LAL  
Date: 12/9/2016  
Worklist: 32848  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1192329
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)?	Y
	LCSD32848	LCSD32848
Count Date:	12/12/2016	12/12/2016
Spike I.D.:	16-026	16-026
Spike Concentration (pCi/mL):	44.673	44.673
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.506	0.509
Target Conc. (pCi/L, g, F):	8.825	8.785
Uncertainty (Calculated):	0.415	0.413
Result (pCi/L, g, F):	8.177	7.617
LC/LCSD Counting Uncertainty (pCi/L, g, F):	0.718	0.688
Numerical Performance Indicator:	-1.53	-2.85
Percent Recovery:	92.66%	86.71%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
Sample I.D.:	LCSD32848	
Duplicate Sample I.D.:	LCSD32848	
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 RPD:	7.10%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*One 1/11/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/28/2016  
Worklist: 32911  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID		1195278
MB concentration:		0.184
M/B Counting Uncertainty:		0.379
MB MDC:		0.841
MB Numerical Performance Indicator:		0.95
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS32911	LCS32911
Count Date:		1/8/2017	
Spike I.D.:		16-027	
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	
LCSD/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 Matrix Spike Control Assessment	
	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):
	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:

Duplicate Sample Assessment		
Sample I.D.:	30204292009	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
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 RPD:	98.30%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
	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:

## 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.

*Amelia 1/7*



**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: AZL0063**

**December 15, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel" written over a horizontal line.

Project Manager

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All test results relate only to the samples analyzed.



**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 15, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-6	AZL0063-01	Ground Water	12/01/16 09:45	12/02/16 08:00
BGWA-26	AZL0063-02	Ground Water	12/01/16 11:40	12/02/16 08:00
BGWA-28	AZL0063-03	Ground Water	12/01/16 14:04	12/02/16 08:00
BGWA-27	AZL0063-04	Ground Water	12/01/16 12:00	12/02/16 08:00
BGWA-29	AZL0063-05	Ground Water	12/01/16 13:50	12/02/16 08:00
Dup-2	AZL0063-06	Ground Water	12/01/16 00:00	12/02/16 08:00



**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

December 15, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0063

**Project:** CCR Event

**Client ID:** BGWA-6

**Lab Number ID:** AZL0063-01

**Date/Time Sampled:** 12/1/2016 9:45:00AM

**Date/Time Received:** 12/2/2016 8:00:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	269	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	6.2	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 17:16	6120106	RNB
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 17:16	6120106	RNB
Sulfate	20	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 17:16	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Barium	0.0144	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Boron	0.0146	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Calcium	55.9	5.00	0.311	mg/L	EPA 6020B	B-01	10	12/06/16 09:50	12/09/16 12:59	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 15:04	6120161	MTC





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

Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 15, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0063

**Project:** CCR Event

**Client ID:** BGWA-26

**Lab Number ID:** AZL0063-02

**Date/Time Sampled:** 12/1/2016 11:40:00AM

**Date/Time Received:** 12/2/2016 8:00:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	214	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	9.2	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 18:18	6120106	RNB
Fluoride	0.20	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 18:18	6120106	RNB
Sulfate	57	5.0	0.26	mg/L	EPA 300.0		5	12/05/16 13:50	12/10/16 23:17	6120106	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Arsenic	0.0022	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Barium	0.0402	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Boron	0.0123	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Calcium	22.0	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 15:55	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Molybdenum	0.0072	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Lithium	0.0029	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 15:06	6120161	MTC



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 Atlanta GA, 30339

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0063

Project: CCR Event

Client ID: BGWA-28

Lab Number ID: AZL0063-03

Date/Time Sampled: 12/1/2016 2:04:00PM

Date/Time Received: 12/2/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	232	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	18	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 18:39	6120106	RNB
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 18:39	6120106	RNB
Sulfate	13	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 18:39	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Barium	0.116	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Boron	0.0640	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Calcium	42.4	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 16:01	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Selenium	0.0020	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 15:09	6120161	MTC



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 Atlanta GA, 30339

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0063

Project: CCR Event

Client ID: BGWA-27

Lab Number ID: AZL0063-04

Date/Time Sampled: 12/1/2016 12:00:00PM

Date/Time Received: 12/2/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	219	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	15	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:00	6120106	RNB
Fluoride	0.07	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 19:00	6120106	RNB
Sulfate	8.8	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:00	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Barium	0.0413	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Boron	0.0125	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Calcium	40.7	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 16:07	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Selenium	0.0012	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 15:11	6120161	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0063

Project: CCR Event

Client ID: BGWA-29

Lab Number ID: AZL0063-05

Date/Time Sampled: 12/1/2016 1:50:00PM

Date/Time Received: 12/2/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	121	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	1.8	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:20	6120106	RNB
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 19:20	6120106	RNB
Sulfate	7.8	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:20	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Barium	0.0334	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Calcium	19.8	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 16:14	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 15:13	6120161	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

December 15, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0063

**Project:** CCR Event

**Client ID:** Dup-2

**Lab Number ID:** AZL0063-06

**Date/Time Sampled:** 12/1/2016 12:00:00AM

**Date/Time Received:** 12/2/2016 8:00:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	223	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	18	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:41	6120106	RNB
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 19:41	6120106	RNB
Sulfate	13	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:41	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Barium	0.109	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Boron	0.0623	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Calcium	42.9	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 16:20	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Selenium	0.0013	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:19	6120212	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0063**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120123 - SM 2540 C</b>											
<b>Blank (6120123-BLK1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120123-BS1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	395	25	10	mg/L	400.00		99	84-108			
<b>Duplicate (6120123-DUP1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	231	25	10	mg/L		269			15	10	QR-03
<b>Duplicate (6120123-DUP2)</b>						Source: AZL0063-02 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	217	25	10	mg/L		214			1	10	
<b>Duplicate (6120123-DUP3)</b>						Source: AZL0033-06RE1 Prepared & Analyzed: 12/06/16					
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

December 15, 2016

**Report No.: AZL0063**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120106 - EPA 300.0</b>											
<b>Blank (6120106-BLK1)</b>						Prepared & Analyzed: 12/05/16					
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 (6120106-BS1)</b>						Prepared & Analyzed: 12/05/16					
Chloride	10.4	0.25	0.01	mg/L	10.010		103	90-110			
Fluoride	10.4	0.30	0.02	mg/L	10.020		104	90-110			
Sulfate	10.3	1.0	0.05	mg/L	10.020		103	90-110			
<b>Matrix Spike (6120106-MS1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/05/16					
Chloride	16.0	0.25	0.01	mg/L	10.010	6.21	98	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020	0.09	100	90-110			
Sulfate	27.8	1.0	0.05	mg/L	10.020	19.6	82	90-110			QM-02
<b>Matrix Spike Dup (6120106-MSD1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/05/16					
Chloride	16.7	0.25	0.01	mg/L	10.010	6.21	104	90-110	4	15	
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.09	106	90-110	5	15	
Sulfate	28.3	1.0	0.05	mg/L	10.020	19.6	87	90-110	2	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

December 15, 2016

**Report No.: AZL0063**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120087 - EPA 3005A</b>											
<b>Blank (6120087-BLK1)</b>						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							
<b>LCS (6120087-BS1)</b>						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			





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Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0063**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120087 - EPA 3005A</b>											
<b>Matrix Spike (6120087-MS1)</b>			<b>Source: AZL0037-01</b>				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			QM-02
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			
<b>Matrix Spike Dup (6120087-MSD1)</b>			<b>Source: AZL0037-01</b>				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	QM-02
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	



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0063**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120087 - EPA 3005A</b>											
<b>Post Spike (6120087-PS1)</b>			<b>Source: AZL0037-01</b>			<b>Prepared: 12/06/16 Analyzed: 12/08/16</b>					
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			QM-02
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			

**Batch 6120161 - EPA 7470A**

<b>Blank (6120161-BLK1)</b>					<b>Prepared &amp; Analyzed: 12/07/16</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120161-BS1)</b>					<b>Prepared &amp; Analyzed: 12/07/16</b>						
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3	95	80-120				



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0063**

**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>Matrix Spike (6120161-MS1)</b>			<b>Source: AZL0033-05</b>			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>			<b>Source: AZL0033-05</b>			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>			<b>Source: AZL0033-05</b>			Prepared & Analyzed: 12/07/16					
Mercury	1.61			ug/L	1.6667	0.00663	96	80-120			
<b>Batch 6120212 - EPA 7470A</b>											
<b>Blank (6120212-BLK1)</b>						Prepared & Analyzed: 12/08/16					
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120212-BS1)</b>						Prepared & Analyzed: 12/08/16					
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3		93	80-120			
<b>Duplicate (6120212-DUP1)</b>			<b>Source: AZL0053-01RE1</b>			Prepared & Analyzed: 12/08/16					
Mercury	0.00009	0.00050	0.000041	mg/L		0.00010			8	20	J
<b>Matrix Spike (6120212-MS1)</b>			<b>Source: AZL0145-04</b>			Prepared & Analyzed: 12/08/16					
Mercury	0.00227	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (6120212-MSD1)</b>			<b>Source: AZL0145-04</b>			Prepared & Analyzed: 12/08/16					
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125	0.4	20	
<b>Post Spike (6120212-PS1)</b>			<b>Source: AZL0145-04</b>			Prepared & Analyzed: 12/08/16					
Mercury	1.62			ug/L	1.6667	-0.0651	97	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 15, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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					L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:									
Southern Company Services					1	2	3					P - PLASTIC	1 - HCl, ≤6°C	
241 Ralph McGill Blvd SE B1085 Atlanta, GA 30308					3	7	3					A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REPORT TO:		CC: Maria P. Smith Heath McCortle			# of							G - CLEAR GLASS	3 - HNO <sub>3</sub>	
REQUESTED COMPLETION DATE:		PO#: GPC 10684198										V - VOA VIAL	4 - NaOH, ≤6°C	
PROJECT NAME/STATE:												S - STERILE	5 - NaOH/ZnAc, ≤6°C	
PROJECT #:												O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
													7 - ≤6°C not frozen	
												*MATRIX CODES:		
												DW - DRINKING WATER	S - SOIL	
												WW - WASTEWATER	SL - SLUDGE	
												GW - GROUNDWATER	SD - SOLID	
												SW - SURFACE WATER	A - AIR	
												ST - STORM WATER	L - LIQUID	
												W - WATER	P - PRODUCT	
												REMARKS/ADDITIONAL INFORMATION		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	↓								
12/1/16	0945	GW		X	B6WA-6	3								1
12/1/16	1140	GW		X	B6WA-26	3								2
12/1/16	1404	GW		X	B6WA-28	3								3
12/1/16	1200	GW		X	B6WA-27	3								4
12/1/16	1350	GW		X	B6WA-29	4								5
12/1/16	---	GW		X	Dup-2	3								6
SAMPLED BY AND TITLE:					DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	FOR LAB USE ONLY						
Robert Mill / Kevin Johnson					12/1/16 1525	MS Pull	12/1/16 0800	LAB #: AZL0063						
RECEIVED BY:					DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	Entered into LIMS: MR						
SAMPLED BY LAB:					DATE/TIME:	SAMPLE SHIPPED VIA:	Tracking #:							
Dahman					12/02/16 0800	UPS FED-EX USPS COURIER CLIENT OTHER FS								
Checked: No NA Yes No NA					Temperature: 10°C Min: 1°C Max:	Custody Seal: Intact Broken Not Present	# of Coolers	Cooler ID:						



**PACE ANALYTICAL SERVICES, INC.**

Environmental Monitoring & Laboratory Analysis  
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**LOG-IN CHECKLIST**

**Printed: 12/15/2016 11:14:55AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/02/16 08:00

**Work Order:** AZL0063

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 6

**#Containers:** 19

**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:**

January 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204308

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 Bowen

Pace Project No.: 30204308

### 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 Bowen

Pace Project No.: 30204308

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204308001	BGWA-6	Water	12/01/16 09:45	12/05/16 09:45
30204308002	BGWA-26	Water	12/01/16 11:40	12/05/16 09:45
30204308003	BGWA-28	Water	12/01/16 14:04	12/05/16 09:45
30204308004	BGWA-27	Water	12/01/16 12:00	12/05/16 09:45
30204308005	BGWA-29	Water	12/01/16 13:50	12/05/16 09:45
30204308006	Dup-2	Water	12/01/16 00:00	12/05/16 09:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen  
Pace Project No.: 30204308

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204308001	BGWA-6	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204308002	BGWA-26	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204308003	BGWA-28	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204308004	BGWA-27	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204308005	BGWA-29	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204308006	Dup-2	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 Bowen  
Pace Project No.: 30204308

Sample: BGWA-6		Lab ID: 30204308001	Collected: 12/01/16 09:45	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.0577 ± 0.114 (0.265)		pCi/L	12/19/16 09:55	13982-63-3	
		C:97% T:NA					
Radium-228	EPA 9320	0.370 ± 0.374 (0.772)		pCi/L	01/08/17 13:27	15262-20-1	
		C:76% T:77%					
Total Radium	Total Radium Calculation	0.428 ± 0.488 (1.04)		pCi/L	01/11/17 15:36	7440-14-4	

Sample: BGWA-26		Lab ID: 30204308002	Collected: 12/01/16 11:40	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.280 ± 0.160 (0.209)		pCi/L	12/19/16 09:55	13982-63-3	
		C:90% T:NA					
Radium-228	EPA 9320	0.218 ± 0.427 (0.940)		pCi/L	01/08/17 13:27	15262-20-1	
		C:68% T:72%					
Total Radium	Total Radium Calculation	0.498 ± 0.587 (1.15)		pCi/L	01/11/17 15:36	7440-14-4	

Sample: BGWA-28		Lab ID: 30204308003	Collected: 12/01/16 14:04	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.204 ± 0.170 (0.323)		pCi/L	12/19/16 09:55	13982-63-3	
		C:94% T:NA					
Radium-228	EPA 9320	-0.0271 ± 0.334 (0.791)		pCi/L	01/08/17 13:27	15262-20-1	
		C:71% T:78%					
Total Radium	Total Radium Calculation	0.204 ± 0.504 (1.11)		pCi/L	01/11/17 15:36	7440-14-4	

Sample: BGWA-27		Lab ID: 30204308004	Collected: 12/01/16 12:00	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.166 ± 0.139 (0.249)		pCi/L	12/19/16 10:05	13982-63-3	
		C:95% T:NA					
Radium-228	EPA 9320	-0.138 ± 0.316 (0.774)		pCi/L	01/08/17 13:27	15262-20-1	
		C:71% T:81%					
Total Radium	Total Radium Calculation	0.166 ± 0.455 (1.02)		pCi/L	01/11/17 15:36	7440-14-4	

Sample: BGWA-29		Lab ID: 30204308005	Collected: 12/01/16 13:50	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.138 ± 0.125 (0.224)		pCi/L	12/19/16 10:05	13982-63-3	
		C:94% T:NA					
Radium-228	EPA 9320	0.0699 ± 0.330 (0.754)		pCi/L	01/08/17 13:27	15262-20-1	
		C:71% T:82%					

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204308

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	<b>0.208 ± 0.455 (0.978)</b>	pCi/L	01/11/17 15:36	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.265 ± 0.153 (0.198)</b> C:95% T:NA	pCi/L	12/19/16 10:05	13982-63-3	
Radium-228	EPA 9320	<b>0.589 ± 0.409 (0.786)</b> C:66% T:88%	pCi/L	01/08/17 13:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.854 ± 0.562 (0.984)</b>	pCi/L	01/11/17 16:38	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204308

QC Batch: 243000

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204308001, 30204308002, 30204308003, 30204308004, 30204308005, 30204308006

METHOD BLANK: 1195272

Matrix: Water

Associated Lab Samples: 30204308001, 30204308002, 30204308003, 30204308004, 30204308005, 30204308006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0698 ± 0.0862 (0.168) C:97% T:NA	pCi/L	12/19/16 09:55	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204308

QC Batch: 243002 Analysis Method: EPA 9320

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

Associated Lab Samples: 30204308001, 30204308002, 30204308003, 30204308004, 30204308005, 30204308006

METHOD BLANK: 1195278 Matrix: Water

Associated Lab Samples: 30204308001, 30204308002, 30204308003, 30204308004, 30204308005, 30204308006

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 Bowen  
Pace Project No.: 30204308

### 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#: 30204308



Chain of Custody



Workorder: AZL0063

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 1/3/2017

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWA-6	G	12/1/2016 9:45	AZL0063-01	GW	1				X	001
2	BGWA-26	G	12/1/2016 11:40	AZL0063-02	GW	1				X	002
3	BGWA-28	G	12/1/2016 14:04	AZL0063-03	GW	1				X	003
4	BGWA-27	G	12/1/2016 12:00	AZL0063-04	GW	1				X	004
5	BGWA-29	G	12/1/2016 13:50	AZL0063-05	GW	2				X	005
6	Dup-2	G	12/1/2016 0:00	AZL0063-06	GW	1				X	006
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			<i>Karen Hill</i>	12-5-16 0945	
2					
3					

Cooler Temperature on Receipt <u>N/A</u> °C	Custody Seal <u>Y</u> or <u>(N)</u>	Received on Ice <u>Y</u> or <u>(N)</u>	Sample Intact <u>(Y)</u> or <u>N</u>
---	-------------------------------------	--	--------------------------------------

\*\*\*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.



30204308

CHAIN OF CUSTODY RECORD



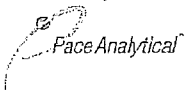
Pace Analytical Services, Inc  
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
(770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED					L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B 10185 Atlanta, GA 30308</u>					CONTAINER TYPE: 1 2 3	1	2	3	4		5	6	7	P - PLASTIC	1 - HCl, ≤6°C
REPORT TO: <u>Joia Abraham</u>					PRESERVATION: 3 7 3					C O N T A I N E R S	G - CLEAR GLASS		2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
REQUESTED COMPLETION DATE: _____					# of									V - VOA VIAL	3 - HNO <sub>3</sub>
PROJECT NAME/STATE: <u>Plant Bowen-Ash Pond CCR</u>					↓	<u>Metals Air III + IV</u> <u>EPA 604 + EPA 7470</u> <u>CLF 504 EPA 300</u> <u>TDS 5M 7540L</u> <u>Radon 226 + 228</u> <u>SW-846 9345 + 9370</u>					S - STERILE		4 - NaOH, ≤6°C		
PROJECT #: _____											O - OTHER		5 - NaOH/ZnAc, ≤6°C		6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION						*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															
12/1/16	0945	GW		X	B6WA-6	3	1	1	1					1	
12/1/16	1140	GW		X	B6WA-26	3	1	1	1					2	
12/1/16	1404	GW		X	B6WA-28	3	1	1	1					3	
12/1/16	1200	GW		X	B6WA-27	3	1	1	1					4	
12/1/16	1350	GW		X	B6WA-29	4	1	1	2					5	
12/1/16	---	GW		X	Dup-2	3	1	1	1					6	

SAMPLED BY AND TITLE: <u>Robert Mill / Kevin Johnson</u>		DATE/TIME: <u>12/1/16 1525</u>	RELINQUISHED BY: <u>[Signature]</u>	DATE/TIME: <u>12/1/16 0800</u>	FOR LAB USE ONLY LAB #: <u>AZL0063</u>
RECEIVED BY: <u>[Signature]</u>		DATE/TIME: <u>12/02/16 0800</u>	RECEIVED BY: <u>[Signature]</u>	DATE/TIME: <u>12/02/16 0800</u>	Entered into LIMS: <u>NR</u>
RECEIVED BY LAB: <u>[Signature]</u>		DATE/TIME: <u>12/02/16 0800</u>	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER <u>CLIENT</u> OTHER FS		Tracking #:
pH checked: <u>[Initials]</u> Yes No NA		Ice: <u>[Initials]</u> Yes No NA	Temperature: <u>1°C</u> Min. <u>1°C</u> Max.		Cooler ID:
Custody Seal: <u>[Initials]</u> Broken Not Present		# of Coolers:		Cooler ID:	

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace Georgia

Project # 30204308

Courier:  Fed Ex  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:	<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:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>pH &lt; 2</u>
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>KH</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>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



Test: Ra-226  
Analyst: LAL  
Date: 12/16/2016  
Worklist: 32909  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1195272	
MB concentration:	0.070	
M/B Counting Uncertainty:	0.086	
MB MDC:	0.168	
MB Numerical Performance Indicator:	1.60	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS32909	LCSD32909
Count Date:	12/19/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.672	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.506	
Target Conc. (pCi/L, g, F):	8.828	
Uncertainty (Calculated):	0.415	
Result (pCi/L, g, F):	7.612	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.708	
Numerical Performance Indicator:	-2.90	
Percent Recovery:	86.22%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30204306004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30204306004DUP	
Sample Result (pCi/L, g, F):	0.021	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.091	
Sample Duplicate Result (pCi/L, g, F):	0.129	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.143	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.252	30204306004
Duplicate RPD:	144.06%	30204306004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Sample*

*On 1/11/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/28/2016  
Worklist: 32911  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID		1195278
MB concentration:		0.184
M/B Counting Uncertainty:		0.379
MB MDC:		0.841
MB Numerical Performance Indicator:		0.95
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS32911	LCS032911
Count Date:		1/8/2017	
Spike I.D.:		16-027	
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 Matrix Spike Control Assessment	
	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):
	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:

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30204292009	30204292009
Duplicate Sample I.D.:	30204292009DUP	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 RPD:	98.30%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
	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:

## 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.

*Amc 1/1/17*



**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: AZL0109**

**December 15, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel", written over a horizontal line.

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

December 15, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-8	AZL0109-01	Ground Water	12/02/16 09:40	12/02/16 15:40
BGWC-11	AZL0109-02	Ground Water	12/02/16 11:45	12/02/16 15:40



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 Atlanta GA, 30339

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0109

Project: CCR Event

Client ID: BGWC-8

Lab Number ID: AZL0109-01

Date/Time Sampled: 12/2/2016 9:40:00AM

Date/Time Received: 12/2/2016 3:40:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	183	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	2.1	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 20:02	6120106	RNB
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 20:02	6120106	RNB
Sulfate	37	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 20:02	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Barium	0.0260	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Boron	0.0668	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Calcium	37.8	2.50	0.155	mg/L	EPA 6020B		5	12/06/16 15:35	12/07/16 15:25	6120130	CSW
Chromium	0.0013	0.0100	0.0009	mg/L	EPA 6020B	J, B-01	1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:29	6120212	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0109

Project: CCR Event

Client ID: BGWC-11

Lab Number ID: AZL0109-02

Date/Time Sampled: 12/2/2016 11:45:00AM

Date/Time Received: 12/2/2016 3:40:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	258	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	9.8	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 20:22	6120106	RNB
Fluoride	0.15	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 20:22	6120106	RNB
Sulfate	75	5.0	0.26	mg/L	EPA 300.0		5	12/05/16 13:50	12/10/16 23:39	6120106	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Arsenic	0.0039	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Barium	0.0198	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Boron	0.229	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Calcium	43.1	2.50	0.155	mg/L	EPA 6020B		5	12/06/16 15:35	12/07/16 15:30	6120130	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Molybdenum	0.0029	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:31	6120212	MTC





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Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0109**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120123 - SM 2540 C</b>											
<b>Blank (6120123-BLK1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120123-BS1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	395	25	10	mg/L	400.00		99	84-108			
<b>Duplicate (6120123-DUP1)</b>						Source: AZL0063-01			Prepared & Analyzed: 12/06/16		
Total Dissolved Solids	231	25	10	mg/L		269			15	10	QR-03
<b>Duplicate (6120123-DUP2)</b>						Source: AZL0063-02			Prepared & Analyzed: 12/06/16		
Total Dissolved Solids	217	25	10	mg/L		214			1	10	
<b>Duplicate (6120123-DUP3)</b>						Source: AZL0033-06RE1			Prepared & Analyzed: 12/06/16		
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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December 15, 2016

**Report No.: AZL0109**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120106 - EPA 300.0</b>											
<b>Blank (6120106-BLK1)</b>						Prepared & Analyzed: 12/05/16					
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 (6120106-BS1)</b>						Prepared & Analyzed: 12/05/16					
Chloride	10.4	0.25	0.01	mg/L	10.010		103	90-110			
Fluoride	10.4	0.30	0.02	mg/L	10.020		104	90-110			
Sulfate	10.3	1.0	0.05	mg/L	10.020		103	90-110			
<b>Matrix Spike (6120106-MS1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/05/16					
Chloride	16.0	0.25	0.01	mg/L	10.010	6.21	98	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020	0.09	100	90-110			
Sulfate	27.8	1.0	0.05	mg/L	10.020	19.6	82	90-110			QM-02
<b>Matrix Spike Dup (6120106-MSD1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/05/16					
Chloride	16.7	0.25	0.01	mg/L	10.010	6.21	104	90-110	4	15	
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.09	106	90-110	5	15	
Sulfate	28.3	1.0	0.05	mg/L	10.020	19.6	87	90-110	2	15	QM-02



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December 15, 2016

**Report No.: AZL0109**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Blank (6120130-BLK1)</b>											
						Prepared: 12/06/16 Analyzed: 12/07/16					
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	ND	0.500	0.0311	mg/L							
Chromium	0.0016	0.0100	0.0009	mg/L							J
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							
<b>LCS (6120130-BS1)</b>											
						Prepared: 12/06/16 Analyzed: 12/07/16					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000		104	80-120			
Arsenic	0.107	0.0050	0.0016	mg/L	0.10000		107	80-120			
Barium	0.106	0.0100	0.0004	mg/L	0.10000		106	80-120			
Beryllium	0.109	0.0030	0.00008	mg/L	0.10000		109	80-120			
Boron	1.15	0.0400	0.0064	mg/L	1.0000		115	80-120			
Cadmium	0.106	0.0010	0.00007	mg/L	0.10000		106	80-120			
Calcium	1.10	0.500	0.0311	mg/L	1.0000		110	80-120			
Chromium	0.111	0.0100	0.0009	mg/L	0.10000		111	80-120			
Cobalt	0.108	0.0100	0.0005	mg/L	0.10000		108	80-120			
Copper	0.107	0.0250	0.0005	mg/L	0.10000		107	80-120			
Lead	0.106	0.0050	0.0001	mg/L	0.10000		106	80-120			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000		108	80-120			
Nickel	0.109	0.0100	0.0006	mg/L	0.10000		109	80-120			
Selenium	0.106	0.0100	0.0010	mg/L	0.10000		106	80-120			
Silver	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Thallium	0.106	0.0010	0.0002	mg/L	0.10000		106	80-120			
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000		108	80-120			
Zinc	0.110	0.0100	0.0021	mg/L	0.10000		110	80-120			
Lithium	0.104	0.0500	0.0021	mg/L	0.10000		104	80-120			



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December 15, 2016

**Report No.: AZL0109**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Matrix Spike (6120130-MS1)</b>			<b>Source: AZL0109-01</b>				Prepared: 12/06/16 Analyzed: 12/07/16				
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	ND	101	75-125			
Barium	0.126	0.0100	0.0004	mg/L	0.10000	0.0260	100	75-125			
Beryllium	0.103	0.0030	0.00008	mg/L	0.10000	ND	103	75-125			
Boron	1.14	0.0400	0.0064	mg/L	1.0000	0.0668	107	75-125			
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000	ND	102	75-125			
Calcium	40.0	2.50	0.155	mg/L	1.0000	37.8	221	75-125			QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	0.0013	103	75-125			
Cobalt	0.0995	0.0100	0.0005	mg/L	0.10000	ND	100	75-125			
Copper	0.0980	0.0250	0.0005	mg/L	0.10000	ND	98	75-125			
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000	ND	108	75-125			
Nickel	0.101	0.0100	0.0006	mg/L	0.10000	0.0015	99	75-125			
Selenium	0.100	0.0100	0.0010	mg/L	0.10000	ND	100	75-125			
Silver	0.0988	0.0100	0.0005	mg/L	0.10000	ND	99	75-125			
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125			
Vanadium	0.104	0.0100	0.0071	mg/L	0.10000	ND	104	75-125			
Zinc	0.103	0.0100	0.0021	mg/L	0.10000	0.0033	99	75-125			
Lithium	0.0995	0.0500	0.0021	mg/L	0.10000	ND	99	75-125			
<b>Matrix Spike Dup (6120130-MSD1)</b>			<b>Source: AZL0109-01</b>				Prepared: 12/06/16 Analyzed: 12/07/16				
Antimony	0.100	0.0030	0.0008	mg/L	0.10000	ND	100	75-125	2	20	
Arsenic	0.0985	0.0050	0.0016	mg/L	0.10000	ND	99	75-125	2	20	
Barium	0.125	0.0100	0.0004	mg/L	0.10000	0.0260	99	75-125	0.3	20	
Beryllium	0.106	0.0030	0.00008	mg/L	0.10000	ND	106	75-125	2	20	
Boron	1.16	0.0400	0.0064	mg/L	1.0000	0.0668	109	75-125	2	20	
Cadmium	0.0993	0.0010	0.00007	mg/L	0.10000	ND	99	75-125	2	20	
Calcium	37.5	2.50	0.155	mg/L	1.0000	37.8	NR	75-125	7	20	QM-02
Chromium	0.103	0.0100	0.0009	mg/L	0.10000	0.0013	102	75-125	0.9	20	
Cobalt	0.0965	0.0100	0.0005	mg/L	0.10000	ND	96	75-125	3	20	
Copper	0.0959	0.0250	0.0005	mg/L	0.10000	ND	96	75-125	2	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	0.5	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	2	20	
Nickel	0.0986	0.0100	0.0006	mg/L	0.10000	0.0015	97	75-125	2	20	
Selenium	0.0994	0.0100	0.0010	mg/L	0.10000	ND	99	75-125	1	20	
Silver	0.0982	0.0100	0.0005	mg/L	0.10000	ND	98	75-125	0.6	20	
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125	1	20	
Vanadium	0.101	0.0100	0.0071	mg/L	0.10000	ND	101	75-125	3	20	
Zinc	0.100	0.0100	0.0021	mg/L	0.10000	0.0033	97	75-125	2	20	
Lithium	0.100	0.0500	0.0021	mg/L	0.10000	ND	100	75-125	1	20	



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Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0109**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Post Spike (6120130-PS1)</b>		<b>Source: AZL0109-01</b>				<b>Prepared: 12/06/16 Analyzed: 12/07/16</b>					
Antimony	96.2			ug/L	100.00	0.310	96	80-120			
Arsenic	99.7			ug/L	100.00	0.860	99	80-120			
Barium	124			ug/L	100.00	26.0	98	80-120			
Beryllium	102			ug/L	100.00	0.0100	102	80-120			
Boron	1120			ug/L	1000.0	66.8	106	80-120			
Cadmium	98.8			ug/L	100.00	0.0100	99	80-120			
Calcium	38100			ug/L	1000.0	37800	24	80-120			QM-02
Chromium	103			ug/L	100.00	1.33	101	80-120			
Cobalt	98.7			ug/L	100.00	0.180	98	80-120			
Copper	97.2			ug/L	100.00	0.390	97	80-120			
Lead	98.7			ug/L	100.00	0.0800	99	80-120			
Molybdenum	104			ug/L	100.00	1.56	103	80-120			
Nickel	99.5			ug/L	100.00	1.54	98	80-120			
Selenium	99.2			ug/L	100.00	-1.00	99	80-120			
Silver	96.0			ug/L	100.00	0.0300	96	80-120			
Thallium	98.2			ug/L	100.00	0.0600	98	80-120			
Vanadium	103			ug/L	100.00	2.71	100	80-120			
Zinc	102			ug/L	100.00	3.33	98	80-120			
Lithium	98.4			ug/L	100.00	0.440	98	80-120			

**Batch 6120212 - EPA 7470A**

<b>Blank (6120212-BLK1)</b>				<b>Prepared &amp; Analyzed: 12/08/16</b>							
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120212-BS1)</b>				<b>Prepared &amp; Analyzed: 12/08/16</b>							
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3		93	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

December 15, 2016

**Report No.: AZL0109**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120212 - EPA 7470A</b>											
<b>Duplicate (6120212-DUP1)</b>			<b>Source: AZL0053-01RE1</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00009	0.00050	0.000041	mg/L		0.00010			8	20	J
<b>Matrix Spike (6120212-MS1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00227	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (6120212-MSD1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125	0.4	20	
<b>Post Spike (6120212-PS1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	1.62			ug/L	1.6667	-0.0651	97	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 15, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>						ANALYSIS REQUESTED						L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Keith McCall Blvd SE 310195</u> <u>Atlanta, GA 30308</u>						CONTAINER TYPE: <u>P</u>	<u>?</u>	<u>?</u>								P - PLASTIC	1 - HCl, ≤6°C
REPORT TO: <u>Joia Abraham</u> CC: <u>Maria Padilla</u> <u>Keith McCall</u>						PRESERVATION: <u>3</u>	<u>7</u>	<u>3</u>							A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REQUESTED COMPLETION DATE:						# of									G - CLEAR GLASS	3 - HNO <sub>3</sub>	
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond CLR</u>						CONTAINERS ↓									V - VOA VIAL	4 - NaOH, ≤6°C	
PROJECT #:																	
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION									O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	7 - ≤6°C not frozen	
<u>12/2/16</u>	<u>0940</u>	<u>GW</u>		<u>X</u>	<u>B6WL-8</u>	<u>3</u>											
<u>12/2/16</u>	<u>1145</u>	<u>GW</u>		<u>X</u>	<u>B6WL-11</u>	<u>3</u>											
SAMPLED BY AND TITLE: <u>Robert Hill / Kevin Stephenson</u>						DATE/TIME: <u>12/2/16 1345</u>			RELINQUISHED BY: <u>Keith B Hill</u>			DATE/TIME: <u>12/2/16 1540</u>			FOR LAB USE ONLY		
RECEIVED BY:						DATE/TIME:			RELINQUISHED BY:			DATE/TIME:			LAB #: <u>AZL0109</u>		
RECEIVED BY LAB: <u>Charles Harty</u>						DATE/TIME: <u>12/2/16 1540</u>			SAMPLE SHIPPED VIA: <u>CLIENT</u>			OTHER FS			Entered into LIMS: <u>12/16</u>		
Checked: <u>No</u> <u>NA</u> <u>Yes</u> <u>No</u> <u>NA</u>						Temperature: <u>1°C</u> Min: <u>1°C</u> Max: <u></u>			Custody Seal: <u>Intact</u> Broken Not Present			# of Coolers			Cooler ID:		

Page 12 of 13





**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: 12/15/2016 11:23:43AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/02/16 15:40

**Work Order:** AZL0109

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 2

**#Containers:** 6

**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:**

January 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204556

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 07, 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 Bowen  
Pace Project No.: 30204556

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen

Pace Project No.: 30204556

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204556001	BGWC-8	Water	12/02/16 09:40	12/07/16 10:15
30204556002	BGWC-11	Water	12/02/16 11:45	12/07/16 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30204556

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204556001	BGWC-8	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204556002	BGWC-11	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 Bowen

Pace Project No.: 30204556

Sample: <b>BGWC-8</b>		Lab ID: <b>30204556001</b>	Collected: 12/02/16 09:40	Received: 12/07/16 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.219 ± 0.175 (0.316)</b> C:87% T:NA	pCi/L	12/19/16 10:05	13982-63-3	
Radium-228	EPA 9320	<b>-0.0692 ± 0.366 (0.870)</b> C:69% T:77%	pCi/L	01/08/17 13:28	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.219 ± 0.541 (1.19)</b>	pCi/L	01/11/17 16:38	7440-14-4	

Sample: <b>BGWC-11</b>		Lab ID: <b>30204556002</b>	Collected: 12/02/16 11:45	Received: 12/07/16 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0640 ± 0.116 (0.265)</b> C:89% T:NA	pCi/L	12/19/16 10:05	13982-63-3	
Radium-228	EPA 9320	<b>0.848 ± 0.478 (0.866)</b> C:68% T:75%	pCi/L	01/08/17 13:28	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.912 ± 0.594 (1.13)</b>	pCi/L	01/11/17 16:38	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204556

QC Batch: 243000

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204556001, 30204556002

METHOD BLANK: 1195272

Matrix: Water

Associated Lab Samples: 30204556001, 30204556002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0698 ± 0.0862 (0.168) C:97% T:NA	pCi/L	12/19/16 09:55	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204556

QC Batch: 243002

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204556001, 30204556002

METHOD BLANK: 1195278

Matrix: Water

Associated Lab Samples: 30204556001, 30204556002

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 Bowen  
Pace Project No.: 30204556

### 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#: 30204556



30204556

Chain of Custody



Workorder: AZL0109

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 1/4/2017

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	Radium 226, 228, Total																

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers					Radium 226, 228, Total	LAB USE ONLY
						HNO3						
1	BGWC-8	G	12/2/2016 9:40	AZL0109-01	GW	1					X	001
2	BGWC-11	G	12/2/2016 11:45	AZL0109-02	GW	1					X	002
3												
4												
5												
6												
7												
8												
9												
10												

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			Karen Liu	12-14-16	
2					
3					

Cooler Temperature on Receipt NA °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 Services, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED					L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
Southern Company Services					CONTAINER TYPE:	P	?	?					P - PLASTIC	1 - HCl, ≤6°C
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Keith McGill Blvd SE 31045 Atlanta, GA 30308					PRESERVATION:	3	7	3					A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C
REPORT TO: Joie Abahan					# of								G - CLEAR GLASS	3 - HNO <sub>3</sub>
REQUESTED COMPLETION DATE:					C O N T A I N E R S  ↓	Metals App III + IV EPA 0020 + EPA 7470 CLP 501 EPA 300 TIO 5M2510C Resum 220128 SW - 846 9315A 9320							V - VOA VIAL	4 - NaOH, ≤6°C
PROJECT NAME/STATE: Plant Basin - Ash Pond CLR													S - STERILE	5 - NaOH/ZnAc, ≤6°C
PROJECT #:													O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C
Collection DATE													*MATRIX CODES:	
Collection TIME												DW - DRINKING WATER	S - SOIL	
MATRIX CODE*												WW - WASTEWATER	SL - SLUDGE	
C O M P												GW - GROUNDWATER	SD - SOLID	
G R A B												SW - SURFACE WATER	A - AIR	
SAMPLE IDENTIFICATION												ST - STORM WATER	L - LIQUID	
												W - WATER	P - PRODUCT	
12/2/16 0940 GW X B6WL-8					3	1	1	1				REMARKS/ADDITIONAL INFORMATION		
12/2/16 1145 GW X B6WL-11					3	1	1	1						

SAMPLED BY AND TITLE: Robert Mill / Kevin Stephenson		DATE/TIME: 12/2/16 1345	RELINQUISHED BY: Keith B. Mill	DATE/TIME: 12/2/16 1540	FOR LAB USE ONLY LAB #: H2L0109
RECEIVED BY: Charles Hankins		DATE/TIME: 12/2/16 1540	RECEIVED BY:	DATE/TIME:	Entered into LIMS: 12/1/16
RECEIVED BY LAB:		DATE/TIME:	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS		Tracking #:
pH checked: Yes No NA		Ice: Yes No NA	Temperature: Min: Max:	Custody Seal: Intact Broken Not Present	# of Coolers Cooler ID:

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, GA

Project # 30204556

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5100 8484

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 12-7-16

Comments:

	Yes	No	N/A	
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:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID/Analysis    Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>PH22</u>
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>KH</u>		Date/time of preservation	
	Lot # of added preservative			
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>KH</u> Date: <u>12-7-16</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

Test: Ra-226  
Analyst: LAL  
Date: 12/16/2016  
Worklist: 32909  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1195272
MB concentration:	0.070
M/B Counting Uncertainty:	0.086
MB MDC:	0.168
MB Numerical Performance Indicator:	1.60
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS(D 'Y or N)?	N
		LCS32909	LCS32909
Count Date:	12/19/2016		
Spike I.D.:	16-026		
Spike Concentration (pCi/mL):	44.672		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.506		
Target Conc. (pCi/L, g, F):	8.828		
Uncertainty (Calculated):	0.415		
Result (pCi/L, g, F):	7.612		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.708		
Numerical Performance Indicator:	-2.90		
Percent Recovery:	86.22%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	
Sample I.D.:	30204306004		
Duplicate Sample I.D.:	30204306004DUP		
Sample Result (pCi/L, g, F):	0.021		
Sample Result Counting Uncertainty (pCi/L, g, F):	0.091		
Sample Duplicate Result (pCi/L, g, F):	0.129		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.143		
Are sample and/or duplicate results below MDC?	See Below ##		
Duplicate Numerical Performance Indicator:	-1.252	30204306004	
Duplicate RPD:	144.06%	30204306004DUP	
Duplicate Status vs Numerical Indicator:	N/A		
Duplicate Status vs RPD:	Fail***		

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Handwritten signature and date: LAL 12/17*

## Quality Control Sample Performance Assessment



Test: Ra-228  
Analyst: JLW  
Date: 12/28/2016  
Worklist: 32911  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1195278	
MB concentration:	0.184	
M/B Counting Uncertainty:	0.379	
MB MDC:	0.841	
MB Numerical Performance Indicator:	0.95	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS32911	LCS32911
Count Date:	1/8/2017		
Spike I.D.:	16-027		
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 Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
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	30204292009
Duplicate RPD:	98.30%	30204292009DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Amelia*



**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: AZL0145**

**December 14, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

December 14, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
FBL120516	AZL0145-01	Water	12/05/16 14:45	12/06/16 08:10
EQBL120516	AZL0145-02	Water	12/05/16 14:52	12/06/16 08:10
BGWC-9	AZL0145-03	Ground Water	12/05/16 11:00	12/06/16 08:10
BGWC-12	AZL0145-04	Ground Water	12/05/16 16:30	12/06/16 08:10





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 14, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0145

Project: CCR Event

Client ID: FBL120516

Lab Number ID: AZL0145-01

Date/Time Sampled: 12/5/2016 2:45:00PM

Date/Time Received: 12/6/2016 8:10:00AM

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	12/06/16 12:00	12/06/16 12:00	6120123	DJS
<b>Inorganic Anions</b>											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 12:40	6120302	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 12:40	6120302	RLC
Sulfate	0.05	1.0	0.05	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 12:40	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Chromium	0.0023	0.0100	0.0009	mg/L	EPA 6020B	J, B-01	1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:43	6120212	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 14, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0145

Project: CCR Event

Client ID: EQBL120516

Lab Number ID: AZL0145-02

Date/Time Sampled: 12/5/2016 2:52:00PM

Date/Time Received: 12/6/2016 8:10:00AM

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	12/06/16 12:00	12/06/16 12:00	6120123	DJS
<b>Inorganic Anions</b>											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 13:21	6120302	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 13:21	6120302	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 13:21	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Calcium	0.0648	0.500	0.0311	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Chromium	0.0031	0.0100	0.0009	mg/L	EPA 6020B	J, B-01	1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:45	6120212	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.:** AZL0145

**Project:** CCR Event

**Client ID:** BGWC-9

**Lab Number ID:** AZL0145-03

**Date/Time Sampled:** 12/5/2016 11:00:00AM

**Date/Time Received:** 12/6/2016 8:10:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	426	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	40	0.25	0.01	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 13:42	6120302	RLC
Fluoride	0.26	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 13:42	6120302	RLC
Sulfate	130	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 02:02	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Barium	0.0269	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Boron	0.710	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Calcium	74.6	5.00	0.311	mg/L	EPA 6020B		10	12/06/16 15:35	12/07/16 15:36	6120130	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Molybdenum	0.0033	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:48	6120212	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

December 14, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0145

Project: CCR Event

Client ID: BGWC-12

Lab Number ID: AZL0145-04

Date/Time Sampled: 12/5/2016 4:30:00PM

Date/Time Received: 12/6/2016 8:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	489	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	41	0.25	0.01	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 14:03	6120302	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 14:03	6120302	RLC
Sulfate	130	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 02:23	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Barium	0.0258	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Boron	0.879	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Calcium	80.9	5.00	0.311	mg/L	EPA 6020B		10	12/06/16 15:35	12/07/16 15:41	6120130	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Lead	0.0003	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:50	6120212	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0145**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120123 - SM 2540 C</b>											
<b>Blank (6120123-BLK1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120123-BS1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	395	25	10	mg/L	400.00		99	84-108			
<b>Duplicate (6120123-DUP1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	231	25	10	mg/L		269			15	10	QR-03
<b>Duplicate (6120123-DUP2)</b>						Source: AZL0063-02 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	217	25	10	mg/L		214			1	10	
<b>Duplicate (6120123-DUP3)</b>						Source: AZL0033-06RE1 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



**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.: AZL0145**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120302 - EPA 300.0</b>											
<b>Blank (6120302-BLK1)</b>						Prepared & Analyzed: 12/11/16					
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 (6120302-BS1)</b>						Prepared & Analyzed: 12/11/16					
Chloride	9.90	0.25	0.01	mg/L	10.010		99	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		101	90-110			
Sulfate	9.95	1.0	0.05	mg/L	10.020		99	90-110			
<b>Matrix Spike (6120302-MS1)</b>						Source: AZL0230-02 Prepared & Analyzed: 12/11/16					
Chloride	49.3	0.25	0.01	mg/L	10.010	44.6	46	90-110			QM-02
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.19	105	90-110			
Sulfate	108	1.0	0.05	mg/L	10.020	109	NR	90-110			QM-02
<b>Matrix Spike (6120302-MS2)</b>						Source: AZL0298-06 Prepared & Analyzed: 12/11/16					
Chloride	20.3	0.25	0.01	mg/L	10.010	10.6	97	90-110			
Fluoride	10.9	0.30	0.02	mg/L	10.020	0.06	108	90-110			
Sulfate	149	1.0	0.05	mg/L	10.020	155	NR	90-110			QM-02
<b>Matrix Spike Dup (6120302-MSD1)</b>						Source: AZL0230-02 Prepared & Analyzed: 12/11/16					
Chloride	49.3	0.25	0.01	mg/L	10.010	44.6	46	90-110	0.04	15	QM-02
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.19	105	90-110	0.4	15	
Sulfate	108	1.0	0.05	mg/L	10.020	109	NR	90-110	0.003	15	QM-02



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0145**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Blank (6120130-BLK1)</b>											
						Prepared: 12/06/16 Analyzed: 12/07/16					
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	ND	0.500	0.0311	mg/L							
Chromium	0.0016	0.0100	0.0009	mg/L							J
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							
<b>LCS (6120130-BS1)</b>											
						Prepared: 12/06/16 Analyzed: 12/07/16					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000		104	80-120			
Arsenic	0.107	0.0050	0.0016	mg/L	0.10000		107	80-120			
Barium	0.106	0.0100	0.0004	mg/L	0.10000		106	80-120			
Beryllium	0.109	0.0030	0.00008	mg/L	0.10000		109	80-120			
Boron	1.15	0.0400	0.0064	mg/L	1.0000		115	80-120			
Cadmium	0.106	0.0010	0.00007	mg/L	0.10000		106	80-120			
Calcium	1.10	0.500	0.0311	mg/L	1.0000		110	80-120			
Chromium	0.111	0.0100	0.0009	mg/L	0.10000		111	80-120			
Cobalt	0.108	0.0100	0.0005	mg/L	0.10000		108	80-120			
Copper	0.107	0.0250	0.0005	mg/L	0.10000		107	80-120			
Lead	0.106	0.0050	0.0001	mg/L	0.10000		106	80-120			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000		108	80-120			
Nickel	0.109	0.0100	0.0006	mg/L	0.10000		109	80-120			
Selenium	0.106	0.0100	0.0010	mg/L	0.10000		106	80-120			
Silver	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Thallium	0.106	0.0010	0.0002	mg/L	0.10000		106	80-120			
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000		108	80-120			
Zinc	0.110	0.0100	0.0021	mg/L	0.10000		110	80-120			
Lithium	0.104	0.0500	0.0021	mg/L	0.10000		104	80-120			



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0145**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Matrix Spike (6120130-MS1)</b>			<b>Source: AZL0109-01</b>				Prepared: 12/06/16 Analyzed: 12/07/16				
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	ND	101	75-125			
Barium	0.126	0.0100	0.0004	mg/L	0.10000	0.0260	100	75-125			
Beryllium	0.103	0.0030	0.00008	mg/L	0.10000	ND	103	75-125			
Boron	1.14	0.0400	0.0064	mg/L	1.0000	0.0668	107	75-125			
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000	ND	102	75-125			
Calcium	40.0	2.50	0.155	mg/L	1.0000	37.8	221	75-125			QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	0.0013	103	75-125			
Cobalt	0.0995	0.0100	0.0005	mg/L	0.10000	ND	100	75-125			
Copper	0.0980	0.0250	0.0005	mg/L	0.10000	ND	98	75-125			
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000	ND	108	75-125			
Nickel	0.101	0.0100	0.0006	mg/L	0.10000	0.0015	99	75-125			
Selenium	0.100	0.0100	0.0010	mg/L	0.10000	ND	100	75-125			
Silver	0.0988	0.0100	0.0005	mg/L	0.10000	ND	99	75-125			
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125			
Vanadium	0.104	0.0100	0.0071	mg/L	0.10000	ND	104	75-125			
Zinc	0.103	0.0100	0.0021	mg/L	0.10000	0.0033	99	75-125			
Lithium	0.0995	0.0500	0.0021	mg/L	0.10000	ND	99	75-125			
<b>Matrix Spike Dup (6120130-MSD1)</b>			<b>Source: AZL0109-01</b>				Prepared: 12/06/16 Analyzed: 12/07/16				
Antimony	0.100	0.0030	0.0008	mg/L	0.10000	ND	100	75-125	2	20	
Arsenic	0.0985	0.0050	0.0016	mg/L	0.10000	ND	99	75-125	2	20	
Barium	0.125	0.0100	0.0004	mg/L	0.10000	0.0260	99	75-125	0.3	20	
Beryllium	0.106	0.0030	0.00008	mg/L	0.10000	ND	106	75-125	2	20	
Boron	1.16	0.0400	0.0064	mg/L	1.0000	0.0668	109	75-125	2	20	
Cadmium	0.0993	0.0010	0.00007	mg/L	0.10000	ND	99	75-125	2	20	
Calcium	37.5	2.50	0.155	mg/L	1.0000	37.8	NR	75-125	7	20	QM-02
Chromium	0.103	0.0100	0.0009	mg/L	0.10000	0.0013	102	75-125	0.9	20	
Cobalt	0.0965	0.0100	0.0005	mg/L	0.10000	ND	96	75-125	3	20	
Copper	0.0959	0.0250	0.0005	mg/L	0.10000	ND	96	75-125	2	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	0.5	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	2	20	
Nickel	0.0986	0.0100	0.0006	mg/L	0.10000	0.0015	97	75-125	2	20	
Selenium	0.0994	0.0100	0.0010	mg/L	0.10000	ND	99	75-125	1	20	
Silver	0.0982	0.0100	0.0005	mg/L	0.10000	ND	98	75-125	0.6	20	
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125	1	20	
Vanadium	0.101	0.0100	0.0071	mg/L	0.10000	ND	101	75-125	3	20	
Zinc	0.100	0.0100	0.0021	mg/L	0.10000	0.0033	97	75-125	2	20	
Lithium	0.100	0.0500	0.0021	mg/L	0.10000	ND	100	75-125	1	20	





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0145**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Post Spike (6120130-PS1)</b>		<b>Source: AZL0109-01</b>				<b>Prepared: 12/06/16 Analyzed: 12/07/16</b>					
Antimony	96.2			ug/L	100.00	0.310	96	80-120			
Arsenic	99.7			ug/L	100.00	0.860	99	80-120			
Barium	124			ug/L	100.00	26.0	98	80-120			
Beryllium	102			ug/L	100.00	0.0100	102	80-120			
Boron	1120			ug/L	1000.0	66.8	106	80-120			
Cadmium	98.8			ug/L	100.00	0.0100	99	80-120			
Calcium	38100			ug/L	1000.0	37800	24	80-120			QM-02
Chromium	103			ug/L	100.00	1.33	101	80-120			
Cobalt	98.7			ug/L	100.00	0.180	98	80-120			
Copper	97.2			ug/L	100.00	0.390	97	80-120			
Lead	98.7			ug/L	100.00	0.0800	99	80-120			
Molybdenum	104			ug/L	100.00	1.56	103	80-120			
Nickel	99.5			ug/L	100.00	1.54	98	80-120			
Selenium	99.2			ug/L	100.00	-1.00	99	80-120			
Silver	96.0			ug/L	100.00	0.0300	96	80-120			
Thallium	98.2			ug/L	100.00	0.0600	98	80-120			
Vanadium	103			ug/L	100.00	2.71	100	80-120			
Zinc	102			ug/L	100.00	3.33	98	80-120			
Lithium	98.4			ug/L	100.00	0.440	98	80-120			

**Batch 6120212 - EPA 7470A**

<b>Blank (6120212-BLK1)</b>				<b>Prepared &amp; Analyzed: 12/08/16</b>							
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120212-BS1)</b>				<b>Prepared &amp; Analyzed: 12/08/16</b>							
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3		93	80-120			



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0145**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120212 - EPA 7470A</b>											
<b>Duplicate (6120212-DUP1)</b>			<b>Source: AZL0053-01RE1</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00009	0.00050	0.000041	mg/L		0.00010			8	20	J
<b>Matrix Spike (6120212-MS1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00227	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (6120212-MSD1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125	0.4	20	
<b>Post Spike (6120212-PS1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	1.62			ug/L	1.6667	-0.0651	97	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
Southern Company Services					CONTAINER TYPE:	P	P	P										P - PLASTIC	1 - HCl, ≤6°C
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Kahn McGill Blvd SE Bldg 85 Atlanta, GA 30308					PRESERVATION:	3	7	3									A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REPORT TO: Joju Abraham					# of												G - CLEAR GLASS	3 - HNO <sub>3</sub>	
REQUESTED COMPLETION DATE:					C O N T A I N E R S ↓	Mixture AM. III + IV EPA 6020 + EPA 7470 C15 504 EPA 300 TDS 5M2540C Rad. um 226 + 228 SW-246 9315 + 9320										S - STERILE	4 - NaOH, ≤6°C		
PROJECT NAME/STATE: Plant Bowen - Ash Pond CLR																O - OTHER	5 - NaOH/ZnAc, ≤6°C		
PROJECT #:																*MATRIX CODES:			
Collection DATE																DW - DRINKING WATER	S - SOIL		
Collection TIME					WW - WASTEWATER	SL - SLUDGE													
MATRIX CODE*					GW - GROUNDWATER	SD - SOLID													
C O M P					SW - SURFACE WATER	A - AIR													
G R A B					ST - STORM WATER	L - LIQUID													
SAMPLE IDENTIFICATION					W - WATER	P - PRODUCT													
					REMARKS/ADDITIONAL INFORMATION														
12/5/16	1445	W	X	FBL 120516	3	1	1	1									1		
12/5/16	1452	W	X	EQBL 120516	3	1	1	1									2		
12/5/16	1100	GW	X	B6WL-9	3	1	1	1									3		
12/5/16	1630	GW	X	B6WL-12	3	1	1	1									4		

SAMPLED BY AND TITLE: Robert Miller / Kevin Stedson		DATE/TIME: 12/5/16 1655	RELINQUISHED BY: KBS Bell	DATE/TIME: 12/16/16 0810	LAB #: A2L0145
RECEIVED BY: Kahman		DATE/TIME: 12/16/16 0810	RELINQUISHED BY:	DATE/TIME:	Entered into LIMS: MR
RECEIVED BY LAB:		DATE/TIME:	SAMPLE SHIPPED VIA:		Tracking #:
Checked: No NA <input checked="" type="checkbox"/> Yes No NA		Temperature: 1°C Min: 1°C Max:	UPS FED-EX USPS COURIER <input checked="" type="checkbox"/> CLIENT OTHER FS		
Ice: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		Custody Seal: Intact Broken Not Present	# of Coolers	Cooler ID:	

Page 14 of 15



**PACE ANALYTICAL SERVICES, INC.**

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
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**LOG-IN CHECKLIST**

**Printed: 12/7/2016 8:50:40AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/06/16 08:10

**Work Order:** AZL0145

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 4

**#Containers:** 12

**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:**

January 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204573

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 07, 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 Bowen

Pace Project No.: 30204573

### 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 Bowen  
Pace Project No.: 30204573

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204573001	FBL 120516	Water	12/05/16 14:45	12/07/16 10:15
30204573002	EQBL 120516	Water	12/05/16 14:52	12/07/16 10:15
30204573003	BGWC-9	Water	12/05/16 11:00	12/07/16 10:15
30204573004	BGWC-12	Water	12/05/16 16:30	12/07/16 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30204573

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204573001	FBL 120516	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204573002	EQBL 120516	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204573003	BGWC-9	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204573004	BGWC-12	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 Bowen

Pace Project No.: 30204573

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: FBL 120516</b>		<b>Lab ID: 30204573001</b>	Collected: 12/05/16 14:45	Received: 12/07/16 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	<b>0.263 ± 0.157 (0.230)</b>	pCi/L	12/19/16 10:06	13982-63-3		
		<b>C:96% T:NA</b>					
Radium-228	EPA 9320	<b>0.114 ± 0.399 (0.900)</b>	pCi/L	01/08/17 13:28	15262-20-1		
		<b>C:69% T:79%</b>					
Total Radium	Total Radium Calculation	<b>0.377 ± 0.556 (1.13)</b>	pCi/L	01/11/17 16:38	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: EQBL 120516</b>		<b>Lab ID: 30204573002</b>	Collected: 12/05/16 14:52	Received: 12/07/16 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	<b>0.00868 ± 0.0984 (0.261)</b>	pCi/L	12/19/16 10:06	13982-63-3		
		<b>C:95% T:NA</b>					
Radium-228	EPA 9320	<b>0.463 ± 0.402 (0.807)</b>	pCi/L	01/08/17 13:28	15262-20-1		
		<b>C:66% T:81%</b>					
Total Radium	Total Radium Calculation	<b>0.472 ± 0.500 (1.07)</b>	pCi/L	01/11/17 16:38	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-9</b>		<b>Lab ID: 30204573003</b>	Collected: 12/05/16 11:00	Received: 12/07/16 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	<b>0.218 ± 0.170 (0.306)</b>	pCi/L	12/19/16 10:06	13982-63-3		
		<b>C:92% T:NA</b>					
Radium-228	EPA 9320	<b>1.98 ± 0.570 (0.568)</b>	pCi/L	01/08/17 13:29	15262-20-1		
		<b>C:73% T:79%</b>					
Total Radium	Total Radium Calculation	<b>2.20 ± 0.740 (0.874)</b>	pCi/L	01/11/17 16:38	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-12</b>		<b>Lab ID: 30204573004</b>	Collected: 12/05/16 16:30	Received: 12/07/16 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	<b>0.132 ± 0.130 (0.247)</b>	pCi/L	12/19/16 10:45	13982-63-3		
		<b>C:94% T:NA</b>					
Radium-228	EPA 9320	<b>0.824 ± 0.399 (0.659)</b>	pCi/L	01/08/17 13:29	15262-20-1		
		<b>C:70% T:82%</b>					
Total Radium	Total Radium Calculation	<b>0.956 ± 0.529 (0.906)</b>	pCi/L	01/11/17 16:38	7440-14-4		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204573

QC Batch: 243003

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204573003, 30204573004

METHOD BLANK: 1195281

Matrix: Water

Associated Lab Samples: 30204573003, 30204573004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.462 ± 0.350 (0.678) C:76% T:78%	pCi/L	01/08/17 13:29	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204573

QC Batch: 243000

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204573001, 30204573002, 30204573003, 30204573004

METHOD BLANK: 1195272

Matrix: Water

Associated Lab Samples: 30204573001, 30204573002, 30204573003, 30204573004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0698 ± 0.0862 (0.168) C:97% T:NA	pCi/L	12/19/16 09:55	

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.

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204573

QC Batch: 243002

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204573001, 30204573002

METHOD BLANK: 1195278

Matrix: Water

Associated Lab Samples: 30204573001, 30204573002

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 Bowen

Pace Project No.: 30204573

### 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#: 30204573



30204573

Pace Analytical  
www.pacelabs.com

Chain of Custody

Workorder: AZL0145

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 1/5/2017

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																	
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total									LAB USE ONLY
						HNO3													
1	FBL 120516	G	12/5/2016 14:45	AZL0145-01	W	1				X									001
2	EQBL 120516	G	12/5/2016 14:52	AZL0145-02	W	1				X									002
3	BGWC-9	G	12/5/2016 11:00	AZL0145-03	GW	1				X									003
4	BGWC-12	G	12/5/2016 16:30	AZL0145-04	GW	1				X									004
5																			
6																			
7																			
8																			
9																			
10																			
Transfers	Released By	Date/Time	Received By	Date/Time	Comments														
1			Karim Hill	12-7-16 1015															
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 COC

This chain of custody is considered complete as is since this information is available in the owner laboratory.

30204573

8301

CHAIN OF CUSTODY RECORD



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

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED								LAB I D N U M B E R	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Palm Mdg. II Bldg SE Bldg 8</u> <u>Atlanta, GA 30308</u>					CONTAINER TYPE	P	P	P								P - PLASTIC	1 - HCl, ≤6°C	
REPORT TO: <u>John Abraham</u>					PRESERVATION:	3	7	3							A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
REQUESTED COMPLETION DATE: <u>PO# GPC 10684198</u>					# of										G - CLEAR GLASS	3 - HNO <sub>3</sub>		
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond CLR</u>					CONTAINERS	Methyl Ar. III + IV EPA 600 + EPA 747D C15 S01 EPA 300 TDS 5M2540C Rad. um 226 + 228 SW-846 9315 + 9320								↓	V - VOA VIAL		4 - NaOH, ≤6°C	
PROJECT #:															S - STERILE		5 - NaOH/ZnAc, ≤6°C	
Collection DATE															O - OTHER		6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
Collection TIME															7 - ≤6°C not frozen		*MATRIX CODES:	
MATRIX CODE*					DW - DRINKING WATER		S - SOIL											
C O M P					WW - WASTEWATER		SL - SLUDGE											
G R A B					GW - GROUNDWATER		SD - SOLID											
SAMPLE IDENTIFICATION					SW - SURFACE WATER		A - AIR											
					ST - STORM WATER		L - LIQUID											
					W - WATER		P - PRODUCT											
REMARKS/ADDITIONAL INFORMATION																		
12/5/16	1445	U		X	FBL 120516	3	1	1	1				1					
12/5/16	1452	V		X	EQBL 120516	3	1	1	1				2					
12/5/16	1100	GW		X	B6WC-9	3	1	1	1				3					
12/5/16	1630	GW		X	B6WC-12	3	1	1	1				4					

SAMPLED BY AND TITLE: <u>Robert Hill / Kevin Stedson</u>	DATE/TIME: <u>12/5/16 1655</u>	RELINQUISHED BY: <u>John Abraham</u>	DATE/TIME: <u>12/16/16 0810</u>	LAB #: <u>AZL0145</u>
RECEIVED BY:	DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	Entered into LIMS: <u>MR</u>
RECEIVED BY LAB: <u>John Abraham</u>	DATE/TIME: <u>12/16/16 0810</u>	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER <u>CLIENT</u> OTHER: FS	Tracking #:	
Checked: Yes No NA	Temperature: 1°C Min: 1°C Max:	Seal: Intact Broken Not Present	# of Coolers:	Cooler ID:



Sample Condition Upon Receipt Pittsburgh

30204573



Client Name: Pace Georgia Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 0812 5100 8800

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 12-7-16

Comments:	Yes	No	N/A	
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:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID/Analysis Matrix: <u>WJ</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>PH 2</u>
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>KH</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>KH</u> Date: <u>12-7-16</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

Test: Ra-226  
Analyst: LAL  
Date: 12/16/2016  
Worklist: 32909  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1195272	
MB concentration:	0.070	
M/B Counting Uncertainty:	0.086	
MB MDC:	0.168	
MB Numerical Performance Indicator:	1.60	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS32909	LCSD32909
Count Date:	12/19/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.672	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.506	
Target Conc. (pCi/L, g, F):	8.826	
Uncertainty (Calculated):	0.415	
Result (pCi/L, g, F):	7.612	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.708	
Numerical Performance Indicator:	-2.90	
Percent Recovery:	86.22%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30204306004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30204306004DUP	
Sample Result (pCi/L, g, F):	0.021	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.091	
Sample Duplicate Result (pCi/L, g, F):	0.129	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.143	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.252	30204306004
Duplicate RPD:	144.06%	30204306004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LAL*

*On 12/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/28/2016  
Worklist: 32911  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID		1195278
MB concentration:		0.184
M/B Counting Uncertainty:		0.379
MB MDC:		0.841
MB Numerical Performance Indicator:		0.95
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS32911	LCS32911
Count Date:		1/8/2017	
Spike I.D.:		16-027	
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	
LCSD/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 Matrix Spike Control Assessment	
	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):
	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:

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
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	30204292009
Duplicate RPD:	98.30%	30204292009DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
	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:

## 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.

*Amelia/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/28/2016  
Worklist: 32912  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1195281	
MB concentration:	0.462	
M/B Counting Uncertainty:	0.340	
MB MDC:	0.678	
MB Numerical Performance Indicator:	2.66	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS32912	LCSD32912
Count Date:	1/8/2017	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.613	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.817	
Target Conc. (pCi/L, g, F):	6.269	
Uncertainty (Calculated):	0.451	
Result (pCi/L, g, F):	8.156	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.806	
Numerical Performance Indicator:	4.00	
Percent Recovery:	130.10%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment
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):
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:

Duplicate Sample Assessment		
Sample I.D.:	30204834003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30204834003DUP	
Sample Result (pCi/L, g, F):	0.752	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.372	
Sample Duplicate Result (pCi/L, g, F):	1.526	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.436	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.649	
Duplicate RPD:	67.95%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment
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:

## 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.

*JLW*

*Amelia 1/7*



**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: AZL0230**

**December 16, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

December 16, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-10	AZL0230-01	Ground Water	12/06/16 15:25	12/07/16 08:02
BGWC-17	AZL0230-02	Ground Water	12/06/16 12:56	12/07/16 08:02
BGWC-18	AZL0230-03	Ground Water	12/06/16 16:45	12/07/16 08:02
BGWC-16	AZL0230-04	Ground Water	12/06/16 10:42	12/07/16 08:02
BGWC-7	AZL0230-05	Ground Water	12/06/16 11:10	12/07/16 08:02



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 2480 Maner Road  
 Atlanta GA, 30339

December 16, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0230

**Project:** CCR Event

**Client ID:** BGWC-10

**Lab Number ID:** AZL0230-01

**Date/Time Sampled:** 12/6/2016 3:25:00PM

**Date/Time Received:** 12/7/2016 8:02:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	421	25	10	mg/L	SM 2540 C		1	12/10/16 17:30	12/10/16 17:30	6120286	JPT
<b>Inorganic Anions</b>											
Chloride	22	0.25	0.01	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 14:23	6120302	RLC
Fluoride	0.16	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 14:23	6120302	RLC
Sulfate	110	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 02:44	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Arsenic	0.0044	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Barium	0.0659	0.0100	0.0004	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Boron	0.515	0.0400	0.0064	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Calcium	55.4	5.00	0.311	mg/L	EPA 6020B		10	12/10/16 15:10	12/14/16 13:06	6120281	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Molybdenum	0.0049	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 17:02	6120212	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

December 16, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0230

Project: CCR Event

Client ID: BGWC-17

Lab Number ID: AZL0230-02

Date/Time Sampled: 12/6/2016 12:56:00PM

Date/Time Received: 12/7/2016 8:02:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	413	25	10	mg/L	SM 2540 C		1	12/10/16 17:30	12/10/16 17:30	6120286	JPT
<b>Inorganic Anions</b>											
Chloride	45	0.25	0.01	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 14:44	6120302	RLC
Fluoride	0.19	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 14:44	6120302	RLC
Sulfate	130	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 03:05	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Barium	0.0171	0.0100	0.0004	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Boron	1.79	0.0400	0.0064	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Cadmium	0.0001	0.0010	0.00007	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Calcium	68.7	5.00	0.311	mg/L	EPA 6020B		10	12/10/16 15:10	12/14/16 13:13	6120281	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Mercury	0.00016	0.00050	0.000041	mg/L	EPA 7470A	J	1	12/08/16 11:25	12/08/16 17:09	6120212	MTC





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 Atlanta GA, 30339

December 16, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0230

Project: CCR Event

Client ID: BGWC-18

Lab Number ID: AZL0230-03

Date/Time Sampled: 12/6/2016 4:45:00PM

Date/Time Received: 12/7/2016 8:02:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	560	25	10	mg/L	SM 2540 C		1	12/10/16 17:30	12/10/16 17:30	6120286	JPT
<b>Inorganic Anions</b>											
Chloride	73	2.5	0.14	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 03:26	6120302	RLC
Fluoride	0.32	0.30	0.02	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 15:46	6120302	RLC
Sulfate	160	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 03:26	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Barium	0.0398	0.0100	0.0004	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Boron	1.50	0.0400	0.0064	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Cadmium	0.0006	0.0010	0.00007	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Calcium	88.1	25.0	1.55	mg/L	EPA 6020B		50	12/10/16 15:10	12/14/16 13:19	6120281	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Cobalt	0.0009	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Lead	0.0001	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 17:12	6120212	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 16, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0230

Project: CCR Event

Client ID: BGWC-16

Lab Number ID: AZL0230-04

Date/Time Sampled: 12/6/2016 10:42:00AM

Date/Time Received: 12/7/2016 8:02:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	730	25	10	mg/L	SM 2540 C		1	12/10/16 17:30	12/10/16 17:30	6120286	JPT
<b>Inorganic Anions</b>											
Chloride	48	2.5	0.14	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 03:48	6120302	RLC
Fluoride	0.24	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 16:07	6120302	RLC
Sulfate	280	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 03:48	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Barium	0.0367	0.0100	0.0004	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Boron	1.65	0.0400	0.0064	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Cadmium	0.0012	0.0010	0.00007	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Calcium	117	25.0	1.55	mg/L	EPA 6020B		50	12/10/16 15:10	12/14/16 13:25	6120281	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Cobalt	0.0050	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Thallium	0.0003	0.0010	0.0002	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/13/16 09:50	12/13/16 13:24	6120352	MTC



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 Atlanta GA, 30339

December 16, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0230

Project: CCR Event

Client ID: BGWC-7

Lab Number ID: AZL0230-05

Date/Time Sampled: 12/6/2016 11:10:00AM

Date/Time Received: 12/7/2016 8:02:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	976	25	10	mg/L	SM 2540 C		1	12/10/16 17:30	12/10/16 17:30	6120286	JPT
<b>Inorganic Anions</b>											
Chloride	11	0.25	0.01	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 17:50	6120302	RLC
Fluoride	0.22	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 17:50	6120302	RLC
Sulfate	470	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 04:09	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Barium	0.0385	0.0100	0.0004	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Boron	2.05	0.0400	0.0064	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Calcium	146	25.0	1.55	mg/L	EPA 6020B		50	12/10/16 15:10	12/14/16 13:31	6120281	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Cobalt	0.0009	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Molybdenum	0.0102	0.0100	0.0017	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Lithium	0.0094	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/13/16 09:50	12/13/16 13:26	6120352	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 16, 2016

**Report No.: AZL0230**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120286 - SM 2540 C</b>											
<b>Blank (6120286-BLK1)</b>						Prepared & Analyzed: 12/10/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120286-BS1)</b>						Prepared & Analyzed: 12/10/16					
Total Dissolved Solids	392	25	10	mg/L	400.00		98	84-108			
<b>Duplicate (6120286-DUP1)</b>						Source: AZL0281-03			Prepared & Analyzed: 12/10/16		
Total Dissolved Solids	605	25	10	mg/L		597			1	10	
<b>Duplicate (6120286-DUP2)</b>						Source: AZL0281-04			Prepared & Analyzed: 12/10/16		
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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Attention: Mr. Joju Abraham

December 16, 2016

**Report No.: AZL0230**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120302 - EPA 300.0</b>											
<b>Blank (6120302-BLK1)</b>						Prepared & Analyzed: 12/11/16					
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 (6120302-BS1)</b>						Prepared & Analyzed: 12/11/16					
Chloride	9.90	0.25	0.01	mg/L	10.010		99	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		101	90-110			
Sulfate	9.95	1.0	0.05	mg/L	10.020		99	90-110			
<b>Duplicate (6120302-DUP1)</b>						Source: AZL0230-05RE2 Prepared: 12/11/16 Analyzed: 12/14/16					
Chloride	9.73	2.5	0.14	mg/L		11.9			20	15	QR-03
Fluoride	0.43	3.0	0.19	mg/L		0.46			7	15	J
Sulfate	462	10	0.51	mg/L		463			0.2	15	
<b>Matrix Spike (6120302-MS1)</b>						Source: AZL0230-02 Prepared & Analyzed: 12/11/16					
Chloride	49.3	0.25	0.01	mg/L	10.010	44.6	46	90-110			QM-02
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.19	105	90-110			
Sulfate	108	1.0	0.05	mg/L	10.020	109	NR	90-110			QM-02
<b>Matrix Spike (6120302-MS2)</b>						Source: AZL0298-06 Prepared & Analyzed: 12/11/16					
Chloride	20.3	0.25	0.01	mg/L	10.010	10.6	97	90-110			
Fluoride	10.9	0.30	0.02	mg/L	10.020	0.06	108	90-110			
Sulfate	149	1.0	0.05	mg/L	10.020	155	NR	90-110			QM-02
<b>Matrix Spike Dup (6120302-MSD1)</b>						Source: AZL0230-02 Prepared & Analyzed: 12/11/16					
Chloride	49.3	0.25	0.01	mg/L	10.010	44.6	46	90-110	0.04	15	QM-02
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.19	105	90-110	0.4	15	
Sulfate	108	1.0	0.05	mg/L	10.020	109	NR	90-110	0.003	15	QM-02



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 16, 2016

**Report No.: AZL0230**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120212 - EPA 7470A</b>											
<b>Blank (6120212-BLK1)</b>						Prepared & Analyzed: 12/08/16					
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120212-BS1)</b>						Prepared & Analyzed: 12/08/16					
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3		93	80-120			
<b>Duplicate (6120212-DUP1)</b>						Source: AZL0053-01RE1 Prepared & Analyzed: 12/08/16					
Mercury	0.00009	0.00050	0.000041	mg/L		0.00010			8	20	J
<b>Matrix Spike (6120212-MS1)</b>						Source: AZL0145-04 Prepared & Analyzed: 12/08/16					
Mercury	0.00227	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (6120212-MSD1)</b>						Source: AZL0145-04 Prepared & Analyzed: 12/08/16					
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125	0.4	20	
<b>Post Spike (6120212-PS1)</b>						Source: AZL0145-04 Prepared & Analyzed: 12/08/16					
Mercury	1.62			ug/L	1.6667	-0.0651	97	80-120			
<b>Batch 6120281 - EPA 3005A</b>											
<b>Blank (6120281-BLK1)</b>						Prepared: 12/10/16 Analyzed: 12/12/16					
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	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							



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Attention: Mr. Joju Abraham

December 16, 2016

**Report No.: AZL0230**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120281 - EPA 3005A</b>											
<b>LCS (6120281-BS1)</b>						Prepared: 12/10/16 Analyzed: 12/12/16					
Antimony	0.0986	0.0030	0.0008	mg/L	0.10000		99	80-120			
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000		102	80-120			
Barium	0.0971	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.104	0.0030	0.00008	mg/L	0.10000		104	80-120			
Boron	1.04	0.0400	0.0064	mg/L	1.0000		104	80-120			
Cadmium	0.0986	0.0010	0.00007	mg/L	0.10000		99	80-120			
Calcium	0.954	0.500	0.0311	mg/L	1.0000		95	80-120			
Chromium	0.0987	0.0100	0.0009	mg/L	0.10000		99	80-120			
Cobalt	0.100	0.0100	0.0005	mg/L	0.10000		100	80-120			
Copper	0.100	0.0250	0.0005	mg/L	0.10000		100	80-120			
Lead	0.0987	0.0050	0.0001	mg/L	0.10000		99	80-120			
Molybdenum	0.100	0.0100	0.0017	mg/L	0.10000		100	80-120			
Nickel	0.102	0.0100	0.0006	mg/L	0.10000		102	80-120			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120			
Silver	0.0987	0.0100	0.0005	mg/L	0.10000		99	80-120			
Thallium	0.0985	0.0010	0.0002	mg/L	0.10000		98	80-120			
Vanadium	0.102	0.0100	0.0071	mg/L	0.10000		102	80-120			
Zinc	0.101	0.0100	0.0021	mg/L	0.10000		101	80-120			
Lithium	0.102	0.0500	0.0021	mg/L	0.10000		102	80-120			
<b>Matrix Spike (6120281-MS1)</b>						Source: AZL0230-01 Prepared: 12/10/16 Analyzed: 12/12/16					
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125			
Arsenic	0.108	0.0050	0.0016	mg/L	0.10000	0.0044	104	75-125			
Barium	0.161	0.0100	0.0004	mg/L	0.10000	0.0659	96	75-125			
Beryllium	0.102	0.0030	0.00008	mg/L	0.10000	ND	102	75-125			
Boron	1.54	0.0400	0.0064	mg/L	1.0000	0.515	103	75-125			
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125			
Calcium	57.3	5.00	0.311	mg/L	1.0000	55.4	186	75-125			QM-02
Chromium	0.0997	0.0100	0.0009	mg/L	0.10000	ND	100	75-125			
Cobalt	0.0972	0.0100	0.0005	mg/L	0.10000	ND	97	75-125			
Copper	0.0959	0.0250	0.0005	mg/L	0.10000	0.0007	95	75-125			
Lead	0.0951	0.0050	0.0001	mg/L	0.10000	ND	95	75-125			
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000	0.0049	104	75-125			
Nickel	0.0985	0.0100	0.0006	mg/L	0.10000	0.0032	95	75-125			
Selenium	0.0995	0.0100	0.0010	mg/L	0.10000	ND	100	75-125			
Silver	0.0992	0.0100	0.0005	mg/L	0.10000	ND	99	75-125			
Thallium	0.0951	0.0010	0.0002	mg/L	0.10000	ND	95	75-125			
Vanadium	0.100	0.0100	0.0071	mg/L	0.10000	ND	100	75-125			
Zinc	0.0984	0.0100	0.0021	mg/L	0.10000	ND	98	75-125			
Lithium	0.0996	0.0500	0.0021	mg/L	0.10000	ND	100	75-125			



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 16, 2016

**Report No.: AZL0230**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120281 - EPA 3005A</b>											
<b>Matrix Spike Dup (6120281-MSD1)</b>			<b>Source: AZL0230-01</b>			<b>Prepared: 12/10/16 Analyzed: 12/12/16</b>					
Antimony	0.109	0.0030	0.0008	mg/L	0.10000	ND	109	75-125	6	20	
Arsenic	0.109	0.0050	0.0016	mg/L	0.10000	0.0044	104	75-125	0.3	20	
Barium	0.163	0.0100	0.0004	mg/L	0.10000	0.0659	98	75-125	1	20	
Beryllium	0.105	0.0030	0.00008	mg/L	0.10000	ND	105	75-125	3	20	
Boron	1.58	0.0400	0.0064	mg/L	1.0000	0.515	106	75-125	2	20	
Cadmium	0.108	0.0010	0.00007	mg/L	0.10000	ND	108	75-125	8	20	
Calcium	56.6	5.00	0.311	mg/L	1.0000	55.4	121	75-125	1	20	
Chromium	0.101	0.0100	0.0009	mg/L	0.10000	ND	101	75-125	2	20	
Cobalt	0.0987	0.0100	0.0005	mg/L	0.10000	ND	99	75-125	2	20	
Copper	0.0976	0.0250	0.0005	mg/L	0.10000	0.0007	97	75-125	2	20	
Lead	0.0987	0.0050	0.0001	mg/L	0.10000	ND	99	75-125	4	20	
Molybdenum	0.117	0.0100	0.0017	mg/L	0.10000	0.0049	112	75-125	7	20	
Nickel	0.100	0.0100	0.0006	mg/L	0.10000	0.0032	97	75-125	2	20	
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	1	20	
Silver	0.105	0.0100	0.0005	mg/L	0.10000	ND	105	75-125	6	20	
Thallium	0.0992	0.0010	0.0002	mg/L	0.10000	ND	99	75-125	4	20	
Vanadium	0.101	0.0100	0.0071	mg/L	0.10000	ND	101	75-125	1	20	
Zinc	0.101	0.0100	0.0021	mg/L	0.10000	ND	101	75-125	2	20	
Lithium	0.104	0.0500	0.0021	mg/L	0.10000	ND	104	75-125	4	20	
<b>Post Spike (6120281-PS1)</b>											
<b>Source: AZL0230-01</b>			<b>Prepared: 12/10/16 Analyzed: 12/12/16</b>								
Antimony	105			ug/L	100.00	0.500	105	80-120			
Arsenic	110			ug/L	100.00	4.43	106	80-120			
Barium	163			ug/L	100.00	65.9	97	80-120			
Beryllium	108			ug/L	100.00	0.0100	108	80-120			
Boron	1600			ug/L	1000.0	515	108	80-120			
Cadmium	106			ug/L	100.00	0.0100	106	80-120			
Calcium	56500			ug/L	1000.0	55400	106	80-120			
Chromium	103			ug/L	100.00	0.510	103	80-120			
Cobalt	101			ug/L	100.00	0.370	100	80-120			
Copper	99.7			ug/L	100.00	0.740	99	80-120			
Lead	99.6			ug/L	100.00	0.0300	100	80-120			
Molybdenum	116			ug/L	100.00	4.93	111	80-120			
Nickel	103			ug/L	100.00	3.25	100	80-120			
Selenium	104			ug/L	100.00	-0.870	104	80-120			
Silver	104			ug/L	100.00	0.00	104	80-120			
Thallium	99.6			ug/L	100.00	0.0400	100	80-120			
Vanadium	103			ug/L	100.00	1.43	101	80-120			
Zinc	103			ug/L	100.00	1.98	101	80-120			
Lithium	106			ug/L	100.00	1.33	105	80-120			





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 16, 2016

**Report No.: AZL0230**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120352 - EPA 7470A</b>											
<b>Blank (6120352-BLK1)</b>											
						Prepared & Analyzed: 12/13/16					
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120352-BS1)</b>											
						Prepared & Analyzed: 12/13/16					
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3		96	80-120			
<b>Matrix Spike (6120352-MS1)</b>											
						Source: AZL0281-07			Prepared & Analyzed: 12/13/16		
Mercury	0.00237	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125			
<b>Matrix Spike Dup (6120352-MSD1)</b>											
						Source: AZL0281-07			Prepared & Analyzed: 12/13/16		
Mercury	0.00246	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125	4	20	
<b>Post Spike (6120352-PS1)</b>											
						Source: AZL0281-07			Prepared & Analyzed: 12/13/16		
Mercury	1.67			ug/L	1.6667	0.0177	99	80-120			



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 16, 2016

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## Legend

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### 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

- 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).

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

CHAIN OF CUSTODY RECORD



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										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:															
Southern Company Services					PRESERVATION:		P	P	P								P - PLASTIC	1 - HCl, ≤6°C		
241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308					# of	3	7	3									A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
REPORT TO: Soju Abraham					CONTAINERS	↓	Metals Ar, III + IV EPA 6020 + EPA 7470	Cl, F, SO4 EPA 300	TDS 5M 75406	Radium 220 + 228	SW-846 9315 + 9320									
REQUESTED COMPLETION DATE: PO# GPC 10684198																				
PROJECT NAME/STATE: Plant Bowen - Ash Pond CCR					*MATRIX CODES:															
PROJECT #:					DW - DRINKING WATER S - SOIL															
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION															
12/6/16	1525	GW		X	BGWL-10	3														
12/6/16	1256	GW		X	BGWL-17	3														
12/6/16	1645	GW		X	BGWL-18	3														
12/6/16	1042	GW		X	BGWL-16	3														
12/6/16	1110	GW		X	BGWL-7	3														
SAMPLED BY AND TITLE: Robert Mull / Kevin Stephenson					DATE/TIME: 12/6/16 1700					RELINQUISHED BY: [Signature]					DATE/TIME: 12/7/16 0802					
RECEIVED BY: [Signature]					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:					
LAB: [Signature]					DATE/TIME: 12/7/16 0802					SAMPLE SHIPPED VIA: UPS					OTHER FS					
Checked: [Signature]					Temperature: 18°C					Custody Seal: Intact					# of Coolers: 1					
No NA Yes No NA					Intact Broken Not Present					Cooler ID:					LAB #: AZLO 230					
															Entered into LIMS: [Signature]					
															Tracking #:					

Page 15 of 16



**PACE ANALYTICAL SERVICES, INC.**

Environmental Monitoring & Laboratory Analysis  
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**LOG-IN CHECKLIST**

**Printed: 12/8/2016 9:11:13AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/07/16 08:02

**Work Order:** AZL0230

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 15

**Minimum Temp(C):** 1.0

**Maximum Temp(C):** 1.0

**Custody Seal(s) Used:** 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:**

January 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204840

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 08, 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 Bowen  
Pace Project No.: 30204840

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen

Pace Project No.: 30204840

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204840001	BGWC-10	Water	12/06/16 15:25	12/08/16 10:20
30204840002	BGWC-17	Water	12/06/16 12:56	12/08/16 10:20
30204840003	BGWC-18	Water	12/06/16 16:45	12/08/16 10:20
30204840004	BGWC-16	Water	12/06/16 10:42	12/08/16 10:20
30204840005	BGWC-7	Water	12/06/16 11:10	12/08/16 10:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30204840

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204840001	BGWC-10	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204840002	BGWC-17	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204840003	BGWC-18	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204840004	BGWC-16	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204840005	BGWC-7	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 Bowen  
Pace Project No.: 30204840

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.447 ± 0.183 (0.179)</b> C:96% T:NA	pCi/L	12/20/16 08:36	13982-63-3	
Radium-228		EPA 9320	<b>0.272 ± 0.434 (0.941)</b> C:67% T:74%	pCi/L	01/08/17 16:59	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.719 ± 0.617 (1.12)</b>	pCi/L	01/11/17 16:38	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.131 ± 0.111 (0.188)</b> C:90% T:NA	pCi/L	12/20/16 08:36	13982-63-3	
Radium-228		EPA 9320	<b>-0.276 ± 0.382 (0.946)</b> C:67% T:78%	pCi/L	01/08/17 16:59	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.131 ± 0.493 (1.13)</b>	pCi/L	01/11/17 16:38	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.200 ± 0.123 (0.159)</b> C:95% T:NA	pCi/L	12/20/16 08:36	13982-63-3	
Radium-228		EPA 9320	<b>0.316 ± 0.403 (0.857)</b> C:64% T:81%	pCi/L	01/08/17 16:59	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.516 ± 0.526 (1.02)</b>	pCi/L	01/11/17 16:38	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.434 ± 0.173 (0.148)</b> C:97% T:NA	pCi/L	12/20/16 08:19	13982-63-3	
Radium-228		EPA 9320	<b>0.784 ± 0.505 (0.947)</b> C:67% T:68%	pCi/L	01/08/17 16:59	15262-20-1	
Total Radium		Total Radium Calculation	<b>1.22 ± 0.678 (1.10)</b>	pCi/L	01/11/17 16:00	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.631 ± 0.239 (0.294)</b> C:95% T:NA	pCi/L	12/20/16 08:19	13982-63-3	
Radium-228		EPA 9320	<b>0.327 ± 0.436 (0.933)</b> C:68% T:81%	pCi/L	01/08/17 16:59	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204840

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**Sample: BGWC-7**      **Lab ID: 30204840005**      Collected: 12/06/16 11:10      Received: 12/08/16 10:20      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>0.958 ± 0.675 (1.23)</b>	pCi/L	01/11/17 16:00	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204840

QC Batch: 243001

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204840001, 30204840002, 30204840003, 30204840004, 30204840005

METHOD BLANK: 1195275

Matrix: Water

Associated Lab Samples: 30204840001, 30204840002, 30204840003, 30204840004, 30204840005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0582 ± 0.0923 (0.202) C:97% T:NA	pCi/L	12/19/16 10:13	

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

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204840

QC Batch: 243004

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204840001, 30204840002, 30204840003, 30204840004, 30204840005

METHOD BLANK: 1195284

Matrix: Water

Associated Lab Samples: 30204840001, 30204840002, 30204840003, 30204840004, 30204840005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.135 ± 0.406 (0.913) C:65% T:77%	pCi/L	01/08/17 16:58	

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.

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen  
Pace Project No.: 30204840

### 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: AZL0230

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 1/6/2017

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	

WO#: 30204840

30204840

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-10	G	12/6/2016 15:25	AZL0230-01	GW	1				X	001
2	BGWC-17	G	12/6/2016 12:56	AZL0230-02	GW	1				X	002
3	BGWC-18	G	12/6/2016 16:45	AZL0230-03	GW	1				X	003
4	BGWC-16	G	12/6/2016 10:42	AZL0230-04	GW	1				X	004
5	BGWC-7	G	12/6/2016 11:10	AZL0230-05	GW	1				X	005
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			Karen Hill	12-8-16 1020	
2					
3					

Cooler Temperature on Receipt	<u>N/A</u> °C	Custody Seal	Y or <u>N</u>	Received on Ice	Y or <u>N</u>	Sample Intact	<u>Y</u> 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.

30204840



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

PAGE: 1 OF 1

CHAIN OF CUSTODY RECORD

CLIENT NAME: <u>Southern Company Services</u>						ANALYSIS REQUESTED										L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308</u>						CONTAINER TYPE: P P P PRESERVATION: 3 7 3											CONTAINER TYPE	PRESERVATION		
REPORT TO: <u>Joel Abraham</u>						CC: <u>Maria Padilla</u>						# of				CONTAINER TYPE		PRESERVATION		
REQUESTED COMPLETION DATE:						PO # <u>GPL 10684198</u>						C O N T A I N E R S  ↓					*MATRIX CODES:			
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond CCR</u>						PROJECT #:						M E T A L S  ↓				DW - DRINKING WATER S - SOIL				
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of	M E T A L S  ↓				W W - W A S T E W A T E R S L - S L U D G E									
12/6/16	1525	GW		X	B6WL-10	3	1	1	1											
12/6/16	1256	GW		X	B6WL-17	3	1	1	1											
12/6/16	1645	GW		X	B6WL-18	3	1	1	1											
12/6/16	1042	GW		X	B6WL-16	3	1	1	1											
12/6/16	1110	GW		X	B6WL-7	3	1	1	1											
SAMPLED BY AND TITLE: <u>Robert Mully/Kevin Stephenson</u>						DATE/TIME: <u>12/6/16 1700</u>				RELINQUISHED BY: <u>Paul Skell</u>				DATE/TIME: <u>12/7/16 0802</u>				FOR LAB USE ONLY		
RECEIVED BY:						DATE/TIME:				RELINQUISHED BY:				DATE/TIME:				LAB #: <u>AZLO 230</u>		
RECEIVED BY LAB: <u>Charles H. ...</u>						DATE/TIME: <u>12/7/16 0802</u>				SAMPLE SHIPPED VIA: <u>CLIENT</u>				OTHER FS				Entered into LIMS: <u>CH</u>		
pH checked: <u>Yes</u>						Ice: <u>Yes</u>				Temperature: <u>15</u> Min. <u>15</u> Max.				Custody Seal: <u>Intact</u>				Tracking #: <u>NA</u>		

Page 11 of 14

Sample Condition Upon Receipt Pittsburgh

30204840



Client Name: Pace, AT

Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5100 9450

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing to 6°C

Date and initials of person examining contents: 09/16 12-B-B

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/Analysis 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.
Filtered volume received for Dissolved tests			X	12.
All containers needing preservation have been checked.	X			13. <u>PH22</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>09/16</u> Date/time of preservation: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):			X	14.
Trip Blank Present:		X		15.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>XH</u> Date: <u>12-8-16</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

Test: Ra-226  
Analyst: LAL  
Date: 12/16/2016  
Worklist: 32910  
Matrix: DW

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

### Method Blank Assessment

MB Sample ID: 1195275  
MB concentration: 0.058  
M/B Counting Uncertainty: 0.092  
MB MDC: 0.202  
MB Numerical Performance Indicator: 1.24  
MB Status vs Numerical Indicator: N/A  
MB Status vs. MDC: Pass

### Laboratory Control Sample Assessment

	LCSD (Y or N)?	N
	LCS32910	LCS32910
Count Date:	12/20/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.672	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.502	
Target Conc. (pCi/L, g, F):	8.904	
Uncertainty (Calculated):	0.419	
Result (pCi/L, g, F):	6.764	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.610	
Numerical Performance Indicator:	-5.67	
Percent Recovery:	75.97%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

### Sample Matrix Spike Control Assessment

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):  
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:

### Duplicate Sample Assessment

Sample I.D.:	30204838001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below:
Duplicate Sample I.D.:	30204838001DUP	
Sample Result (pCi/L, g, F):	0.301	
Sample Duplicate Result (pCi/L, g, F):	0.462	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.155	See Below ##
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.192	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.279	30204838001
Duplicate RPD:	42.22%	30204838001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

### Matrix Spike/Matrix Spike Duplicate Sample Assessment

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:  
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:

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

*Handwritten signature and date: 12/16/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/29/2016  
Worklist: 32913  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1195284
MB concentration:	0.135
M/B Counting Uncertainty:	0.405
MB MDC:	0.913
MB Numerical Performance Indicator:	0.65
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD32913	LCSD32913
Count Date:	1/8/2017	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.612	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.814	
Target Conc. (pCi/L, g, F):	6.296	
Uncertainty (Calculated):	0.453	
Result (pCi/L, g, F):	6.003	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.772	
Numerical Performance Indicator:	-0.64	
Percent Recovery:	95.35%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30204841008	
Duplicate Sample I.D.:	30204841008DUP	
Sample Result (pCi/L, g, F):	-0.300	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.306	
Sample Duplicate Result (pCi/L, g, F):	-0.115	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.400	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.722	30204841008
Duplicate RPD:	-89.35%	30204841008DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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  
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**Laboratory Report**

**Prepared For:**

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

**Attention: Mr. Joju Abraham**

**Report Number: AZL0313**

**December 19, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

December 19, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-19	AZL0313-01	Ground Water	12/07/16 10:02	12/08/16 07:48
BGWC-20	AZL0313-02	Ground Water	12/07/16 12:20	12/08/16 07:48
BGWC-24	AZL0313-03	Ground Water	12/07/16 12:10	12/08/16 07:48
BGWC-23	AZL0313-04	Ground Water	12/07/16 16:20	12/08/16 07:48



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 19, 2016

Report No.: AZL0313

Project: CCR Event

Client ID: BGWC-19

Lab Number ID: AZL0313-01

Date/Time Sampled: 12/7/2016 10:02:00AM

Date/Time Received: 12/8/2016 7:48:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	269	25	10	mg/L	SM 2540 C		1	12/12/16 18:16	12/12/16 18:16	6120339	JPT
<b>Inorganic Anions</b>											
Chloride	23	0.25	0.01	mg/L	EPA 300.0		1	12/13/16 08:57	12/14/16 00:49	6120363	RLC
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	12/13/16 08:57	12/14/16 00:49	6120363	RLC
Sulfate	97	5.0	0.26	mg/L	EPA 300.0		5	12/13/16 08:57	12/14/16 18:41	6120363	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Barium	0.0338	0.0100	0.0004	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Boron	0.510	0.0400	0.0064	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Calcium	48.6	5.00	0.311	mg/L	EPA 6020B		10	12/12/16 16:35	12/17/16 03:39	6120325	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Mercury	0.00008	0.00050	0.000041	mg/L	EPA 7470A	J	1	12/13/16 09:50	12/13/16 15:13	6120353	MTC



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 Atlanta GA, 30339

December 19, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0313

Project: CCR Event

Client ID: BGWC-20

Lab Number ID: AZL0313-02

Date/Time Sampled: 12/7/2016 12:20:00PM

Date/Time Received: 12/8/2016 7:48:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1100	25	10	mg/L	SM 2540 C		1	12/12/16 18:16	12/12/16 18:16	6120339	JPT
<b>Inorganic Anions</b>											
Chloride	130	6.2	0.35	mg/L	EPA 300.0		25	12/13/16 08:57	12/14/16 19:04	6120363	RLC
Fluoride	0.07	0.30	0.02	mg/L	EPA 300.0	J	1	12/13/16 08:57	12/14/16 01:11	6120363	RLC
Sulfate	580	25	1.3	mg/L	EPA 300.0		25	12/13/16 08:57	12/14/16 19:04	6120363	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Barium	0.0279	0.0100	0.0004	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Boron	3.08	0.0400	0.0064	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Calcium	215	25.0	1.55	mg/L	EPA 6020B		50	12/12/16 16:35	12/17/16 03:44	6120325	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Cobalt	0.0008	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Molybdenum	0.0139	0.0100	0.0017	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Selenium	0.0037	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Lithium	0.0265	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/13/16 09:50	12/13/16 15:16	6120353	MTC



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December 19, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0313

**Project:** CCR Event

**Client ID:** BGWC-24

**Lab Number ID:** AZL0313-03

**Date/Time Sampled:** 12/7/2016 12:10:00PM

**Date/Time Received:** 12/8/2016 7:48:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2720	25	10	mg/L	SM 2540 C		1	12/12/16 18:16	12/12/16 18:16	6120339	JPT
<b>Inorganic Anions</b>											
Chloride	970	6.2	0.35	mg/L	EPA 300.0		25	12/13/16 08:57	12/14/16 19:26	6120363	RLC
Fluoride	0.05	0.30	0.02	mg/L	EPA 300.0	J	1	12/13/16 08:57	12/14/16 01:32	6120363	RLC
Sulfate	370	25	1.3	mg/L	EPA 300.0		25	12/13/16 08:57	12/14/16 19:26	6120363	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Arsenic	0.0121	0.0050	0.0016	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Barium	0.0289	0.0100	0.0004	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Boron	9.19	0.0400	0.0064	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Cadmium	0.0004	0.0010	0.00007	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Calcium	387	25.0	1.55	mg/L	EPA 6020B		50	12/12/16 16:35	12/17/16 03:50	6120325	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Cobalt	0.0018	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Molybdenum	0.0066	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Selenium	0.0302	0.0100	0.0010	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Lithium	0.0066	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Mercury	0.00007	0.00050	0.000041	mg/L	EPA 7470A	J	1	12/13/16 09:50	12/13/16 15:18	6120353	MTC



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December 19, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0313

Project: CCR Event

Client ID: BGWC-23

Lab Number ID: AZL0313-04

Date/Time Sampled: 12/7/2016 4:20:00PM

Date/Time Received: 12/8/2016 7:48:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1770	25	10	mg/L	SM 2540 C		1	12/12/16 18:16	12/12/16 18:16	6120339	JPT
<b>Inorganic Anions</b>											
Chloride	450	12	0.70	mg/L	EPA 300.0		50	12/13/16 08:57	12/14/16 19:49	6120363	RLC
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	12/13/16 08:57	12/14/16 01:54	6120363	RLC
Sulfate	490	50	2.6	mg/L	EPA 300.0		50	12/13/16 08:57	12/14/16 19:49	6120363	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Arsenic	0.0023	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Barium	0.0912	0.0100	0.0004	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Boron	5.70	0.0400	0.0064	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Calcium	271	25.0	1.55	mg/L	EPA 6020B		50	12/12/16 16:35	12/17/16 03:56	6120325	CSW
Chromium	0.0020	0.0100	0.0009	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Cobalt	0.0015	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Molybdenum	0.0128	0.0100	0.0017	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Selenium	0.0176	0.0100	0.0010	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Lithium	0.0117	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Mercury	0.00005	0.00050	0.000041	mg/L	EPA 7470A	J	1	12/13/16 09:50	12/13/16 15:25	6120353	MTC





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Attention: Mr. Joju Abraham

December 19, 2016

**Report No.: AZL0313**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120339 - SM 2540 C</b>											
<b>Blank (6120339-BLK1)</b>						Prepared & Analyzed: 12/12/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120339-BS1)</b>						Prepared & Analyzed: 12/12/16					
Total Dissolved Solids	394	25	10	mg/L	400.00		98	84-108			
<b>Duplicate (6120339-DUP1)</b>			<b>Source: AZL0313-04</b>			Prepared & Analyzed: 12/12/16					
Total Dissolved Solids	1730	25	10	mg/L		1770			3	10	



**PACE ANALYTICAL SERVICES, LLC.**

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December 19, 2016

**Report No.: AZL0313**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120363 - EPA 300.0</b>											
<b>Blank (6120363-BLK1)</b>						Prepared & Analyzed: 12/13/16					
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 (6120363-BS1)</b>						Prepared & Analyzed: 12/13/16					
Chloride	9.93	0.25	0.01	mg/L	10.010		99	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.020		105	90-110			
Sulfate	10.0	1.0	0.05	mg/L	10.020		100	90-110			
<b>Matrix Spike (6120363-MS1)</b>						Source: AZL0284-07 Prepared & Analyzed: 12/13/16					
Chloride	12.3	0.25	0.01	mg/L	10.010	3.13	92	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020	0.10	100	90-110			
Sulfate	50.3	1.0	0.05	mg/L	10.020	45.5	48	90-110			QM-02
<b>Matrix Spike (6120363-MS2)</b>						Source: AZL0316-03 Prepared: 12/13/16 Analyzed: 12/14/16					
Chloride	14.2	0.25	0.01	mg/L	10.010	4.81	93	90-110			
Fluoride	10.2	0.30	0.02	mg/L	10.020	0.07	101	90-110			
Sulfate	10.6	1.0	0.05	mg/L	10.020	1.53	90	90-110			
<b>Matrix Spike Dup (6120363-MSD1)</b>						Source: AZL0284-07 Prepared & Analyzed: 12/13/16					
Chloride	13.0	0.25	0.01	mg/L	10.010	3.13	98	90-110	5	15	
Fluoride	10.8	0.30	0.02	mg/L	10.020	0.10	107	90-110	6	15	
Sulfate	50.7	1.0	0.05	mg/L	10.020	45.5	52	90-110	0.8	15	QM-02



**PACE ANALYTICAL SERVICES, LLC.**

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December 19, 2016

**Report No.: AZL0313**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120325 - EPA 3005A</b>											
<b>Blank (6120325-BLK1)</b>											
						Prepared: 12/12/16 Analyzed: 12/13/16					
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	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	0.0025	0.0100	0.0021	mg/L							J
Lithium	ND	0.0500	0.0021	mg/L							
<b>LCS (6120325-BS1)</b>											
						Prepared: 12/12/16 Analyzed: 12/13/16					
Antimony	0.105	0.0030	0.0008	mg/L	0.10000		105	80-120			
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000		102	80-120			
Barium	0.103	0.0100	0.0004	mg/L	0.10000		103	80-120			
Beryllium	0.108	0.0030	0.00008	mg/L	0.10000		108	80-120			
Boron	1.10	0.0400	0.0064	mg/L	1.0000		110	80-120			
Cadmium	0.106	0.0010	0.00007	mg/L	0.10000		106	80-120			
Calcium	1.00	0.500	0.0311	mg/L	1.0000		100	80-120			
Chromium	0.104	0.0100	0.0009	mg/L	0.10000		104	80-120			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000		102	80-120			
Copper	0.104	0.0250	0.0005	mg/L	0.10000		104	80-120			
Lead	0.102	0.0050	0.0001	mg/L	0.10000		102	80-120			
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000		109	80-120			
Nickel	0.106	0.0100	0.0006	mg/L	0.10000		106	80-120			
Selenium	0.104	0.0100	0.0010	mg/L	0.10000		104	80-120			
Silver	0.104	0.0100	0.0005	mg/L	0.10000		104	80-120			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000		102	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	0.106	0.0500	0.0021	mg/L	0.10000		106	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

December 19, 2016

**Report No.: AZL0313**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120325 - EPA 3005A</b>											
<b>Matrix Spike (6120325-MS1)</b>			<b>Source: AZL0282-07</b>			<b>Prepared: 12/12/16 Analyzed: 12/13/16</b>					
Antimony	0.108	0.0030	0.0008	mg/L	0.10000	ND	108	75-125			
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	ND	106	75-125			
Barium	0.174	0.0100	0.0004	mg/L	0.10000	0.0752	99	75-125			
Beryllium	0.113	0.0030	0.00008	mg/L	0.10000	ND	113	75-125			
Boron	2.19	0.0400	0.0064	mg/L	1.0000	1.06	114	75-125			
Cadmium	0.109	0.0010	0.00007	mg/L	0.10000	0.0002	109	75-125			
Calcium	102	25.0	1.55	mg/L	1.0000	104	NR	75-125			QM-02
Chromium	0.102	0.0100	0.0009	mg/L	0.10000	ND	102	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	0.0009	101	75-125			
Copper	0.0998	0.0250	0.0005	mg/L	0.10000	0.0006	99	75-125			
Lead	0.100	0.0050	0.0001	mg/L	0.10000	0.0001	100	75-125			
Molybdenum	0.149	0.0100	0.0017	mg/L	0.10000	0.0365	113	75-125			
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	0.0053	99	75-125			
Selenium	0.107	0.0100	0.0010	mg/L	0.10000	ND	107	75-125			
Silver	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125			
Vanadium	0.109	0.0100	0.0071	mg/L	0.10000	ND	109	75-125			
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	0.0032	102	75-125			
Lithium	0.111	0.0500	0.0021	mg/L	0.10000	0.0026	108	75-125			
<b>Matrix Spike Dup (6120325-MSD1)</b>			<b>Source: AZL0282-07</b>			<b>Prepared: 12/12/16 Analyzed: 12/13/16</b>					
Antimony	0.109	0.0030	0.0008	mg/L	0.10000	ND	109	75-125	0.5	20	
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	ND	104	75-125	1	20	
Barium	0.177	0.0100	0.0004	mg/L	0.10000	0.0752	102	75-125	2	20	
Beryllium	0.116	0.0030	0.00008	mg/L	0.10000	ND	116	75-125	3	20	
Boron	2.24	0.0400	0.0064	mg/L	1.0000	1.06	119	75-125	2	20	
Cadmium	0.108	0.0010	0.00007	mg/L	0.10000	0.0002	108	75-125	0.8	20	
Calcium	103	25.0	1.55	mg/L	1.0000	104	NR	75-125	0.5	20	QM-02
Chromium	0.103	0.0100	0.0009	mg/L	0.10000	ND	103	75-125	0.5	20	
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	0.0009	102	75-125	0.8	20	
Copper	0.0996	0.0250	0.0005	mg/L	0.10000	0.0006	99	75-125	0.1	20	
Lead	0.101	0.0050	0.0001	mg/L	0.10000	0.0001	101	75-125	0.8	20	
Molybdenum	0.149	0.0100	0.0017	mg/L	0.10000	0.0365	113	75-125	0.04	20	
Nickel	0.107	0.0100	0.0006	mg/L	0.10000	0.0053	102	75-125	2	20	
Selenium	0.108	0.0100	0.0010	mg/L	0.10000	ND	108	75-125	0.6	20	
Silver	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	1	20	
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	ND	104	75-125	1	20	
Vanadium	0.109	0.0100	0.0071	mg/L	0.10000	ND	109	75-125	0.3	20	
Zinc	0.107	0.0100	0.0021	mg/L	0.10000	0.0032	104	75-125	2	20	
Lithium	0.114	0.0500	0.0021	mg/L	0.10000	0.0026	112	75-125	3	20	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 19, 2016

**Report No.: AZL0313**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120325 - EPA 3005A</b>											
<b>Post Spike (6120325-PS1)</b>		<b>Source: AZL0282-07</b>				<b>Prepared: 12/12/16 Analyzed: 12/13/16</b>					
Antimony	101			ug/L	100.00	0.150	101	80-120			
Arsenic	101			ug/L	100.00	0.750	100	80-120			
Barium	170			ug/L	100.00	75.2	95	80-120			
Beryllium	110			ug/L	100.00	0.0200	110	80-120			
Boron	2140			ug/L	1000.0	1060	109	80-120			
Cadmium	104			ug/L	100.00	0.190	103	80-120			
Calcium	101000			ug/L	1000.0	104000	NR	80-120			QM-02
Chromium	97.9			ug/L	100.00	-3.87	98	80-120			
Cobalt	96.3			ug/L	100.00	0.910	95	80-120			
Copper	94.1			ug/L	100.00	0.630	93	80-120			
Lead	96.7			ug/L	100.00	0.140	97	80-120			
Molybdenum	144			ug/L	100.00	36.5	107	80-120			
Nickel	100			ug/L	100.00	5.29	95	80-120			
Selenium	102			ug/L	100.00	0.770	101	80-120			
Silver	99.8			ug/L	100.00	0.0100	100	80-120			
Thallium	99.7			ug/L	100.00	0.0400	100	80-120			
Vanadium	106			ug/L	100.00	3.17	102	80-120			
Zinc	100			ug/L	100.00	3.24	97	80-120			
Lithium	109			ug/L	100.00	2.55	107	80-120			

**Batch 6120353 - EPA 7470A**

<b>Blank (6120353-BLK1)</b>		<b>Prepared &amp; Analyzed: 12/13/16</b>									
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120353-BS1)</b>		<b>Prepared &amp; Analyzed: 12/13/16</b>									
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 19, 2016

**Report No.: AZL0313**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120353 - EPA 7470A</b>											
<b>Matrix Spike (6120353-MS1)</b>			<b>Source: AZL0284-06</b>			<b>Prepared &amp; Analyzed: 12/13/16</b>					
Mercury	0.00250	0.00050	0.000041	mg/L	2.5000E-3	0.00008	97	75-125			
<b>Matrix Spike Dup (6120353-MSD1)</b>			<b>Source: AZL0284-06</b>			<b>Prepared &amp; Analyzed: 12/13/16</b>					
Mercury	0.00244	0.00050	0.000041	mg/L	2.5000E-3	0.00008	94	75-125	2	20	
<b>Post Spike (6120353-PS1)</b>			<b>Source: AZL0284-06</b>			<b>Prepared &amp; Analyzed: 12/13/16</b>					
Mercury	1.73			ug/L	1.6667	0.0524	101	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 19, 2016

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## Legend

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### 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

**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, Inc
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092
(770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

Form containing client information, analysis requested details, sample collection data table, and shipping/receiving information.

Page 14 of 15





**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: 12/12/2016 8:19:26AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/08/16 07:48

**Work Order:** AZL0313

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 4

**#Containers:** 12

**Minimum Temp(C):** 0.5

**Maximum Temp(C):** 0.5

**Custody Seal(s) Used:** 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:**

January 23, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30205053

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 09, 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 Bowen  
Pace Project No.: 30205053

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen

Pace Project No.: 30205053

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30205053001	BGWC-19	Water	12/07/16 10:02	12/09/16 10:15
30205053002	BGWC-20	Water	12/07/16 12:20	12/09/16 10:15
30205053003	BGWC-24	Water	12/07/16 12:10	12/09/16 10:15
30205053004	BGWC-23	Water	12/07/16 16:20	12/09/16 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30205053

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30205053001	BGWC-19	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	CMC	1
30205053002	BGWC-20	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	CMC	1
30205053003	BGWC-24	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	CMC	1
30205053004	BGWC-23	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	CMC	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30205053

Sample: <b>BGWC-19</b>		Lab ID: <b>30205053001</b>	Collected: 12/07/16 10:02	Received: 12/09/16 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.213 ± 0.203 (0.371)</b> C:86% T:NA	pCi/L	01/13/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>1.10 ± 0.599 (1.07)</b> C:60% T:82%	pCi/L	01/21/17 16:43	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.31 ± 0.802 (1.44)</b>	pCi/L	01/23/17 08:32	7440-14-4	

Sample: <b>BGWC-20</b>		Lab ID: <b>30205053002</b>	Collected: 12/07/16 12:20	Received: 12/09/16 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.481 ± 0.272 (0.386)</b> C:99% T:NA	pCi/L	01/13/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>1.81 ± 0.679 (0.981)</b> C:54% T:86%	pCi/L	01/21/17 16:43	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.29 ± 0.951 (1.37)</b>	pCi/L	01/23/17 08:32	7440-14-4	

Sample: <b>BGWC-24</b>		Lab ID: <b>30205053003</b>	Collected: 12/07/16 12:10	Received: 12/09/16 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.226 ± 0.222 (0.422)</b> C:90% T:NA	pCi/L	01/13/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>1.42 ± 0.546 (0.777)</b> C:74% T:74%	pCi/L	01/21/17 16:43	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.65 ± 0.768 (1.20)</b>	pCi/L	01/23/17 08:32	7440-14-4	

Sample: <b>BGWC-23</b>		Lab ID: <b>30205053004</b>	Collected: 12/07/16 16:20	Received: 12/09/16 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.614 ± 0.304 (0.387)</b> C:85% T:NA	pCi/L	01/13/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>2.00 ± 0.707 (0.983)</b> C:68% T:73%	pCi/L	01/21/17 16:43	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.61 ± 1.01 (1.37)</b>	pCi/L	01/23/17 08:32	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30205053

QC Batch: 245735 Analysis Method: EPA 9315

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

Associated Lab Samples: 30205053001, 30205053002, 30205053003, 30205053004

METHOD BLANK: 1208845 Matrix: Water

Associated Lab Samples: 30205053001, 30205053002, 30205053003, 30205053004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0640 ± 0.166 (0.402) C:91% T:NA	pCi/L	01/13/17 08:20	

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 - RADIOCHEMISTRY**

Project: Plant Bowen

Pace Project No.: 30205053

QC Batch: 245736

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30205053001, 30205053002, 30205053003, 30205053004

METHOD BLANK: 1208846

Matrix: Water

Associated Lab Samples: 30205053001, 30205053002, 30205053003, 30205053004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.286 ± 0.385 (0.821) C:68% T:88%	pCi/L	01/21/17 16:43	

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 Bowen

Pace Project No.: 30205053

### 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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# Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, At.

Project # 30205053

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5100 9817

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 \_\_\_\_\_ °C    Correction Factor: \_\_\_\_\_ °C    Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: DPAR 12-12-16

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/Analysis    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.
Filtered volume received for Dissolved tests			X	12.
All containers needing preservation have been checked.	X			13.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PH12</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>DPAR</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):			X	14.
Trip Blank Present:		X		15.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>DPAR</u> Date: <u>12-12-16</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

Test: Ra-226  
Analyst: LAL  
Date: 1/12/2017  
Worklist: 33366  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1208845
MB concentration:	0.064
M/B Counting Uncertainty:	0.166
MB MDC:	0.402
MB Numerical Performance Indicator:	0.76
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS33366	LCSD33366
Count Date:	1/13/2017	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.671	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.503	
Target Conc. (pCi/L, g, F):	8.875	
Uncertainty (Calculated):	0.417	
Result (pCi/L, g, F):	6.807	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.818	
Numerical Performance Indicator:	-4.41	
Percent Recovery:	76.70%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	
Sample Matrix Spike 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:	

Duplicate Sample Assessment		
Sample I.D.:	30205160001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30205160001DUP	
Sample Result (pCi/L, g, F):	0.408	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.253	
Sample Duplicate Result (pCi/L, g, F):	0.029	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.123	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	2.639	30205160001
Duplicate RPD:	173.30%	30205160001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LAL*  
*1/23/17*





## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JAL  
Date: 1/11/2017  
Worklist: 33367  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1208846
MB concentration:	0.286
M/B Counting Uncertainty:	0.381
MB MDC:	0.821
MB Numerical Performance Indicator:	1.47
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS33367	LCS33367
Count Date:	1/21/2017	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.503	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.809	
Target Conc. (pCi/L, g, F):	6.307	
Uncertainty (Calculated):	0.454	
Result (pCi/L, g, F):	6.535	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.834	
Numerical Performance Indicator:	0.47	
Percent Recovery:	103.62%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30205160004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30205160004DUP	
Sample Result (pCi/L, g, F):	1.855	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.553	
Sample Duplicate Result (pCi/L, g, F):	2.225	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.584	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.903	30205160004
Duplicate RPD:	18.15%	30205160004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*JAL 1/23/17*



**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: AZL0406**

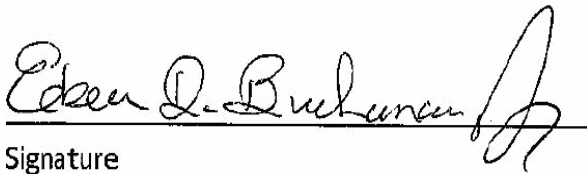
**December 28, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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:

  
Signature

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

December 28, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-22	AZL0406-01	Ground Water	12/08/16 10:25	12/09/16 08:30
BGWC-21	AZL0406-02	Ground Water	12/08/16 13:20	12/09/16 08:30
BGWC-14	AZL0406-03	Ground Water	12/08/16 14:35	12/09/16 08:30
BGWC-15	AZL0406-04	Ground Water	12/08/16 15:42	12/09/16 08:30
BGWC-25	AZL0406-05	Ground Water	12/08/16 15:56	12/09/16 08:30
Dup-3	AZL0406-06	Ground Water	12/08/16 00:00	12/09/16 08:30
FBL120816	AZL0406-07	Water	12/08/16 16:45	12/09/16 08:30
EQBL120816	AZL0406-08	Water	12/08/16 16:50	12/09/16 08:30





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: BGWC-22

Lab Number ID: AZL0406-01

Date/Time Sampled: 12/8/2016 10:25:00AM

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2200	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	540	25	1.4	mg/L	EPA 300.0		100	12/17/16 10:12	12/23/16 23:35	6120528	RNB
Fluoride	0.26	0.30	0.02	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/22/16 21:48	6120528	RNB
Sulfate	660	100	5.1	mg/L	EPA 300.0	B-01	100	12/17/16 10:12	12/23/16 23:35	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Barium	0.0991	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Boron	11.1	4.00	0.642	mg/L	EPA 6020B		100	12/13/16 07:55	12/21/16 17:00	6120327	CSW
Cadmium	0.0002	0.0010	0.00007	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Calcium	434	50.0	3.11	mg/L	EPA 6020B		100	12/13/16 07:55	12/21/16 17:00	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Cobalt	0.0130	0.0100	0.0005	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Molybdenum	0.0682	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Selenium	0.0120	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Thallium	0.0005	0.0010	0.0002	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Lithium	0.0154	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/14/16 11:40	12/14/16 16:53	6120387	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: BGWC-21

Lab Number ID: AZL0406-02

Date/Time Sampled: 12/8/2016 1:20:00PM

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	255	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	6.3	0.25	0.01	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 22:08	6120528	RNB
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/22/16 22:08	6120528	RNB
Sulfate	68	10	0.51	mg/L	EPA 300.0	B-01	10	12/17/16 10:12	12/23/16 23:56	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Barium	0.0474	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Boron	0.144	0.0400	0.0064	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Calcium	43.4	5.00	0.311	mg/L	EPA 6020B		10	12/13/16 07:55	12/21/16 17:06	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/14/16 11:40	12/14/16 16:56	6120387	MTC



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 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0406

**Project:** CCR Event

**Client ID:** BGWC-14

**Lab Number ID:** AZL0406-03

**Date/Time Sampled:** 12/8/2016 2:35:00PM

**Date/Time Received:** 12/9/2016 8:30:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	573	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	38	0.25	0.01	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 22:29	6120528	RNB
Fluoride	0.31	0.30	0.02	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 22:29	6120528	RNB
Sulfate	200	10	0.51	mg/L	EPA 300.0	B-01	10	12/17/16 10:12	12/24/16 00:18	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Barium	0.0723	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Boron	0.776	0.0400	0.0064	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Calcium	96.5	25.0	1.55	mg/L	EPA 6020B		50	12/13/16 07:55	12/21/16 17:12	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Molybdenum	0.0082	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/14/16 11:40	12/14/16 16:58	6120387	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: BGWC-15

Lab Number ID: AZL0406-04

Date/Time Sampled: 12/8/2016 3:42:00PM

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	980	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	11	0.25	0.01	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 23:10	6120528	RNB
Fluoride	0.40	0.30	0.02	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 23:10	6120528	RNB
Sulfate	420	10	0.51	mg/L	EPA 300.0	B-01	10	12/17/16 10:12	12/24/16 00:40	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Barium	0.107	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Boron	0.0789	0.0400	0.0064	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Calcium	121	50.0	3.11	mg/L	EPA 6020B		100	12/13/16 07:55	12/21/16 17:18	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Cobalt	0.0035	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Molybdenum	0.0138	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/15/16 10:35	12/15/16 14:05	6120426	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0406

**Project:** CCR Event

**Client ID:** BGWC-25

**Lab Number ID:** AZL0406-05

**Date/Time Sampled:** 12/8/2016 3:56:00PM

**Date/Time Received:** 12/9/2016 8:30:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	209	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	2.8	0.25	0.01	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 23:31	6120528	RNB
Fluoride	0.06	0.30	0.02	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/22/16 23:31	6120528	RNB
Sulfate	13	1.0	0.05	mg/L	EPA 300.0	B-01	1	12/17/16 10:12	12/22/16 23:31	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Barium	0.0294	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Boron	0.0164	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Calcium	38.5	5.00	0.311	mg/L	EPA 6020B		10	12/13/16 07:55	12/21/16 17:45	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Lead	0.0006	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/15/16 10:35	12/15/16 14:07	6120426	MTC



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 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: Dup-3

Lab Number ID: AZL0406-06

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

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2160	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	530	25	1.4	mg/L	EPA 300.0		100	12/17/16 10:12	12/24/16 01:02	6120528	RNB
Fluoride	0.27	0.30	0.02	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/23/16 01:14	6120528	RNB
Sulfate	670	100	5.1	mg/L	EPA 300.0	B-01	100	12/17/16 10:12	12/24/16 01:02	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Barium	0.0969	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Boron	9.99	0.0400	0.0064	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Cadmium	0.0002	0.0010	0.00007	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Calcium	390	50.0	3.11	mg/L	EPA 6020B		100	12/13/16 07:55	12/22/16 16:34	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Cobalt	0.0131	0.0100	0.0005	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Molybdenum	0.0665	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Selenium	0.0104	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Thallium	0.0005	0.0010	0.0002	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Lithium	0.0158	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/15/16 10:35	12/15/16 14:10	6120426	MTC



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 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: FBL120816

Lab Number ID: AZL0406-07

Date/Time Sampled: 12/8/2016 4:45:00PM

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	18	25	10	mg/L	SM 2540 C	J	1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	0.09	0.25	0.01	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/23/16 01:35	6120528	RNB
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	12/17/16 10:12	12/23/16 01:35	6120528	RNB
Sulfate	0.24	1.0	0.05	mg/L	EPA 300.0	B-01, J	1	12/17/16 10:12	12/23/16 01:35	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/13/16 07:55	12/17/16 15:12	6120327	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/15/16 10:35	12/15/16 14:12	6120426	MTC



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December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: EQBL120816

Lab Number ID: AZL0406-08

Date/Time Sampled: 12/8/2016 4:50:00PM

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	24	25	10	mg/L	SM 2540 C	J	1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	0.07	0.25	0.01	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/23/16 01:56	6120528	RNB
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	12/17/16 10:12	12/23/16 01:56	6120528	RNB
Sulfate	0.13	1.0	0.05	mg/L	EPA 300.0	B-01, J	1	12/17/16 10:12	12/23/16 01:56	6120528	RNB
<b>Metals, Total</b>											
Antimony	0.0013	0.0030	0.0008	mg/L	EPA 6020B	J	1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Calcium	0.0413	0.500	0.0311	mg/L	EPA 6020B	J	1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/15/16 10:35	12/15/16 14:19	6120426	MTC





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Attention: Mr. Joju Abraham

December 28, 2016

**Report No.: AZL0406**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120356 - SM 2540 C</b>											
<b>Blank (6120356-BLK1)</b>						Prepared & Analyzed: 12/13/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120356-BS1)</b>						Prepared & Analyzed: 12/13/16					
Total Dissolved Solids	411	25	10	mg/L	400.00		103	84-108			
<b>Duplicate (6120356-DUP1)</b>						Source: AZL0406-04			Prepared & Analyzed: 12/13/16		
Total Dissolved Solids	974	25	10	mg/L		980			0.6	10	
<b>Duplicate (6120356-DUP2)</b>						Source: AZL0435-04			Prepared & Analyzed: 12/13/16		
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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Attention: Mr. Joju Abraham

December 28, 2016

**Report No.: AZL0406**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120528 - EPA 300.0</b>											
<b>Blank (6120528-BLK1)</b>						Prepared: 12/17/16 Analyzed: 12/22/16					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	0.15	1.0	0.05	mg/L							J
<b>LCS (6120528-BS1)</b>						Prepared: 12/17/16 Analyzed: 12/22/16					
Chloride	9.89	0.25	0.01	mg/L	10.010		99	90-110			
Fluoride	9.76	0.30	0.02	mg/L	10.020		97	90-110			
Sulfate	10.0	1.0	0.05	mg/L	10.020		100	90-110			
<b>Matrix Spike (6120528-MS1)</b>						<b>Source: AZL0383-02</b> Prepared: 12/17/16 Analyzed: 12/22/16					
Chloride	22.5	0.25	0.01	mg/L	10.010	13.6	89	90-110			QM-05
Fluoride	9.73	0.30	0.02	mg/L	10.020	0.30	94	90-110			
Sulfate	131	1.0	0.05	mg/L	10.020	133	NR	90-110			QM-02
<b>Matrix Spike (6120528-MS2)</b>						<b>Source: AZL0406-03</b> Prepared: 12/17/16 Analyzed: 12/22/16					
Chloride	43.3	0.25	0.01	mg/L	10.010	37.6	57	90-110			QM-05
Fluoride	10.2	0.30	0.02	mg/L	10.020	0.31	99	90-110			
Sulfate	155	1.0	0.05	mg/L	10.020	160	NR	90-110			QM-02
<b>Matrix Spike Dup (6120528-MSD1)</b>						<b>Source: AZL0383-02</b> Prepared: 12/17/16 Analyzed: 12/22/16					
Chloride	23.0	0.25	0.01	mg/L	10.010	13.6	94	90-110	2	15	
Fluoride	10.4	0.30	0.02	mg/L	10.020	0.30	101	90-110	7	15	
Sulfate	130	1.0	0.05	mg/L	10.020	133	NR	90-110	0.7	15	QM-02



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Attention: Mr. Joju Abraham

December 28, 2016

**Report No.: AZL0406**

**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 6120327 - EPA 3005A**

**Blank (6120327-BLK1)**

Prepared: 12/13/16 Analyzed: 12/14/16

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	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 (6120327-BS1)**

Prepared: 12/13/16 Analyzed: 12/14/16

Antimony	0.102	0.0030	0.0008	mg/L	0.10000		102	80-120			
Arsenic	0.0998	0.0050	0.0016	mg/L	0.10000		100	80-120			
Barium	0.0989	0.0100	0.0004	mg/L	0.10000		99	80-120			
Beryllium	0.101	0.0030	0.00008	mg/L	0.10000		101	80-120			
Boron	1.01	0.0400	0.0064	mg/L	1.0000		101	80-120			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000		104	80-120			
Calcium	0.968	0.500	0.0311	mg/L	1.0000		97	80-120			
Chromium	0.0986	0.0100	0.0009	mg/L	0.10000		99	80-120			
Cobalt	0.0970	0.0100	0.0005	mg/L	0.10000		97	80-120			
Copper	0.101	0.0250	0.0005	mg/L	0.10000		101	80-120			
Lead	0.0988	0.0050	0.0001	mg/L	0.10000		99	80-120			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000		103	80-120			
Nickel	0.0972	0.0100	0.0006	mg/L	0.10000		97	80-120			
Selenium	0.0986	0.0100	0.0010	mg/L	0.10000		99	80-120			
Silver	0.102	0.0100	0.0005	mg/L	0.10000		102	80-120			
Thallium	0.0989	0.0010	0.0002	mg/L	0.10000		99	80-120			
Vanadium	0.0993	0.0100	0.0071	mg/L	0.10000		99	80-120			
Zinc	0.100	0.0100	0.0021	mg/L	0.10000		100	80-120			
Lithium	0.0991	0.0500	0.0021	mg/L	0.10000		99	80-120			



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 28, 2016

**Report No.: AZL0406**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120327 - EPA 3005A</b>											
<b>Matrix Spike (6120327-MS1)</b>			<b>Source: AZL0387-04</b>			Prepared: 12/13/16 Analyzed: 12/14/16					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125			
Arsenic	0.0936	0.0050	0.0016	mg/L	0.10000	ND	94	75-125			
Barium	0.186	0.0100	0.0004	mg/L	0.10000	0.0868	99	75-125			
Beryllium	0.0993	0.0030	0.00008	mg/L	0.10000	ND	99	75-125			
Boron	1.09	0.0400	0.0064	mg/L	1.0000	0.0758	102	75-125			
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000	ND	105	75-125			
Calcium	48.3	25.0	1.55	mg/L	1.0000	45.3	298	75-125			QM-02
Chromium	0.0936	0.0100	0.0009	mg/L	0.10000	ND	94	75-125			
Cobalt	0.0929	0.0100	0.0005	mg/L	0.10000	ND	93	75-125			
Copper	0.0939	0.0250	0.0005	mg/L	0.10000	0.0006	93	75-125			
Lead	0.0995	0.0050	0.0001	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000	ND	103	75-125			
Nickel	0.0946	0.0100	0.0006	mg/L	0.10000	0.0017	93	75-125			
Selenium	0.0937	0.0100	0.0010	mg/L	0.10000	ND	94	75-125			
Silver	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125			
Thallium	0.100	0.0010	0.0002	mg/L	0.10000	ND	100	75-125			
Vanadium	0.0976	0.0100	0.0071	mg/L	0.10000	ND	98	75-125			
Zinc	0.0971	0.0100	0.0021	mg/L	0.10000	ND	97	75-125			
Lithium	0.111	0.0500	0.0021	mg/L	0.10000	0.0153	95	75-125			
<b>Matrix Spike Dup (6120327-MSD1)</b>			<b>Source: AZL0387-04</b>			Prepared: 12/13/16 Analyzed: 12/14/16					
Antimony	0.101	0.0030	0.0008	mg/L	0.10000	ND	101	75-125	2	20	
Arsenic	0.0947	0.0050	0.0016	mg/L	0.10000	ND	95	75-125	1	20	
Barium	0.183	0.0100	0.0004	mg/L	0.10000	0.0868	97	75-125	1	20	
Beryllium	0.0972	0.0030	0.00008	mg/L	0.10000	ND	97	75-125	2	20	
Boron	1.05	0.0400	0.0064	mg/L	1.0000	0.0758	98	75-125	3	20	
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125	4	20	
Calcium	47.7	25.0	1.55	mg/L	1.0000	45.3	242	75-125	1	20	QM-02
Chromium	0.0910	0.0100	0.0009	mg/L	0.10000	ND	91	75-125	3	20	
Cobalt	0.0901	0.0100	0.0005	mg/L	0.10000	ND	90	75-125	3	20	
Copper	0.0922	0.0250	0.0005	mg/L	0.10000	0.0006	92	75-125	2	20	
Lead	0.0961	0.0050	0.0001	mg/L	0.10000	ND	96	75-125	3	20	
Molybdenum	0.101	0.0100	0.0017	mg/L	0.10000	ND	101	75-125	2	20	
Nickel	0.0924	0.0100	0.0006	mg/L	0.10000	0.0017	91	75-125	2	20	
Selenium	0.0915	0.0100	0.0010	mg/L	0.10000	ND	92	75-125	2	20	
Silver	0.0993	0.0100	0.0005	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.0950	0.0010	0.0002	mg/L	0.10000	ND	95	75-125	5	20	
Vanadium	0.0973	0.0100	0.0071	mg/L	0.10000	ND	97	75-125	0.3	20	
Zinc	0.0942	0.0100	0.0021	mg/L	0.10000	ND	94	75-125	3	20	
Lithium	0.112	0.0500	0.0021	mg/L	0.10000	0.0153	97	75-125	1	20	



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December 28, 2016

**Report No.: AZL0406**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120327 - EPA 3005A</b>											
<b>Post Spike (6120327-PS1)</b>			<b>Source: AZL0387-04</b>			Prepared: 12/13/16 Analyzed: 12/14/16					
Antimony	98.8			ug/L	100.00	0.310	98	80-120			
Arsenic	92.5			ug/L	100.00	-0.580	92	80-120			
Barium	178			ug/L	100.00	86.8	92	80-120			
Beryllium	97.2			ug/L	100.00	0.0100	97	80-120			
Boron	1070			ug/L	1000.0	75.8	99	80-120			
Cadmium	102			ug/L	100.00	0.00	102	80-120			
Calcium	46400			ug/L	1000.0	45300	113	80-120			
Chromium	92.3			ug/L	100.00	-2.69	92	80-120			
Cobalt	91.0			ug/L	100.00	0.230	91	80-120			
Copper	92.4			ug/L	100.00	0.580	92	80-120			
Lead	97.1			ug/L	100.00	0.00	97	80-120			
Molybdenum	103			ug/L	100.00	0.130	103	80-120			
Nickel	91.8			ug/L	100.00	1.67	90	80-120			
Selenium	92.1			ug/L	100.00	-0.370	92	80-120			
Silver	99.8			ug/L	100.00	0.00	100	80-120			
Thallium	97.6			ug/L	100.00	0.0100	98	80-120			
Vanadium	97.8			ug/L	100.00	2.96	95	80-120			
Zinc	95.2			ug/L	100.00	1.18	94	80-120			
Lithium	110			ug/L	100.00	15.3	95	80-120			

**Batch 6120387 - EPA 7470A**

<b>Blank (6120387-BLK1)</b>					Prepared & Analyzed: 12/14/16						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120387-BS1)</b>					Prepared & Analyzed: 12/14/16						
Mercury	0.00237	0.00050	0.000041	mg/L	2.5000E-3		95	80-120			



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December 28, 2016

**Report No.: AZL0406**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120387 - EPA 7470A</b>											
<b>Duplicate (6120387-DUP1)</b>			<b>Source: AZL0390-01</b>			<b>Prepared &amp; Analyzed: 12/14/16</b>					
Mercury	ND	0.00050	0.000041	mg/L		ND				20	
<b>Matrix Spike (6120387-MS1)</b>			<b>Source: AZL0387-07</b>			<b>Prepared &amp; Analyzed: 12/14/16</b>					
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125			
<b>Matrix Spike Dup (6120387-MSD1)</b>			<b>Source: AZL0387-07</b>			<b>Prepared &amp; Analyzed: 12/14/16</b>					
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125	2	20	
<b>Post Spike (6120387-PS1)</b>			<b>Source: AZL0387-07</b>			<b>Prepared &amp; Analyzed: 12/14/16</b>					
Mercury	1.66			ug/L	1.6667	-0.0210	100	80-120			
<b>Batch 6120426 - EPA 7470A</b>											
<b>Blank (6120426-BLK1)</b>						<b>Prepared &amp; Analyzed: 12/15/16</b>					
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120426-BS1)</b>						<b>Prepared &amp; Analyzed: 12/15/16</b>					
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			
<b>Matrix Spike (6120426-MS1)</b>			<b>Source: AZL0406-04</b>			<b>Prepared &amp; Analyzed: 12/15/16</b>					
Mercury	0.00243	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125			
<b>Matrix Spike Dup (6120426-MSD1)</b>			<b>Source: AZL0406-04</b>			<b>Prepared &amp; Analyzed: 12/15/16</b>					
Mercury	0.00242	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125	0.3	20	
<b>Post Spike (6120426-PS1)</b>			<b>Source: AZL0406-04</b>			<b>Prepared &amp; Analyzed: 12/15/16</b>					
Mercury	1.77			ug/L	1.6667	-0.0161	106	80-120			



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December 28, 2016

**Report No.: AZL0406**

**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 6120445 - EPA 3005A**

**Blank (6120445-BLK1)**

Prepared: 12/15/16 Analyzed: 12/16/16

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	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 (6120445-BS1)**

Prepared: 12/15/16 Analyzed: 12/16/16

Antimony	0.116	0.0030	0.0008	mg/L	0.10000		116	80-120			
Arsenic	0.105	0.0050	0.0016	mg/L	0.10000		105	80-120			
Barium	0.105	0.0100	0.0004	mg/L	0.10000		105	80-120			
Beryllium	0.111	0.0030	0.00008	mg/L	0.10000		111	80-120			
Boron	1.05	0.0400	0.0064	mg/L	1.0000		105	80-120			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000		104	80-120			
Calcium	1.07	0.500	0.0311	mg/L	1.0000		107	80-120			
Chromium	0.104	0.0100	0.0009	mg/L	0.10000		104	80-120			
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Copper	0.103	0.0250	0.0005	mg/L	0.10000		103	80-120			
Lead	0.104	0.0050	0.0001	mg/L	0.10000		104	80-120			
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000		106	80-120			
Nickel	0.105	0.0100	0.0006	mg/L	0.10000		105	80-120			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120			
Silver	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120			
Thallium	0.105	0.0010	0.0002	mg/L	0.10000		105	80-120			
Vanadium	0.107	0.0100	0.0071	mg/L	0.10000		107	80-120			
Zinc	0.106	0.0100	0.0021	mg/L	0.10000		106	80-120			
Lithium	0.106	0.0500	0.0021	mg/L	0.10000		106	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
<b>Batch 6120445 - EPA 3005A</b>											
<b>Matrix Spike (6120445-MS1)</b>			<b>Source: AZL0418-01</b>				Prepared: 12/15/16 Analyzed: 12/16/16				
Antimony	0.115	0.0030	0.0008	mg/L	0.10000	ND	115	75-125			
Arsenic	0.105	0.0050	0.0016	mg/L	0.10000	ND	105	75-125			
Barium	0.174	0.0100	0.0004	mg/L	0.10000	0.0781	95	75-125			
Beryllium	0.0958	0.0030	0.00008	mg/L	0.10000	ND	96	75-125			
Boron	1.01	0.0400	0.0064	mg/L	1.0000	0.224	79	75-125			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000	ND	104	75-125			
Calcium	78.8	25.0	1.55	mg/L	1.0000	74.0	480	75-125			QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125			
Cobalt	0.108	0.0100	0.0005	mg/L	0.10000	0.0005	107	75-125			
Copper	0.102	0.0250	0.0005	mg/L	0.10000	ND	102	75-125			
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125			
Molybdenum	0.110	0.0100	0.0017	mg/L	0.10000	ND	110	75-125			
Nickel	0.106	0.0100	0.0006	mg/L	0.10000	ND	106	75-125			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000	ND	102	75-125			
Silver	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	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	0.111	0.0100	0.0021	mg/L	0.10000	ND	111	75-125			
Lithium	0.0967	0.0500	0.0021	mg/L	0.10000	ND	97	75-125			
<b>Matrix Spike Dup (6120445-MSD1)</b>			<b>Source: AZL0418-01</b>				Prepared: 12/15/16 Analyzed: 12/16/16				
Antimony	0.118	0.0030	0.0008	mg/L	0.10000	ND	118	75-125	3	20	
Arsenic	0.109	0.0050	0.0016	mg/L	0.10000	ND	109	75-125	3	20	
Barium	0.176	0.0100	0.0004	mg/L	0.10000	0.0781	98	75-125	1	20	
Beryllium	0.0929	0.0030	0.00008	mg/L	0.10000	ND	93	75-125	3	20	
Boron	0.979	0.0400	0.0064	mg/L	1.0000	0.224	76	75-125	3	20	
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000	ND	104	75-125	0.4	20	
Calcium	81.3	25.0	1.55	mg/L	1.0000	74.0	728	75-125	3	20	QM-02
Chromium	0.106	0.0100	0.0009	mg/L	0.10000	ND	106	75-125	2	20	
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	0.0005	102	75-125	5	20	
Copper	0.101	0.0250	0.0005	mg/L	0.10000	ND	101	75-125	1	20	
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125	0.5	20	
Molybdenum	0.112	0.0100	0.0017	mg/L	0.10000	ND	112	75-125	2	20	
Nickel	0.103	0.0100	0.0006	mg/L	0.10000	ND	103	75-125	3	20	
Selenium	0.104	0.0100	0.0010	mg/L	0.10000	ND	104	75-125	2	20	
Silver	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	1	20	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125	1	20	
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125	0.3	20	
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	ND	106	75-125	4	20	
Lithium	0.0925	0.0500	0.0021	mg/L	0.10000	ND	92	75-125	4	20	





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December 28, 2016

**Report No.: AZL0406**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120445 - EPA 3005A</b>											
<b>Post Spike (6120445-PS1)</b>			<b>Source: AZL0418-01</b>			<b>Prepared: 12/15/16 Analyzed: 12/16/16</b>					
Antimony	109			ug/L	100.00	0.375	108	80-120			
Arsenic	110			ug/L	100.00	1.00	109	80-120			
Barium	178			ug/L	100.00	78.1	100	80-120			
Beryllium	96.0			ug/L	100.00	0.0417	96	80-120			
Boron	1010			ug/L	1000.0	224	78	80-120			QM-02
Cadmium	106			ug/L	100.00	0.0408	106	80-120			
Calcium	81800			ug/L	1000.0	74000	782	80-120			QM-02
Chromium	103			ug/L	100.00	0.152	103	80-120			
Cobalt	104			ug/L	100.00	0.524	103	80-120			
Copper	101			ug/L	100.00	0.266	101	80-120			
Lead	99.8			ug/L	100.00	0.0576	100	80-120			
Molybdenum	110			ug/L	100.00	0.410	110	80-120			
Nickel	103			ug/L	100.00	0.424	103	80-120			
Selenium	105			ug/L	100.00	0.274	105	80-120			
Silver	101			ug/L	100.00	0.0079	101	80-120			
Thallium	102			ug/L	100.00	0.0281	102	80-120			
Vanadium	109			ug/L	100.00	-1.15	109	80-120			
Zinc	108			ug/L	100.00	1.45	106	80-120			
Lithium	92.8			ug/L	100.00	0.782	92	80-120			



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December 28, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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

PAGE: 1 OF 1

CLIENT NAME: <u>System Control Services</u>						ANALYSIS REQUESTED						L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Roland McGill Blvd SE Bldg 85 Atlanta, GA 30308</u>						CONTAINER TYPE	P	F	P								P - PLASTIC
REPORT TO: <u>Steve Abraham</u>						PRESERVATION	U	F	W							A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C
REQUESTED COMPLETION DATE: <u>PO #:</u>						# of										G - CLEAR GLASS	3 - HNO <sub>3</sub>
PROJECT NAME/STATE: <u>Plant Based Agw Prod CCR</u>						C										V - VOA VIAL	4 - NaOH, ≤6°C
PROJECT #:						O										S - STERILE	5 - NaOH/ZnAc, ≤6°C
Collection DATE						A										O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C
Collection TIME						N											7 - ≤6°C not frozen
MATRIX CODE*						E									*MATRIX CODES:		
C O M P						B									DW - DRINKING WATER	S - SOIL	
G R A B						R									MW - WASTEWATER	SL - SLUDGE	
SAMPLE IDENTIFICATION															GW - GROUNDWATER	SD - SOLID	
↓															SW - SURFACE WATER	A - AIR	
12/8/16 1025 GW															ST - STORM WATER	L - LIQUID	
12/8/16 1320 GW															W - WATER	P - PRODUCT	
12/8/16 1435 GW															REMARKS/ADDITIONAL INFORMATION		
12/8/16 1542 GW																	
12/8/16 1556 GW																	
12/8/16 - GW																	
12/8/16 1645 W																	
12/8/16 1650 W																	
SAMPLED BY AND TITLE: <u>Kevin Edwards - Environmental</u>																	
DATE/TIME: <u>12/8/16 @ 1715</u>																	
RECEIVED BY: <u>Kevin Edwards</u>																	
DATE/TIME: <u>12/9/16 0830</u>																	
RELINQUISHED BY: <u>Kevin Edwards</u>																	
DATE/TIME: <u>12/9/16 @ 0830</u>																	
RELINQUISHED BY: <u>Kevin Edwards</u>																	
DATE/TIME: <u>12/9/16 0830</u>																	
SAMPLED BY LAB: <u>Kevin Edwards</u>																	
DATE/TIME: <u>12/9/16 0830</u>																	
RECEIVED BY LAB: <u>Kevin Edwards</u>																	
DATE/TIME: <u>12/9/16 0830</u>																	
TEMPERATURE: <u>16.5 C Min: 16.5 C Max:</u>																	
Custody Seal: <u>Intact</u>																	
# of Coolers: <u>0</u>																	
Cooler ID: <u>0</u>																	
SAMPLE SHIPPED VIA: <u>COURIER</u>																	
OTHER FS: <u>0</u>																	
LAB #: <u>AZL0406</u>																	
Entered into LIMS: <u>02/17</u>																	
Tracking #: <u>02/17</u>																	

Page 21 of 22



**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: 12/12/2016 8:28:42AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/09/16 08:30

**Work Order:** AZL0406

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 8

**#Containers:** 23

**Minimum Temp(C):** 1.5

**Maximum Temp(C):** 1.5

**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:**

January 23, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30205169

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 12, 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 Bowen

Pace Project No.: 30205169

### 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 Bowen

Pace Project No.: 30205169

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30205169001	BGWC-22	Water	12/08/16 10:25	12/12/16 09:20
30205169002	BGWC-21	Water	12/08/16 13:20	12/12/16 09:20
30205169003	BGWC-25	Water	12/08/16 15:56	12/12/16 09:20
30205169004	Dup-3	Water	12/08/16 00:00	12/12/16 09:20
30205169005	FBL120816	Water	12/08/16 16:45	12/12/16 09:20
30205169006	EQBL120816	Water	12/08/16 16:50	12/12/16 09:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen  
Pace Project No.: 30205169

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30205169001	BGWC-22	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1
30205169002	BGWC-21	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1
30205169003	BGWC-25	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1
30205169004	Dup-3	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1
30205169005	FBL120816	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1
30205169006	EQBL120816	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen  
Pace Project No.: 30205169

Sample: <b>BGWC-22</b>		Lab ID: <b>30205169001</b>	Collected: 12/08/16 10:25	Received: 12/12/16 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>0.861 ± 0.343 (0.359)</b>		pCi/L	01/17/17 09:27	13982-63-3	
		<b>C:95% T:NA</b>					
Radium-228	EPA 9320	<b>1.78 ± 0.604 (0.823)</b>		pCi/L	01/22/17 12:55	15262-20-1	
		<b>C:66% T:86%</b>					
Total Radium	Total Radium Calculation	<b>2.64 ± 0.947 (1.18)</b>		pCi/L	01/23/17 12:09	7440-14-4	

Sample: <b>BGWC-21</b>		Lab ID: <b>30205169002</b>	Collected: 12/08/16 13:20	Received: 12/12/16 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>0.343 ± 0.270 (0.477)</b>		pCi/L	01/17/17 09:28	13982-63-3	
		<b>C:84% T:NA</b>					
Radium-228	EPA 9320	<b>0.672 ± 0.412 (0.758)</b>		pCi/L	01/22/17 12:55	15262-20-1	
		<b>C:65% T:89%</b>					
Total Radium	Total Radium Calculation	<b>1.02 ± 0.682 (1.24)</b>		pCi/L	01/23/17 12:09	7440-14-4	

Sample: <b>BGWC-25</b>		Lab ID: <b>30205169003</b>	Collected: 12/08/16 15:56	Received: 12/12/16 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>0.196 ± 0.210 (0.404)</b>		pCi/L	01/17/17 09:28	13982-63-3	
		<b>C:83% T:NA</b>					
Radium-228	EPA 9320	<b>1.27 ± 0.854 (1.61)</b>		pCi/L	01/22/17 12:55	15262-20-1	
		<b>C:69% T:39%</b>					
Total Radium	Total Radium Calculation	<b>1.47 ± 1.06 (2.01)</b>		pCi/L	01/23/17 12:09	7440-14-4	

Sample: <b>Dup-3</b>		Lab ID: <b>30205169004</b>	Collected: 12/08/16 00:00	Received: 12/12/16 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>0.665 ± 0.338 (0.516)</b>		pCi/L	01/17/17 09:28	13982-63-3	
		<b>C:98% T:NA</b>					
Radium-228	EPA 9320	<b>1.18 ± 0.466 (0.698)</b>		pCi/L	01/22/17 16:00	15262-20-1	
		<b>C:70% T:87%</b>					
Total Radium	Total Radium Calculation	<b>1.85 ± 0.804 (1.21)</b>		pCi/L	01/23/17 12:09	7440-14-4	

Sample: <b>FBL120816</b>		Lab ID: <b>30205169005</b>	Collected: 12/08/16 16:45	Received: 12/12/16 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>0.0630 ± 0.170 (0.414)</b>		pCi/L	01/17/17 09:28	13982-63-3	
		<b>C:89% T:NA</b>					
Radium-228	EPA 9320	<b>1.53 ± 0.602 (0.932)</b>		pCi/L	01/22/17 16:00	15262-20-1	
		<b>C:62% T:86%</b>					

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30205169

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	<b>1.59 ± 0.772 (1.35)</b>	pCi/L	01/23/17 12:09	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.102 ± 0.176 (0.395)</b> C:83% T:NA	pCi/L	01/17/17 09:28	13982-63-3	
Radium-228	EPA 9320	<b>0.614 ± 0.407 (0.771)</b> C:65% T:92%	pCi/L	01/22/17 16:00	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.716 ± 0.583 (1.17)</b>	pCi/L	01/23/17 12:09	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30205169

QC Batch: 245740

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30205169001, 30205169002, 30205169003, 30205169004, 30205169005, 30205169006

METHOD BLANK: 1208859

Matrix: Water

Associated Lab Samples: 30205169001, 30205169002, 30205169003, 30205169004, 30205169005, 30205169006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.612 ± 0.377 (0.695) C:68% T:93%	pCi/L	01/22/17 12:53	

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

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30205169

QC Batch: 245739

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30205169001, 30205169002, 30205169003, 30205169004, 30205169005, 30205169006

METHOD BLANK: 1208851

Matrix: Water

Associated Lab Samples: 30205169001, 30205169002, 30205169003, 30205169004, 30205169005, 30205169006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0563 ± 0.118 (0.277) C:97% T:NA	pCi/L	01/17/17 08:09	

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 Bowen

Pace Project No.: 30205169

### 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: AZL0406

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 1/10/2017

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	<div style="text-align: center;">  <p>W0# : 30205169</p> </div>

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-22	G	12/8/2016 10:25	AZL0406-01	GW	2				X	001
2	BGWC-21	G	12/8/2016 13:20	AZL0406-02	GW	1				X	002
3	BGWC-25	G	12/8/2016 15:56	AZL0406-05	GW	1				X	003
4	Dup-3	G	12/8/2016 0:00	AZL0406-06	GW	1				X	004
5	FBL120816	G	12/8/2016 16:45	AZL0406-07	W	1				X	005
6	EQBL120816	G	12/8/2016 16:50	AZL0406-08	W	1				X	006
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			<i>Korn Hill</i>	12-12-16 0920	
2					
3					

Cooler Temperature on Receipt <u>N/A</u> °C	Custody Seal <u>Y</u> or <u>N</u>	Received on Ice <u>Y</u> or <u>N</u>	Sample Intact <u>Y</u> or <u>N</u>
---	-----------------------------------	--------------------------------------	------------------------------------

\*\*\*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



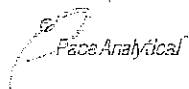
Pace Analytical Services, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED										L A B I D N U M B E R ↓	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 2412010 Marshall Blvd SE 31028 Atlanta, GA 30328					CONTAINER TYPE: P S P PRESERVATION: 3 7 3 # of CONTAINERS ↓											P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER		1 - HCl, ≤6°C 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C 3 - HNO <sub>3</sub> 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen	
REPORT TO: Joe Morrison REQUESTED COMPLETION DATE: PO# GFC10684198					C O N T A I N E R S ↓ Metals High III III EPA 8210-A EPA 8460 C11F1504 EPA 800 TDS SM 24110C Radon 220-4 228 SMO 846 9115 + 9120											*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			
PROJECT NAME/STATE: Plant Based And Prod CCR PROJECT #:																			
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION											REMARKS/ADDITIONAL INFORMATION			
12/16/16	1025	GW		X	BG-CC-22	4	1	1	2									1	
12/16/16	1320	GW		X	BG-CC-21	3	1	1	1									2	
12/16/16	1435	GW		X	BG-CC-14	2	1	1										3	
12/16/16	1542	GW		X	BG-CC-15	2	1	1										4	
12/16/16	1556	GW		X	BG-CC-25	3	1	1	1									5	
12/16/16	-	GW		X	Dup-3	3	1	1	1								6		
12/16/16	1645	W		X	FDL120816	3	1	1	1								7		
12/16/16	1650	W		X	E05LW20816	3	1	1	1								8		
SAMPLED BY AND TITLE: Kevin Simpson / Environmental					DATE/TIME: 12/16 @ 1715					RELINQUISHED BY: Kevin Simpson					DATE/TIME: 12/16 @ 0830				
RECEIVED BY: Charles Henk					DATE/TIME: 12/16 0830					SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS					LAB #: AZL0406				
pH checked: Yes No NA					Temperature: 105 (Min) 109 (Max)					Intact Broken Not Present					Entered into LIMS: [initials] Tracking #:				

Sample Condition Upon Receipt Pittsburgh

30205169



Client Name: Pace Georgia Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 08125101 0100

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: KAL 12-12-16

Comments:	Yes	No	N/A	
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/Analysis Matrix: <u>WT</u>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input 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.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>PHLZ</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics			Initial when completed: <u>AKR</u>	Date/time of preservation
			Lot # of added preservative	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>AKR</u> Date: <u>12-13-16</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

Test: Ra-228  
Analyst: JAL  
Date: 1/13/2017  
Worklist: 33371  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1208859	
MB concentration:	0.612	
M/B Counting Uncertainty:	0.360	
MB MDC:	0.695	
MB Numerical Performance Indicator:	3.33	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCS/D (Y or N)?	N
	LCS33371	LCS33371
Count Date:	1/22/2017	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.496	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.608	
Target Conc. (pCi/L, g, F):	6.307	
Uncertainty (Calculated):	0.454	
Result (pCi/L, g, F):	6.561	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.798	
Numerical Performance Indicator:	0.54	
Percent Recovery:	104.03%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30205168004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30205168004DUP	
Sample Result (pCi/L, g, F):	0.344	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.356	
Sample Duplicate Result (pCi/L, g, F):	0.439	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.335	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.382	30205168004
Duplicate RPD:	24.32%	30205168004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*JAL*  
1/23/17



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: LAL  
Date: 1/16/2017  
Worklist: 33370  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID		1208851
MB concentration:		0.056
M/B Counting Uncertainty:		0.118
MB MDC:		0.277
MB Numerical Performance Indicator:		0.94
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		
	LCS(D (Y or N)?	N
	LCS33370	LCS033370
Count Date:		1/17/2017
Spike I.D.:		16-026
Spike Concentration (pCi/mL):		44.671
Volume Used (mL):		0.10
Aliquot Volume (L, g, F):		0.506
Target Conc. (pCi/L, g, F):		8.828
Uncertainty (Calculated):		0.415
Result (pCi/L, g, F):		7.998
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		0.881
Numerical Performance Indicator:		-1.67
Percent Recovery:		90.60%
Status vs Numerical Indicator:		N/A
Status vs Recovery:		Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30205168004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30205168004DUP	
Sample Result (pCi/L, g, F):	0.189	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.188	
Sample Duplicate Result (pCi/L, g, F):	0.204	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.195	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.110	30205168004
Duplicate RPD:	7.72%	30205168004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*[Handwritten Signature]*  
1/16/2017



**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: AAA0285**

**January 19, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel" over a horizontal line.

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

January 19, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-26	AAA0285-01	Ground Water	01/10/17 12:32	01/11/17 08:14
BGWA-27	AAA0285-02	Ground Water	01/10/17 11:50	01/11/17 08:14
BGWA-28	AAA0285-03	Ground Water	01/10/17 11:00	01/11/17 08:14
BGWA-29	AAA0285-04	Ground Water	01/10/17 10:16	01/11/17 08:14



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

January 19, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0285

Project: CCR Event

Client ID: BGWA-26

Lab Number ID: AAA0285-01

Date/Time Sampled: 1/10/2017 12:32:00PM

Date/Time Received: 1/11/2017 8:14:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	186	25	10	mg/L	SM 2540 C		1	01/11/17 12:58	01/11/17 12:58	7010241	JPT
<b>Inorganic Anions</b>											
Chloride	6.7	0.25	0.01	mg/L	EPA 300.0		1	01/13/17 08:53	01/14/17 07:53	7010303	RLC
Fluoride	0.34	0.30	0.02	mg/L	EPA 300.0		1	01/13/17 08:53	01/14/17 07:53	7010303	RLC
Sulfate	36	1.0	0.05	mg/L	EPA 300.0	B-01	1	01/13/17 08:53	01/14/17 07:53	7010303	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Arsenic	0.0018	0.0050	0.0016	mg/L	EPA 6020B	J	1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Barium	0.0380	0.0100	0.0004	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Boron	0.0111	0.0400	0.0064	mg/L	EPA 6020B	J	1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Calcium	23.5	5.00	0.311	mg/L	EPA 6020B		10	01/16/17 11:10	01/18/17 13:03	7010326	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Molybdenum	0.0054	0.0100	0.0017	mg/L	EPA 6020B	J	1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Lithium	0.0022	0.0500	0.0021	mg/L	EPA 6020B	J	1	01/16/17 11:10	01/17/17 17:26	7010326	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	01/12/17 10:30	01/12/17 14:09	7010238	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

January 19, 2017

Report No.: AAA0285

Project: CCR Event

Client ID: BGWA-27

Lab Number ID: AAA0285-02

Date/Time Sampled: 1/10/2017 11:50:00AM

Date/Time Received: 1/11/2017 8:14:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	218	25	10	mg/L	SM 2540 C		1	01/11/17 12:58	01/11/17 12:58	7010241	JPT
<b>Inorganic Anions</b>											
Chloride	14	0.25	0.01	mg/L	EPA 300.0		1	01/13/17 08:53	01/14/17 08:14	7010303	RLC
Fluoride	0.11	0.30	0.02	mg/L	EPA 300.0	J	1	01/13/17 08:53	01/14/17 08:14	7010303	RLC
Sulfate	8.8	1.0	0.05	mg/L	EPA 300.0	B-01	1	01/13/17 08:53	01/14/17 08:14	7010303	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Barium	0.0388	0.0100	0.0004	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Boron	0.0123	0.0400	0.0064	mg/L	EPA 6020B	J	1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Calcium	41.8	25.0	1.55	mg/L	EPA 6020B		50	01/16/17 11:10	01/17/17 18:03	7010326	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	01/16/17 11:10	01/17/17 17:57	7010326	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	01/12/17 10:30	01/12/17 14:12	7010238	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

January 19, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0285

Project: CCR Event

Client ID: BGWA-28

Lab Number ID: AAA0285-03

Date/Time Sampled: 1/10/2017 11:00:00AM

Date/Time Received: 1/11/2017 8:14:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	225	25	10	mg/L	SM 2540 C		1	01/11/17 12:58	01/11/17 12:58	7010241	JPT
<b>Inorganic Anions</b>											
Chloride	17	0.25	0.01	mg/L	EPA 300.0		1	01/13/17 08:53	01/14/17 08:35	7010303	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	01/13/17 08:53	01/14/17 08:35	7010303	RLC
Sulfate	12	1.0	0.05	mg/L	EPA 300.0	B-01	1	01/13/17 08:53	01/14/17 08:35	7010303	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Barium	0.167	0.0100	0.0004	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Boron	0.0745	0.0400	0.0064	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Calcium	42.6	25.0	1.55	mg/L	EPA 6020B		50	01/12/17 12:15	01/16/17 18:42	7010268	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Molybdenum	0.0018	0.0100	0.0017	mg/L	EPA 6020B	J	1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Selenium	0.0014	0.0100	0.0010	mg/L	EPA 6020B	J	1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:36	7010268	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	01/12/17 10:30	01/12/17 14:19	7010238	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

January 19, 2017

Attention: Mr. Joju Abraham

Report No.: AAA0285

Project: CCR Event

Client ID: BGWA-29

Lab Number ID: AAA0285-04

Date/Time Sampled: 1/10/2017 10:16:00AM

Date/Time Received: 1/11/2017 8:14:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	115	25	10	mg/L	SM 2540 C		1	01/11/17 12:58	01/11/17 12:58	7010241	JPT
<b>Inorganic Anions</b>											
Chloride	1.6	0.25	0.01	mg/L	EPA 300.0		1	01/13/17 08:53	01/14/17 08:56	7010303	RLC
Fluoride	0.03	0.30	0.02	mg/L	EPA 300.0	J	1	01/13/17 08:53	01/14/17 08:56	7010303	RLC
Sulfate	4.5	1.0	0.05	mg/L	EPA 300.0	B-01	1	01/13/17 08:53	01/14/17 08:56	7010303	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Barium	0.0306	0.0100	0.0004	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Cadmium	0.00009	0.0010	0.00007	mg/L	EPA 6020B	J	1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Calcium	20.4	5.00	0.311	mg/L	EPA 6020B		10	01/12/17 12:15	01/17/17 15:27	7010268	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	01/12/17 12:15	01/16/17 18:48	7010268	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	01/12/17 10:30	01/12/17 14:21	7010238	MTC





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

January 19, 2017

**Report No.: AAA0285**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010241 - SM 2540 C</b>											
<b>Blank (7010241-BLK1)</b>						Prepared & Analyzed: 01/11/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7010241-BS1)</b>						Prepared & Analyzed: 01/11/17					
Total Dissolved Solids	403	25	10	mg/L	400.00		101	84-108			
<b>Duplicate (7010241-DUP1)</b>						Source: AAA0285-03 Prepared & Analyzed: 01/11/17					
Total Dissolved Solids	228	25	10	mg/L		225			1	10	



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January 19, 2017

**Report No.: AAA0285**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010303 - EPA 300.0</b>											
<b>Blank (7010303-BLK1)</b>						Prepared: 01/13/17 Analyzed: 01/14/17					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	0.12	1.0	0.05	mg/L							J
<b>LCS (7010303-BS1)</b>						Prepared: 01/13/17 Analyzed: 01/14/17					
Chloride	10.4	0.25	0.01	mg/L	10.010		104	90-110			
Fluoride	10.7	0.30	0.02	mg/L	10.020		107	90-110			
Sulfate	10.7	1.0	0.05	mg/L	10.020		106	90-110			
<b>Matrix Spike (7010303-MS1)</b>						Source: AAA0261-01 Prepared: 01/13/17 Analyzed: 01/14/17					
Chloride	12.3	0.25	0.01	mg/L	10.010	2.52	98	90-110			
Fluoride	10.3	0.30	0.02	mg/L	10.020	0.02	102	90-110			
Sulfate	11.8	1.0	0.05	mg/L	10.020	1.93	99	90-110			
<b>Matrix Spike Dup (7010303-MSD1)</b>						Source: AAA0261-01 Prepared: 01/13/17 Analyzed: 01/14/17					
Chloride	12.3	0.25	0.01	mg/L	10.010	2.52	98	90-110	0.3	15	
Fluoride	10.3	0.30	0.02	mg/L	10.020	0.02	102	90-110	0	15	
Sulfate	11.9	1.0	0.05	mg/L	10.020	1.93	99	90-110	0.4	15	



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**Report No.: AAA0285**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010238 - EPA 7470A</b>											
<b>Blank (7010238-BLK1)</b> Prepared & Analyzed: 01/12/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7010238-BS1)</b> Prepared & Analyzed: 01/12/17											
Mercury	0.00240	0.00050	0.000041	mg/L	2.5000E-3		96	80-120			
<b>Matrix Spike (7010238-MS1)</b> Source: AAA0285-01 Prepared & Analyzed: 01/12/17											
Mercury	0.00243	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125			
<b>Matrix Spike Dup (7010238-MSD1)</b> Source: AAA0285-01 Prepared & Analyzed: 01/12/17											
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125	2	20	
<b>Post Spike (7010238-PS1)</b> Source: AAA0285-01 Prepared & Analyzed: 01/12/17											
Mercury	1.78			ug/L	1.6667	0.00235	107	80-120			
<b>Batch 7010268 - EPA 3005A</b>											
<b>Blank (7010268-BLK1)</b> Prepared: 01/12/17 Analyzed: 01/16/17											
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	0.0008	0.0250	0.0005	mg/L							J
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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Attention: Mr. Joju Abraham

January 19, 2017

**Report No.: AAA0285**

**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 7010268 - EPA 3005A**

**LCS (7010268-BS1)**

Prepared: 01/12/17 Analyzed: 01/16/17

Antimony	0.108	0.0030	0.0008	mg/L	0.10000		108	80-120			
Arsenic	0.103	0.0050	0.0016	mg/L	0.10000		103	80-120			
Barium	0.101	0.0100	0.0004	mg/L	0.10000		101	80-120			
Beryllium	0.107	0.0030	0.00008	mg/L	0.10000		107	80-120			
Boron	0.967	0.0400	0.0064	mg/L	1.0000		97	80-120			
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000		105	80-120			
Calcium	1.04	0.500	0.0311	mg/L	1.0000		104	80-120			
Chromium	0.101	0.0100	0.0009	mg/L	0.10000		101	80-120			
Cobalt	0.0981	0.0100	0.0005	mg/L	0.10000		98	80-120			
Copper	0.0994	0.0250	0.0005	mg/L	0.10000		99	80-120			
Lead	0.0992	0.0050	0.0001	mg/L	0.10000		99	80-120			
Molybdenum	0.105	0.0100	0.0017	mg/L	0.10000		105	80-120			
Nickel	0.109	0.0100	0.0006	mg/L	0.10000		109	80-120			
Selenium	0.106	0.0100	0.0010	mg/L	0.10000		106	80-120			
Silver	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Thallium	0.101	0.0010	0.0002	mg/L	0.10000		101	80-120			
Vanadium	0.104	0.0100	0.0071	mg/L	0.10000		104	80-120			
Zinc	0.106	0.0100	0.0021	mg/L	0.10000		106	80-120			
Lithium	0.103	0.0500	0.0021	mg/L	0.10000		103	80-120			

**Matrix Spike (7010268-MS1)**

Source: AAA0261-03

Prepared: 01/12/17 Analyzed: 01/16/17

Antimony	0.108	0.0030	0.0008	mg/L	0.10000	ND	108	75-125			
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125			
Barium	0.115	0.0100	0.0004	mg/L	0.10000	0.0135	101	75-125			
Beryllium	0.106	0.0030	0.00008	mg/L	0.10000	ND	106	75-125			
Boron	0.964	0.0400	0.0064	mg/L	1.0000	ND	96	75-125			
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000	0.0002	105	75-125			
Calcium	29.1	25.0	1.55	mg/L	1.0000	27.6	153	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	ND	107	75-125			
Copper	0.105	0.0250	0.0005	mg/L	0.10000	ND	105	75-125			
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125			
Molybdenum	0.102	0.0100	0.0017	mg/L	0.10000	ND	102	75-125			
Nickel	0.111	0.0100	0.0006	mg/L	0.10000	ND	111	75-125			
Selenium	0.105	0.0100	0.0010	mg/L	0.10000	ND	105	75-125			
Silver	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Thallium	0.105	0.0010	0.0002	mg/L	0.10000	ND	105	75-125			
Vanadium	0.113	0.0100	0.0071	mg/L	0.10000	ND	113	75-125			
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	ND	105	75-125			
Lithium	0.109	0.0500	0.0021	mg/L	0.10000	ND	109	75-125			



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Attention: Mr. Joju Abraham

January 19, 2017

**Report No.: AAA0285**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010268 - EPA 3005A</b>											
<b>Matrix Spike Dup (7010268-MSD1)</b>			<b>Source: AAA0261-03</b>			<b>Prepared: 01/12/17 Analyzed: 01/16/17</b>					
Antimony	0.110	0.0030	0.0008	mg/L	0.10000	ND	110	75-125	2	20	
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	ND	101	75-125	1	20	
Barium	0.117	0.0100	0.0004	mg/L	0.10000	0.0135	103	75-125	1	20	
Beryllium	0.108	0.0030	0.00008	mg/L	0.10000	ND	108	75-125	3	20	
Boron	0.965	0.0400	0.0064	mg/L	1.0000	ND	96	75-125	0.1	20	
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000	0.0002	104	75-125	0.5	20	
Calcium	28.1	25.0	1.55	mg/L	1.0000	27.6	50	75-125	4	20	QM-02
Chromium	0.108	0.0100	0.0009	mg/L	0.10000	ND	108	75-125	0.6	20	
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	3	20	
Copper	0.0990	0.0250	0.0005	mg/L	0.10000	ND	99	75-125	6	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	0.8	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	4	20	
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	ND	105	75-125	6	20	
Selenium	0.0963	0.0100	0.0010	mg/L	0.10000	ND	96	75-125	9	20	
Silver	0.0995	0.0100	0.0005	mg/L	0.10000	ND	99	75-125	3	20	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125	2	20	
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125	5	20	
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	ND	105	75-125	0.6	20	
Lithium	0.109	0.0500	0.0021	mg/L	0.10000	ND	109	75-125	0.5	20	
<b>Post Spike (7010268-PS1)</b>											
<b>Source: AAA0261-03</b>			<b>Prepared: 01/12/17 Analyzed: 01/16/17</b>								
Antimony	104			ug/L	100.00	0.501	103	80-120			
Arsenic	104			ug/L	100.00	0.616	104	80-120			
Barium	117			ug/L	100.00	13.5	103	80-120			
Beryllium	107			ug/L	100.00	0.0260	107	80-120			
Boron	966			ug/L	1000.0	3.42	96	80-120			
Cadmium	108			ug/L	100.00	0.153	108	80-120			
Calcium	28000			ug/L	1000.0	27600	38	80-120			QM-02
Chromium	109			ug/L	100.00	0.537	108	80-120			
Cobalt	107			ug/L	100.00	0.0216	107	80-120			
Copper	102			ug/L	100.00	0.231	102	80-120			
Lead	101			ug/L	100.00	0.0322	101	80-120			
Molybdenum	109			ug/L	100.00	0.446	109	80-120			
Nickel	110			ug/L	100.00	0.151	110	80-120			
Selenium	104			ug/L	100.00	0.0190	104	80-120			
Silver	104			ug/L	100.00	0.0035	104	80-120			
Thallium	104			ug/L	100.00	0.0334	104	80-120			
Vanadium	112			ug/L	100.00	-0.774	112	80-120			
Zinc	108			ug/L	100.00	1.50	106	80-120			
Lithium	108			ug/L	100.00	0.598	107	80-120			



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January 19, 2017

**Report No.: AAA0285**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010326 - EPA 3005A</b>											
<b>Blank (7010326-BLK1)</b>						Prepared: 01/16/17 Analyzed: 01/17/17					
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							
<b>LCS (7010326-BS1)</b>						Prepared: 01/16/17 Analyzed: 01/17/17					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000		102	80-120			
Arsenic	0.100	0.0050	0.0016	mg/L	0.10000		100	80-120			
Barium	0.0974	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.0993	0.0030	0.00008	mg/L	0.10000		99	80-120			
Boron	0.985	0.0400	0.0064	mg/L	1.0000		99	80-120			
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000		102	80-120			
Calcium	1.02	0.500	0.0311	mg/L	1.0000		102	80-120			
Chromium	0.102	0.0100	0.0009	mg/L	0.10000		102	80-120			
Cobalt	0.0996	0.0100	0.0005	mg/L	0.10000		100	80-120			
Copper	0.0958	0.0250	0.0005	mg/L	0.10000		96	80-120			
Lead	0.0981	0.0050	0.0001	mg/L	0.10000		98	80-120			
Molybdenum	0.0994	0.0100	0.0017	mg/L	0.10000		99	80-120			
Nickel	0.101	0.0100	0.0006	mg/L	0.10000		101	80-120			
Selenium	0.100	0.0100	0.0010	mg/L	0.10000		100	80-120			
Silver	0.0999	0.0100	0.0005	mg/L	0.10000		100	80-120			
Thallium	0.0981	0.0010	0.0002	mg/L	0.10000		98	80-120			
Vanadium	0.101	0.0100	0.0071	mg/L	0.10000		101	80-120			
Zinc	0.0962	0.0100	0.0021	mg/L	0.10000		96	80-120			
Lithium	0.0983	0.0500	0.0021	mg/L	0.10000		98	80-120			



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**Report No.: AAA0285**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010326 - EPA 3005A</b>											
<b>Matrix Spike (7010326-MS1)</b>			<b>Source: AAA0446-03</b>			<b>Prepared: 01/16/17 Analyzed: 01/17/17</b>					
Antimony	0.101	0.0030	0.0008	mg/L	0.10000	ND	101	75-125			
Arsenic	0.100	0.0050	0.0016	mg/L	0.10000	ND	100	75-125			
Barium	0.115	0.0100	0.0004	mg/L	0.10000	0.0150	100	75-125			
Beryllium	0.101	0.0030	0.00008	mg/L	0.10000	ND	101	75-125			
Boron	0.983	0.0400	0.0064	mg/L	1.0000	ND	98	75-125			
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	0.0001	101	75-125			
Calcium	33.5	25.0	1.55	mg/L	1.0000	31.2	227	75-125			QM-02
Chromium	0.105	0.0100	0.0009	mg/L	0.10000	ND	105	75-125			
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Copper	0.0969	0.0250	0.0005	mg/L	0.10000	ND	97	75-125			
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125			
Molybdenum	0.104	0.0100	0.0017	mg/L	0.10000	ND	104	75-125			
Nickel	0.103	0.0100	0.0006	mg/L	0.10000	ND	103	75-125			
Selenium	0.0978	0.0100	0.0010	mg/L	0.10000	ND	98	75-125			
Silver	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125			
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125			
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125			
Zinc	0.102	0.0100	0.0021	mg/L	0.10000	ND	102	75-125			
Lithium	0.101	0.0500	0.0021	mg/L	0.10000	ND	101	75-125			
<b>Matrix Spike Dup (7010326-MSD1)</b>			<b>Source: AAA0446-03</b>			<b>Prepared: 01/16/17 Analyzed: 01/17/17</b>					
Antimony	0.109	0.0030	0.0008	mg/L	0.10000	ND	109	75-125	7	20	
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125	2	20	
Barium	0.117	0.0100	0.0004	mg/L	0.10000	0.0150	102	75-125	2	20	
Beryllium	0.0979	0.0030	0.00008	mg/L	0.10000	ND	98	75-125	3	20	
Boron	0.984	0.0400	0.0064	mg/L	1.0000	ND	98	75-125	0.2	20	
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000	0.0001	102	75-125	1	20	
Calcium	34.0	25.0	1.55	mg/L	1.0000	31.2	280	75-125	2	20	QM-02
Chromium	0.109	0.0100	0.0009	mg/L	0.10000	ND	109	75-125	4	20	
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	1	20	
Copper	0.0980	0.0250	0.0005	mg/L	0.10000	ND	98	75-125	1	20	
Lead	0.0994	0.0050	0.0001	mg/L	0.10000	ND	99	75-125	2	20	
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000	ND	103	75-125	1	20	
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	ND	105	75-125	1	20	
Selenium	0.0988	0.0100	0.0010	mg/L	0.10000	ND	99	75-125	1	20	
Silver	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125	1	20	
Thallium	0.100	0.0010	0.0002	mg/L	0.10000	ND	100	75-125	3	20	
Vanadium	0.111	0.0100	0.0071	mg/L	0.10000	ND	111	75-125	3	20	
Zinc	0.102	0.0100	0.0021	mg/L	0.10000	ND	102	75-125	0.1	20	
Lithium	0.103	0.0500	0.0021	mg/L	0.10000	ND	103	75-125	1	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

January 19, 2017

**Report No.: AAA0285**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7010326 - EPA 3005A</b>											
<b>Post Spike (7010326-PS1)</b>			<b>Source: AAA0446-03</b>			<b>Prepared: 01/16/17 Analyzed: 01/17/17</b>					
Antimony	98.3			ug/L	100.00	0.463	98	80-120			
Arsenic	102			ug/L	100.00	0.438	102	80-120			
Barium	118			ug/L	100.00	15.0	103	80-120			
Beryllium	96.2			ug/L	100.00	0.0139	96	80-120			
Boron	1000			ug/L	1000.0	2.54	100	80-120			
Cadmium	97.0			ug/L	100.00	0.148	97	80-120			
Calcium	34400			ug/L	1000.0	31200	320	80-120			QM-02
Chromium	106			ug/L	100.00	0.645	105	80-120			
Cobalt	103			ug/L	100.00	0.0295	103	80-120			
Copper	99.1			ug/L	100.00	0.206	99	80-120			
Lead	99.9			ug/L	100.00	0.0602	100	80-120			
Molybdenum	103			ug/L	100.00	0.299	103	80-120			
Nickel	101			ug/L	100.00	0.180	101	80-120			
Selenium	104			ug/L	100.00	-0.392	104	80-120			
Silver	101			ug/L	100.00	0.0010	101	80-120			
Thallium	100			ug/L	100.00	0.0051	100	80-120			
Vanadium	108			ug/L	100.00	-1.49	108	80-120			
Zinc	102			ug/L	100.00	0.822	101	80-120			
Lithium	99.5			ug/L	100.00	0.568	99	80-120			





**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

January 19, 2017

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## Legend

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### 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

- 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



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										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:	P	P	P											
Southern Company Services																P - PLASTIC	1 - HCl, ≤6°C		
241 Ralph McGill Blvd SE B10125																A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
Atlanta GA 30308																G - CLEAR GLASS	3 - HNO <sub>3</sub>		
REPORT TO: Juju Abraham																V - VOA VIAL	4 - NaOH, ≤6°C		
CC: Maria Padilla																S - STERILE	5 - NaOH/ZnAc, ≤6°C		
HEATH McLERKE																O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C		
REQUESTED COMPLETION DATE:																	7 - ≤6°C not frozen		
PROJECT NAME/STATE: Plant Bowen CCR																*MATRIX CODES:			
Ash Pond																DW - DRINKING WATER	S - SOIL		
PROJECT #:																WW - WASTEWATER	SL - SLUDGE		
Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAB	SAMPLE IDENTIFICATION	# of													
1/10/17	1232	GW		X	BGWA-26	3													
1/10/17	1150	GW		X	BGWA-27	3													
1/10/17	1100	GW		X	BGWA-28	3													
1/10/17	1016	GW		X	BGWA-29	3													
SAMPLED BY AND TITLE: Ernest Blawie/Kenn Stevenson					DATE/TIME: 1/10/17 1530					RELINQUISHED BY: Ernest Blawie					DATE/TIME: 1/11/17 0814				
RECEIVED BY: [Signature]					DATE/TIME: 01-11-17 0814					RELINQUISHED BY:					DATE/TIME:				
RECEIVED BY LAB: [Signature]					DATE/TIME: 1-11-17 0814					SAMPLE SHIPPED VIA: COURIER					CLIENT OTHER FS				
Checked: [Signature]					Temperature: 21.4					Custody Seal: Not Present					# of Coolers				
No NA Yes No NA					Min: Max:					Intact Broken					Cooler ID:				

Page 16 of 17



**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: 1/11/2017 10:17:39AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 01/11/17 08:14

**Work Order:** AAA0285

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 4

**#Containers:** 12

**Minimum Temp(C):** 1.4

**Maximum Temp(C):** 1.4

**Custody Seal(s) Used:** 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:**

February 09, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339


RE: Project: Plant Bowen  
Pace Project No.: 30207810

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on January 12, 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  
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 Bowen

Pace Project No.: 30207810

### 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 Bowen

Pace Project No.: 30207810

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30207810001	BGWA-26	Water	01/10/17 12:32	01/12/17 09:40
30207810002	BGWA-27	Water	01/10/17 11:50	01/12/17 09:40
30207810003	BGWA-28	Water	01/10/17 11:00	01/12/17 09:40
30207810004	BGWA-29	Water	01/10/17 10:16	01/12/17 09:40

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30207810

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30207810001	BGWA-26	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30207810002	BGWA-27	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30207810003	BGWA-28	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30207810004	BGWA-29	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 Bowen  
Pace Project No.: 30207810

**Sample: BGWA-26**      **Lab ID: 30207810001**      Collected: 01/10/17 12:32      Received: 01/12/17 09:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Comments: • Low volume, client notified

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.154 ± 0.159 (0.306)</b> C:89% T:NA	pCi/L	01/22/17 12:53	13982-63-3	
Radium-228	EPA 9320	<b>0.804 ± 0.480 (0.908)</b> C:81% T:81%	pCi/L	02/07/17 12:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.958 ± 0.639 (1.21)</b>	pCi/L	02/08/17 15:41	7440-14-4	

**Sample: BGWA-27**      **Lab ID: 30207810002**      Collected: 01/10/17 11:50      Received: 01/12/17 09:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Comments: • Low volume, client notified

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.301 ± 0.196 (0.323)</b> C:96% T:NA	pCi/L	01/22/17 12:53	13982-63-3	
Radium-228	EPA 9320	<b>0.388 ± 0.368 (0.753)</b> C:80% T:86%	pCi/L	02/07/17 12:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.689 ± 0.564 (1.08)</b>	pCi/L	02/08/17 15:41	7440-14-4	

**Sample: BGWA-28**      **Lab ID: 30207810003**      Collected: 01/10/17 11:00      Received: 01/12/17 09:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Comments: • Low volume, client notified

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.191 ± 0.248 (0.521)</b> C:92% T:NA	pCi/L	01/22/17 12:53	13982-63-3	
Radium-228	EPA 9320	<b>0.595 ± 0.410 (0.789)</b> C:72% T:88%	pCi/L	02/07/17 12:15	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.786 ± 0.658 (1.31)</b>	pCi/L	02/08/17 15:41	7440-14-4	

**Sample: BGWA-29**      **Lab ID: 30207810004**      Collected: 01/10/17 10:16      Received: 01/12/17 09:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Comments: • Low volume, client notified

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>-0.0482 ± 0.116 (0.334)</b> C:95% T:NA	pCi/L	01/22/17 12:53	13982-63-3	
Radium-228	EPA 9320	<b>0.0240 ± 0.362 (0.835)</b> C:76% T:83%	pCi/L	02/07/17 12:15	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.0240 ± 0.478 (1.17)</b>	pCi/L	02/08/17 15:41	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30207810

QC Batch: 246909

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30207810001, 30207810002, 30207810003, 30207810004

METHOD BLANK: 1214154

Matrix: Water

Associated Lab Samples: 30207810001, 30207810002, 30207810003, 30207810004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.245 ± 0.436 (0.952) C:77% T:67%	pCi/L	02/07/17 12:14	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen

Pace Project No.: 30207810

### 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: AAA0285

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 2/3/2017

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

WO#: 30207810



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWA-26	G	1/10/2017 12:32	AAA0285-01	GW	1				X	001
2	BGWA-27	G	1/10/2017 11:50	AAA0285-02	GW	1				X	002
3	BGWA-28	G	1/10/2017 11:00	AAA0285-03	GW	1				X	003
4	BGWA-29	G	1/10/2017 10:16	AAA0285-04	GW	1				X	004
5											
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			<i>Alyssa B. Mudd</i>	1/17/17 0940	
2			<i>Pace</i>		
3					

Cooler Temperature on Receipt <u>N/A</u> °C	Custody Seal <u>Y</u> or <u>N</u>	Received on Ice <u>Y</u> or <u>N</u>	Sample Intact <u>Y</u> or <u>N</u>
---	-----------------------------------	--------------------------------------	------------------------------------

\*\*\*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

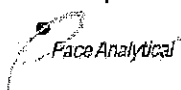


Pace Analytical Services, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>						ANALYSIS REQUESTED											L A B I D N U M B E R ↓	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B101ES Atlanta GA 30308</u>						CONTAINER TYPE: P P P												P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	1 - HCl, 56°C 2 - H <sub>2</sub> SO <sub>4</sub> , 58°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> , 58°C 7 - 56°C not frozen		
REPORT TO: <u>JuJu Abraham</u>			CC: <u>Maria Padilla Heath McLenkle</u>			PRESERVATION: 3 7 3															
REQUESTED COMPLETION DATE: <u>6 PC 1068498</u>			PO #:																		
PROJECT NAME/STATE: <u>Plant Bowen CCR Ash Pond</u>						CONTAINERS											*MATRIX CODES:				
PROJECT #:																	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				
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of												REMARKS/ADDITIONAL INFORMATION			
1/10/17	1232	GW		X	B6WA-26	3	1	1	1												1
1/10/17	1150	GW		X	B6WA-27	3	1	1	1												2
1/10/17	1100	GW		X	B6WA-28	3	1	1	1												3
1/10/17	1016	GW		X	B6WA-29	3	1	1	1												4
SAMPLED BY AND TITLE: <u>Fernest Blawie/Kenn Stevenson</u>						DATE/TIME: <u>1/10/17 1530</u>			RELINQUISHED BY: <u>Fernest Blawie</u>			DATE/TIME: <u>1/11/17 0814</u>			FOR LAB USE ONLY LAB #: <u>AAA0285</u>						
RECEIVED BY: <u>Shanna Harper</u>						DATE/TIME: <u>SLN 01-11-17 0814</u>			RECEIVED BY:			DATE/TIME:			Entered into LIMS: <u>MR</u>						
RECEIVED BY LAB: <u>Shanna Harper</u>						DATE/TIME: <u>1-11-17 0814</u>			SAMPLE SHIPPED VIA: <u>SLN 01-11-17 COURIER</u>			CLIENT			Tracking #:						
pH checked: <u>Yes</u>						Temperature: <u>21.4</u>			Custody Seal: <u>Not Present</u>			Cooler ID:									

Sample Condition Upon Receipt Pittsburgh



Client Name: PAGEA

Project # 30207810

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 081251016200

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ARM 1/12/17

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>NT</u>				
Samples Arrived within Hold Time:	/			6.
Short Hold Time Analysis (<72hr remaining):	/			7.
Rush Turn Around Time Requested:	/			8.
Sufficient Volume:	/			9. <u>low volume</u>
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.
All containers needing preservation are found to be in compliance with EPA recommendation.	/			<u>DHLZ</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed <u>ARM</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>ARM</u> Date: <u>1/12/17</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

Test: Ra-226  
Analyst: LAL  
Date: 1/20/2017  
Worklist: 33614  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1214156
MB concentration:	0.011
M/B Counting Uncertainty:	0.061
MB MDC:	0.153
MB Numerical Performance Indicator:	0.34
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS33614	LCSD33614
Count Date:	1/22/2017	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.671	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.502	
Target Conc. (pCi/L, g, F):	8.898	
Uncertainty (Calculated):	0.419	
Result (pCi/L, g, F):	8.161	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.543	
Numerical Performance Indicator:	-2.11	
Percent Recovery:	91.71%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30208060001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30208060001DUP	
Sample Result (pCi/L, g, F):	0.125	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.094	
Sample Duplicate Result (pCi/L, g, F):	0.111	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.087	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.222	30208060001
Duplicate RPD:	12.30%	30208060001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*Handwritten signature/initials: LAL 1/21/17*





## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 1/21/2017  
Worklist: 33612  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1214154	
MB concentration:	0.245	
M/B Counting Uncertainty:	0.433	
MB MDC:	0.952	
MB Numerical Performance Indicator:	1.11	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS33612	LCS33612
Count Date:	2/7/2017		
Spike I.D.:	16-027		
Spike Concentration (pCi/mL):	25.362		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.805		
Target Conc. (pCi/L, g, F):	6.303		
Uncertainty (Calculated):	0.454		
Result (pCi/L, g, F):	4.970		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.627		
Numerical Performance Indicator:	-3.38		
Percent Recovery:	78.84%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30208060001	
Duplicate Sample I.D.:	30208060001DUP	
Sample Result (pCi/L, g, F):	0.265	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.333	
Sample Duplicate Result (pCi/L, g, F):	0.535	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.434	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.967	30208060001
Duplicate RPD:	67.46%	30208060001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Handwritten signature/initials*





**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: AZK0855**

**December 13, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Maya Tarkenton", written over a horizontal line.

**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  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 13, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-2	AZK0855-01	Ground Water	11/29/16 12:20	11/30/16 08:02
BGWA-4	AZK0855-02	Ground Water	11/29/16 12:54	11/30/16 08:02
BGWA-1	AZK0855-03	Ground Water	11/29/16 14:25	11/30/16 08:02
FBL112916	AZK0855-04	Water	11/29/16 14:55	11/30/16 08:02
EQBL112916	AZK0855-05	Water	11/29/16 15:05	11/30/16 08:02
Dup-1	AZK0855-06	Ground Water	11/29/16 00:00	11/30/16 08:02



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 13, 2016

Attention: Mr. Joju Abraham

Report No.: AZK0855

Project: CCR Event

Client ID: BGWA-2

Lab Number ID: AZK0855-01

Date/Time Sampled: 11/29/2016 12:20:00PM

Date/Time Received: 11/30/2016 8:02:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	109	25	10	mg/L	SM 2540 C		1	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	2.6	0.25	0.01	mg/L	EPA 300.0		1	11/30/16 08:54	11/30/16 13:46	6110695	RLC
Fluoride	0.11	0.30	0.02	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 13:46	6110695	RLC
Sulfate	5.2	1.0	0.05	mg/L	EPA 300.0		1	11/30/16 08:54	11/30/16 13:46	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Arsenic	0.0023	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Barium	0.201	0.100	0.0044	mg/L	EPA 6020B		10	12/02/16 08:55	12/06/16 12:06	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Boron	0.0085	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Calcium	29.7	5.00	0.311	mg/L	EPA 6020B	B-01	10	12/02/16 08:55	12/06/16 12:06	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	B-01, J	1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Molybdenum	0.0022	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:15	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:10	6120036	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 13, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZK0855

**Project:** CCR Event

**Client ID:** BGWA-4

**Lab Number ID:** AZK0855-02

**Date/Time Sampled:** 11/29/2016 12:54:00PM

**Date/Time Received:** 11/30/2016 8:02:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	669	25	10	mg/L	SM 2540 C		1	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	230	1.2	0.07	mg/L	EPA 300.0		5	11/30/16 08:54	12/13/16 09:50	6110695	RLC
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 15:50	6110695	RLC
Sulfate	81	5.0	0.26	mg/L	EPA 300.0		5	11/30/16 08:54	12/13/16 09:50	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Arsenic	0.0051	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Barium	0.0553	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Boron	2.87	2.00	0.321	mg/L	EPA 6020B		50	12/02/16 08:55	12/06/16 12:11	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Calcium	112	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 12:11	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Selenium	0.0028	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:21	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:12	6120036	MTC



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 Atlanta GA, 30339

December 13, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZK0855

**Project:** CCR Event

**Client ID:** BGWA-1

**Lab Number ID:** AZK0855-03

**Date/Time Sampled:** 11/29/2016 2:25:00PM

**Date/Time Received:** 11/30/2016 8:02:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	624	25	10	mg/L	SM 2540 C		1	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	170	2.5	0.14	mg/L	EPA 300.0		10	11/30/16 08:54	11/30/16 23:45	6110695	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 16:11	6110695	RLC
Sulfate	100	10	0.51	mg/L	EPA 300.0		10	11/30/16 08:54	11/30/16 23:45	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Barium	0.153	0.0500	0.0022	mg/L	EPA 6020B		5	12/02/16 08:55	12/06/16 18:15	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Boron	2.83	2.00	0.321	mg/L	EPA 6020B		50	12/02/16 08:55	12/06/16 12:17	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Calcium	112	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 12:17	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Selenium	0.0056	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:27	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:15	6120036	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 13, 2016

Attention: Mr. Joju Abraham

Report No.: AZK0855

Project: CCR Event

Client ID: FBL112916

Lab Number ID: AZK0855-04

Date/Time Sampled: 11/29/2016 2:55:00PM

Date/Time Received: 11/30/2016 8:02:00AM

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	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	0.10	0.25	0.01	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 16:31	6110695	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	11/30/16 08:54	11/30/16 16:31	6110695	RLC
Sulfate	0.06	1.0	0.05	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 16:31	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Boron	0.0119	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:33	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:17	6120036	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 13, 2016

Attention: Mr. Joju Abraham

Report No.: AZK0855

Project: CCR Event

Client ID: EQBL112916

Lab Number ID: AZK0855-05

Date/Time Sampled: 11/29/2016 3:05:00PM

Date/Time Received: 11/30/2016 8:02:00AM

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	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	0.07	0.25	0.01	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 16:52	6110695	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	11/30/16 08:54	11/30/16 16:52	6110695	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	11/30/16 08:54	11/30/16 16:52	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Beryllium	0.0004	0.0030	0.00008	mg/L	EPA 6020B	B-01, J	1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:38	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:19	6120036	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

December 13, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZK0855

**Project:** CCR Event

**Client ID:** Dup-1

**Lab Number ID:** AZK0855-06

**Date/Time Sampled:** 11/29/2016 12:00:00AM

**Date/Time Received:** 11/30/2016 8:02:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	626	25	10	mg/L	SM 2540 C		1	11/30/16 11:01	11/30/16 11:01	6110705	JPT
<b>Inorganic Anions</b>											
Chloride	250	2.5	0.14	mg/L	EPA 300.0		10	11/30/16 08:54	12/01/16 01:49	6110695	RLC
Fluoride	0.10	0.30	0.02	mg/L	EPA 300.0	J	1	11/30/16 08:54	11/30/16 17:13	6110695	RLC
Sulfate	87	10	0.51	mg/L	EPA 300.0		10	11/30/16 08:54	12/01/16 01:49	6110695	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Arsenic	0.0050	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Barium	0.0550	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Boron	3.17	2.00	0.321	mg/L	EPA 6020B		50	12/02/16 08:55	12/06/16 12:34	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Calcium	118	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 12:34	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Selenium	0.0031	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:44	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:22	6120036	MTC





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Attention: Mr. Joju Abraham

December 13, 2016

**Report No.: AZK0855**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6110705 - SM 2540 C</b>											
<b>Blank (6110705-BLK1)</b>						Prepared & Analyzed: 11/30/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6110705-BS1)</b>						Prepared & Analyzed: 11/30/16					
Total Dissolved Solids	371	25	10	mg/L	400.00		93	84-108			
<b>Duplicate (6110705-DUP1)</b>						Source: AZK0782-01 Prepared & Analyzed: 11/30/16					
Total Dissolved Solids	118	25	10	mg/L		116			2	10	
<b>Duplicate (6110705-DUP2)</b>						Source: AZK0850-03 Prepared & Analyzed: 11/30/16					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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December 13, 2016

**Report No.: AZK0855**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6110695 - EPA 300.0</b>											
<b>Blank (6110695-BLK1)</b>						Prepared & Analyzed: 11/30/16					
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 (6110695-BS1)</b>						Prepared & Analyzed: 11/30/16					
Chloride	10.4	0.25	0.01	mg/L	10.010		104	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		101	90-110			
Sulfate	10.2	1.0	0.05	mg/L	10.020		102	90-110			
<b>Matrix Spike (6110695-MS1)</b>						Source: AZK0850-02 Prepared & Analyzed: 11/30/16					
Chloride	16.8	0.25	0.01	mg/L	10.010	6.68	101	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.020	0.03	104	90-110			
Sulfate	111	1.0	0.05	mg/L	10.020	113	NR	90-110			QM-02
<b>Matrix Spike (6110695-MS2)</b>						Source: AZK0855-01 Prepared & Analyzed: 11/30/16					
Chloride	13.1	0.25	0.01	mg/L	10.010	2.56	105	90-110			
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.11	106	90-110			
Sulfate	15.1	1.0	0.05	mg/L	10.020	5.18	99	90-110			
<b>Matrix Spike Dup (6110695-MSD1)</b>						Source: AZK0850-02 Prepared & Analyzed: 11/30/16					
Chloride	16.9	0.25	0.01	mg/L	10.010	6.68	102	90-110	0.7	15	
Fluoride	10.6	0.30	0.02	mg/L	10.020	0.03	106	90-110	2	15	
Sulfate	111	1.0	0.05	mg/L	10.020	113	NR	90-110	0.3	15	QM-02



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December 13, 2016

**Report No.: AZK0855**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Blank (6120022-BLK1)</b>											
						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							
<b>LCS (6120022-BS1)</b>											
						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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Attention: Mr. Joju Abraham

December 13, 2016

**Report No.: AZK0855**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Matrix Spike (6120022-MS1)</b>			<b>Source: AZK0850-01</b>				<b>Prepared: 12/02/16 Analyzed: 12/05/16</b>				
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			QM-02
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			
<b>Matrix Spike Dup (6120022-MSD1)</b>			<b>Source: AZK0850-01</b>				<b>Prepared: 12/02/16 Analyzed: 12/05/16</b>				
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	0.0014	102	75-125	3	20	
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125	0.2	20	
Barium	0.148	0.0500	0.0022	mg/L	0.10000	0.0529	95	75-125	2	20	
Beryllium	0.0888	0.0030	0.00008	mg/L	0.10000	ND	89	75-125	6	20	
Boron	0.915	0.0400	0.0064	mg/L	1.0000	0.0095	91	75-125	3	20	
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125	1	20	
Calcium	10.7	2.50	0.155	mg/L	1.0000	9.47	121	75-125	1	20	
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125	0.08	20	
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	0.0036	98	75-125	0.5	20	
Copper	0.103	0.0250	0.0005	mg/L	0.10000	0.0010	102	75-125	3	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	1	20	
Molybdenum	0.102	0.0100	0.0017	mg/L	0.10000	ND	102	75-125	2	20	
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	0.0039	101	75-125	0.6	20	
Selenium	0.102	0.0100	0.0010	mg/L	0.10000	ND	102	75-125	3	20	
Silver	0.0995	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	1	20	
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125	1	20	
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125	1	20	
Zinc	0.104	0.0100	0.0021	mg/L	0.10000	0.0028	101	75-125	0.9	20	
Lithium	0.0897	0.0500	0.0021	mg/L	0.10000	ND	90	75-125	7	20	



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Attention: Mr. Joju Abraham

December 13, 2016

**Report No.: AZK0855**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Post Spike (6120022-PS1)</b>			<b>Source: AZK0850-01</b>			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**

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

December 13, 2016

**Report No.: AZK0855**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120036 - EPA 7470A</b>											
<b>Matrix Spike (6120036-MS1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	0.00249	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125			
<b>Matrix Spike Dup (6120036-MSD1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125	0.4	20	
<b>Post Spike (6120036-PS1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	1.73			ug/L	1.6667	0.0118	103	80-120			



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 13, 2016

## 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

- 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



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

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED										L A B  I D N U M B E R	CONTAINER TYPE		PRESERVATION					
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE Bldg 85</u> <u>Atlanta, GA 30308</u>					CONTAINER TYPE:	P	P	P															
REPORT TO: <u>Joie Abraham</u>					PRESERVATION:																		
REQUESTED COMPLETION DATE:					# of																		
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond</u>					CONTAINERS	<u>Mutals Air III + IV</u> <u>EPA 1010 X EPA 7470</u> <u>CIF, SO4 EPA 300</u> <u>TP3 SM 2500</u> <u>Polonium 210/212</u> <u>SO-246 9315 + 9320</u>					*MATRIX CODES:												
PROJECT #:											DW - DRINKING WATER S - SOIL				WW - WASTEWATER SL - SLUDGE								
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION											REMARKS/ADDITIONAL INFORMATION							
11/29/16	1220	GW		X	B6WA-2	3	1	1	1										1				
11/29/16	1254	GW		X	B6WA-4	4	1	1	2										2				
11/29/16	1425	GW		X	B6WA-1	3	1	1	1										3				
11/29/16	1455	U		X	FBL 112916	3	1	1	1										4				
11/29/16	1505	W		X	EQBL 112916	3	1	1	1										5				
11/29/16	---	GW		X	Dup-1	3	1	1	1										6				
SAMPLED BY AND TITLE: <u>Robert Mull/Revin Stephenson</u>					DATE/TIME: <u>11/29/16 1528</u>					RELINQUISHED BY: <u>Dee Bell</u>					DATE/TIME: <u>11/30/16 0802</u>					FOR LAB USE ONLY			
RECEIVED BY:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:					LAB #: <u>AZK0855</u>			
RECEIVED BY LAB: <u>M. A. Arman</u>					DATE/TIME: <u>11/30/16 0802</u>					SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER <u>CLIENT</u> OTHER FS					Tracking #:					Entered into LIMS: <u>NR</u>			
pH Checked: Yes No NA					Temperature: Min: <u>1°C</u> Max: <u>1°C</u>					Custody Seal: Broken Not Present					# of Coolers Cooler ID:								





**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: 12/13/2016 4:45:36PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 11/30/16 08:02

**Work Order:** AZK0855

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 6

**#Containers:** 19

**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:**

January 04, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204007

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 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 Bowen  
Pace Project No.: 30204007

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen

Pace Project No.: 30204007

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204007001	BGWA-2	Water	11/29/16 12:20	12/01/16 10:20
30204007002	BGWA-4	Water	11/29/16 12:54	12/01/16 10:20
30204007003	BGWA-1	Water	11/29/16 14:25	12/01/16 10:20
30204007004	FBL 112916	Water	11/29/16 14:55	12/01/16 10:20
30204007005	EQBL 112916	Water	11/29/16 15:05	12/01/16 10:20
30204007006	Dup-1	Water	11/29/16 00:00	12/01/16 10:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen  
Pace Project No.: 30204007

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204007001	BGWA-2	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204007002	BGWA-4	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204007003	BGWA-1	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204007004	FBL 112916	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204007005	EQBL 112916	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30204007006	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: Plant Bowen  
Pace Project No.: 30204007

Sample: <b>BGWA-2</b>		Lab ID: <b>30204007001</b>	Collected: 11/29/16 12:20	Received: 12/01/16 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>0.427 ± 0.224 (0.346)</b>		pCi/L	12/12/16 07:56	13982-63-3	
		<b>C:91% T:NA</b>					
Radium-228	EPA 9320	<b>0.460 ± 0.301 (0.557)</b>		pCi/L	12/30/16 12:04	15262-20-1	
		<b>C:75% T:91%</b>					
Total Radium	Total Radium Calculation	<b>0.887 ± 0.525 (0.903)</b>		pCi/L	01/04/17 15:07	7440-14-4	

Sample: <b>BGWA-4</b>		Lab ID: <b>30204007002</b>	Collected: 11/29/16 12:54	Received: 12/01/16 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>0.725 ± 0.257 (0.207)</b>		pCi/L	12/12/16 07:57	13982-63-3	
		<b>C:88% T:NA</b>					
Radium-228	EPA 9320	<b>0.198 ± 0.281 (0.603)</b>		pCi/L	12/30/16 11:18	15262-20-1	
		<b>C:97% T:79%</b>					
Total Radium	Total Radium Calculation	<b>0.923 ± 0.538 (0.810)</b>		pCi/L	01/04/17 15:07	7440-14-4	

Sample: <b>BGWA-1</b>		Lab ID: <b>30204007003</b>	Collected: 11/29/16 14:25	Received: 12/01/16 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>1.49 ± 0.398 (0.284)</b>		pCi/L	12/12/16 07:57	13982-63-3	
		<b>C:88% T:NA</b>					
Radium-228	EPA 9320	<b>0.290 ± 0.393 (0.840)</b>		pCi/L	12/30/16 11:18	15262-20-1	
		<b>C:68% T:88%</b>					
Total Radium	Total Radium Calculation	<b>1.78 ± 0.791 (1.12)</b>		pCi/L	01/04/17 15:07	7440-14-4	

Sample: <b>FBL 112916</b>		Lab ID: <b>30204007004</b>	Collected: 11/29/16 14:55	Received: 12/01/16 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>0.00781 ± 0.0981 (0.266)</b>		pCi/L	12/12/16 07:57	13982-63-3	
		<b>C:87% T:NA</b>					
Radium-228	EPA 9320	<b>0.158 ± 0.375 (0.835)</b>		pCi/L	12/30/16 11:19	15262-20-1	
		<b>C:64% T:86%</b>					
Total Radium	Total Radium Calculation	<b>0.166 ± 0.473 (1.10)</b>		pCi/L	01/04/17 15:07	7440-14-4	

Sample: <b>EQBL 112916</b>		Lab ID: <b>30204007005</b>	Collected: 11/29/16 15:05	Received: 12/01/16 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>0.0556 ± 0.101 (0.229)</b>		pCi/L	12/12/16 08:10	13982-63-3	
		<b>C:87% T:NA</b>					
Radium-228	EPA 9320	<b>-0.138 ± 0.424 (0.998)</b>		pCi/L	12/30/16 11:19	15262-20-1	
		<b>C:65% T:90%</b>					

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen  
Pace Project No.: 30204007

Sample: EQBL 112916		Lab ID: 30204007005	Collected: 11/29/16 15:05	Received: 12/01/16 10:20	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>0.0556 ± 0.525 (1.23)</b>		pCi/L	01/04/17 15:07	7440-14-4	

Sample: Dup-1		Lab ID: 30204007006	Collected: 11/29/16 00:00	Received: 12/01/16 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>0.312 ± 0.192 (0.317)</b> C:92% T:NA		pCi/L	12/12/16 07:57	13982-63-3	
Radium-228	EPA 9320	<b>0.533 ± 0.408 (0.801)</b> C:66% T:86%		pCi/L	12/30/16 11:19	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.845 ± 0.600 (1.12)</b>		pCi/L	01/04/17 15:23	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204007

QC Batch: 242765

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204007001

METHOD BLANK: 1193274

Matrix: Water

Associated Lab Samples: 30204007001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.941 ± 0.448 (0.737) C:59% T:89%	pCi/L	12/30/16 12:03	

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 Bowen

Pace Project No.: 30204007

QC Batch: 242577

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204007001, 30204007002, 30204007003, 30204007004, 30204007005, 30204007006

METHOD BLANK: 1192328

Matrix: Water

Associated Lab Samples: 30204007001, 30204007002, 30204007003, 30204007004, 30204007005, 30204007006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0984 ± 0.107 (0.203) C:96% T:NA	pCi/L	12/12/16 08:25	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen

Pace Project No.: 30204007

### 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#: 30204007



30204007



Chain of Custody

Workorder: AZK0855

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 12/30/2016

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWA-2	G	11/29/2016 12:20	AZK0855-01	GW	1				X	001
2	BGWA-4	G	11/29/2016 12:54	AZK0855-02	GW	2				X	002
3	BGWA-1	G	11/29/2016 14:25	AZK0855-03	GW	1				X	003
4	FBL 112916	G	11/29/2016 14:55	AZK0855-04	W	1				X	004
5	EQBL 112916	G	11/29/2016 15:05	AZK0855-05	W	1				X	005
6	Dup-1	G	11/29/2016 0:00	AZK0855-06	GW	1				X	006
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			<i>[Signature]</i>	12-7-16 10:26	
2					
3					

Cooler Temperature on Receipt <u>NA</u> °C	Custody Seal Y or <u>N</u>	Received on Ice Y or <u>N</u>	Sample Intact <u>Y</u> 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 Services, Inc  
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
(770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED					CONTAINER TYPE	PRESERVATION								
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE Bldg 15</u> <u>Atlanta, GA 30308</u>					CONTAINER TYPE:	P	P	P											
REPORT TO: <u>Joan Abraham</u>					CC: <u>Marin Padilla</u> <u>Heath McConkle</u>					LAB	PRESERVATION								
REQUESTED COMPLETION DATE:					PO #: <u>GPC 10684198</u>							A	PRESERVATION						
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond</u>					CONTAINERS	# of	P	P	P	D	PRESERVATION			PRESERVATION					
PROJECT #:												C	O		N	T	A	I	PRESERVATION
Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAB	SAMPLE IDENTIFICATION														
11/29/16	1220	GW	X	X	B6WA-2	3													
11/29/16	1254	GW	X	X	B6WA-4	4													
11/29/16	1425	GW	X	X	B6WA-1	3													
11/29/16	1455	U	X	X	FBL 112916	3													
11/29/16	1505	W	X	X	EQBL 112916	3													
11/29/16	---	GW	X	X	Dup-1	3													
SAMPLED BY AND TITLE: <u>Robert M. Hill / Kevin Stephenson</u>					DATE/TIME: <u>11/29/16 1528</u>					RELINQUISHED BY: <u>Robert M. Hill</u>					DATE/TIME: <u>11/30/16 0802</u>				
RECEIVED BY: <u>Maatman</u>					DATE/TIME: <u>11/30/16 0802</u>					SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS					FOR LAB USE ONLY LAB #: <u>AZK0855</u> Entered into LIMS: <u>NO</u>				
Temperature: Min: <u>1°C</u> Max: <u>1°C</u>					Custody Seal: Intact Broken Not Present					# of Coolers					Cooler ID:				

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace GA

Project # 30204007

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 68125100 6829

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: MLD-01-16

Comments:	Yes	No	N/A	
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/Analysis    Matrix: <u>W+</u>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" 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.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>PH &lt; 2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>ML</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Rad Aqueous Samples Screened > 0.5 mrem/hr	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>ML</u> Date: <u>12-01-16</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

Test: Ra-226  
Analyst: LAL  
Date: 12/9/2016  
Worklist: 32847  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID		1192328
MB concentration:		0.098
M/B Counting Uncertainty:		0.106
MB MDC:		0.203
MB Numerical Performance Indicator:		1.83
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS32847	LCS32847
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):	0.501	
Target Conc. (pCi/L, g, F):	8.909	
Uncertainty (Calculated):	0.419	
Result (pCi/L, g, F):	7.414	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.730	
Numerical Performance Indicator:	-3.48	
Percent Recovery:	83.22%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30204007002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30204007002DUP	
Sample Result (pCi/L, g, F):	0.725	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.234	
Sample Duplicate Result (pCi/L, g, F):	0.561	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.221	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.997	30204007002
Duplicate RPD:	25.45%	30204007002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Handwritten signature and date: LAL 12/14/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/13/2016  
Worklist: 32880  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1193274	
MB concentration:	0.941	
M/B Counting Uncertainty:	0.415	
MB MDC:	0.737	
MB Numerical Performance Indicator:	4.44	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	See Comment*	

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS32880	LCS32880
Count Date:	12/30/2016		
Spike I.D.:	16-027		
Spike Concentration (pCi/mL):	25.690		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.810		
Target Conc. (pCi/L, g, F):	6.340		
Uncertainty (Calculated):	0.456		
Result (pCi/L, g, F):	7.513		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.821		
Numerical Performance Indicator:	2.45		
Percent Recovery:	118.51%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30203642004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30203642004DUP	
Sample Result (pCi/L, g, F):	-0.130	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.283	
Sample Duplicate Result (pCi/L, g, F):	0.350	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.346	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.103	30203642004
Duplicate RPD:	437.77%	30203642004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Handwritten signature/initials*





## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/13/2016  
Worklist: 32881  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1193275	
MB concentration:	0.289	
M/B Counting Uncertainty:	0.344	
MB MDC:	0.734	
MB Numerical Performance Indicator:	1.64	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS32881	LCS032881
Count Date:	12/30/2016	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.690	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.802	
Target Conc. (pCi/L, g, F):	6.403	
Uncertainty (Calculated):	0.461	
Result (pCi/L, g, F):	5.764	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.691	
Numerical Performance Indicator:	-1.51	
Percent Recovery:	90.02%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30204007002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30204007002DUP	
Sample Result (pCi/L, g, F):	0.198	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.278	
Sample Duplicate Result (pCi/L, g, F):	0.830	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.472	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.258	30204007002
Duplicate RPD:	122.84%	30204007002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Handwritten notes:*  
LMP  
02/14/12



**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: AZL0002**

**December 14, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel" written over a horizontal line.

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

December 14, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-3	AZL0002-01	Ground Water	11/30/16 10:18	12/01/16 08:00
BGWA-5	AZL0002-02	Ground Water	11/30/16 11:14	12/01/16 08:00



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 14, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0002

Project: CCR Event

Client ID: BGWA-3

Lab Number ID: AZL0002-01

Date/Time Sampled: 11/30/2016 10:18:00AM

Date/Time Received: 12/1/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	406	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	85	0.50	0.03	mg/L	EPA 300.0		2	12/02/16 16:34	12/10/16 18:21	6120091	RNB
Fluoride	0.16	0.30	0.02	mg/L	EPA 300.0	J	1	12/02/16 16:34	12/10/16 18:42	6120091	RNB
Sulfate	58	2.0	0.10	mg/L	EPA 300.0		2	12/02/16 16:34	12/10/16 18:21	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 15:50	6120022	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Barium	0.0159	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Boron	0.681	0.0400	0.0064	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Calcium	61.8	25.0	1.55	mg/L	EPA 6020B	B-01	50	12/02/16 08:55	12/06/16 12:39	6120022	CSW
Chromium	0.0010	0.0100	0.0009	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Selenium	0.0050	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:50	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:29	6120036	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 14, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0002

Project: CCR Event

Client ID: BGWA-5

Lab Number ID: AZL0002-02

Date/Time Sampled: 11/30/2016 11:14:00AM

Date/Time Received: 12/1/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	763	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	250	2.5	0.14	mg/L	EPA 300.0		10	12/02/16 16:34	12/13/16 10:11	6120091	RLC
Fluoride	0.11	0.30	0.02	mg/L	EPA 300.0	J	1	12/02/16 16:34	12/10/16 19:24	6120091	RNB
Sulfate	150	10	0.51	mg/L	EPA 300.0		10	12/02/16 16:34	12/13/16 10:11	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 15:55	6120022	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Barium	0.0466	0.0100	0.0004	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Boron	3.73	0.400	0.0642	mg/L	EPA 6020B		10	12/02/16 08:55	12/06/16 18:22	6120022	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Calcium	131	50.0	3.11	mg/L	EPA 6020B	B-01	100	12/02/16 08:55	12/06/16 12:45	6120022	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Selenium	0.0145	0.0100	0.0010	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/02/16 08:55	12/05/16 15:55	6120022	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/02/16 09:20	12/02/16 13:31	6120036	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0002**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120057 - SM 2540 C</b>											
<b>Blank (6120057-BLK1)</b>						Prepared & Analyzed: 12/02/16					
Total Dissolved Solids	16	25	10	mg/L							B-01, J
<b>LCS (6120057-BS1)</b>						Prepared & Analyzed: 12/02/16					
Total Dissolved Solids	419	25	10	mg/L	400.00		105	84-108			
<b>Duplicate (6120057-DUP1)</b>						Source: AZL0033-04 Prepared & Analyzed: 12/02/16					
Total Dissolved Solids	4020	25	10	mg/L		3970			1	10	B-01
<b>Duplicate (6120057-DUP2)</b>						Source: AZL0033-06 Prepared & Analyzed: 12/02/16					
Total Dissolved Solids	37	25	10	mg/L		66			56	10	B-01, QR-03



**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.: AZL0002**

**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>						Prepared & Analyzed: 12/02/16					
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>						Prepared & Analyzed: 12/02/16					
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>						Source: AZL0002-02 Prepared & Analyzed: 12/02/16					
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>						Source: AZL0037-01 Prepared: 12/02/16 Analyzed: 12/03/16					
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>						Source: AZL0002-02 Prepared & Analyzed: 12/02/16					
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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Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0002**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Blank (6120022-BLK1)</b>						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							

<b>LCS (6120022-BS1)</b>						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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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0002**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Matrix Spike (6120022-MS1)</b>			<b>Source: AZK0850-01</b>				<b>Prepared: 12/02/16 Analyzed: 12/05/16</b>				
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			QM-02
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			
<b>Matrix Spike Dup (6120022-MSD1)</b>			<b>Source: AZK0850-01</b>				<b>Prepared: 12/02/16 Analyzed: 12/05/16</b>				
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	0.0014	102	75-125	3	20	
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125	0.2	20	
Barium	0.148	0.0500	0.0022	mg/L	0.10000	0.0529	95	75-125	2	20	
Beryllium	0.0888	0.0030	0.00008	mg/L	0.10000	ND	89	75-125	6	20	
Boron	0.915	0.0400	0.0064	mg/L	1.0000	0.0095	91	75-125	3	20	
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125	1	20	
Calcium	10.7	2.50	0.155	mg/L	1.0000	9.47	121	75-125	1	20	
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125	0.08	20	
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	0.0036	98	75-125	0.5	20	
Copper	0.103	0.0250	0.0005	mg/L	0.10000	0.0010	102	75-125	3	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	1	20	
Molybdenum	0.102	0.0100	0.0017	mg/L	0.10000	ND	102	75-125	2	20	
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	0.0039	101	75-125	0.6	20	
Selenium	0.102	0.0100	0.0010	mg/L	0.10000	ND	102	75-125	3	20	
Silver	0.0995	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	1	20	
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125	1	20	
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125	1	20	
Zinc	0.104	0.0100	0.0021	mg/L	0.10000	0.0028	101	75-125	0.9	20	
Lithium	0.0897	0.0500	0.0021	mg/L	0.10000	ND	90	75-125	7	20	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0002**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120022 - EPA 3005A</b>											
<b>Post Spike (6120022-PS1)</b>			<b>Source: AZK0850-01</b>			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**

<b>Blank (6120036-BLK1)</b>				Prepared & Analyzed: 12/02/16							
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120036-BS1)</b>				Prepared & Analyzed: 12/02/16							
Mercury	0.00245	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

December 14, 2016

**Report No.: AZL0002**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120036 - EPA 7470A</b>											
<b>Matrix Spike (6120036-MS1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	0.00249	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125			
<b>Matrix Spike Dup (6120036-MSD1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125	0.4	20	
<b>Post Spike (6120036-PS1)</b>			<b>Source: AZK0782-01</b>			<b>Prepared &amp; Analyzed: 12/02/16</b>					
Mercury	1.73			ug/L	1.6667	0.0118	103	80-120			



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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

PAGE: 1 OF 1

CLIENT NAME: <i>Southern Company Services</i>					ANALYSIS REQUESTED							L A B  I D  N U M B E R  ↓	CONTAINER TYPE	PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <i>241 Raton M<sup>o</sup>. 11 Blvd SE 30185 Atlanta GA 30308</i>					CONTAINER TYPE:											
REPORT TO: <i>Joju Abraham</i>					PRESERVATION:											
REQUESTED COMPLETION DATE:					# of											
PROJECT NAME/STATE: <i>Plant Bowen - Ash Pond CLR</i>					C O N T A I N E R S  ↓											
PROJECT #:																
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION											
<i>11/30/16</i>	<i>1018</i>	<i>GW</i>		<i>X</i>	<i>B6WA-3</i>	<i>3</i>									<i>1</i>	
<i>11/30/16</i>	<i>1114</i>	<i>GW</i>		<i>X</i>	<i>B6WA-5</i>	<i>3</i>									<i>2</i>	
SAMPLED BY AND TITLE: <i>Robert Mull / Kevin Stephenson</i>					DATE/TIME: <i>11/30/16 1730</i>			RELINQUISHED BY: <i>[Signature]</i>			DATE/TIME: <i>12/1/16 0800</i>			FOR LAB USE ONLY		
RECEIVED BY:					DATE/TIME:			RELINQUISHED BY:			DATE/TIME:			LAB #:	<i>A2L0002</i>	
CHECKED BY LAB: <i>Rahman</i>					DATE/TIME: <i>12/01/16 0800</i>			SAMPLE SHIPPED VIA:			CLIENT <input checked="" type="radio"/> OTHER <input type="radio"/> FS			Tracking #:		
Checked: No <input type="checkbox"/> NA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>					Temperature: <i>1°C</i> Min: <i>1°C</i> Max:			Custody Seal: <input checked="" type="radio"/> Broken <input type="radio"/> Not Present			# of Coolers: <i>1</i> Cooler ID:					

Page 12 of 13



**PACE ANALYTICAL SERVICES, INC.**

Environmental Monitoring & Laboratory Analysis  
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**LOG-IN CHECKLIST**

**Printed: 12/14/2016 11:36:36AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/01/16 08:00

**Work Order:** AZL0002

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 2

**#Containers:** 6

**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:**

January 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204305

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

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

Project: Plant Bowen

Pace Project No.: 30204305

### 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 Bowen

Pace Project No.: 30204305

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204305001	BGWA-3	Water	11/30/16 10:18	12/05/16 09:45
30204305002	BGWA-5	Water	11/30/16 11:14	12/05/16 09:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen  
Pace Project No.: 30204305

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204305001	BGWA-3	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204305002	BGWA-5	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 Bowen

Pace Project No.: 30204305

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWA-3</b>		<b>Lab ID: 30204305001</b>	Collected: 11/30/16 10:18	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	<b>0.272 ± 0.162 (0.235)</b>	pCi/L	12/12/16 09:39	13982-63-3		
Radium-228	EPA 9320	<b>0.721 ± 0.460 (0.863)</b>	pCi/L	01/08/17 13:26	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.993 ± 0.622 (1.10)</b>	pCi/L	01/11/17 15:36	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWA-5</b>		<b>Lab ID: 30204305002</b>	Collected: 11/30/16 11:14	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	<b>0.688 ± 0.269 (0.291)</b>	pCi/L	12/12/16 09:39	13982-63-3		
Radium-228	EPA 9320	<b>0.725 ± 0.467 (0.876)</b>	pCi/L	01/08/17 13:26	15262-20-1		
Total Radium	Total Radium Calculation	<b>1.41 ± 0.736 (1.17)</b>	pCi/L	01/11/17 15:36	7440-14-4		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204305

QC Batch: 242578

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204305001, 30204305002

METHOD BLANK: 1192329

Matrix: Water

Associated Lab Samples: 30204305001, 30204305002

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.

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204305

QC Batch: 243002

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204305001, 30204305002

METHOD BLANK: 1195278

Matrix: Water

Associated Lab Samples: 30204305001, 30204305002

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 Bowen

Pace Project No.: 30204305

### 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#: 30204305



30204305

Chain of Custody



Workorder: AZL0002

Workorder Name: Plant Bowen

Owner Received Date: 12/1/2016

Results Requested By: 12/30/2016

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWA-3	G	11/30/2016 10:18	AZL0002-01	W	1				X	001
2	BGWA-5	G	11/30/2016 11:14	AZL0002-02	w	1				X	002
3											
4											
5											
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			Karen Hill	12-5-14 0445	
2					
3					

Cooler Temperature on Receipt <u>N/A</u> °C	Custody Seal Y or <input checked="" type="radio"/> N	Received on Ice Y or <input checked="" type="radio"/> N	Sample Intact <input checked="" type="radio"/> 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.

30204305

CHAIN OF CUSTODY RECORD



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

PAGE: 1 OF 1

Form containing client information (Southern Company Services), analysis requested details, collection dates (11/30/16), sample identification (B6WA-3, B6WA-5), and shipping/receiving signatures and dates.



Sample Condition Upon Receipt Pittsburgh



30204305

Client Name: Pace Georgia Project # \_\_\_\_\_

Courier:  Fed Ex  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:	<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/Analysis Matrix: <u>Wt</u>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	10.
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>pH &lt; 2</u>
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>KH</u> Date/time of preservation: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>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



Test: Ra-226  
Analyst: LAL  
Date: 12/9/2016  
Worklist: 32848  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1192329
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)?	
	LCSD32848	LCSD32848
Count Date:	12/12/2016	12/12/2016
Spike I.D.:	16-026	16-026
Spike Concentration (pCi/mL):	44.673	44.673
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.506	0.509
Target Conc. (pCi/L, g, F):	8.825	8.785
Uncertainty (Calculated):	0.415	0.413
Result (pCi/L, g, F):	8.177	7.617
LC/LCSD Counting Uncertainty (pCi/L, g, F):	0.718	0.688
Numerical Performance Indicator:	-1.53	-2.85
Percent Recovery:	92.66%	86.71%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
Sample I.D.:	LCSD32848	
Duplicate Sample I.D.:	LCSD32848	
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 RPD:	7.10%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*One 1/11/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/28/2016  
Worklist: 32911  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID		1195278
MB concentration:		0.184
M/B Counting Uncertainty:		0.379
MB MDC:		0.841
MB Numerical Performance Indicator:		0.95
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS32911	LCS32911
Count Date:		1/8/2017	
Spike I.D.:		16-027	
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	
LCSD/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 Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30204292009	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
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 RPD:	98.30%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Amelia 1/7*



**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: AZL0109**

**December 15, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

Project Manager

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All test results relate only to the samples analyzed.



**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 15, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-8	AZL0109-01	Ground Water	12/02/16 09:40	12/02/16 15:40
BGWC-11	AZL0109-02	Ground Water	12/02/16 11:45	12/02/16 15:40



**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

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0109

Project: CCR Event

Client ID: BGWC-8

Lab Number ID: AZL0109-01

Date/Time Sampled: 12/2/2016 9:40:00AM

Date/Time Received: 12/2/2016 3:40:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	183	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	2.1	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 20:02	6120106	RNB
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 20:02	6120106	RNB
Sulfate	37	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 20:02	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Barium	0.0260	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Boron	0.0668	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Calcium	37.8	2.50	0.155	mg/L	EPA 6020B		5	12/06/16 15:35	12/07/16 15:25	6120130	CSW
Chromium	0.0013	0.0100	0.0009	mg/L	EPA 6020B	J, B-01	1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:51	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:29	6120212	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

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0109

Project: CCR Event

Client ID: BGWC-11

Lab Number ID: AZL0109-02

Date/Time Sampled: 12/2/2016 11:45:00AM

Date/Time Received: 12/2/2016 3:40:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	258	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	9.8	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 20:22	6120106	RNB
Fluoride	0.15	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 20:22	6120106	RNB
Sulfate	75	5.0	0.26	mg/L	EPA 300.0		5	12/05/16 13:50	12/10/16 23:39	6120106	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Arsenic	0.0039	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Barium	0.0198	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Boron	0.229	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Calcium	43.1	2.50	0.155	mg/L	EPA 6020B		5	12/06/16 15:35	12/07/16 15:30	6120130	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Molybdenum	0.0029	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 12:58	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:31	6120212	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 15, 2016

**Report No.: AZL0109**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120123 - SM 2540 C</b>											
<b>Blank (6120123-BLK1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120123-BS1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	395	25	10	mg/L	400.00		99	84-108			
<b>Duplicate (6120123-DUP1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	231	25	10	mg/L		269			15	10	QR-03
<b>Duplicate (6120123-DUP2)</b>						Source: AZL0063-02 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	217	25	10	mg/L		214			1	10	
<b>Duplicate (6120123-DUP3)</b>						Source: AZL0033-06RE1 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	





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Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0109**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120106 - EPA 300.0</b>											
<b>Blank (6120106-BLK1)</b>						Prepared & Analyzed: 12/05/16					
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 (6120106-BS1)</b>						Prepared & Analyzed: 12/05/16					
Chloride	10.4	0.25	0.01	mg/L	10.010		103	90-110			
Fluoride	10.4	0.30	0.02	mg/L	10.020		104	90-110			
Sulfate	10.3	1.0	0.05	mg/L	10.020		103	90-110			
<b>Matrix Spike (6120106-MS1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/05/16					
Chloride	16.0	0.25	0.01	mg/L	10.010	6.21	98	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020	0.09	100	90-110			
Sulfate	27.8	1.0	0.05	mg/L	10.020	19.6	82	90-110			QM-02
<b>Matrix Spike Dup (6120106-MSD1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/05/16					
Chloride	16.7	0.25	0.01	mg/L	10.010	6.21	104	90-110	4	15	
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.09	106	90-110	5	15	
Sulfate	28.3	1.0	0.05	mg/L	10.020	19.6	87	90-110	2	15	QM-02



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Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0109**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Blank (6120130-BLK1)</b>											
						Prepared: 12/06/16 Analyzed: 12/07/16					
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	ND	0.500	0.0311	mg/L							
Chromium	0.0016	0.0100	0.0009	mg/L							J
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							
<b>LCS (6120130-BS1)</b>											
						Prepared: 12/06/16 Analyzed: 12/07/16					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000		104	80-120			
Arsenic	0.107	0.0050	0.0016	mg/L	0.10000		107	80-120			
Barium	0.106	0.0100	0.0004	mg/L	0.10000		106	80-120			
Beryllium	0.109	0.0030	0.00008	mg/L	0.10000		109	80-120			
Boron	1.15	0.0400	0.0064	mg/L	1.0000		115	80-120			
Cadmium	0.106	0.0010	0.00007	mg/L	0.10000		106	80-120			
Calcium	1.10	0.500	0.0311	mg/L	1.0000		110	80-120			
Chromium	0.111	0.0100	0.0009	mg/L	0.10000		111	80-120			
Cobalt	0.108	0.0100	0.0005	mg/L	0.10000		108	80-120			
Copper	0.107	0.0250	0.0005	mg/L	0.10000		107	80-120			
Lead	0.106	0.0050	0.0001	mg/L	0.10000		106	80-120			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000		108	80-120			
Nickel	0.109	0.0100	0.0006	mg/L	0.10000		109	80-120			
Selenium	0.106	0.0100	0.0010	mg/L	0.10000		106	80-120			
Silver	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Thallium	0.106	0.0010	0.0002	mg/L	0.10000		106	80-120			
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000		108	80-120			
Zinc	0.110	0.0100	0.0021	mg/L	0.10000		110	80-120			
Lithium	0.104	0.0500	0.0021	mg/L	0.10000		104	80-120			



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December 15, 2016

**Report No.: AZL0109**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Matrix Spike (6120130-MS1)</b>			<b>Source: AZL0109-01</b>				Prepared: 12/06/16 Analyzed: 12/07/16				
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	ND	101	75-125			
Barium	0.126	0.0100	0.0004	mg/L	0.10000	0.0260	100	75-125			
Beryllium	0.103	0.0030	0.00008	mg/L	0.10000	ND	103	75-125			
Boron	1.14	0.0400	0.0064	mg/L	1.0000	0.0668	107	75-125			
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000	ND	102	75-125			
Calcium	40.0	2.50	0.155	mg/L	1.0000	37.8	221	75-125			QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	0.0013	103	75-125			
Cobalt	0.0995	0.0100	0.0005	mg/L	0.10000	ND	100	75-125			
Copper	0.0980	0.0250	0.0005	mg/L	0.10000	ND	98	75-125			
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000	ND	108	75-125			
Nickel	0.101	0.0100	0.0006	mg/L	0.10000	0.0015	99	75-125			
Selenium	0.100	0.0100	0.0010	mg/L	0.10000	ND	100	75-125			
Silver	0.0988	0.0100	0.0005	mg/L	0.10000	ND	99	75-125			
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125			
Vanadium	0.104	0.0100	0.0071	mg/L	0.10000	ND	104	75-125			
Zinc	0.103	0.0100	0.0021	mg/L	0.10000	0.0033	99	75-125			
Lithium	0.0995	0.0500	0.0021	mg/L	0.10000	ND	99	75-125			
<b>Matrix Spike Dup (6120130-MSD1)</b>			<b>Source: AZL0109-01</b>				Prepared: 12/06/16 Analyzed: 12/07/16				
Antimony	0.100	0.0030	0.0008	mg/L	0.10000	ND	100	75-125	2	20	
Arsenic	0.0985	0.0050	0.0016	mg/L	0.10000	ND	99	75-125	2	20	
Barium	0.125	0.0100	0.0004	mg/L	0.10000	0.0260	99	75-125	0.3	20	
Beryllium	0.106	0.0030	0.00008	mg/L	0.10000	ND	106	75-125	2	20	
Boron	1.16	0.0400	0.0064	mg/L	1.0000	0.0668	109	75-125	2	20	
Cadmium	0.0993	0.0010	0.00007	mg/L	0.10000	ND	99	75-125	2	20	
Calcium	37.5	2.50	0.155	mg/L	1.0000	37.8	NR	75-125	7	20	QM-02
Chromium	0.103	0.0100	0.0009	mg/L	0.10000	0.0013	102	75-125	0.9	20	
Cobalt	0.0965	0.0100	0.0005	mg/L	0.10000	ND	96	75-125	3	20	
Copper	0.0959	0.0250	0.0005	mg/L	0.10000	ND	96	75-125	2	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	0.5	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	2	20	
Nickel	0.0986	0.0100	0.0006	mg/L	0.10000	0.0015	97	75-125	2	20	
Selenium	0.0994	0.0100	0.0010	mg/L	0.10000	ND	99	75-125	1	20	
Silver	0.0982	0.0100	0.0005	mg/L	0.10000	ND	98	75-125	0.6	20	
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125	1	20	
Vanadium	0.101	0.0100	0.0071	mg/L	0.10000	ND	101	75-125	3	20	
Zinc	0.100	0.0100	0.0021	mg/L	0.10000	0.0033	97	75-125	2	20	
Lithium	0.100	0.0500	0.0021	mg/L	0.10000	ND	100	75-125	1	20	



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Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0109**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Post Spike (6120130-PS1)</b>			<b>Source: AZL0109-01</b>			<b>Prepared: 12/06/16 Analyzed: 12/07/16</b>					
Antimony	96.2			ug/L	100.00	0.310	96	80-120			
Arsenic	99.7			ug/L	100.00	0.860	99	80-120			
Barium	124			ug/L	100.00	26.0	98	80-120			
Beryllium	102			ug/L	100.00	0.0100	102	80-120			
Boron	1120			ug/L	1000.0	66.8	106	80-120			
Cadmium	98.8			ug/L	100.00	0.0100	99	80-120			
Calcium	38100			ug/L	1000.0	37800	24	80-120			QM-02
Chromium	103			ug/L	100.00	1.33	101	80-120			
Cobalt	98.7			ug/L	100.00	0.180	98	80-120			
Copper	97.2			ug/L	100.00	0.390	97	80-120			
Lead	98.7			ug/L	100.00	0.0800	99	80-120			
Molybdenum	104			ug/L	100.00	1.56	103	80-120			
Nickel	99.5			ug/L	100.00	1.54	98	80-120			
Selenium	99.2			ug/L	100.00	-1.00	99	80-120			
Silver	96.0			ug/L	100.00	0.0300	96	80-120			
Thallium	98.2			ug/L	100.00	0.0600	98	80-120			
Vanadium	103			ug/L	100.00	2.71	100	80-120			
Zinc	102			ug/L	100.00	3.33	98	80-120			
Lithium	98.4			ug/L	100.00	0.440	98	80-120			

**Batch 6120212 - EPA 7470A**

<b>Blank (6120212-BLK1)</b>					<b>Prepared &amp; Analyzed: 12/08/16</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120212-BS1)</b>					<b>Prepared &amp; Analyzed: 12/08/16</b>						
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3		93	80-120			



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December 15, 2016

**Report No.: AZL0109**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120212 - EPA 7470A</b>											
<b>Duplicate (6120212-DUP1)</b>			<b>Source: AZL0053-01RE1</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00009	0.00050	0.000041	mg/L		0.00010			8	20	J
<b>Matrix Spike (6120212-MS1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00227	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (6120212-MSD1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125	0.4	20	
<b>Post Spike (6120212-PS1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	1.62			ug/L	1.6667	-0.0651	97	80-120			



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 15, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>						ANALYSIS REQUESTED						L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Keith McCall Blvd SE 310195</u> <u>Atlanta, GA 30308</u>						CONTAINER TYPE: <u>P</u>	<u>7</u>	<u>3</u>								P - PLASTIC
REPORT TO: <u>Joia Abraham</u> CC: <u>Maria Padilla</u> <u>Keith McCall</u>						PRESERVATION								A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REQUESTED COMPLETION DATE:						# of									G - CLEAR GLASS	3 - HNO <sub>3</sub>
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond CLR</u>						C O N T A I N E R S  ↓	Metals App. III + IV EPA 0020 + EPA 7470 U.S. EPA 300 TDS 5M2540X Radon 260 + 228 SW-846 9315 + 9320								V - VOA VIAL	4 - NaOH, ≤6°C
PROJECT #:																
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION									O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	7 - ≤6°C not frozen
<u>12/2/16</u>	<u>0940</u>	<u>GW</u>		<u>X</u>	<u>B6WL-8</u>	<u>3</u>										
<u>12/2/16</u>	<u>1145</u>	<u>GW</u>		<u>X</u>	<u>B6WL-11</u>	<u>3</u>										
SAMPLED BY AND TITLE: <u>Robert Hill/Karen Stephenson</u>						DATE/TIME: <u>12/2/16 1345</u>			RELINQUISHED BY: <u>Keith B Hill</u>			DATE/TIME: <u>12/2/16 1540</u>			FOR LAB USE ONLY	
RECEIVED BY:						DATE/TIME:			RELINQUISHED BY:			DATE/TIME:			LAB #: <u>AZL0109</u>	
RECEIVED BY LAB: <u>Charles Harty</u>						DATE/TIME: <u>12/2/16 1540</u>			SAMPLE SHIPPED VIA: <u>CLIENT</u>			Entered into LIMS: <u>12/16</u>			Tracking #:	
Checked: No NA		Ice: Yes No NA		Temperature: Min: <u>1°C</u> Max:		Custody Seal: Intact Broken Not Present			# of Coolers			Cooler ID:				

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**PACE ANALYTICAL SERVICES, INC.**

Environmental Monitoring & Laboratory Analysis  
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**LOG-IN CHECKLIST**

**Printed: 12/15/2016 11:23:43AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/02/16 15:40

**Work Order:** AZL0109

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 2

**#Containers:** 6

**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:**



January 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204556

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 07, 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 Bowen  
Pace Project No.: 30204556

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen

Pace Project No.: 30204556

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204556001	BGWC-8	Water	12/02/16 09:40	12/07/16 10:15
30204556002	BGWC-11	Water	12/02/16 11:45	12/07/16 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30204556

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204556001	BGWC-8	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204556002	BGWC-11	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 Bowen

Pace Project No.: 30204556

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-8</b>		<b>Lab ID: 30204556001</b>	Collected: 12/02/16 09:40	Received: 12/07/16 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	<b>0.219 ± 0.175 (0.316)</b>	pCi/L	12/19/16 10:05	13982-63-3		
Radium-228	EPA 9320	<b>-0.0692 ± 0.366 (0.870)</b>	pCi/L	01/08/17 13:28	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.219 ± 0.541 (1.19)</b>	pCi/L	01/11/17 16:38	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-11</b>		<b>Lab ID: 30204556002</b>	Collected: 12/02/16 11:45	Received: 12/07/16 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	<b>0.0640 ± 0.116 (0.265)</b>	pCi/L	12/19/16 10:05	13982-63-3		
Radium-228	EPA 9320	<b>0.848 ± 0.478 (0.866)</b>	pCi/L	01/08/17 13:28	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.912 ± 0.594 (1.13)</b>	pCi/L	01/11/17 16:38	7440-14-4		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204556

QC Batch: 243000

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204556001, 30204556002

METHOD BLANK: 1195272

Matrix: Water

Associated Lab Samples: 30204556001, 30204556002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0698 ± 0.0862 (0.168) C:97% T:NA	pCi/L	12/19/16 09:55	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204556

QC Batch: 243002

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204556001, 30204556002

METHOD BLANK: 1195278

Matrix: Water

Associated Lab Samples: 30204556001, 30204556002

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 Bowen  
Pace Project No.: 30204556

### 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#: 30204556



30204556



Chain of Custody

Workorder: AZL0109

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 1/4/2017

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												

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-8	G	12/2/2016 9:40	AZL0109-01	GW	1				X	001
2	BGWC-11	G	12/2/2016 11:45	AZL0109-02	GW	1				X	002
3											
4											
5											
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			<i>Karen Liu</i>	12-14-16	
2					
3					

Cooler Temperature on Receipt NA °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 Services, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED					L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
Southern Company Services					CONTAINER TYPE:	P	?	?					P - PLASTIC	1 - HCl, ≤6°C
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Keith McGill Blvd SE 31045 Atlanta, GA 30308					PRESERVATION:	3	7	3					A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C
REPORT TO: Joie Abahan					# of								G - CLEAR GLASS	3 - HNO <sub>3</sub>
REQUESTED COMPLETION DATE:					C O N T A I N E R S  ↓	Metals App III + IV EPA 0020 + EPA 7470 CLP 501 EPA 300 TOS 5M2510C Resum 220128 SW - 846 9315A 9320							V - VOA VIAL	4 - NaOH, ≤6°C
PROJECT NAME/STATE: Plant Basin - Ash Pond CLR													S - STERILE	5 - NaOH/ZnAc, ≤6°C
PROJECT #:													O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C
Collection DATE													*MATRIX CODES:	
Collection TIME												DW - DRINKING WATER	S - SOIL	
MATRIX CODE*												WW - WASTEWATER	SL - SLUDGE	
C O M P												GW - GROUNDWATER	SD - SOLID	
G R A B												SW - SURFACE WATER	A - AIR	
SAMPLE IDENTIFICATION												ST - STORM WATER	L - LIQUID	
												W - WATER	P - PRODUCT	
12/2/16 0940 GW X B6WL-8					3	1	1	1				REMARKS/ADDITIONAL INFORMATION		
12/2/16 1145 GW X B6WL-11					3	1	1	1						

SAMPLED BY AND TITLE: Robert Mill / Kevin Stephenson		DATE/TIME: 12/2/16 1345	RELINQUISHED BY: Keith B. Mill	DATE/TIME: 12/2/16 1540	FOR LAB USE ONLY LAB #: H2L0109
RECEIVED BY: Charles Hankins		DATE/TIME: 12/2/16 1540	RECEIVED BY:	DATE/TIME:	Entered into LIMS: 12/11
RECEIVED BY LAB:		DATE/TIME:	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS		Tracking #:
pH checked: Yes No NA		Ice: Yes No NA	Temperature: Min: Max:	Custody Seal: Intact Broken Not Present	# of Coolers Cooler ID:

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, GA

Project # 30204556

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5100 8484

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 12-7-16

Comments:	Yes	No	N/A	
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:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID/Analysis    Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>PH22</u>
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>KH</u>		Date/time of preservation	
	Lot # of added preservative			
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>KH</u> Date: <u>12-7-16</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

Test: Ra-226  
Analyst: LAL  
Date: 12/16/2016  
Worklist: 32909  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1195272
MB concentration:	0.070
M/B Counting Uncertainty:	0.086
MB MDC:	0.168
MB Numerical Performance Indicator:	1.60
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS(D 'Y or N)?	N
		LCS32909	LCS32909
Count Date:	12/19/2016		
Spike I.D.:	16-026		
Spike Concentration (pCi/mL):	44.672		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.506		
Target Conc. (pCi/L, g, F):	8.828		
Uncertainty (Calculated):	0.415		
Result (pCi/L, g, F):	7.612		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.708		
Numerical Performance Indicator:	-2.90		
Percent Recovery:	86.22%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	
Sample I.D.:	30204306004		
Duplicate Sample I.D.:	30204306004DUP		
Sample Result (pCi/L, g, F):	0.021		
Sample Result Counting Uncertainty (pCi/L, g, F):	0.091		
Sample Duplicate Result (pCi/L, g, F):	0.129		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.143		
Are sample and/or duplicate results below MDC?	See Below ##		
Duplicate Numerical Performance Indicator:	-1.252	30204306004	
Duplicate RPD:	144.06%	30204306004DUP	
Duplicate Status vs Numerical Indicator:	N/A		
Duplicate Status vs RPD:	Fail***		

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Handwritten signature and date: LAL 12/17*

## Quality Control Sample Performance Assessment



Test: Ra-228  
Analyst: JLW  
Date: 12/28/2016  
Worklist: 32911  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1195278	
MB concentration:	0.184	
M/B Counting Uncertainty:	0.379	
MB MDC:	0.841	
MB Numerical Performance Indicator:	0.95	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS32911	LCS32911
Count Date:	1/8/2017		
Spike I.D.:	16-027		
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 Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
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	30204292009
Duplicate RPD:	98.30%	30204292009DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Amelia*



**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: AZL0145**

**December 14, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

Project Manager

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All test results relate only to the samples analyzed.



**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

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
FBL120516	AZL0145-01	Water	12/05/16 14:45	12/06/16 08:10
EQBL120516	AZL0145-02	Water	12/05/16 14:52	12/06/16 08:10
BGWC-9	AZL0145-03	Ground Water	12/05/16 11:00	12/06/16 08:10
BGWC-12	AZL0145-04	Ground Water	12/05/16 16:30	12/06/16 08:10



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 Atlanta GA, 30339

December 14, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0145

Project: CCR Event

Client ID: FBL120516

Lab Number ID: AZL0145-01

Date/Time Sampled: 12/5/2016 2:45:00PM

Date/Time Received: 12/6/2016 8:10:00AM

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	12/06/16 12:00	12/06/16 12:00	6120123	DJS
<b>Inorganic Anions</b>											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 12:40	6120302	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 12:40	6120302	RLC
Sulfate	0.05	1.0	0.05	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 12:40	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Chromium	0.0023	0.0100	0.0009	mg/L	EPA 6020B	J, B-01	1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:06	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:43	6120212	MTC





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 Atlanta GA, 30339

December 14, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0145

Project: CCR Event

Client ID: EQBL120516

Lab Number ID: AZL0145-02

Date/Time Sampled: 12/5/2016 2:52:00PM

Date/Time Received: 12/6/2016 8:10:00AM

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	12/06/16 12:00	12/06/16 12:00	6120123	DJS
<b>Inorganic Anions</b>											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 13:21	6120302	RLC
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 13:21	6120302	RLC
Sulfate	ND	1.0	0.05	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 13:21	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Calcium	0.0648	0.500	0.0311	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Chromium	0.0031	0.0100	0.0009	mg/L	EPA 6020B	J, B-01	1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:13	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:45	6120212	MTC



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December 14, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0145

**Project:** CCR Event

**Client ID:** BGWC-9

**Lab Number ID:** AZL0145-03

**Date/Time Sampled:** 12/5/2016 11:00:00AM

**Date/Time Received:** 12/6/2016 8:10:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	426	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	40	0.25	0.01	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 13:42	6120302	RLC
Fluoride	0.26	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 13:42	6120302	RLC
Sulfate	130	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 02:02	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Barium	0.0269	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Boron	0.710	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Calcium	74.6	5.00	0.311	mg/L	EPA 6020B		10	12/06/16 15:35	12/07/16 15:36	6120130	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Molybdenum	0.0033	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:20	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:48	6120212	MTC



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December 14, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0145

**Project:** CCR Event

**Client ID:** BGWC-12

**Lab Number ID:** AZL0145-04

**Date/Time Sampled:** 12/5/2016 4:30:00PM

**Date/Time Received:** 12/6/2016 8:10:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	489	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	41	0.25	0.01	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 14:03	6120302	RLC
Fluoride	0.12	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 14:03	6120302	RLC
Sulfate	130	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 02:23	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Barium	0.0258	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Boron	0.879	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Calcium	80.9	5.00	0.311	mg/L	EPA 6020B		10	12/06/16 15:35	12/07/16 15:41	6120130	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Lead	0.0003	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 15:35	12/07/16 13:39	6120130	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:50	6120212	MTC



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**Report No.: AZL0145**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120123 - SM 2540 C</b>											
<b>Blank (6120123-BLK1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120123-BS1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	395	25	10	mg/L	400.00		99	84-108			
<b>Duplicate (6120123-DUP1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	231	25	10	mg/L		269			15	10	QR-03
<b>Duplicate (6120123-DUP2)</b>						Source: AZL0063-02 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	217	25	10	mg/L		214			1	10	
<b>Duplicate (6120123-DUP3)</b>						Source: AZL0033-06RE1 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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**Report No.: AZL0145**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120302 - EPA 300.0</b>											
<b>Blank (6120302-BLK1)</b>						Prepared & Analyzed: 12/11/16					
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 (6120302-BS1)</b>						Prepared & Analyzed: 12/11/16					
Chloride	9.90	0.25	0.01	mg/L	10.010		99	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		101	90-110			
Sulfate	9.95	1.0	0.05	mg/L	10.020		99	90-110			
<b>Matrix Spike (6120302-MS1)</b>						Source: AZL0230-02 Prepared & Analyzed: 12/11/16					
Chloride	49.3	0.25	0.01	mg/L	10.010	44.6	46	90-110			QM-02
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.19	105	90-110			
Sulfate	108	1.0	0.05	mg/L	10.020	109	NR	90-110			QM-02
<b>Matrix Spike (6120302-MS2)</b>						Source: AZL0298-06 Prepared & Analyzed: 12/11/16					
Chloride	20.3	0.25	0.01	mg/L	10.010	10.6	97	90-110			
Fluoride	10.9	0.30	0.02	mg/L	10.020	0.06	108	90-110			
Sulfate	149	1.0	0.05	mg/L	10.020	155	NR	90-110			QM-02
<b>Matrix Spike Dup (6120302-MSD1)</b>						Source: AZL0230-02 Prepared & Analyzed: 12/11/16					
Chloride	49.3	0.25	0.01	mg/L	10.010	44.6	46	90-110	0.04	15	QM-02
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.19	105	90-110	0.4	15	
Sulfate	108	1.0	0.05	mg/L	10.020	109	NR	90-110	0.003	15	QM-02



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**Report No.: AZL0145**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Blank (6120130-BLK1)</b>											
						Prepared: 12/06/16 Analyzed: 12/07/16					
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	ND	0.500	0.0311	mg/L							
Chromium	0.0016	0.0100	0.0009	mg/L							J
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							
<b>LCS (6120130-BS1)</b>											
						Prepared: 12/06/16 Analyzed: 12/07/16					
Antimony	0.104	0.0030	0.0008	mg/L	0.10000		104	80-120			
Arsenic	0.107	0.0050	0.0016	mg/L	0.10000		107	80-120			
Barium	0.106	0.0100	0.0004	mg/L	0.10000		106	80-120			
Beryllium	0.109	0.0030	0.00008	mg/L	0.10000		109	80-120			
Boron	1.15	0.0400	0.0064	mg/L	1.0000		115	80-120			
Cadmium	0.106	0.0010	0.00007	mg/L	0.10000		106	80-120			
Calcium	1.10	0.500	0.0311	mg/L	1.0000		110	80-120			
Chromium	0.111	0.0100	0.0009	mg/L	0.10000		111	80-120			
Cobalt	0.108	0.0100	0.0005	mg/L	0.10000		108	80-120			
Copper	0.107	0.0250	0.0005	mg/L	0.10000		107	80-120			
Lead	0.106	0.0050	0.0001	mg/L	0.10000		106	80-120			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000		108	80-120			
Nickel	0.109	0.0100	0.0006	mg/L	0.10000		109	80-120			
Selenium	0.106	0.0100	0.0010	mg/L	0.10000		106	80-120			
Silver	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Thallium	0.106	0.0010	0.0002	mg/L	0.10000		106	80-120			
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000		108	80-120			
Zinc	0.110	0.0100	0.0021	mg/L	0.10000		110	80-120			
Lithium	0.104	0.0500	0.0021	mg/L	0.10000		104	80-120			



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Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0145**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Matrix Spike (6120130-MS1)</b>			<b>Source: AZL0109-01</b>				Prepared: 12/06/16 Analyzed: 12/07/16				
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	ND	101	75-125			
Barium	0.126	0.0100	0.0004	mg/L	0.10000	0.0260	100	75-125			
Beryllium	0.103	0.0030	0.00008	mg/L	0.10000	ND	103	75-125			
Boron	1.14	0.0400	0.0064	mg/L	1.0000	0.0668	107	75-125			
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000	ND	102	75-125			
Calcium	40.0	2.50	0.155	mg/L	1.0000	37.8	221	75-125			QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	0.0013	103	75-125			
Cobalt	0.0995	0.0100	0.0005	mg/L	0.10000	ND	100	75-125			
Copper	0.0980	0.0250	0.0005	mg/L	0.10000	ND	98	75-125			
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000	ND	108	75-125			
Nickel	0.101	0.0100	0.0006	mg/L	0.10000	0.0015	99	75-125			
Selenium	0.100	0.0100	0.0010	mg/L	0.10000	ND	100	75-125			
Silver	0.0988	0.0100	0.0005	mg/L	0.10000	ND	99	75-125			
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125			
Vanadium	0.104	0.0100	0.0071	mg/L	0.10000	ND	104	75-125			
Zinc	0.103	0.0100	0.0021	mg/L	0.10000	0.0033	99	75-125			
Lithium	0.0995	0.0500	0.0021	mg/L	0.10000	ND	99	75-125			
<b>Matrix Spike Dup (6120130-MSD1)</b>			<b>Source: AZL0109-01</b>				Prepared: 12/06/16 Analyzed: 12/07/16				
Antimony	0.100	0.0030	0.0008	mg/L	0.10000	ND	100	75-125	2	20	
Arsenic	0.0985	0.0050	0.0016	mg/L	0.10000	ND	99	75-125	2	20	
Barium	0.125	0.0100	0.0004	mg/L	0.10000	0.0260	99	75-125	0.3	20	
Beryllium	0.106	0.0030	0.00008	mg/L	0.10000	ND	106	75-125	2	20	
Boron	1.16	0.0400	0.0064	mg/L	1.0000	0.0668	109	75-125	2	20	
Cadmium	0.0993	0.0010	0.00007	mg/L	0.10000	ND	99	75-125	2	20	
Calcium	37.5	2.50	0.155	mg/L	1.0000	37.8	NR	75-125	7	20	QM-02
Chromium	0.103	0.0100	0.0009	mg/L	0.10000	0.0013	102	75-125	0.9	20	
Cobalt	0.0965	0.0100	0.0005	mg/L	0.10000	ND	96	75-125	3	20	
Copper	0.0959	0.0250	0.0005	mg/L	0.10000	ND	96	75-125	2	20	
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	0.5	20	
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000	ND	106	75-125	2	20	
Nickel	0.0986	0.0100	0.0006	mg/L	0.10000	0.0015	97	75-125	2	20	
Selenium	0.0994	0.0100	0.0010	mg/L	0.10000	ND	99	75-125	1	20	
Silver	0.0982	0.0100	0.0005	mg/L	0.10000	ND	98	75-125	0.6	20	
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125	1	20	
Vanadium	0.101	0.0100	0.0071	mg/L	0.10000	ND	101	75-125	3	20	
Zinc	0.100	0.0100	0.0021	mg/L	0.10000	0.0033	97	75-125	2	20	
Lithium	0.100	0.0500	0.0021	mg/L	0.10000	ND	100	75-125	1	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

December 14, 2016

**Report No.: AZL0145**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120130 - EPA 3005A</b>											
<b>Post Spike (6120130-PS1)</b>		<b>Source: AZL0109-01</b>				<b>Prepared: 12/06/16 Analyzed: 12/07/16</b>					
Antimony	96.2			ug/L	100.00	0.310	96	80-120			
Arsenic	99.7			ug/L	100.00	0.860	99	80-120			
Barium	124			ug/L	100.00	26.0	98	80-120			
Beryllium	102			ug/L	100.00	0.0100	102	80-120			
Boron	1120			ug/L	1000.0	66.8	106	80-120			
Cadmium	98.8			ug/L	100.00	0.0100	99	80-120			
Calcium	38100			ug/L	1000.0	37800	24	80-120			QM-02
Chromium	103			ug/L	100.00	1.33	101	80-120			
Cobalt	98.7			ug/L	100.00	0.180	98	80-120			
Copper	97.2			ug/L	100.00	0.390	97	80-120			
Lead	98.7			ug/L	100.00	0.0800	99	80-120			
Molybdenum	104			ug/L	100.00	1.56	103	80-120			
Nickel	99.5			ug/L	100.00	1.54	98	80-120			
Selenium	99.2			ug/L	100.00	-1.00	99	80-120			
Silver	96.0			ug/L	100.00	0.0300	96	80-120			
Thallium	98.2			ug/L	100.00	0.0600	98	80-120			
Vanadium	103			ug/L	100.00	2.71	100	80-120			
Zinc	102			ug/L	100.00	3.33	98	80-120			
Lithium	98.4			ug/L	100.00	0.440	98	80-120			

**Batch 6120212 - EPA 7470A**

<b>Blank (6120212-BLK1)</b>				<b>Prepared &amp; Analyzed: 12/08/16</b>							
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120212-BS1)</b>				<b>Prepared &amp; Analyzed: 12/08/16</b>							
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3		93	80-120			





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

**Report No.: AZL0145**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120212 - EPA 7470A</b>											
<b>Duplicate (6120212-DUP1)</b>			<b>Source: AZL0053-01RE1</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00009	0.00050	0.000041	mg/L		0.00010			8	20	J
<b>Matrix Spike (6120212-MS1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00227	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (6120212-MSD1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125	0.4	20	
<b>Post Spike (6120212-PS1)</b>			<b>Source: AZL0145-04</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Mercury	1.62			ug/L	1.6667	-0.0651	97	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 14, 2016

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## Legend

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### 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

- 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, 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 8:50:40AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/06/16 08:10

**Work Order:** AZL0145

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 4

**#Containers:** 12

**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:**

January 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204573

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 07, 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 Bowen

Pace Project No.: 30204573

### 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 Bowen  
Pace Project No.: 30204573

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204573001	FBL 120516	Water	12/05/16 14:45	12/07/16 10:15
30204573002	EQBL 120516	Water	12/05/16 14:52	12/07/16 10:15
30204573003	BGWC-9	Water	12/05/16 11:00	12/07/16 10:15
30204573004	BGWC-12	Water	12/05/16 16:30	12/07/16 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30204573

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204573001	FBL 120516	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204573002	EQBL 120516	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204573003	BGWC-9	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204573004	BGWC-12	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 Bowen

Pace Project No.: 30204573

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.263 ± 0.157 (0.230)</b> C:96% T:NA	pCi/L	12/19/16 10:06	13982-63-3	
Radium-228		EPA 9320	<b>0.114 ± 0.399 (0.900)</b> C:69% T:79%	pCi/L	01/08/17 13:28	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.377 ± 0.556 (1.13)</b>	pCi/L	01/11/17 16:38	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.00868 ± 0.0984 (0.261)</b> C:95% T:NA	pCi/L	12/19/16 10:06	13982-63-3	
Radium-228		EPA 9320	<b>0.463 ± 0.402 (0.807)</b> C:66% T:81%	pCi/L	01/08/17 13:28	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.472 ± 0.500 (1.07)</b>	pCi/L	01/11/17 16:38	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.218 ± 0.170 (0.306)</b> C:92% T:NA	pCi/L	12/19/16 10:06	13982-63-3	
Radium-228		EPA 9320	<b>1.98 ± 0.570 (0.568)</b> C:73% T:79%	pCi/L	01/08/17 13:29	15262-20-1	
Total Radium		Total Radium Calculation	<b>2.20 ± 0.740 (0.874)</b>	pCi/L	01/11/17 16:38	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.132 ± 0.130 (0.247)</b> C:94% T:NA	pCi/L	12/19/16 10:45	13982-63-3	
Radium-228		EPA 9320	<b>0.824 ± 0.399 (0.659)</b> C:70% T:82%	pCi/L	01/08/17 13:29	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.956 ± 0.529 (0.906)</b>	pCi/L	01/11/17 16:38	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204573

QC Batch: 243003

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204573003, 30204573004

METHOD BLANK: 1195281

Matrix: Water

Associated Lab Samples: 30204573003, 30204573004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.462 ± 0.350 (0.678) C:76% T:78%	pCi/L	01/08/17 13:29	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204573

QC Batch: 243000

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204573001, 30204573002, 30204573003, 30204573004

METHOD BLANK: 1195272

Matrix: Water

Associated Lab Samples: 30204573001, 30204573002, 30204573003, 30204573004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0698 ± 0.0862 (0.168) C:97% T:NA	pCi/L	12/19/16 09:55	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204573

QC Batch: 243002

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204573001, 30204573002

METHOD BLANK: 1195278

Matrix: Water

Associated Lab Samples: 30204573001, 30204573002

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 Bowen  
Pace Project No.: 30204573

### 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#: 30204573



30204573

Pace Analytical  
www.pacelabs.com

Chain of Custody

Workorder: AZL0145

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 1/5/2017

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																	
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total									LAB USE ONLY
						HNO3													
1	FBL 120516	G	12/5/2016 14:45	AZL0145-01	W	1				X									001
2	EQBL 120516	G	12/5/2016 14:52	AZL0145-02	W	1				X									002
3	BGWC-9	G	12/5/2016 11:00	AZL0145-03	GW	1				X									003
4	BGWC-12	G	12/5/2016 16:30	AZL0145-04	GW	1				X									004
5																			
6																			
7																			
8																			
9																			
10																			
Transfers	Released By	Date/Time	Received By	Date/Time	Comments														
1			KARIM HILL	12-7-16 1015															
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 COC

This chain of custody is considered complete as is since this information is available in the owner laboratory.

30204573

8301

CHAIN OF CUSTODY RECORD



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

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED								LAB NUMBER	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Palm Mdg. II Blvd SE Bldg 85 Atlanta, GA 30308</u>					CONTAINER TYPE	P	P	P									
REPORT TO: <u>John Abraham</u>					PRESERVATION:	3	7	3									
REQUESTED COMPLETION DATE: <u>PO# GPC 10684198</u>					# of												
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond CLR</u>					CONTAINERS	Methyl Ar. III + IV EPA 600 + EPA 747D C15 S01 EPA 300 TDS SM2540C Rad. um 226 + 228 SW-846 9315 + 9320								MATRIX CODES:			
PROJECT #:														DW - DRINKING WATER		S - SOIL	
Collection DATE														WW - WASTEWATER		SL - SLUDGE	
Collection TIME														GW - GROUNDWATER		SD - SOLID	
MATRIX CODE*					SW - SURFACE WATER		A - AIR										
COMP					ST - STORM WATER		L - LIQUID										
GRAB					W - WATER		P - PRODUCT										
SAMPLE IDENTIFICATION					REMARKS/ADDITIONAL INFORMATION												
12/5/16	1445	U		X	FBL 120516	3	1	1	1								1
12/5/16	1452	V		X	EQBL 120516	3	1	1	1								2
12/5/16	1100	GW		X	B6WC-9	3	1	1	1								3
12/5/16	1630	GW		X	B6WC-12	3	1	1	1								4

SAMPLED BY AND TITLE: <u>Robert Hill / Kevin Stedson</u>	DATE/TIME: <u>12/5/16 1655</u>	RELINQUISHED BY: <u>Robert Hill</u>	DATE/TIME: <u>12/16/16 0810</u>	LAB #: <u>AZL0145</u>
RECEIVED BY:	DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	Entered into LIMS: <u>MR</u>
RECEIVED BY LAB: <u>John Abraham</u>	DATE/TIME: <u>12/16/16 0810</u>	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER <u>CLIENT</u> OTHER: FS	Tracking #:	
Checked: Yes No NA	Temperature: 1°C Min: 1°C Max:	Seal: Intact Broken Not Present	# of Coolers:	Cooler ID:

Sample Condition Upon Receipt Pittsburgh

30204573



Client Name: Pace Georgia

Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 0812 5100 8800

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 12-7-16

Comments:	Yes	No	N/A	
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:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID/Analysis Matrix: <u>Wt</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>PH 2</u>
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>KH</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>KH</u> Date: <u>12-7-16</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

Test: Ra-226  
Analyst: LAL  
Date: 12/16/2016  
Worklist: 32909  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1195272	
MB concentration:	0.070	
M/B Counting Uncertainty:	0.086	
MB MDC:	0.168	
MB Numerical Performance Indicator:	1.60	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS32909	LCSD32909
Count Date:	12/19/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.672	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.506	
Target Conc. (pCi/L, g, F):	8.826	
Uncertainty (Calculated):	0.415	
Result (pCi/L, g, F):	7.612	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.708	
Numerical Performance Indicator:	-2.90	
Percent Recovery:	86.22%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30204306004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30204306004DUP	
Sample Result (pCi/L, g, F):	0.021	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.091	
Sample Duplicate Result (pCi/L, g, F):	0.129	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.143	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.252	30204306004
Duplicate RPD:	144.06%	30204306004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LAL*

*On 12/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/28/2016  
Worklist: 32911  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID		1195278
MB concentration:		0.184
M/B Counting Uncertainty:		0.379
MB MDC:		0.841
MB Numerical Performance Indicator:		0.95
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS32911	LCS32911
Count Date:		1/8/2017	
Spike I.D.:		16-027	
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	
LCSD/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 Matrix Spike Control Assessment	
	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):
	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:

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
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	30204292009
Duplicate RPD:	98.30%	30204292009DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
	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:

## 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.

*Handwritten signature and date: 1/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/28/2016  
Worklist: 32912  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1195281	
MB concentration:	0.462	
M/B Counting Uncertainty:	0.340	
MB MDC:	0.678	
MB Numerical Performance Indicator:	2.66	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS32912	LCSD32912
Count Date:	1/8/2017	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.613	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.817	
Target Conc. (pCi/L, g, F):	6.269	
Uncertainty (Calculated):	0.451	
Result (pCi/L, g, F):	8.156	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.806	
Numerical Performance Indicator:	4.00	
Percent Recovery:	130.10%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment
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):
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:

Duplicate Sample Assessment		
Sample I.D.:	30204834003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30204834003DUP	
Sample Result (pCi/L, g, F):	0.752	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.372	
Sample Duplicate Result (pCi/L, g, F):	1.526	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.436	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.649	
Duplicate RPD:	67.95%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment
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:

## 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.

*JLW*

*Amelia 1/7*



**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: AZL0230**

**December 16, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel", written over a horizontal line.

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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 16, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-10	AZL0230-01	Ground Water	12/06/16 15:25	12/07/16 08:02
BGWC-17	AZL0230-02	Ground Water	12/06/16 12:56	12/07/16 08:02
BGWC-18	AZL0230-03	Ground Water	12/06/16 16:45	12/07/16 08:02
BGWC-16	AZL0230-04	Ground Water	12/06/16 10:42	12/07/16 08:02
BGWC-7	AZL0230-05	Ground Water	12/06/16 11:10	12/07/16 08:02



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 16, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0230

**Project:** CCR Event

**Client ID:** BGWC-10

**Lab Number ID:** AZL0230-01

**Date/Time Sampled:** 12/6/2016 3:25:00PM

**Date/Time Received:** 12/7/2016 8:02:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	421	25	10	mg/L	SM 2540 C		1	12/10/16 17:30	12/10/16 17:30	6120286	JPT
<b>Inorganic Anions</b>											
Chloride	22	0.25	0.01	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 14:23	6120302	RLC
Fluoride	0.16	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 14:23	6120302	RLC
Sulfate	110	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 02:44	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Arsenic	0.0044	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Barium	0.0659	0.0100	0.0004	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Boron	0.515	0.0400	0.0064	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Calcium	55.4	5.00	0.311	mg/L	EPA 6020B		10	12/10/16 15:10	12/14/16 13:06	6120281	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Molybdenum	0.0049	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 13:57	6120281	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 17:02	6120212	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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

Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 16, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0230

Project: CCR Event

Client ID: BGWC-17

Lab Number ID: AZL0230-02

Date/Time Sampled: 12/6/2016 12:56:00PM

Date/Time Received: 12/7/2016 8:02:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	413	25	10	mg/L	SM 2540 C		1	12/10/16 17:30	12/10/16 17:30	6120286	JPT
<b>Inorganic Anions</b>											
Chloride	45	0.25	0.01	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 14:44	6120302	RLC
Fluoride	0.19	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 14:44	6120302	RLC
Sulfate	130	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 03:05	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Barium	0.0171	0.0100	0.0004	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Boron	1.79	0.0400	0.0064	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Cadmium	0.0001	0.0010	0.00007	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Calcium	68.7	5.00	0.311	mg/L	EPA 6020B		10	12/10/16 15:10	12/14/16 13:13	6120281	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:04	6120281	CSW
Mercury	0.00016	0.00050	0.000041	mg/L	EPA 7470A	J	1	12/08/16 11:25	12/08/16 17:09	6120212	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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

Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 16, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0230

Project: CCR Event

Client ID: BGWC-18

Lab Number ID: AZL0230-03

Date/Time Sampled: 12/6/2016 4:45:00PM

Date/Time Received: 12/7/2016 8:02:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	560	25	10	mg/L	SM 2540 C		1	12/10/16 17:30	12/10/16 17:30	6120286	JPT
<b>Inorganic Anions</b>											
Chloride	73	2.5	0.14	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 03:26	6120302	RLC
Fluoride	0.32	0.30	0.02	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 15:46	6120302	RLC
Sulfate	160	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 03:26	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Barium	0.0398	0.0100	0.0004	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Boron	1.50	0.0400	0.0064	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Cadmium	0.0006	0.0010	0.00007	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Calcium	88.1	25.0	1.55	mg/L	EPA 6020B		50	12/10/16 15:10	12/14/16 13:19	6120281	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Cobalt	0.0009	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Lead	0.0001	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:12	6120281	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 17:12	6120212	MTC





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 Atlanta GA, 30339

December 16, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0230

Project: CCR Event

Client ID: BGWC-16

Lab Number ID: AZL0230-04

Date/Time Sampled: 12/6/2016 10:42:00AM

Date/Time Received: 12/7/2016 8:02:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	730	25	10	mg/L	SM 2540 C		1	12/10/16 17:30	12/10/16 17:30	6120286	JPT
<b>Inorganic Anions</b>											
Chloride	48	2.5	0.14	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 03:48	6120302	RLC
Fluoride	0.24	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 16:07	6120302	RLC
Sulfate	280	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 03:48	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Barium	0.0367	0.0100	0.0004	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Boron	1.65	0.0400	0.0064	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Cadmium	0.0012	0.0010	0.00007	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Calcium	117	25.0	1.55	mg/L	EPA 6020B		50	12/10/16 15:10	12/14/16 13:25	6120281	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Cobalt	0.0050	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Thallium	0.0003	0.0010	0.0002	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:19	6120281	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/13/16 09:50	12/13/16 13:24	6120352	MTC



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 Atlanta GA, 30339

December 16, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0230

Project: CCR Event

Client ID: BGWC-7

Lab Number ID: AZL0230-05

Date/Time Sampled: 12/6/2016 11:10:00AM

Date/Time Received: 12/7/2016 8:02:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	976	25	10	mg/L	SM 2540 C		1	12/10/16 17:30	12/10/16 17:30	6120286	JPT
<b>Inorganic Anions</b>											
Chloride	11	0.25	0.01	mg/L	EPA 300.0		1	12/11/16 11:17	12/11/16 17:50	6120302	RLC
Fluoride	0.22	0.30	0.02	mg/L	EPA 300.0	J	1	12/11/16 11:17	12/11/16 17:50	6120302	RLC
Sulfate	470	10	0.51	mg/L	EPA 300.0		10	12/11/16 11:17	12/13/16 04:09	6120302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Barium	0.0385	0.0100	0.0004	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Boron	2.05	0.0400	0.0064	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Calcium	146	25.0	1.55	mg/L	EPA 6020B		50	12/10/16 15:10	12/14/16 13:31	6120281	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Cobalt	0.0009	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Molybdenum	0.0102	0.0100	0.0017	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Lithium	0.0094	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/10/16 15:10	12/12/16 14:27	6120281	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/13/16 09:50	12/13/16 13:26	6120352	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 16, 2016

**Report No.: AZL0230**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120286 - SM 2540 C</b>											
<b>Blank (6120286-BLK1)</b>						Prepared & Analyzed: 12/10/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120286-BS1)</b>						Prepared & Analyzed: 12/10/16					
Total Dissolved Solids	392	25	10	mg/L	400.00		98	84-108			
<b>Duplicate (6120286-DUP1)</b>						Source: AZL0281-03 Prepared & Analyzed: 12/10/16					
Total Dissolved Solids	605	25	10	mg/L		597			1	10	
<b>Duplicate (6120286-DUP2)</b>						Source: AZL0281-04 Prepared & Analyzed: 12/10/16					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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Attention: Mr. Joju Abraham

December 16, 2016

**Report No.: AZL0230**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120302 - EPA 300.0</b>											
<b>Blank (6120302-BLK1)</b>						Prepared & Analyzed: 12/11/16					
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 (6120302-BS1)</b>						Prepared & Analyzed: 12/11/16					
Chloride	9.90	0.25	0.01	mg/L	10.010		99	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020		101	90-110			
Sulfate	9.95	1.0	0.05	mg/L	10.020		99	90-110			
<b>Duplicate (6120302-DUP1)</b>						Source: AZL0230-05RE2 Prepared: 12/11/16 Analyzed: 12/14/16					
Chloride	9.73	2.5	0.14	mg/L		11.9			20	15	QR-03
Fluoride	0.43	3.0	0.19	mg/L		0.46			7	15	J
Sulfate	462	10	0.51	mg/L		463			0.2	15	
<b>Matrix Spike (6120302-MS1)</b>						Source: AZL0230-02 Prepared & Analyzed: 12/11/16					
Chloride	49.3	0.25	0.01	mg/L	10.010	44.6	46	90-110			QM-02
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.19	105	90-110			
Sulfate	108	1.0	0.05	mg/L	10.020	109	NR	90-110			QM-02
<b>Matrix Spike (6120302-MS2)</b>						Source: AZL0298-06 Prepared & Analyzed: 12/11/16					
Chloride	20.3	0.25	0.01	mg/L	10.010	10.6	97	90-110			
Fluoride	10.9	0.30	0.02	mg/L	10.020	0.06	108	90-110			
Sulfate	149	1.0	0.05	mg/L	10.020	155	NR	90-110			QM-02
<b>Matrix Spike Dup (6120302-MSD1)</b>						Source: AZL0230-02 Prepared & Analyzed: 12/11/16					
Chloride	49.3	0.25	0.01	mg/L	10.010	44.6	46	90-110	0.04	15	QM-02
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.19	105	90-110	0.4	15	
Sulfate	108	1.0	0.05	mg/L	10.020	109	NR	90-110	0.003	15	QM-02



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Attention: Mr. Joju Abraham

December 16, 2016

**Report No.: AZL0230**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120212 - EPA 7470A</b>											
<b>Blank (6120212-BLK1)</b>						Prepared & Analyzed: 12/08/16					
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120212-BS1)</b>						Prepared & Analyzed: 12/08/16					
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3		93	80-120			
<b>Duplicate (6120212-DUP1)</b>						Source: AZL0053-01RE1 Prepared & Analyzed: 12/08/16					
Mercury	0.00009	0.00050	0.000041	mg/L		0.00010			8	20	J
<b>Matrix Spike (6120212-MS1)</b>						Source: AZL0145-04 Prepared & Analyzed: 12/08/16					
Mercury	0.00227	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (6120212-MSD1)</b>						Source: AZL0145-04 Prepared & Analyzed: 12/08/16					
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125	0.4	20	
<b>Post Spike (6120212-PS1)</b>						Source: AZL0145-04 Prepared & Analyzed: 12/08/16					
Mercury	1.62			ug/L	1.6667	-0.0651	97	80-120			
<b>Batch 6120281 - EPA 3005A</b>											
<b>Blank (6120281-BLK1)</b>						Prepared: 12/10/16 Analyzed: 12/12/16					
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	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							



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Attention: Mr. Joju Abraham

December 16, 2016

**Report No.: AZL0230**

**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 6120281 - EPA 3005A**

**LCS (6120281-BS1)**

Prepared: 12/10/16 Analyzed: 12/12/16

Antimony	0.0986	0.0030	0.0008	mg/L	0.10000		99	80-120			
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000		102	80-120			
Barium	0.0971	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.104	0.0030	0.00008	mg/L	0.10000		104	80-120			
Boron	1.04	0.0400	0.0064	mg/L	1.0000		104	80-120			
Cadmium	0.0986	0.0010	0.00007	mg/L	0.10000		99	80-120			
Calcium	0.954	0.500	0.0311	mg/L	1.0000		95	80-120			
Chromium	0.0987	0.0100	0.0009	mg/L	0.10000		99	80-120			
Cobalt	0.100	0.0100	0.0005	mg/L	0.10000		100	80-120			
Copper	0.100	0.0250	0.0005	mg/L	0.10000		100	80-120			
Lead	0.0987	0.0050	0.0001	mg/L	0.10000		99	80-120			
Molybdenum	0.100	0.0100	0.0017	mg/L	0.10000		100	80-120			
Nickel	0.102	0.0100	0.0006	mg/L	0.10000		102	80-120			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120			
Silver	0.0987	0.0100	0.0005	mg/L	0.10000		99	80-120			
Thallium	0.0985	0.0010	0.0002	mg/L	0.10000		98	80-120			
Vanadium	0.102	0.0100	0.0071	mg/L	0.10000		102	80-120			
Zinc	0.101	0.0100	0.0021	mg/L	0.10000		101	80-120			
Lithium	0.102	0.0500	0.0021	mg/L	0.10000		102	80-120			

**Matrix Spike (6120281-MS1)**

Source: AZL0230-01

Prepared: 12/10/16 Analyzed: 12/12/16

Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125			
Arsenic	0.108	0.0050	0.0016	mg/L	0.10000	0.0044	104	75-125			
Barium	0.161	0.0100	0.0004	mg/L	0.10000	0.0659	96	75-125			
Beryllium	0.102	0.0030	0.00008	mg/L	0.10000	ND	102	75-125			
Boron	1.54	0.0400	0.0064	mg/L	1.0000	0.515	103	75-125			
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125			
Calcium	57.3	5.00	0.311	mg/L	1.0000	55.4	186	75-125			QM-02
Chromium	0.0997	0.0100	0.0009	mg/L	0.10000	ND	100	75-125			
Cobalt	0.0972	0.0100	0.0005	mg/L	0.10000	ND	97	75-125			
Copper	0.0959	0.0250	0.0005	mg/L	0.10000	0.0007	95	75-125			
Lead	0.0951	0.0050	0.0001	mg/L	0.10000	ND	95	75-125			
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000	0.0049	104	75-125			
Nickel	0.0985	0.0100	0.0006	mg/L	0.10000	0.0032	95	75-125			
Selenium	0.0995	0.0100	0.0010	mg/L	0.10000	ND	100	75-125			
Silver	0.0992	0.0100	0.0005	mg/L	0.10000	ND	99	75-125			
Thallium	0.0951	0.0010	0.0002	mg/L	0.10000	ND	95	75-125			
Vanadium	0.100	0.0100	0.0071	mg/L	0.10000	ND	100	75-125			
Zinc	0.0984	0.0100	0.0021	mg/L	0.10000	ND	98	75-125			
Lithium	0.0996	0.0500	0.0021	mg/L	0.10000	ND	100	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 16, 2016

**Report No.: AZL0230**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120281 - EPA 3005A</b>											
<b>Matrix Spike Dup (6120281-MSD1)</b>			<b>Source: AZL0230-01</b>				Prepared: 12/10/16 Analyzed: 12/12/16				
Antimony	0.109	0.0030	0.0008	mg/L	0.10000	ND	109	75-125	6	20	
Arsenic	0.109	0.0050	0.0016	mg/L	0.10000	0.0044	104	75-125	0.3	20	
Barium	0.163	0.0100	0.0004	mg/L	0.10000	0.0659	98	75-125	1	20	
Beryllium	0.105	0.0030	0.00008	mg/L	0.10000	ND	105	75-125	3	20	
Boron	1.58	0.0400	0.0064	mg/L	1.0000	0.515	106	75-125	2	20	
Cadmium	0.108	0.0010	0.00007	mg/L	0.10000	ND	108	75-125	8	20	
Calcium	56.6	5.00	0.311	mg/L	1.0000	55.4	121	75-125	1	20	
Chromium	0.101	0.0100	0.0009	mg/L	0.10000	ND	101	75-125	2	20	
Cobalt	0.0987	0.0100	0.0005	mg/L	0.10000	ND	99	75-125	2	20	
Copper	0.0976	0.0250	0.0005	mg/L	0.10000	0.0007	97	75-125	2	20	
Lead	0.0987	0.0050	0.0001	mg/L	0.10000	ND	99	75-125	4	20	
Molybdenum	0.117	0.0100	0.0017	mg/L	0.10000	0.0049	112	75-125	7	20	
Nickel	0.100	0.0100	0.0006	mg/L	0.10000	0.0032	97	75-125	2	20	
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	1	20	
Silver	0.105	0.0100	0.0005	mg/L	0.10000	ND	105	75-125	6	20	
Thallium	0.0992	0.0010	0.0002	mg/L	0.10000	ND	99	75-125	4	20	
Vanadium	0.101	0.0100	0.0071	mg/L	0.10000	ND	101	75-125	1	20	
Zinc	0.101	0.0100	0.0021	mg/L	0.10000	ND	101	75-125	2	20	
Lithium	0.104	0.0500	0.0021	mg/L	0.10000	ND	104	75-125	4	20	
<b>Post Spike (6120281-PS1)</b>											
			<b>Source: AZL0230-01</b>				Prepared: 12/10/16 Analyzed: 12/12/16				
Antimony	105			ug/L	100.00	0.500	105	80-120			
Arsenic	110			ug/L	100.00	4.43	106	80-120			
Barium	163			ug/L	100.00	65.9	97	80-120			
Beryllium	108			ug/L	100.00	0.0100	108	80-120			
Boron	1600			ug/L	1000.0	515	108	80-120			
Cadmium	106			ug/L	100.00	0.0100	106	80-120			
Calcium	56500			ug/L	1000.0	55400	106	80-120			
Chromium	103			ug/L	100.00	0.510	103	80-120			
Cobalt	101			ug/L	100.00	0.370	100	80-120			
Copper	99.7			ug/L	100.00	0.740	99	80-120			
Lead	99.6			ug/L	100.00	0.0300	100	80-120			
Molybdenum	116			ug/L	100.00	4.93	111	80-120			
Nickel	103			ug/L	100.00	3.25	100	80-120			
Selenium	104			ug/L	100.00	-0.870	104	80-120			
Silver	104			ug/L	100.00	0.00	104	80-120			
Thallium	99.6			ug/L	100.00	0.0400	100	80-120			
Vanadium	103			ug/L	100.00	1.43	101	80-120			
Zinc	103			ug/L	100.00	1.98	101	80-120			
Lithium	106			ug/L	100.00	1.33	105	80-120			



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 16, 2016

**Report No.: AZL0230**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120352 - EPA 7470A</b>											
<b>Blank (6120352-BLK1)</b>											
						Prepared & Analyzed: 12/13/16					
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120352-BS1)</b>											
						Prepared & Analyzed: 12/13/16					
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3		96	80-120			
<b>Matrix Spike (6120352-MS1)</b>											
						Source: AZL0281-07			Prepared & Analyzed: 12/13/16		
Mercury	0.00237	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125			
<b>Matrix Spike Dup (6120352-MSD1)</b>											
						Source: AZL0281-07			Prepared & Analyzed: 12/13/16		
Mercury	0.00246	0.00050	0.000041	mg/L	2.5000E-3	ND	98	75-125	4	20	
<b>Post Spike (6120352-PS1)</b>											
						Source: AZL0281-07			Prepared & Analyzed: 12/13/16		
Mercury	1.67			ug/L	1.6667	0.0177	99	80-120			





**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 16, 2016

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## Legend

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### 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

- 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).

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

CHAIN OF CUSTODY RECORD



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										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION						
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:																			
Southern Company Services					PRESERVATION:		P	P	P								P - PLASTIC	1 - HCl, ≤6°C						
241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308					# of	3	7	3								A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C							
REPORT TO: Sajid Abraham					CONTAINERS	↓	Metals Ar, III + IV EPA 6020 + EPA 7470	Cl, F, SO <sub>4</sub> EPA 300	TDS 5M 75406	Radium 220 + 228	SW-846 9315 + 9320													
REQUESTED COMPLETION DATE: PO# GPC 10684198																								
PROJECT NAME/STATE: Plant Bowen - Ash Pond CCR					*MATRIX CODES:																			
PROJECT #:					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 O M P	G R A B	SAMPLE IDENTIFICATION																			
12/6/16	1525	GW		X	BGWL-10	3														1				
12/6/16	1256	GW		X	BGWL-17	3															2			
12/6/16	1645	GW		X	BGWL-18	3															3			
12/6/16	1042	GW		X	BGWL-16	3															4			
12/6/16	1110	GW		X	BGWL-7	3															5			
SAMPLED BY AND TITLE: Robert Mull / Kevin Stephenson					DATE/TIME: 12/6/16 1700					RELINQUISHED BY: [Signature]					DATE/TIME: 12/7/16 0802					FOR LAB USE ONLY				
RECEIVED BY: [Signature]					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:					LAB #: AZLO 230				
ANALYZED BY LAB: [Signature]					DATE/TIME: 12/7/16 0802					SAMPLE SHIPPED VIA: UPS					CLIENT: [Signature]					Entered into LIMS: [Signature]				
Checked: No NA Yes No NA					Ice: Yes No NA					Temperature: Min: 18 Max:					Custody Seal: Intact Broken Not Present					# of Coolers: [Signature]				
																				Tracking #:				

Page 15 of 16



**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: 12/8/2016 9:11:13AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/07/16 08:02

**Work Order:** AZL0230

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 15

**Minimum Temp(C):** 1.0

**Maximum Temp(C):** 1.0

**Custody Seal(s) Used:** 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:**

January 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204840

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 08, 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,  
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## CERTIFICATIONS

Project: Plant Bowen  
Pace Project No.: 30204840

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen

Pace Project No.: 30204840

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204840001	BGWC-10	Water	12/06/16 15:25	12/08/16 10:20
30204840002	BGWC-17	Water	12/06/16 12:56	12/08/16 10:20
30204840003	BGWC-18	Water	12/06/16 16:45	12/08/16 10:20
30204840004	BGWC-16	Water	12/06/16 10:42	12/08/16 10:20
30204840005	BGWC-7	Water	12/06/16 11:10	12/08/16 10:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30204840

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204840001	BGWC-10	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204840002	BGWC-17	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204840003	BGWC-18	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204840004	BGWC-16	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204840005	BGWC-7	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 Bowen  
Pace Project No.: 30204840

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.447 ± 0.183 (0.179)</b> C:96% T:NA	pCi/L	12/20/16 08:36	13982-63-3	
Radium-228		EPA 9320	<b>0.272 ± 0.434 (0.941)</b> C:67% T:74%	pCi/L	01/08/17 16:59	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.719 ± 0.617 (1.12)</b>	pCi/L	01/11/17 16:38	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.131 ± 0.111 (0.188)</b> C:90% T:NA	pCi/L	12/20/16 08:36	13982-63-3	
Radium-228		EPA 9320	<b>-0.276 ± 0.382 (0.946)</b> C:67% T:78%	pCi/L	01/08/17 16:59	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.131 ± 0.493 (1.13)</b>	pCi/L	01/11/17 16:38	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.200 ± 0.123 (0.159)</b> C:95% T:NA	pCi/L	12/20/16 08:36	13982-63-3	
Radium-228		EPA 9320	<b>0.316 ± 0.403 (0.857)</b> C:64% T:81%	pCi/L	01/08/17 16:59	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.516 ± 0.526 (1.02)</b>	pCi/L	01/11/17 16:38	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.434 ± 0.173 (0.148)</b> C:97% T:NA	pCi/L	12/20/16 08:19	13982-63-3	
Radium-228		EPA 9320	<b>0.784 ± 0.505 (0.947)</b> C:67% T:68%	pCi/L	01/08/17 16:59	15262-20-1	
Total Radium		Total Radium Calculation	<b>1.22 ± 0.678 (1.10)</b>	pCi/L	01/11/17 16:00	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.631 ± 0.239 (0.294)</b> C:95% T:NA	pCi/L	12/20/16 08:19	13982-63-3	
Radium-228		EPA 9320	<b>0.327 ± 0.436 (0.933)</b> C:68% T:81%	pCi/L	01/08/17 16:59	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204840

---

**Sample: BGWC-7**      **Lab ID: 30204840005**      Collected: 12/06/16 11:10      Received: 12/08/16 10:20      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>0.958 ± 0.675 (1.23)</b>	pCi/L	01/11/17 16:00	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204840

QC Batch: 243001

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204840001, 30204840002, 30204840003, 30204840004, 30204840005

METHOD BLANK: 1195275

Matrix: Water

Associated Lab Samples: 30204840001, 30204840002, 30204840003, 30204840004, 30204840005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0582 ± 0.0923 (0.202) C:97% T:NA	pCi/L	12/19/16 10:13	

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

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204840

QC Batch: 243004

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30204840001, 30204840002, 30204840003, 30204840004, 30204840005

METHOD BLANK: 1195284

Matrix: Water

Associated Lab Samples: 30204840001, 30204840002, 30204840003, 30204840004, 30204840005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.135 ± 0.406 (0.913) C:65% T:77%	pCi/L	01/08/17 16:58	

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.

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen  
Pace Project No.: 30204840

### 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: AZL0230

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 1/6/2017

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	

WO#: 30204840

30204840

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-10	G	12/6/2016 15:25	AZL0230-01	GW	1				X	001
2	BGWC-17	G	12/6/2016 12:56	AZL0230-02	GW	1				X	002
3	BGWC-18	G	12/6/2016 16:45	AZL0230-03	GW	1				X	003
4	BGWC-16	G	12/6/2016 10:42	AZL0230-04	GW	1				X	004
5	BGWC-7	G	12/6/2016 11:10	AZL0230-05	GW	1				X	005
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			Karen Hill	12-8-16 1020	
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 COC

This chain of custody is considered complete as is since this information is available in the owner laboratory.

30204840



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

PAGE: 1 OF 1

CHAIN OF CUSTODY RECORD

CLIENT NAME: <u>Southern Company Services</u>						ANALYSIS REQUESTED										CONTAINER TYPE	PRESERVATION														
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308</u>						CONTAINER TYPE:	P	F	P																						
REPORT TO: <u>Joel Abraham</u>						CC: <u>Maria Padilla Heath McCorkle</u>						PRESERVATION:				L A B  I D  N U M B E R  ↓	*MATRIX CODES:														
REQUESTED COMPLETION DATE:						PO # <u>GPL 10684198</u>						# of																			
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond CCR</u>						PROJECT #:						CONTAINERS ↓	MUTUALS AP, III & IV EPA 8020 + EPA 7470 Cl, F, SO <sub>4</sub> EPA 300 TDS 5M2540L Radium 220 + 228 SW 846 9315 + 9320										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								
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	↓																									
12/6/16	1525	GW		X	B6WL-10	3	1	1	1												1										
12/6/16	1256	GW		X	B6WL-17	3	1	1	1												2										
12/6/16	1645	GW		X	B6WL-18	3	1	1	1												3										
12/6/16	1042	GW		X	B6WL-16	3	1	1	1												4										
12/6/16	1110	GW		X	B6WL-7	3	1	1	1												5										
SAMPLED BY AND TITLE: <u>Robert Mully/Kevin Stephenson</u>						DATE/TIME: <u>12/6/16 1700</u>						RELINQUISHED BY: <u>Paul Skull</u>						DATE/TIME: <u>12/7/16 0802</u>						FOR LAB USE ONLY							
RECEIVED BY:						DATE/TIME:						RELINQUISHED BY:						DATE/TIME:						LAB #: <u>AZLO 230</u>							
RECEIVED BY LAB: <u>Charles Frank</u>						DATE/TIME: <u>12/7/16 0802</u>						SAMPLE SHIPPED VIA: <u>CLIENT</u>						OTHER FS						Entered into LIMS: <u>(JH)</u>							
pH checked: <u>Yes</u>						Ice: <u>Yes</u>						Temperature: <u>15</u> Min. <u>15</u> Max.						Custody Seal: <u>Intact</u>						# of Coolers: <u>NA</u>						Cooler ID:	
Tracking #:																															

Page 11 of 14

Sample Condition Upon Receipt Pittsburgh

30204840



Client Name: Pace, AT

Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5100 9450

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 09/16 12-8-16

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/Analysis 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.
Filtered volume received for Dissolved tests			X	12.
All containers needing preservation have been checked.	X			13. <u>PH22</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>09/16</u> Date/time of preservation: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):			X	14.
Trip Blank Present:		X		15.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>XH</u> Date: <u>12-8-16</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

Test: Ra-226  
Analyst: LAL  
Date: 12/16/2016  
Worklist: 32910  
Matrix: DW

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

### Method Blank Assessment

MB Sample ID: 1195275  
MB concentration: 0.058  
M/B Counting Uncertainty: 0.092  
MB MDC: 0.202  
MB Numerical Performance Indicator: 1.24  
MB Status vs Numerical Indicator: N/A  
MB Status vs. MDC: Pass

### Laboratory Control Sample Assessment

	LCSD (Y or N)?	N
	LCS32910	LCS32910
Count Date:	12/20/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.672	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.502	
Target Conc. (pCi/L, g, F):	8.904	
Uncertainty (Calculated):	0.419	
Result (pCi/L, g, F):	6.764	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.610	
Numerical Performance Indicator:	-5.67	
Percent Recovery:	75.97%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

### Sample Matrix Spike Control Assessment

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):  
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:

### Duplicate Sample Assessment

Sample I.D.:	30204838001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below:
Duplicate Sample I.D.:	30204838001DUP	
Sample Result (pCi/L, g, F):	0.301	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.155	
Sample Duplicate Result (pCi/L, g, F):	0.462	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.192	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.279	30204838001
Duplicate RPD:	42.22%	30204838001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

### Matrix Spike/Matrix Spike Duplicate Sample Assessment

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:  
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:

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

*Amc 1/1/17*





## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/29/2016  
Worklist: 32913  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1195284
MB concentration:	0.135
M/B Counting Uncertainty:	0.405
MB MDC:	0.913
MB Numerical Performance Indicator:	0.65
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD32913	LCSD32913
Count Date:	1/8/2017	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.612	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.814	
Target Conc. (pCi/L, g, F):	6.296	
Uncertainty (Calculated):	0.453	
Result (pCi/L, g, F):	6.003	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.772	
Numerical Performance Indicator:	-0.64	
Percent Recovery:	95.35%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30204841008	
Duplicate Sample I.D.:	30204841008DUP	
Sample Result (pCi/L, g, F):	-0.300	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.306	
Sample Duplicate Result (pCi/L, g, F):	-0.115	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.400	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.722	30204841008
Duplicate RPD:	-89.35%	30204841008DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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: AZL0313**

**December 19, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 19, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-19	AZL0313-01	Ground Water	12/07/16 10:02	12/08/16 07:48
BGWC-20	AZL0313-02	Ground Water	12/07/16 12:20	12/08/16 07:48
BGWC-24	AZL0313-03	Ground Water	12/07/16 12:10	12/08/16 07:48
BGWC-23	AZL0313-04	Ground Water	12/07/16 16:20	12/08/16 07:48



**PACE ANALYTICAL SERVICES, LLC.**

Environmental Monitoring & Laboratory Analysis  
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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 19, 2016

**Report No.:** AZL0313

**Project:** CCR Event

**Client ID:** BGWC-19

**Lab Number ID:** AZL0313-01

**Date/Time Sampled:** 12/7/2016 10:02:00AM

**Date/Time Received:** 12/8/2016 7:48:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	269	25	10	mg/L	SM 2540 C		1	12/12/16 18:16	12/12/16 18:16	6120339	JPT
<b>Inorganic Anions</b>											
Chloride	23	0.25	0.01	mg/L	EPA 300.0		1	12/13/16 08:57	12/14/16 00:49	6120363	RLC
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	12/13/16 08:57	12/14/16 00:49	6120363	RLC
Sulfate	97	5.0	0.26	mg/L	EPA 300.0		5	12/13/16 08:57	12/14/16 18:41	6120363	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Barium	0.0338	0.0100	0.0004	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Boron	0.510	0.0400	0.0064	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Calcium	48.6	5.00	0.311	mg/L	EPA 6020B		10	12/12/16 16:35	12/17/16 03:39	6120325	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:49	6120325	KLH
Mercury	0.00008	0.00050	0.000041	mg/L	EPA 7470A	J	1	12/13/16 09:50	12/13/16 15:13	6120353	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 19, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0313

Project: CCR Event

Client ID: BGWC-20

Lab Number ID: AZL0313-02

Date/Time Sampled: 12/7/2016 12:20:00PM

Date/Time Received: 12/8/2016 7:48:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1100	25	10	mg/L	SM 2540 C		1	12/12/16 18:16	12/12/16 18:16	6120339	JPT
<b>Inorganic Anions</b>											
Chloride	130	6.2	0.35	mg/L	EPA 300.0		25	12/13/16 08:57	12/14/16 19:04	6120363	RLC
Fluoride	0.07	0.30	0.02	mg/L	EPA 300.0	J	1	12/13/16 08:57	12/14/16 01:11	6120363	RLC
Sulfate	580	25	1.3	mg/L	EPA 300.0		25	12/13/16 08:57	12/14/16 19:04	6120363	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Barium	0.0279	0.0100	0.0004	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Boron	3.08	0.0400	0.0064	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Calcium	215	25.0	1.55	mg/L	EPA 6020B		50	12/12/16 16:35	12/17/16 03:44	6120325	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Cobalt	0.0008	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Molybdenum	0.0139	0.0100	0.0017	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Selenium	0.0037	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Lithium	0.0265	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 15:55	6120325	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/13/16 09:50	12/13/16 15:16	6120353	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 19, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0313

**Project:** CCR Event

**Client ID:** BGWC-24

**Lab Number ID:** AZL0313-03

**Date/Time Sampled:** 12/7/2016 12:10:00PM

**Date/Time Received:** 12/8/2016 7:48:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2720	25	10	mg/L	SM 2540 C		1	12/12/16 18:16	12/12/16 18:16	6120339	JPT
<b>Inorganic Anions</b>											
Chloride	970	6.2	0.35	mg/L	EPA 300.0		25	12/13/16 08:57	12/14/16 19:26	6120363	RLC
Fluoride	0.05	0.30	0.02	mg/L	EPA 300.0	J	1	12/13/16 08:57	12/14/16 01:32	6120363	RLC
Sulfate	370	25	1.3	mg/L	EPA 300.0		25	12/13/16 08:57	12/14/16 19:26	6120363	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Arsenic	0.0121	0.0050	0.0016	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Barium	0.0289	0.0100	0.0004	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Boron	9.19	0.0400	0.0064	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Cadmium	0.0004	0.0010	0.00007	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Calcium	387	25.0	1.55	mg/L	EPA 6020B		50	12/12/16 16:35	12/17/16 03:50	6120325	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Cobalt	0.0018	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Molybdenum	0.0066	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Selenium	0.0302	0.0100	0.0010	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Lithium	0.0066	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:02	6120325	KLH
Mercury	0.00007	0.00050	0.000041	mg/L	EPA 7470A	J	1	12/13/16 09:50	12/13/16 15:18	6120353	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

December 19, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0313

Project: CCR Event

Client ID: BGWC-23

Lab Number ID: AZL0313-04

Date/Time Sampled: 12/7/2016 4:20:00PM

Date/Time Received: 12/8/2016 7:48:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1770	25	10	mg/L	SM 2540 C		1	12/12/16 18:16	12/12/16 18:16	6120339	JPT
<b>Inorganic Anions</b>											
Chloride	450	12	0.70	mg/L	EPA 300.0		50	12/13/16 08:57	12/14/16 19:49	6120363	RLC
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	12/13/16 08:57	12/14/16 01:54	6120363	RLC
Sulfate	490	50	2.6	mg/L	EPA 300.0		50	12/13/16 08:57	12/14/16 19:49	6120363	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Arsenic	0.0023	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Barium	0.0912	0.0100	0.0004	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Boron	5.70	0.0400	0.0064	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Calcium	271	25.0	1.55	mg/L	EPA 6020B		50	12/12/16 16:35	12/17/16 03:56	6120325	CSW
Chromium	0.0020	0.0100	0.0009	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Cobalt	0.0015	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Molybdenum	0.0128	0.0100	0.0017	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Selenium	0.0176	0.0100	0.0010	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Lithium	0.0117	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/12/16 16:35	12/13/16 16:08	6120325	KLH
Mercury	0.00005	0.00050	0.000041	mg/L	EPA 7470A	J	1	12/13/16 09:50	12/13/16 15:25	6120353	MTC



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December 19, 2016

**Report No.: AZL0313**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120339 - SM 2540 C</b>											
<b>Blank (6120339-BLK1)</b>						Prepared & Analyzed: 12/12/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120339-BS1)</b>						Prepared & Analyzed: 12/12/16					
Total Dissolved Solids	394	25	10	mg/L	400.00		98	84-108			
<b>Duplicate (6120339-DUP1)</b>						Prepared & Analyzed: 12/12/16					
						Source: AZL0313-04					
Total Dissolved Solids	1730	25	10	mg/L		1770			3	10	





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December 19, 2016

**Report No.: AZL0313**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120363 - EPA 300.0</b>											
<b>Blank (6120363-BLK1)</b>						Prepared & Analyzed: 12/13/16					
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 (6120363-BS1)</b>						Prepared & Analyzed: 12/13/16					
Chloride	9.93	0.25	0.01	mg/L	10.010		99	90-110			
Fluoride	10.5	0.30	0.02	mg/L	10.020		105	90-110			
Sulfate	10.0	1.0	0.05	mg/L	10.020		100	90-110			
<b>Matrix Spike (6120363-MS1)</b>						Source: AZL0284-07 Prepared & Analyzed: 12/13/16					
Chloride	12.3	0.25	0.01	mg/L	10.010	3.13	92	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020	0.10	100	90-110			
Sulfate	50.3	1.0	0.05	mg/L	10.020	45.5	48	90-110			QM-02
<b>Matrix Spike (6120363-MS2)</b>						Source: AZL0316-03 Prepared: 12/13/16 Analyzed: 12/14/16					
Chloride	14.2	0.25	0.01	mg/L	10.010	4.81	93	90-110			
Fluoride	10.2	0.30	0.02	mg/L	10.020	0.07	101	90-110			
Sulfate	10.6	1.0	0.05	mg/L	10.020	1.53	90	90-110			
<b>Matrix Spike Dup (6120363-MSD1)</b>						Source: AZL0284-07 Prepared & Analyzed: 12/13/16					
Chloride	13.0	0.25	0.01	mg/L	10.010	3.13	98	90-110	5	15	
Fluoride	10.8	0.30	0.02	mg/L	10.020	0.10	107	90-110	6	15	
Sulfate	50.7	1.0	0.05	mg/L	10.020	45.5	52	90-110	0.8	15	QM-02



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**Report No.: AZL0313**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120325 - EPA 3005A</b>											
<b>Blank (6120325-BLK1)</b>											
						Prepared: 12/12/16 Analyzed: 12/13/16					
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	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	0.0025	0.0100	0.0021	mg/L							J
Lithium	ND	0.0500	0.0021	mg/L							
<b>LCS (6120325-BS1)</b>											
						Prepared: 12/12/16 Analyzed: 12/13/16					
Antimony	0.105	0.0030	0.0008	mg/L	0.10000		105	80-120			
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000		102	80-120			
Barium	0.103	0.0100	0.0004	mg/L	0.10000		103	80-120			
Beryllium	0.108	0.0030	0.00008	mg/L	0.10000		108	80-120			
Boron	1.10	0.0400	0.0064	mg/L	1.0000		110	80-120			
Cadmium	0.106	0.0010	0.00007	mg/L	0.10000		106	80-120			
Calcium	1.00	0.500	0.0311	mg/L	1.0000		100	80-120			
Chromium	0.104	0.0100	0.0009	mg/L	0.10000		104	80-120			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000		102	80-120			
Copper	0.104	0.0250	0.0005	mg/L	0.10000		104	80-120			
Lead	0.102	0.0050	0.0001	mg/L	0.10000		102	80-120			
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000		109	80-120			
Nickel	0.106	0.0100	0.0006	mg/L	0.10000		106	80-120			
Selenium	0.104	0.0100	0.0010	mg/L	0.10000		104	80-120			
Silver	0.104	0.0100	0.0005	mg/L	0.10000		104	80-120			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000		102	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	0.106	0.0500	0.0021	mg/L	0.10000		106	80-120			



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December 19, 2016

**Report No.: AZL0313**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120325 - EPA 3005A</b>											
<b>Matrix Spike (6120325-MS1)</b>			<b>Source: AZL0282-07</b>			<b>Prepared: 12/12/16 Analyzed: 12/13/16</b>					
Antimony	0.108	0.0030	0.0008	mg/L	0.10000	ND	108	75-125			
Arsenic	0.106	0.0050	0.0016	mg/L	0.10000	ND	106	75-125			
Barium	0.174	0.0100	0.0004	mg/L	0.10000	0.0752	99	75-125			
Beryllium	0.113	0.0030	0.00008	mg/L	0.10000	ND	113	75-125			
Boron	2.19	0.0400	0.0064	mg/L	1.0000	1.06	114	75-125			
Cadmium	0.109	0.0010	0.00007	mg/L	0.10000	0.0002	109	75-125			
Calcium	102	25.0	1.55	mg/L	1.0000	104	NR	75-125			QM-02
Chromium	0.102	0.0100	0.0009	mg/L	0.10000	ND	102	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	0.0009	101	75-125			
Copper	0.0998	0.0250	0.0005	mg/L	0.10000	0.0006	99	75-125			
Lead	0.100	0.0050	0.0001	mg/L	0.10000	0.0001	100	75-125			
Molybdenum	0.149	0.0100	0.0017	mg/L	0.10000	0.0365	113	75-125			
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	0.0053	99	75-125			
Selenium	0.107	0.0100	0.0010	mg/L	0.10000	ND	107	75-125			
Silver	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125			
Vanadium	0.109	0.0100	0.0071	mg/L	0.10000	ND	109	75-125			
Zinc	0.105	0.0100	0.0021	mg/L	0.10000	0.0032	102	75-125			
Lithium	0.111	0.0500	0.0021	mg/L	0.10000	0.0026	108	75-125			
<b>Matrix Spike Dup (6120325-MSD1)</b>			<b>Source: AZL0282-07</b>			<b>Prepared: 12/12/16 Analyzed: 12/13/16</b>					
Antimony	0.109	0.0030	0.0008	mg/L	0.10000	ND	109	75-125	0.5	20	
Arsenic	0.104	0.0050	0.0016	mg/L	0.10000	ND	104	75-125	1	20	
Barium	0.177	0.0100	0.0004	mg/L	0.10000	0.0752	102	75-125	2	20	
Beryllium	0.116	0.0030	0.00008	mg/L	0.10000	ND	116	75-125	3	20	
Boron	2.24	0.0400	0.0064	mg/L	1.0000	1.06	119	75-125	2	20	
Cadmium	0.108	0.0010	0.00007	mg/L	0.10000	0.0002	108	75-125	0.8	20	
Calcium	103	25.0	1.55	mg/L	1.0000	104	NR	75-125	0.5	20	QM-02
Chromium	0.103	0.0100	0.0009	mg/L	0.10000	ND	103	75-125	0.5	20	
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	0.0009	102	75-125	0.8	20	
Copper	0.0996	0.0250	0.0005	mg/L	0.10000	0.0006	99	75-125	0.1	20	
Lead	0.101	0.0050	0.0001	mg/L	0.10000	0.0001	101	75-125	0.8	20	
Molybdenum	0.149	0.0100	0.0017	mg/L	0.10000	0.0365	113	75-125	0.04	20	
Nickel	0.107	0.0100	0.0006	mg/L	0.10000	0.0053	102	75-125	2	20	
Selenium	0.108	0.0100	0.0010	mg/L	0.10000	ND	108	75-125	0.6	20	
Silver	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	1	20	
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	ND	104	75-125	1	20	
Vanadium	0.109	0.0100	0.0071	mg/L	0.10000	ND	109	75-125	0.3	20	
Zinc	0.107	0.0100	0.0021	mg/L	0.10000	0.0032	104	75-125	2	20	
Lithium	0.114	0.0500	0.0021	mg/L	0.10000	0.0026	112	75-125	3	20	



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December 19, 2016

**Report No.: AZL0313**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120325 - EPA 3005A</b>											
<b>Post Spike (6120325-PS1)</b>			<b>Source: AZL0282-07</b>			<b>Prepared: 12/12/16 Analyzed: 12/13/16</b>					
Antimony	101			ug/L	100.00	0.150	101	80-120			
Arsenic	101			ug/L	100.00	0.750	100	80-120			
Barium	170			ug/L	100.00	75.2	95	80-120			
Beryllium	110			ug/L	100.00	0.0200	110	80-120			
Boron	2140			ug/L	1000.0	1060	109	80-120			
Cadmium	104			ug/L	100.00	0.190	103	80-120			
Calcium	101000			ug/L	1000.0	104000	NR	80-120			QM-02
Chromium	97.9			ug/L	100.00	-3.87	98	80-120			
Cobalt	96.3			ug/L	100.00	0.910	95	80-120			
Copper	94.1			ug/L	100.00	0.630	93	80-120			
Lead	96.7			ug/L	100.00	0.140	97	80-120			
Molybdenum	144			ug/L	100.00	36.5	107	80-120			
Nickel	100			ug/L	100.00	5.29	95	80-120			
Selenium	102			ug/L	100.00	0.770	101	80-120			
Silver	99.8			ug/L	100.00	0.0100	100	80-120			
Thallium	99.7			ug/L	100.00	0.0400	100	80-120			
Vanadium	106			ug/L	100.00	3.17	102	80-120			
Zinc	100			ug/L	100.00	3.24	97	80-120			
Lithium	109			ug/L	100.00	2.55	107	80-120			

**Batch 6120353 - EPA 7470A**

<b>Blank (6120353-BLK1)</b>					<b>Prepared &amp; Analyzed: 12/13/16</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120353-BS1)</b>					<b>Prepared &amp; Analyzed: 12/13/16</b>						
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			



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December 19, 2016

**Report No.: AZL0313**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120353 - EPA 7470A</b>											
<b>Matrix Spike (6120353-MS1)</b>			<b>Source: AZL0284-06</b>			<b>Prepared &amp; Analyzed: 12/13/16</b>					
Mercury	0.00250	0.00050	0.000041	mg/L	2.5000E-3	0.00008	97	75-125			
<b>Matrix Spike Dup (6120353-MSD1)</b>			<b>Source: AZL0284-06</b>			<b>Prepared &amp; Analyzed: 12/13/16</b>					
Mercury	0.00244	0.00050	0.000041	mg/L	2.5000E-3	0.00008	94	75-125	2	20	
<b>Post Spike (6120353-PS1)</b>			<b>Source: AZL0284-06</b>			<b>Prepared &amp; Analyzed: 12/13/16</b>					
Mercury	1.73			ug/L	1.6667	0.0524	101	80-120			



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Attention: Mr. Joju Abraham

December 19, 2016

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## Legend

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### 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

**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: 12/12/2016 8:19:26AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/08/16 07:48

**Work Order:** AZL0313

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 4

**#Containers:** 12

**Minimum Temp(C):** 0.5

**Maximum Temp(C):** 0.5

**Custody Seal(s) Used:** 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:**



January 23, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30205053

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 09, 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 Bowen  
Pace Project No.: 30205053

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen

Pace Project No.: 30205053

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30205053001	BGWC-19	Water	12/07/16 10:02	12/09/16 10:15
30205053002	BGWC-20	Water	12/07/16 12:20	12/09/16 10:15
30205053003	BGWC-24	Water	12/07/16 12:10	12/09/16 10:15
30205053004	BGWC-23	Water	12/07/16 16:20	12/09/16 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30205053

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30205053001	BGWC-19	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	CMC	1
30205053002	BGWC-20	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	CMC	1
30205053003	BGWC-24	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	CMC	1
30205053004	BGWC-23	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	CMC	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30205053

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.213 ± 0.203 (0.371)</b> C:86% T:NA	pCi/L	01/13/17 08:20	13982-63-3	
Radium-228		EPA 9320	<b>1.10 ± 0.599 (1.07)</b> C:60% T:82%	pCi/L	01/21/17 16:43	15262-20-1	
Total Radium		Total Radium Calculation	<b>1.31 ± 0.802 (1.44)</b>	pCi/L	01/23/17 08:32	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.481 ± 0.272 (0.386)</b> C:99% T:NA	pCi/L	01/13/17 08:20	13982-63-3	
Radium-228		EPA 9320	<b>1.81 ± 0.679 (0.981)</b> C:54% T:86%	pCi/L	01/21/17 16:43	15262-20-1	
Total Radium		Total Radium Calculation	<b>2.29 ± 0.951 (1.37)</b>	pCi/L	01/23/17 08:32	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.226 ± 0.222 (0.422)</b> C:90% T:NA	pCi/L	01/13/17 08:20	13982-63-3	
Radium-228		EPA 9320	<b>1.42 ± 0.546 (0.777)</b> C:74% T:74%	pCi/L	01/21/17 16:43	15262-20-1	
Total Radium		Total Radium Calculation	<b>1.65 ± 0.768 (1.20)</b>	pCi/L	01/23/17 08:32	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.614 ± 0.304 (0.387)</b> C:85% T:NA	pCi/L	01/13/17 08:20	13982-63-3	
Radium-228		EPA 9320	<b>2.00 ± 0.707 (0.983)</b> C:68% T:73%	pCi/L	01/21/17 16:43	15262-20-1	
Total Radium		Total Radium Calculation	<b>2.61 ± 1.01 (1.37)</b>	pCi/L	01/23/17 08:32	7440-14-4	

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## QUALIFIERS

Project: Plant Bowen

Pace Project No.: 30205053

### 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#: 30205053



Chain of Custody

Workorder: AZL0313

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 1/9/2017

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												

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-19	G	12/7/2016 10:02	AZL0313-01	GW	1				X	001
2	BGWC-20	G	12/7/2016 12:20	AZL0313-02	GW	1				X	002
3	BGWC-24	G	12/7/2016 12:10	AZL0313-03	GW	1				X	003
4	BGWC-23	G	12/7/2016 16:20	AZL0313-04	GW	1				X	004
5											
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			Ashley Hore/pace	12-9-14/15	
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 COC

This chain of custody is considered complete as is since this information is available in the owner laboratory.



# Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, At.

Project # 30205053

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5100 9817

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 \_\_\_\_\_ °C    Correction Factor: \_\_\_\_\_ °C    Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: DPNA 12-12-16

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/Analysis 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.
Filtered volume received for Dissolved tests			X	12.
All containers needing preservation have been checked.	X			13.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PHLZ</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>DPNA</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):			X	14.
Trip Blank Present:		X		15.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: <u>DPNA</u> Date: <u>12-12-16</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



Test: Ra-226  
Analyst: LAL  
Date: 1/12/2017  
Worklist: 33366  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1208845
MB concentration:	0.064
M/B Counting Uncertainty:	0.166
MB MDC:	0.402
MB Numerical Performance Indicator:	0.76
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS33366	LCSD33366
Count Date:	1/13/2017	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.671	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.503	
Target Conc. (pCi/L, g, F):	8.875	
Uncertainty (Calculated):	0.417	
Result (pCi/L, g, F):	6.807	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.818	
Numerical Performance Indicator:	-4.41	
Percent Recovery:	76.70%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30205160001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30205160001DUP	
Sample Result (pCi/L, g, F):	0.408	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.253	
Sample Duplicate Result (pCi/L, g, F):	0.029	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.123	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	2.639	30205160001
Duplicate RPD:	173.30%	30205160001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LAL*  
*1/23/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JAL  
Date: 1/11/2017  
Worklist: 33367  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1208846
MB concentration:	0.286
M/B Counting Uncertainty:	0.381
MB MDC:	0.821
MB Numerical Performance Indicator:	1.47
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS33367	LCS33367
Count Date:	1/21/2017	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.503	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.809	
Target Conc. (pCi/L, g, F):	6.307	
Uncertainty (Calculated):	0.454	
Result (pCi/L, g, F):	6.535	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.834	
Numerical Performance Indicator:	0.47	
Percent Recovery:	103.62%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment
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):
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:

Duplicate Sample Assessment	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30205160004
Duplicate Sample I.D.:	30205160004DUP
Sample Result (pCi/L, g, F):	1.855
Sample Result Counting Uncertainty (pCi/L, g, F):	0.553
Sample Duplicate Result (pCi/L, g, F):	2.225
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.584
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	-0.903
Duplicate RPD:	18.15%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass

Matrix Spike/Matrix Spike Duplicate Sample Assessment
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:

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

Comments:

*JAL 1/23/17*





**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: AZL0406**

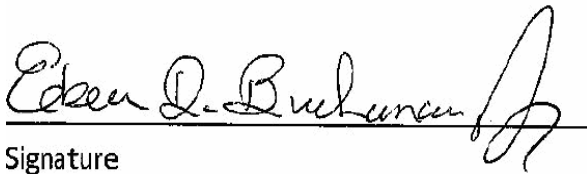
**December 28, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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:

  
Signature

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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 28, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-22	AZL0406-01	Ground Water	12/08/16 10:25	12/09/16 08:30
BGWC-21	AZL0406-02	Ground Water	12/08/16 13:20	12/09/16 08:30
BGWC-14	AZL0406-03	Ground Water	12/08/16 14:35	12/09/16 08:30
BGWC-15	AZL0406-04	Ground Water	12/08/16 15:42	12/09/16 08:30
BGWC-25	AZL0406-05	Ground Water	12/08/16 15:56	12/09/16 08:30
Dup-3	AZL0406-06	Ground Water	12/08/16 00:00	12/09/16 08:30
FBL120816	AZL0406-07	Water	12/08/16 16:45	12/09/16 08:30
EQBL120816	AZL0406-08	Water	12/08/16 16:50	12/09/16 08:30



**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

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: BGWC-22

Lab Number ID: AZL0406-01

Date/Time Sampled: 12/8/2016 10:25:00AM

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2200	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	540	25	1.4	mg/L	EPA 300.0		100	12/17/16 10:12	12/23/16 23:35	6120528	RNB
Fluoride	0.26	0.30	0.02	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/22/16 21:48	6120528	RNB
Sulfate	660	100	5.1	mg/L	EPA 300.0	B-01	100	12/17/16 10:12	12/23/16 23:35	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Barium	0.0991	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Boron	11.1	4.00	0.642	mg/L	EPA 6020B		100	12/13/16 07:55	12/21/16 17:00	6120327	CSW
Cadmium	0.0002	0.0010	0.00007	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Calcium	434	50.0	3.11	mg/L	EPA 6020B		100	12/13/16 07:55	12/21/16 17:00	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Cobalt	0.0130	0.0100	0.0005	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Molybdenum	0.0682	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Selenium	0.0120	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Thallium	0.0005	0.0010	0.0002	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Lithium	0.0154	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 20:47	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/14/16 11:40	12/14/16 16:53	6120387	MTC





**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: BGWC-21

Lab Number ID: AZL0406-02

Date/Time Sampled: 12/8/2016 1:20:00PM

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	255	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	6.3	0.25	0.01	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 22:08	6120528	RNB
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/22/16 22:08	6120528	RNB
Sulfate	68	10	0.51	mg/L	EPA 300.0	B-01	10	12/17/16 10:12	12/23/16 23:56	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Barium	0.0474	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Boron	0.144	0.0400	0.0064	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Calcium	43.4	5.00	0.311	mg/L	EPA 6020B		10	12/13/16 07:55	12/21/16 17:06	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 20:55	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/14/16 11:40	12/14/16 16:56	6120387	MTC



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 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: BGWC-14

Lab Number ID: AZL0406-03

Date/Time Sampled: 12/8/2016 2:35:00PM

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	573	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	38	0.25	0.01	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 22:29	6120528	RNB
Fluoride	0.31	0.30	0.02	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 22:29	6120528	RNB
Sulfate	200	10	0.51	mg/L	EPA 300.0	B-01	10	12/17/16 10:12	12/24/16 00:18	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Barium	0.0723	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Boron	0.776	0.0400	0.0064	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Calcium	96.5	25.0	1.55	mg/L	EPA 6020B		50	12/13/16 07:55	12/21/16 17:12	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Molybdenum	0.0082	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:12	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/14/16 11:40	12/14/16 16:58	6120387	MTC



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 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

**Report No.:** AZL0406

**Project:** CCR Event

**Client ID:** BGWC-15

**Lab Number ID:** AZL0406-04

**Date/Time Sampled:** 12/8/2016 3:42:00PM

**Date/Time Received:** 12/9/2016 8:30:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	980	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	11	0.25	0.01	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 23:10	6120528	RNB
Fluoride	0.40	0.30	0.02	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 23:10	6120528	RNB
Sulfate	420	10	0.51	mg/L	EPA 300.0	B-01	10	12/17/16 10:12	12/24/16 00:40	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Barium	0.107	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Boron	0.0789	0.0400	0.0064	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Calcium	121	50.0	3.11	mg/L	EPA 6020B		100	12/13/16 07:55	12/21/16 17:18	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Cobalt	0.0035	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Molybdenum	0.0138	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:19	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/15/16 10:35	12/15/16 14:05	6120426	MTC



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 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: BGWC-25

Lab Number ID: AZL0406-05

Date/Time Sampled: 12/8/2016 3:56:00PM

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	209	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	2.8	0.25	0.01	mg/L	EPA 300.0		1	12/17/16 10:12	12/22/16 23:31	6120528	RNB
Fluoride	0.06	0.30	0.02	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/22/16 23:31	6120528	RNB
Sulfate	13	1.0	0.05	mg/L	EPA 300.0	B-01	1	12/17/16 10:12	12/22/16 23:31	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Barium	0.0294	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Boron	0.0164	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Calcium	38.5	5.00	0.311	mg/L	EPA 6020B		10	12/13/16 07:55	12/21/16 17:45	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Lead	0.0006	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:26	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/15/16 10:35	12/15/16 14:07	6120426	MTC



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 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: Dup-3

Lab Number ID: AZL0406-06

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

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2160	25	10	mg/L	SM 2540 C		1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	530	25	1.4	mg/L	EPA 300.0		100	12/17/16 10:12	12/24/16 01:02	6120528	RNB
Fluoride	0.27	0.30	0.02	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/23/16 01:14	6120528	RNB
Sulfate	670	100	5.1	mg/L	EPA 300.0	B-01	100	12/17/16 10:12	12/24/16 01:02	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Barium	0.0969	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Boron	9.99	0.0400	0.0064	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Cadmium	0.0002	0.0010	0.00007	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Calcium	390	50.0	3.11	mg/L	EPA 6020B		100	12/13/16 07:55	12/22/16 16:34	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Cobalt	0.0131	0.0100	0.0005	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Molybdenum	0.0665	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Selenium	0.0104	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Thallium	0.0005	0.0010	0.0002	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Lithium	0.0158	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:34	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/15/16 10:35	12/15/16 14:10	6120426	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: FBL120816

Lab Number ID: AZL0406-07

Date/Time Sampled: 12/8/2016 4:45:00PM

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	18	25	10	mg/L	SM 2540 C	J	1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	0.09	0.25	0.01	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/23/16 01:35	6120528	RNB
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	12/17/16 10:12	12/23/16 01:35	6120528	RNB
Sulfate	0.24	1.0	0.05	mg/L	EPA 300.0	B-01, J	1	12/17/16 10:12	12/23/16 01:35	6120528	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/13/16 07:55	12/17/16 15:12	6120327	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	J	1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/13/16 07:55	12/14/16 21:41	6120327	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/15/16 10:35	12/15/16 14:12	6120426	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 28, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0406

Project: CCR Event

Client ID: EQBL120816

Lab Number ID: AZL0406-08

Date/Time Sampled: 12/8/2016 4:50:00PM

Date/Time Received: 12/9/2016 8:30:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	24	25	10	mg/L	SM 2540 C	J	1	12/13/16 11:20	12/13/16 11:20	6120356	JPT
<b>Inorganic Anions</b>											
Chloride	0.07	0.25	0.01	mg/L	EPA 300.0	J	1	12/17/16 10:12	12/23/16 01:56	6120528	RNB
Fluoride	ND	0.30	0.02	mg/L	EPA 300.0		1	12/17/16 10:12	12/23/16 01:56	6120528	RNB
Sulfate	0.13	1.0	0.05	mg/L	EPA 300.0	B-01, J	1	12/17/16 10:12	12/23/16 01:56	6120528	RNB
<b>Metals, Total</b>											
Antimony	0.0013	0.0030	0.0008	mg/L	EPA 6020B	J	1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Calcium	0.0413	0.500	0.0311	mg/L	EPA 6020B	J	1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/15/16 09:05	12/16/16 19:03	6120445	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/15/16 10:35	12/15/16 14:19	6120426	MTC



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December 28, 2016

**Report No.: AZL0406**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120356 - SM 2540 C</b>											
<b>Blank (6120356-BLK1)</b>						Prepared & Analyzed: 12/13/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120356-BS1)</b>						Prepared & Analyzed: 12/13/16					
Total Dissolved Solids	411	25	10	mg/L	400.00		103	84-108			
<b>Duplicate (6120356-DUP1)</b>						Source: AZL0406-04			Prepared & Analyzed: 12/13/16		
Total Dissolved Solids	974	25	10	mg/L		980			0.6	10	
<b>Duplicate (6120356-DUP2)</b>						Source: AZL0435-04			Prepared & Analyzed: 12/13/16		
Total Dissolved Solids	ND	25	10	mg/L		ND				10	





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**Report No.: AZL0406**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120528 - EPA 300.0</b>											
<b>Blank (6120528-BLK1)</b> Prepared: 12/17/16 Analyzed: 12/22/16											
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.02	mg/L							
Sulfate	0.15	1.0	0.05	mg/L							J
<b>LCS (6120528-BS1)</b> Prepared: 12/17/16 Analyzed: 12/22/16											
Chloride	9.89	0.25	0.01	mg/L	10.010		99	90-110			
Fluoride	9.76	0.30	0.02	mg/L	10.020		97	90-110			
Sulfate	10.0	1.0	0.05	mg/L	10.020		100	90-110			
<b>Matrix Spike (6120528-MS1)</b> Source: AZL0383-02 Prepared: 12/17/16 Analyzed: 12/22/16											
Chloride	22.5	0.25	0.01	mg/L	10.010	13.6	89	90-110			QM-05
Fluoride	9.73	0.30	0.02	mg/L	10.020	0.30	94	90-110			
Sulfate	131	1.0	0.05	mg/L	10.020	133	NR	90-110			QM-02
<b>Matrix Spike (6120528-MS2)</b> Source: AZL0406-03 Prepared: 12/17/16 Analyzed: 12/22/16											
Chloride	43.3	0.25	0.01	mg/L	10.010	37.6	57	90-110			QM-05
Fluoride	10.2	0.30	0.02	mg/L	10.020	0.31	99	90-110			
Sulfate	155	1.0	0.05	mg/L	10.020	160	NR	90-110			QM-02
<b>Matrix Spike Dup (6120528-MSD1)</b> Source: AZL0383-02 Prepared: 12/17/16 Analyzed: 12/22/16											
Chloride	23.0	0.25	0.01	mg/L	10.010	13.6	94	90-110	2	15	
Fluoride	10.4	0.30	0.02	mg/L	10.020	0.30	101	90-110	7	15	
Sulfate	130	1.0	0.05	mg/L	10.020	133	NR	90-110	0.7	15	QM-02



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December 28, 2016

**Report No.: AZL0406**

**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 6120327 - EPA 3005A**

**Blank (6120327-BLK1)**

Prepared: 12/13/16 Analyzed: 12/14/16

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	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 (6120327-BS1)**

Prepared: 12/13/16 Analyzed: 12/14/16

Antimony	0.102	0.0030	0.0008	mg/L	0.10000		102	80-120			
Arsenic	0.0998	0.0050	0.0016	mg/L	0.10000		100	80-120			
Barium	0.0989	0.0100	0.0004	mg/L	0.10000		99	80-120			
Beryllium	0.101	0.0030	0.00008	mg/L	0.10000		101	80-120			
Boron	1.01	0.0400	0.0064	mg/L	1.0000		101	80-120			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000		104	80-120			
Calcium	0.968	0.500	0.0311	mg/L	1.0000		97	80-120			
Chromium	0.0986	0.0100	0.0009	mg/L	0.10000		99	80-120			
Cobalt	0.0970	0.0100	0.0005	mg/L	0.10000		97	80-120			
Copper	0.101	0.0250	0.0005	mg/L	0.10000		101	80-120			
Lead	0.0988	0.0050	0.0001	mg/L	0.10000		99	80-120			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000		103	80-120			
Nickel	0.0972	0.0100	0.0006	mg/L	0.10000		97	80-120			
Selenium	0.0986	0.0100	0.0010	mg/L	0.10000		99	80-120			
Silver	0.102	0.0100	0.0005	mg/L	0.10000		102	80-120			
Thallium	0.0989	0.0010	0.0002	mg/L	0.10000		99	80-120			
Vanadium	0.0993	0.0100	0.0071	mg/L	0.10000		99	80-120			
Zinc	0.100	0.0100	0.0021	mg/L	0.10000		100	80-120			
Lithium	0.0991	0.0500	0.0021	mg/L	0.10000		99	80-120			



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December 28, 2016

**Report No.: AZL0406**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120327 - EPA 3005A</b>											
<b>Matrix Spike (6120327-MS1)</b>			<b>Source: AZL0387-04</b>			<b>Prepared: 12/13/16 Analyzed: 12/14/16</b>					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125			
Arsenic	0.0936	0.0050	0.0016	mg/L	0.10000	ND	94	75-125			
Barium	0.186	0.0100	0.0004	mg/L	0.10000	0.0868	99	75-125			
Beryllium	0.0993	0.0030	0.00008	mg/L	0.10000	ND	99	75-125			
Boron	1.09	0.0400	0.0064	mg/L	1.0000	0.0758	102	75-125			
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000	ND	105	75-125			
Calcium	48.3	25.0	1.55	mg/L	1.0000	45.3	298	75-125			QM-02
Chromium	0.0936	0.0100	0.0009	mg/L	0.10000	ND	94	75-125			
Cobalt	0.0929	0.0100	0.0005	mg/L	0.10000	ND	93	75-125			
Copper	0.0939	0.0250	0.0005	mg/L	0.10000	0.0006	93	75-125			
Lead	0.0995	0.0050	0.0001	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000	ND	103	75-125			
Nickel	0.0946	0.0100	0.0006	mg/L	0.10000	0.0017	93	75-125			
Selenium	0.0937	0.0100	0.0010	mg/L	0.10000	ND	94	75-125			
Silver	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125			
Thallium	0.100	0.0010	0.0002	mg/L	0.10000	ND	100	75-125			
Vanadium	0.0976	0.0100	0.0071	mg/L	0.10000	ND	98	75-125			
Zinc	0.0971	0.0100	0.0021	mg/L	0.10000	ND	97	75-125			
Lithium	0.111	0.0500	0.0021	mg/L	0.10000	0.0153	95	75-125			
<b>Matrix Spike Dup (6120327-MSD1)</b>			<b>Source: AZL0387-04</b>			<b>Prepared: 12/13/16 Analyzed: 12/14/16</b>					
Antimony	0.101	0.0030	0.0008	mg/L	0.10000	ND	101	75-125	2	20	
Arsenic	0.0947	0.0050	0.0016	mg/L	0.10000	ND	95	75-125	1	20	
Barium	0.183	0.0100	0.0004	mg/L	0.10000	0.0868	97	75-125	1	20	
Beryllium	0.0972	0.0030	0.00008	mg/L	0.10000	ND	97	75-125	2	20	
Boron	1.05	0.0400	0.0064	mg/L	1.0000	0.0758	98	75-125	3	20	
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000	ND	101	75-125	4	20	
Calcium	47.7	25.0	1.55	mg/L	1.0000	45.3	242	75-125	1	20	QM-02
Chromium	0.0910	0.0100	0.0009	mg/L	0.10000	ND	91	75-125	3	20	
Cobalt	0.0901	0.0100	0.0005	mg/L	0.10000	ND	90	75-125	3	20	
Copper	0.0922	0.0250	0.0005	mg/L	0.10000	0.0006	92	75-125	2	20	
Lead	0.0961	0.0050	0.0001	mg/L	0.10000	ND	96	75-125	3	20	
Molybdenum	0.101	0.0100	0.0017	mg/L	0.10000	ND	101	75-125	2	20	
Nickel	0.0924	0.0100	0.0006	mg/L	0.10000	0.0017	91	75-125	2	20	
Selenium	0.0915	0.0100	0.0010	mg/L	0.10000	ND	92	75-125	2	20	
Silver	0.0993	0.0100	0.0005	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.0950	0.0010	0.0002	mg/L	0.10000	ND	95	75-125	5	20	
Vanadium	0.0973	0.0100	0.0071	mg/L	0.10000	ND	97	75-125	0.3	20	
Zinc	0.0942	0.0100	0.0021	mg/L	0.10000	ND	94	75-125	3	20	
Lithium	0.112	0.0500	0.0021	mg/L	0.10000	0.0153	97	75-125	1	20	



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December 28, 2016

**Report No.: AZL0406**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120327 - EPA 3005A</b>											
<b>Post Spike (6120327-PS1)</b>			<b>Source: AZL0387-04</b>			Prepared: 12/13/16 Analyzed: 12/14/16					
Antimony	98.8			ug/L	100.00	0.310	98	80-120			
Arsenic	92.5			ug/L	100.00	-0.580	92	80-120			
Barium	178			ug/L	100.00	86.8	92	80-120			
Beryllium	97.2			ug/L	100.00	0.0100	97	80-120			
Boron	1070			ug/L	1000.0	75.8	99	80-120			
Cadmium	102			ug/L	100.00	0.00	102	80-120			
Calcium	46400			ug/L	1000.0	45300	113	80-120			
Chromium	92.3			ug/L	100.00	-2.69	92	80-120			
Cobalt	91.0			ug/L	100.00	0.230	91	80-120			
Copper	92.4			ug/L	100.00	0.580	92	80-120			
Lead	97.1			ug/L	100.00	0.00	97	80-120			
Molybdenum	103			ug/L	100.00	0.130	103	80-120			
Nickel	91.8			ug/L	100.00	1.67	90	80-120			
Selenium	92.1			ug/L	100.00	-0.370	92	80-120			
Silver	99.8			ug/L	100.00	0.00	100	80-120			
Thallium	97.6			ug/L	100.00	0.0100	98	80-120			
Vanadium	97.8			ug/L	100.00	2.96	95	80-120			
Zinc	95.2			ug/L	100.00	1.18	94	80-120			
Lithium	110			ug/L	100.00	15.3	95	80-120			

**Batch 6120387 - EPA 7470A**

<b>Blank (6120387-BLK1)</b>					Prepared & Analyzed: 12/14/16						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120387-BS1)</b>					Prepared & Analyzed: 12/14/16						
Mercury	0.00237	0.00050	0.000041	mg/L	2.5000E-3		95	80-120			



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**Report No.: AZL0406**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120387 - EPA 7470A</b>											
<b>Duplicate (6120387-DUP1)</b>			<b>Source: AZL0390-01</b>			<b>Prepared &amp; Analyzed: 12/14/16</b>					
Mercury	ND	0.00050	0.000041	mg/L		ND				20	
<b>Matrix Spike (6120387-MS1)</b>			<b>Source: AZL0387-07</b>			<b>Prepared &amp; Analyzed: 12/14/16</b>					
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125			
<b>Matrix Spike Dup (6120387-MSD1)</b>			<b>Source: AZL0387-07</b>			<b>Prepared &amp; Analyzed: 12/14/16</b>					
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125	2	20	
<b>Post Spike (6120387-PS1)</b>			<b>Source: AZL0387-07</b>			<b>Prepared &amp; Analyzed: 12/14/16</b>					
Mercury	1.66			ug/L	1.6667	-0.0210	100	80-120			
<b>Batch 6120426 - EPA 7470A</b>											
<b>Blank (6120426-BLK1)</b>						<b>Prepared &amp; Analyzed: 12/15/16</b>					
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120426-BS1)</b>						<b>Prepared &amp; Analyzed: 12/15/16</b>					
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			
<b>Matrix Spike (6120426-MS1)</b>			<b>Source: AZL0406-04</b>			<b>Prepared &amp; Analyzed: 12/15/16</b>					
Mercury	0.00243	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125			
<b>Matrix Spike Dup (6120426-MSD1)</b>			<b>Source: AZL0406-04</b>			<b>Prepared &amp; Analyzed: 12/15/16</b>					
Mercury	0.00242	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125	0.3	20	
<b>Post Spike (6120426-PS1)</b>			<b>Source: AZL0406-04</b>			<b>Prepared &amp; Analyzed: 12/15/16</b>					
Mercury	1.77			ug/L	1.6667	-0.0161	106	80-120			



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**Report No.: AZL0406**

**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 6120445 - EPA 3005A**

**Blank (6120445-BLK1)**

Prepared: 12/15/16 Analyzed: 12/16/16

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	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 (6120445-BS1)**

Prepared: 12/15/16 Analyzed: 12/16/16

Antimony	0.116	0.0030	0.0008	mg/L	0.10000		116	80-120			
Arsenic	0.105	0.0050	0.0016	mg/L	0.10000		105	80-120			
Barium	0.105	0.0100	0.0004	mg/L	0.10000		105	80-120			
Beryllium	0.111	0.0030	0.00008	mg/L	0.10000		111	80-120			
Boron	1.05	0.0400	0.0064	mg/L	1.0000		105	80-120			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000		104	80-120			
Calcium	1.07	0.500	0.0311	mg/L	1.0000		107	80-120			
Chromium	0.104	0.0100	0.0009	mg/L	0.10000		104	80-120			
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Copper	0.103	0.0250	0.0005	mg/L	0.10000		103	80-120			
Lead	0.104	0.0050	0.0001	mg/L	0.10000		104	80-120			
Molybdenum	0.106	0.0100	0.0017	mg/L	0.10000		106	80-120			
Nickel	0.105	0.0100	0.0006	mg/L	0.10000		105	80-120			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120			
Silver	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120			
Thallium	0.105	0.0010	0.0002	mg/L	0.10000		105	80-120			
Vanadium	0.107	0.0100	0.0071	mg/L	0.10000		107	80-120			
Zinc	0.106	0.0100	0.0021	mg/L	0.10000		106	80-120			
Lithium	0.106	0.0500	0.0021	mg/L	0.10000		106	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

December 28, 2016

**Report No.: AZL0406**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120445 - EPA 3005A</b>											
<b>Matrix Spike (6120445-MS1)</b>			<b>Source: AZL0418-01</b>				Prepared: 12/15/16 Analyzed: 12/16/16				
Antimony	0.115	0.0030	0.0008	mg/L	0.10000	ND	115	75-125			
Arsenic	0.105	0.0050	0.0016	mg/L	0.10000	ND	105	75-125			
Barium	0.174	0.0100	0.0004	mg/L	0.10000	0.0781	95	75-125			
Beryllium	0.0958	0.0030	0.00008	mg/L	0.10000	ND	96	75-125			
Boron	1.01	0.0400	0.0064	mg/L	1.0000	0.224	79	75-125			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000	ND	104	75-125			
Calcium	78.8	25.0	1.55	mg/L	1.0000	74.0	480	75-125			QM-02
Chromium	0.104	0.0100	0.0009	mg/L	0.10000	ND	104	75-125			
Cobalt	0.108	0.0100	0.0005	mg/L	0.10000	0.0005	107	75-125			
Copper	0.102	0.0250	0.0005	mg/L	0.10000	ND	102	75-125			
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125			
Molybdenum	0.110	0.0100	0.0017	mg/L	0.10000	ND	110	75-125			
Nickel	0.106	0.0100	0.0006	mg/L	0.10000	ND	106	75-125			
Selenium	0.102	0.0100	0.0010	mg/L	0.10000	ND	102	75-125			
Silver	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	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	0.111	0.0100	0.0021	mg/L	0.10000	ND	111	75-125			
Lithium	0.0967	0.0500	0.0021	mg/L	0.10000	ND	97	75-125			
<b>Matrix Spike Dup (6120445-MSD1)</b>			<b>Source: AZL0418-01</b>				Prepared: 12/15/16 Analyzed: 12/16/16				
Antimony	0.118	0.0030	0.0008	mg/L	0.10000	ND	118	75-125	3	20	
Arsenic	0.109	0.0050	0.0016	mg/L	0.10000	ND	109	75-125	3	20	
Barium	0.176	0.0100	0.0004	mg/L	0.10000	0.0781	98	75-125	1	20	
Beryllium	0.0929	0.0030	0.00008	mg/L	0.10000	ND	93	75-125	3	20	
Boron	0.979	0.0400	0.0064	mg/L	1.0000	0.224	76	75-125	3	20	
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000	ND	104	75-125	0.4	20	
Calcium	81.3	25.0	1.55	mg/L	1.0000	74.0	728	75-125	3	20	QM-02
Chromium	0.106	0.0100	0.0009	mg/L	0.10000	ND	106	75-125	2	20	
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	0.0005	102	75-125	5	20	
Copper	0.101	0.0250	0.0005	mg/L	0.10000	ND	101	75-125	1	20	
Lead	0.101	0.0050	0.0001	mg/L	0.10000	ND	101	75-125	0.5	20	
Molybdenum	0.112	0.0100	0.0017	mg/L	0.10000	ND	112	75-125	2	20	
Nickel	0.103	0.0100	0.0006	mg/L	0.10000	ND	103	75-125	3	20	
Selenium	0.104	0.0100	0.0010	mg/L	0.10000	ND	104	75-125	2	20	
Silver	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	1	20	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125	1	20	
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125	0.3	20	
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	ND	106	75-125	4	20	
Lithium	0.0925	0.0500	0.0021	mg/L	0.10000	ND	92	75-125	4	20	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 28, 2016

**Report No.: AZL0406**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120445 - EPA 3005A</b>											
<b>Post Spike (6120445-PS1)</b>			<b>Source: AZL0418-01</b>			<b>Prepared: 12/15/16 Analyzed: 12/16/16</b>					
Antimony	109			ug/L	100.00	0.375	108	80-120			
Arsenic	110			ug/L	100.00	1.00	109	80-120			
Barium	178			ug/L	100.00	78.1	100	80-120			
Beryllium	96.0			ug/L	100.00	0.0417	96	80-120			
Boron	1010			ug/L	1000.0	224	78	80-120			QM-02
Cadmium	106			ug/L	100.00	0.0408	106	80-120			
Calcium	81800			ug/L	1000.0	74000	782	80-120			QM-02
Chromium	103			ug/L	100.00	0.152	103	80-120			
Cobalt	104			ug/L	100.00	0.524	103	80-120			
Copper	101			ug/L	100.00	0.266	101	80-120			
Lead	99.8			ug/L	100.00	0.0576	100	80-120			
Molybdenum	110			ug/L	100.00	0.410	110	80-120			
Nickel	103			ug/L	100.00	0.424	103	80-120			
Selenium	105			ug/L	100.00	0.274	105	80-120			
Silver	101			ug/L	100.00	0.0079	101	80-120			
Thallium	102			ug/L	100.00	0.0281	102	80-120			
Vanadium	109			ug/L	100.00	-1.15	109	80-120			
Zinc	108			ug/L	100.00	1.45	106	80-120			
Lithium	92.8			ug/L	100.00	0.782	92	80-120			





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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 28, 2016

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## Legend

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### 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

- 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: 12/12/2016 8:28:42AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/09/16 08:30

**Work Order:** AZL0406

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 8

**#Containers:** 23

**Minimum Temp(C):** 1.5

**Maximum Temp(C):** 1.5

**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:**



**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: AZL0063**

**December 15, 2016**

**Project: CCR Event**

**Project #:Plant Bowen**

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", written over a horizontal line.

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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 15, 2016

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-6	AZL0063-01	Ground Water	12/01/16 09:45	12/02/16 08:00
BGWA-26	AZL0063-02	Ground Water	12/01/16 11:40	12/02/16 08:00
BGWA-28	AZL0063-03	Ground Water	12/01/16 14:04	12/02/16 08:00
BGWA-27	AZL0063-04	Ground Water	12/01/16 12:00	12/02/16 08:00
BGWA-29	AZL0063-05	Ground Water	12/01/16 13:50	12/02/16 08:00
Dup-2	AZL0063-06	Ground Water	12/01/16 00:00	12/02/16 08:00



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0063

Project: CCR Event

Client ID: BGWA-6

Lab Number ID: AZL0063-01

Date/Time Sampled: 12/1/2016 9:45:00AM

Date/Time Received: 12/2/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	269	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	6.2	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 17:16	6120106	RNB
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 17:16	6120106	RNB
Sulfate	20	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 17:16	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Barium	0.0144	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Boron	0.0146	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Calcium	55.9	5.00	0.311	mg/L	EPA 6020B	B-01	10	12/06/16 09:50	12/09/16 12:59	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:01	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 15:04	6120161	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0063

Project: CCR Event

Client ID: BGWA-26

Lab Number ID: AZL0063-02

Date/Time Sampled: 12/1/2016 11:40:00AM

Date/Time Received: 12/2/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	214	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	9.2	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 18:18	6120106	RNB
Fluoride	0.20	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 18:18	6120106	RNB
Sulfate	57	5.0	0.26	mg/L	EPA 300.0		5	12/05/16 13:50	12/10/16 23:17	6120106	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Arsenic	0.0022	0.0050	0.0016	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Barium	0.0402	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Boron	0.0123	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Calcium	22.0	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 15:55	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Molybdenum	0.0072	0.0100	0.0017	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Lithium	0.0029	0.0500	0.0021	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:07	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 15:06	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

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0063

Project: CCR Event

Client ID: BGWA-28

Lab Number ID: AZL0063-03

Date/Time Sampled: 12/1/2016 2:04:00PM

Date/Time Received: 12/2/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	232	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	18	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 18:39	6120106	RNB
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 18:39	6120106	RNB
Sulfate	13	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 18:39	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Barium	0.116	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Boron	0.0640	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Calcium	42.4	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 16:01	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Selenium	0.0020	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:12	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 15:09	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

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0063

Project: CCR Event

Client ID: BGWA-27

Lab Number ID: AZL0063-04

Date/Time Sampled: 12/1/2016 12:00:00PM

Date/Time Received: 12/2/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	219	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	15	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:00	6120106	RNB
Fluoride	0.07	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 19:00	6120106	RNB
Sulfate	8.8	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:00	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Barium	0.0413	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Boron	0.0125	0.0400	0.0064	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Calcium	40.7	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 16:07	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Selenium	0.0012	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:18	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 15:11	6120161	MTC



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 Atlanta GA, 30339

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0063

Project: CCR Event

Client ID: BGWA-29

Lab Number ID: AZL0063-05

Date/Time Sampled: 12/1/2016 1:50:00PM

Date/Time Received: 12/2/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	121	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	1.8	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:20	6120106	RNB
Fluoride	0.08	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 19:20	6120106	RNB
Sulfate	7.8	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:20	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Barium	0.0334	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Calcium	19.8	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 16:14	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:24	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/07/16 11:20	12/07/16 15:13	6120161	MTC



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 Atlanta GA, 30339

December 15, 2016

Attention: Mr. Joju Abraham

Report No.: AZL0063

Project: CCR Event

Client ID: Dup-2

Lab Number ID: AZL0063-06

Date/Time Sampled: 12/1/2016 12:00:00AM

Date/Time Received: 12/2/2016 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	223	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	18	0.25	0.01	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:41	6120106	RNB
Fluoride	0.09	0.30	0.02	mg/L	EPA 300.0	J	1	12/05/16 13:50	12/05/16 19:41	6120106	RNB
Sulfate	13	1.0	0.05	mg/L	EPA 300.0		1	12/05/16 13:50	12/05/16 19:41	6120106	RNB
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Barium	0.109	0.0100	0.0004	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Boron	0.0623	0.0400	0.0064	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Calcium	42.9	2.50	0.155	mg/L	EPA 6020B	B-01	5	12/06/16 09:50	12/08/16 16:20	6120087	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Selenium	0.0013	0.0100	0.0010	mg/L	EPA 6020B	J	1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	12/06/16 09:50	12/08/16 02:41	6120087	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	12/08/16 11:25	12/08/16 16:19	6120212	MTC



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Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0063**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120123 - SM 2540 C</b>											
<b>Blank (6120123-BLK1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (6120123-BS1)</b>						Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	395	25	10	mg/L	400.00		99	84-108			
<b>Duplicate (6120123-DUP1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	231	25	10	mg/L		269			15	10	QR-03
<b>Duplicate (6120123-DUP2)</b>						Source: AZL0063-02 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	217	25	10	mg/L		214			1	10	
<b>Duplicate (6120123-DUP3)</b>						Source: AZL0033-06RE1 Prepared & Analyzed: 12/06/16					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0063**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120106 - EPA 300.0</b>											
<b>Blank (6120106-BLK1)</b>						Prepared & Analyzed: 12/05/16					
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 (6120106-BS1)</b>						Prepared & Analyzed: 12/05/16					
Chloride	10.4	0.25	0.01	mg/L	10.010		103	90-110			
Fluoride	10.4	0.30	0.02	mg/L	10.020		104	90-110			
Sulfate	10.3	1.0	0.05	mg/L	10.020		103	90-110			
<b>Matrix Spike (6120106-MS1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/05/16					
Chloride	16.0	0.25	0.01	mg/L	10.010	6.21	98	90-110			
Fluoride	10.1	0.30	0.02	mg/L	10.020	0.09	100	90-110			
Sulfate	27.8	1.0	0.05	mg/L	10.020	19.6	82	90-110			QM-02
<b>Matrix Spike Dup (6120106-MSD1)</b>						Source: AZL0063-01 Prepared & Analyzed: 12/05/16					
Chloride	16.7	0.25	0.01	mg/L	10.010	6.21	104	90-110	4	15	
Fluoride	10.7	0.30	0.02	mg/L	10.020	0.09	106	90-110	5	15	
Sulfate	28.3	1.0	0.05	mg/L	10.020	19.6	87	90-110	2	15	QM-02



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December 15, 2016

**Report No.: AZL0063**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120087 - EPA 3005A</b>											
<b>Blank (6120087-BLK1)</b>											
						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							
<b>LCS (6120087-BS1)</b>											
						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			



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Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0063**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120087 - EPA 3005A</b>											
<b>Matrix Spike (6120087-MS1)</b>			<b>Source: AZL0037-01</b>				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			QM-02
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			
<b>Matrix Spike Dup (6120087-MSD1)</b>			<b>Source: AZL0037-01</b>				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	QM-02
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	



**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 15, 2016

**Report No.: AZL0063**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 6120087 - EPA 3005A</b>											
<b>Post Spike (6120087-PS1)</b>			<b>Source: AZL0037-01</b>			<b>Prepared: 12/06/16 Analyzed: 12/08/16</b>					
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			QM-02
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			

**Batch 6120161 - EPA 7470A**

<b>Blank (6120161-BLK1)</b>				<b>Prepared &amp; Analyzed: 12/07/16</b>							
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120161-BS1)</b>				<b>Prepared &amp; Analyzed: 12/07/16</b>							
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3	95	80-120				





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 15, 2016

**Report No.: AZL0063**

**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>Matrix Spike (6120161-MS1)</b>			<b>Source: AZL0033-05</b>			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>			<b>Source: AZL0033-05</b>			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>			<b>Source: AZL0033-05</b>			Prepared & Analyzed: 12/07/16					
Mercury	1.61			ug/L	1.6667	0.00663	96	80-120			
<b>Batch 6120212 - EPA 7470A</b>											
<b>Blank (6120212-BLK1)</b>						Prepared & Analyzed: 12/08/16					
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (6120212-BS1)</b>						Prepared & Analyzed: 12/08/16					
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3		93	80-120			
<b>Duplicate (6120212-DUP1)</b>			<b>Source: AZL0053-01RE1</b>			Prepared & Analyzed: 12/08/16					
Mercury	0.00009	0.00050	0.000041	mg/L		0.00010			8	20	J
<b>Matrix Spike (6120212-MS1)</b>			<b>Source: AZL0145-04</b>			Prepared & Analyzed: 12/08/16					
Mercury	0.00227	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (6120212-MSD1)</b>			<b>Source: AZL0145-04</b>			Prepared & Analyzed: 12/08/16					
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125	0.4	20	
<b>Post Spike (6120212-PS1)</b>			<b>Source: AZL0145-04</b>			Prepared & Analyzed: 12/08/16					
Mercury	1.62			ug/L	1.6667	-0.0651	97	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

December 15, 2016

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED					L A B  I D  N U M B E R  ↓	CONTAINER TYPE	PRESERVATION												
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B1085 Atlanta, GA 30308</u>					CONTAINER TYPE:	1	2	3																
REPORT TO: <u>Joju Abraham</u>					PRESERVATION:					CONTAINERS ↓	*MATRIX CODES:													
REQUESTED COMPLETION DATE:					# of																			
PROJECT NAME/STATE: <u>Plant Bowen-Ash Pond CLR</u>					Meths App. III + IV EPA 6012 + EPA 7470 Li, P, SO <sub>4</sub> EPA 300 TDS SM 7540 Radion 226 + 228 SW 846 9345 + 9370																			
PROJECT #:																								
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION																			
12/1/16	0945	GW		X	B6WA-6	3							1											
12/1/16	1140	GW		X	B6WA-26	3							2											
12/1/16	1404	GW		X	B6WA-28	3							3											
12/1/16	1200	GW		X	B6WA-27	3							4											
12/1/16	1350	GW		X	B6WA-29	4							5											
12/1/16	---	GW		X	Dup-2	3							6											
SAMPLED BY AND TITLE: <u>Robert Mill / Kevin Stokerson</u>					DATE/TIME: <u>12/1/16 1525</u>					RELINQUISHED BY: <u>[Signature]</u>					DATE/TIME: <u>12/1/16 0800</u>									
RECEIVED BY:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:									
DELIVERED BY LAB: <u>[Signature]</u>					DATE/TIME: <u>12/02/16 0800</u>					SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER <u>CLIENT</u> OTHER FS					FOR LAB USE ONLY LAB #: <u>AZL0063</u> Entered into LIMS: <u>MR</u>									
Checked: No NA <u>Yes</u> No NA					Ice: <u>Yes</u> No NA					Temperature: <u>10°C</u> Min: <u>1°C</u> Max:					Custody Seal: <u>Intact</u> Broken Not Present					# of Coolers: <u>1</u> Cooler ID:				



**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: 12/15/2016 11:14:55AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 12/02/16 08:00

**Work Order:** AZL0063

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 6

**#Containers:** 19

**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:**

January 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30204308

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

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

Project: Plant Bowen

Pace Project No.: 30204308

### 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 Bowen

Pace Project No.: 30204308

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30204308001	BGWA-6	Water	12/01/16 09:45	12/05/16 09:45
30204308002	BGWA-26	Water	12/01/16 11:40	12/05/16 09:45
30204308003	BGWA-28	Water	12/01/16 14:04	12/05/16 09:45
30204308004	BGWA-27	Water	12/01/16 12:00	12/05/16 09:45
30204308005	BGWA-29	Water	12/01/16 13:50	12/05/16 09:45
30204308006	Dup-2	Water	12/01/16 00:00	12/05/16 09:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen  
Pace Project No.: 30204308

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30204308001	BGWA-6	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204308002	BGWA-26	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204308003	BGWA-28	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204308004	BGWA-27	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204308005	BGWA-29	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30204308006	Dup-2	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 Bowen  
Pace Project No.: 30204308

Sample: BGWA-6		Lab ID: 30204308001	Collected: 12/01/16 09:45	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.0577 ± 0.114 (0.265)</b> C:97% T:NA	pCi/L	12/19/16 09:55	13982-63-3		
Radium-228	EPA 9320	<b>0.370 ± 0.374 (0.772)</b> C:76% T:77%	pCi/L	01/08/17 13:27	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.428 ± 0.488 (1.04)</b>	pCi/L	01/11/17 15:36	7440-14-4		

Sample: BGWA-26		Lab ID: 30204308002	Collected: 12/01/16 11:40	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.280 ± 0.160 (0.209)</b> C:90% T:NA	pCi/L	12/19/16 09:55	13982-63-3		
Radium-228	EPA 9320	<b>0.218 ± 0.427 (0.940)</b> C:68% T:72%	pCi/L	01/08/17 13:27	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.498 ± 0.587 (1.15)</b>	pCi/L	01/11/17 15:36	7440-14-4		

Sample: BGWA-28		Lab ID: 30204308003	Collected: 12/01/16 14:04	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.204 ± 0.170 (0.323)</b> C:94% T:NA	pCi/L	12/19/16 09:55	13982-63-3		
Radium-228	EPA 9320	<b>-0.0271 ± 0.334 (0.791)</b> C:71% T:78%	pCi/L	01/08/17 13:27	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.204 ± 0.504 (1.11)</b>	pCi/L	01/11/17 15:36	7440-14-4		

Sample: BGWA-27		Lab ID: 30204308004	Collected: 12/01/16 12:00	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.166 ± 0.139 (0.249)</b> C:95% T:NA	pCi/L	12/19/16 10:05	13982-63-3		
Radium-228	EPA 9320	<b>-0.138 ± 0.316 (0.774)</b> C:71% T:81%	pCi/L	01/08/17 13:27	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.166 ± 0.455 (1.02)</b>	pCi/L	01/11/17 15:36	7440-14-4		

Sample: BGWA-29		Lab ID: 30204308005	Collected: 12/01/16 13:50	Received: 12/05/16 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.138 ± 0.125 (0.224)</b> C:94% T:NA	pCi/L	12/19/16 10:05	13982-63-3		
Radium-228	EPA 9320	<b>0.0699 ± 0.330 (0.754)</b> C:71% T:82%	pCi/L	01/08/17 13:27	15262-20-1		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204308

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	<b>0.208 ± 0.455 (0.978)</b>	pCi/L	01/11/17 15:36	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.265 ± 0.153 (0.198)</b> C:95% T:NA	pCi/L	12/19/16 10:05	13982-63-3	
Radium-228	EPA 9320	<b>0.589 ± 0.409 (0.786)</b> C:66% T:88%	pCi/L	01/08/17 13:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.854 ± 0.562 (0.984)</b>	pCi/L	01/11/17 16:38	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30204308

QC Batch: 243000

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30204308001, 30204308002, 30204308003, 30204308004, 30204308005, 30204308006

METHOD BLANK: 1195272

Matrix: Water

Associated Lab Samples: 30204308001, 30204308002, 30204308003, 30204308004, 30204308005, 30204308006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0698 ± 0.0862 (0.168) C:97% T:NA	pCi/L	12/19/16 09:55	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen  
Pace Project No.: 30204308

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QC Batch:	243002	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30204308001, 30204308002, 30204308003, 30204308004, 30204308005, 30204308006		

---

METHOD BLANK:	1195278	Matrix:	Water
Associated Lab Samples:	30204308001, 30204308002, 30204308003, 30204308004, 30204308005, 30204308006		

---

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 Bowen  
Pace Project No.: 30204308

### 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#: 30204308



Chain of Custody



Workorder: AZL0063

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 1/3/2017

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWA-6	G	12/1/2016 9:45	AZL0063-01	GW	1				X	001
2	BGWA-26	G	12/1/2016 11:40	AZL0063-02	GW	1				X	002
3	BGWA-28	G	12/1/2016 14:04	AZL0063-03	GW	1				X	003
4	BGWA-27	G	12/1/2016 12:00	AZL0063-04	GW	1				X	004
5	BGWA-29	G	12/1/2016 13:50	AZL0063-05	GW	2				X	005
6	Dup-2	G	12/1/2016 0:00	AZL0063-06	GW	1				X	006
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			<i>Karen Hill</i>	12-5-16 0945	
2					
3					

Cooler Temperature on Receipt <u>N/A</u> °C	Custody Seal <u>Y</u> or <u>(N)</u>	Received on Ice <u>Y</u> or <u>(N)</u>	Sample Intact <u>(Y)</u> or <u>N</u>
---	-------------------------------------	--	--------------------------------------

\*\*\*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.

30204308

CHAIN OF CUSTODY RECORD



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

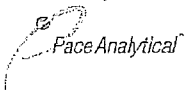
PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED					L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B 10185 Atlanta, GA 30308</u>					CONTAINER TYPE:	1	2	3					P - PLASTIC	1 - HCl, ≤6°C
REPORT TO: <u>Joia Abraham</u>					PRESERVATION:	3	7	3				A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REQUESTED COMPLETION DATE:					# of							G - CLEAR GLASS	3 - HNO <sub>3</sub>	
PROJECT NAME/STATE: <u>Plant Bowen-Ash Pond CCR</u>					CONTAINERS	↓	Metals Ar, III + IV EPA 600 & EPA 7470 U.F. 504 EPA 300 TDS 5M 7540L Radon 226 + 228 SW-846 93.5 d 9370							
PROJECT #:														
Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAB	SAMPLE IDENTIFICATION									
12/1/16	0945	GW		X	B6WA-6	3	1	1	1					1
12/1/16	1140	GW		X	B6WA-26	3	1	1	1					2
12/1/16	1404	GW		X	B6WA-28	3	1	1	1					3
12/1/16	1200	GW		X	B6WA-27	3	1	1	1					4
12/1/16	1350	GW		X	B6WA-29	4	1	1	2					5
12/1/16	---	GW		X	Dup-2	3	1	1	1					6

SAMPLED BY AND TITLE: <u>Robert Mill / Kevin Johnson</u>		DATE/TIME: <u>12/1/16 1525</u>	RELINQUISHED BY: <u>[Signature]</u>	DATE/TIME: <u>12/1/16 0800</u>	FOR LAB USE ONLY LAB #: <u>AZL0063</u>
RECEIVED BY: <u>[Signature]</u>		DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	Entered into LIMS: <u>NR</u>
RECEIVED BY LAB: <u>Moakman</u>		DATE/TIME: <u>12/02/16 0800</u>	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER <u>CLIENT</u> OTHER FS		Tracking #:
pH checked: <u>Yes</u> No NA		Ice: <u>Yes</u> No NA	Temperature: <u>1°C</u> Min. <u>1°C</u> Max.	Custody Seal: <u>Intact</u> Broken Not Present	# of Coolers Cooler ID:

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace Georgia

Project # 30204308

Courier:  Fed Ex  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:	<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:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13. <u>pH &lt; 2</u>
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>KH</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>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

Test: Ra-226  
Analyst: LAL  
Date: 12/16/2016  
Worklist: 32909  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1195272	
MB concentration:	0.070	
M/B Counting Uncertainty:	0.086	
MB MDC:	0.168	
MB Numerical Performance Indicator:	1.60	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
		LCS32909
Count Date:	12/19/2016	
Spike I.D.:	16-026	
Spike Concentration (pCi/mL):	44.672	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.506	
Target Conc. (pCi/L, g, F):	8.828	
Uncertainty (Calculated):	0.415	
Result (pCi/L, g, F):	7.612	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.708	
Numerical Performance Indicator:	-2.90	
Percent Recovery:	86.22%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30204306004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30204306004DUP	
Sample Result (pCi/L, g, F):	0.021	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.091	
Sample Duplicate Result (pCi/L, g, F):	0.129	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.143	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.252	30204306004
Duplicate RPD:	144.06%	30204306004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Sample*

*On 1/11/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 12/28/2016  
Worklist: 32911  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID		1195278
MB concentration:		0.184
M/B Counting Uncertainty:		0.379
MB MDC:		0.841
MB Numerical Performance Indicator:		0.95
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS32911	LCS032911
Count Date:		1/8/2017	
Spike I.D.:		16-027	
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 Matrix Spike Control Assessment	
	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):
	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:

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
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	30204292009
Duplicate RPD:	98.30%	30204292009DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
	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:

## 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.

*Amc 1/1/17*

January 23, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30205169

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on December 12, 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 Bowen

Pace Project No.: 30205169

### 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 Bowen

Pace Project No.: 30205169

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30205169001	BGWC-22	Water	12/08/16 10:25	12/12/16 09:20
30205169002	BGWC-21	Water	12/08/16 13:20	12/12/16 09:20
30205169003	BGWC-25	Water	12/08/16 15:56	12/12/16 09:20
30205169004	Dup-3	Water	12/08/16 00:00	12/12/16 09:20
30205169005	FBL120816	Water	12/08/16 16:45	12/12/16 09:20
30205169006	EQBL120816	Water	12/08/16 16:50	12/12/16 09:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30205169

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30205169001	BGWC-22	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1
30205169002	BGWC-21	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1
30205169003	BGWC-25	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1
30205169004	Dup-3	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1
30205169005	FBL120816	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1
30205169006	EQBL120816	EPA 9315	LAL	1
		EPA 9320	JAL	1
		Total Radium Calculation	RMK	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen  
Pace Project No.: 30205169

Sample: <b>BGWC-22</b>		Lab ID: <b>30205169001</b>	Collected: 12/08/16 10:25	Received: 12/12/16 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>0.861 ± 0.343 (0.359)</b> C:95% T:NA	pCi/L	01/17/17 09:27	13982-63-3		
Radium-228	EPA 9320	<b>1.78 ± 0.604 (0.823)</b> C:66% T:86%	pCi/L	01/22/17 12:55	15262-20-1		
Total Radium	Total Radium Calculation	<b>2.64 ± 0.947 (1.18)</b>	pCi/L	01/23/17 12:09	7440-14-4		

Sample: <b>BGWC-21</b>		Lab ID: <b>30205169002</b>	Collected: 12/08/16 13:20	Received: 12/12/16 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>0.343 ± 0.270 (0.477)</b> C:84% T:NA	pCi/L	01/17/17 09:28	13982-63-3		
Radium-228	EPA 9320	<b>0.672 ± 0.412 (0.758)</b> C:65% T:89%	pCi/L	01/22/17 12:55	15262-20-1		
Total Radium	Total Radium Calculation	<b>1.02 ± 0.682 (1.24)</b>	pCi/L	01/23/17 12:09	7440-14-4		

Sample: <b>BGWC-25</b>		Lab ID: <b>30205169003</b>	Collected: 12/08/16 15:56	Received: 12/12/16 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>0.196 ± 0.210 (0.404)</b> C:83% T:NA	pCi/L	01/17/17 09:28	13982-63-3		
Radium-228	EPA 9320	<b>1.27 ± 0.854 (1.61)</b> C:69% T:39%	pCi/L	01/22/17 12:55	15262-20-1		
Total Radium	Total Radium Calculation	<b>1.47 ± 1.06 (2.01)</b>	pCi/L	01/23/17 12:09	7440-14-4		

Sample: <b>Dup-3</b>		Lab ID: <b>30205169004</b>	Collected: 12/08/16 00:00	Received: 12/12/16 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>0.665 ± 0.338 (0.516)</b> C:98% T:NA	pCi/L	01/17/17 09:28	13982-63-3		
Radium-228	EPA 9320	<b>1.18 ± 0.466 (0.698)</b> C:70% T:87%	pCi/L	01/22/17 16:00	15262-20-1		
Total Radium	Total Radium Calculation	<b>1.85 ± 0.804 (1.21)</b>	pCi/L	01/23/17 12:09	7440-14-4		

Sample: <b>FBL120816</b>		Lab ID: <b>30205169005</b>	Collected: 12/08/16 16:45	Received: 12/12/16 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>0.0630 ± 0.170 (0.414)</b> C:89% T:NA	pCi/L	01/17/17 09:28	13982-63-3		
Radium-228	EPA 9320	<b>1.53 ± 0.602 (0.932)</b> C:62% T:86%	pCi/L	01/22/17 16:00	15262-20-1		

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen  
Pace Project No.: 30205169

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	<b>1.59 ± 0.772 (1.35)</b>	pCi/L	01/23/17 12:09	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.102 ± 0.176 (0.395)</b> C:83% T:NA	pCi/L	01/17/17 09:28	13982-63-3	
Radium-228	EPA 9320	<b>0.614 ± 0.407 (0.771)</b> C:65% T:92%	pCi/L	01/22/17 16:00	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.716 ± 0.583 (1.17)</b>	pCi/L	01/23/17 12:09	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30205169

QC Batch: 245740

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30205169001, 30205169002, 30205169003, 30205169004, 30205169005, 30205169006

METHOD BLANK: 1208859

Matrix: Water

Associated Lab Samples: 30205169001, 30205169002, 30205169003, 30205169004, 30205169005, 30205169006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.612 ± 0.377 (0.695) C:68% T:93%	pCi/L	01/22/17 12:53	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30205169

---

QC Batch:	245739	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30205169001, 30205169002, 30205169003, 30205169004, 30205169005, 30205169006		

---

METHOD BLANK:	1208851	Matrix:	Water
Associated Lab Samples:	30205169001, 30205169002, 30205169003, 30205169004, 30205169005, 30205169006		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0563 ± 0.118 (0.277) C:97% T:NA	pCi/L	01/17/17 08:09	

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## QUALIFIERS

Project: Plant Bowen

Pace Project No.: 30205169

### 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



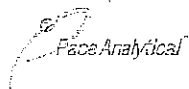
Pace Analytical Services, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED										L A B I D N U M B E R ↓	CONTAINER TYPE		PRESERVATION			
SYSTEM CONSULTING SERVICES 2412040 Marshall Blvd SE 31028 Atlanta, GA 30328					CONTAINER TYPE	P	S	P										P - PLASTIC	1 - HCl, ≤6°C		
					PRESERVATION	3	7	3												A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C
REPORT TO:					CONTAINERS	# of	C	O	N	T	A	I	N	E		R	*MATRIX CODES:				
CC: <u>Chadwick</u> Requested Completion Date: <u>PO#</u> <u>6801068498</u>																	D	W	S	L	A
PROJECT NAME/STATE:																REMARKS/ADDITIONAL INFORMATION					
PROJECT #:																					
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	↓															
12/16/16	1025	GW		X	BEUC-22	4	1	1	2												1
12/16/16	1320	GW		X	BEUC-21	3	1	1	1												
12/16/16	1435	GW		X	BEUC-14	2	1	1													3
12/16/16	1542	GW		X	BEUC-15	2	1	1													4
12/16/16	1556	GW		X	BEUC-25	3	1	1	1												5
12/16/16	-	GW		X	Dup-3	3	1	1	1												6
12/16/16	1645	W		X	FDL120816	3	1	1	1												7
12/16/16	1650	W		X	EQSL20816	3	1	1	1												8

Sample Condition Upon Receipt Pittsburgh

30205169



Client Name: Pace Georgia Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 08125101 0100

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: KAL 12-12-16

Comments:	Yes	No	N/A	
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/Analysis Matrix: <u>WT</u>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input 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.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PHLZ
exceptions: VOA, coliform, TOC, O&G, Phenolics			Initial when completed: <u>AKR</u>	Date/time of preservation
			Lot # of added preservative	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
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>AKR</u> Date: <u>12-13-16</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

Test: Ra-228  
Analyst: JAL  
Date: 1/13/2017  
Worklist: 33371  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1208859	
MB concentration:	0.612	
M/B Counting Uncertainty:	0.360	
MB MDC:	0.695	
MB Numerical Performance Indicator:	3.33	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCS/D (Y or N)?	N
	LCS33371	LCS33371
Count Date:	1/22/2017	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.496	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.608	
Target Conc. (pCi/L, g, F):	6.307	
Uncertainty (Calculated):	0.454	
Result (pCi/L, g, F):	6.561	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.798	
Numerical Performance Indicator:	0.54	
Percent Recovery:	104.03%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30205168004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30205168004DUP	
Sample Result (pCi/L, g, F):	0.344	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.356	
Sample Duplicate Result (pCi/L, g, F):	0.439	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.335	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.382	30205168004
Duplicate RPD:	24.32%	30205168004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*JAL*  
1/23/17



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: LAL  
Date: 1/16/2017  
Worklist: 33370  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID		1208851
MB concentration:		0.056
M/B Counting Uncertainty:		0.118
MB MDC:		0.277
MB Numerical Performance Indicator:		0.94
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		
	LCS/D (Y or N)?	N
	LCS33370	LCS/D33370
Count Date:		1/17/2017
Spike I.D.:		16-026
Spike Concentration (pCi/mL):		44.671
Volume Used (mL):		0.10
Aliquot Volume (L, g, F):		0.506
Target Conc. (pCi/L, g, F):		8.828
Uncertainty (Calculated):		0.415
Result (pCi/L, g, F):		7.998
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		0.881
Numerical Performance Indicator:		-1.67
Percent Recovery:		90.60%
Status vs Numerical Indicator:		N/A
Status vs Recovery:		Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30205168004	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30205168004DUP	
Sample Result (pCi/L, g, F):	0.189	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.188	
Sample Duplicate Result (pCi/L, g, F):	0.204	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.195	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.110	30205168004
Duplicate RPD:	7.72%	30205168004DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*[Handwritten Signature]*  
1/23/17



February 22, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30208969

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on January 25, 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  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Plant Bowen

Pace Project No.: 30208969

### 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 Bowen

Pace Project No.: 30208969

<b>Lab ID</b>	<b>Sample ID</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Date Received</b>
30208969001	BGWA-30	Water	01/23/17 16:40	01/25/17 10:30

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30208969

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30208969001	BGWA-30	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 Bowen

Pace Project No.: 30208969

**Sample: BGWA-30**      **Lab ID: 30208969001**      Collected: 01/23/17 16:40      Received: 01/25/17 10:30      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.39 ± 0.343 (0.181)</b> <b>C:102% T:NA</b>	pCi/L	02/14/17 10:42	13982-63-3	
Radium-228	EPA 9320	<b>0.628 ± 0.565 (1.15)</b> <b>C:58% T:81%</b>	pCi/L	02/22/17 12:44	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.71 ± 1.08 (1.42)</b>	pCi/L	02/22/17 17:32	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30208969

QC Batch: 248823

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30208969001

METHOD BLANK: 1223621

Matrix: Water

Associated Lab Samples: 30208969001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0812 ± 0.121 (0.265) C:94% T:NA	pCi/L	02/14/17 10:57	

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 Bowen

Pace Project No.: 30208969

QC Batch: 248898

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30208969001

METHOD BLANK: 1224047

Matrix: Water

Associated Lab Samples: 30208969001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.520 ± 0.375 (0.722) C:72% T:87%	pCi/L	02/20/17 20:11	

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: Plant Bowen  
Pace Project No.: 30208969

### 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, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

30208909 PAGE 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED							LAB NUMBER	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE											
System Company Services					P	P	P							P - PLASTIC	1 - HCl, ≤5°C	
241 Ralph McGill Blvd SE 310185					3	7	3							A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤5°C	
Atlanta, GA 30308					# of									G - CLEAR GLASS	3 - HNO <sub>3</sub>	
REPORT TO:			CC: Manna Padilla		CONTAINERS	↓	Methods App. III, IIIA EPA 6070, EPA 8140 C.F. 501 EPA 300 TSS 212.510 C Radon 224 & 228 SW-846 915.1032									
Requested Completion Date:			PO #:													
Project Name/State:																
Project #:																
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION											
1/23/17	1640	GW		X	BG02-30		4	1	1	2						
REMARKS/ADDITIONAL INFORMATION																
SAMPLED BY AND TITLE:					DATE/TIME:			RELINQUISHED BY:			DATE/TIME:			FOR LAB USE ONLY		
RECEIVED BY:					DATE/TIME:			RELINQUISHED BY:			DATE/TIME:			LAB #:		
RECEIVED BY LAB:					DATE/TIME:			SAMPLE SHIPPED VIA:			DATE/TIME:			Entered into LIMS:		
pH checked:					Temperature:			Custody Seal:			# of Coolers:			Cooler ID:		
Yes No NA					Min Max			Intact Broken Not Present								

Sample Condition Upon Receipt Pittsburgh



Client Name: POLICE GA

Project # 30208969

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 1081251018844

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

Thermometer Used N/A      Type of Ice: Wet Blue None      °C      Final Temp: \_\_\_\_\_ °C

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

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ARM 1/25/17

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.
Filtered volume received for Dissolved tests			/	14.
All containers have been checked for preservation.	/			15.
All containers needing preservation are found to be in compliance with EPA recommendation.				<u>PH42</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>ARM</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>ARM</u> Date: <u>1/25/17</u>

Client Notification/ Resolution:      Date/Time: \_\_\_\_\_      Contacted By: \_\_\_\_\_  
 Person Contacted: \_\_\_\_\_

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.**

Test: Ra-228  
Analyst: JLW  
Date: 2/9/2017  
Worklist: 33964  
Matrix: DW

Method Blank Assessment		
MB Sample ID	1224047	
MB concentration:	0.520	
M/B Counting Uncertainty:	0.364	
MB MDC:	0.722	
MB Numerical Performance Indicator:	2.81	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS33964	LCS033964
Count Date:	2/20/2017	
Spike I.D.:	16-027	
Spike Concentration (pCi/mL):	25.250	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.804	
Target Conc. (pCi/L, g, F):	6.281	
Uncertainty (Calculated):	0.452	
Result (pCi/L, g, F):	6.644	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.773	
Numerical Performance Indicator:	0.79	
Percent Recovery:	105.78%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30209047006	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30209047006DUP	
Sample Result (pCi/L, g, F):	0.874	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.548	
Sample Duplicate Result (pCi/L, g, F):	0.471	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.524	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.044	
Duplicate RPD:	60.06%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*JLW*  
*2/22/17*



## Quality Control Sample Performance Assessment

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

Test: Ra-226  
Analyst: LAL  
Date: 2/10/2017  
Worklist: 33938  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1223621
MB concentration:	0.122
M/B Counting Uncertainty:	0.180
MB MDC:	0.397
MB Numerical Performance Indicator:	1.33
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS33938	LCSD33938
Count Date:	2/14/2017		
Spike I.D.:	16-026		
Spike Concentration (pCi/mL):	44.659		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.502		
Target Conc. (pCi/L, g, F):	8.890		
Uncertainty (Calculated):	0.418		
Result (pCi/L, g, F):	7.710		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.698		
Numerical Performance Indicator:	-2.84		
Percent Recovery:	86.73%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30208670001	
Duplicate Sample I.D.	30208670001DUP	
Sample Result (pCi/L, g, F):	0.075	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.156	
Sample Duplicate Result (pCi/L, g, F):	0.159	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.199	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.651	30208670001
Duplicate RPD:	71.67%	30208670001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LAL*  
*Om 2/22/17*



**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: AAB0267**

**February 20, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

February 20, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-30	AAB0267-01	Ground Water	02/07/17 09:58	02/08/17 08:10



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 20, 2017

Report No.: AAB0267

Project: CCR Event

Client ID: BGWA-30

Lab Number ID: AAB0267-01

Date/Time Sampled: 2/7/2017 9:58:00AM

Date/Time Received: 2/8/2017 8:10:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1860	25	10	mg/L	SM 2540 C		1	02/09/17 13:40	02/09/17 13:40	7020234	JPT
<b>Inorganic Anions</b>											
Chloride	780	12	0.65	mg/L	EPA 300.0		50	02/10/17 12:34	02/15/17 16:39	7020302	RLC
Fluoride	0.09	0.30	0.004	mg/L	EPA 300.0	J	1	02/10/17 12:34	02/13/17 16:50	7020302	RLC
Sulfate	410	50	4.6	mg/L	EPA 300.0		50	02/10/17 12:34	02/15/17 16:39	7020302	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Barium	0.191	0.0100	0.0004	mg/L	EPA 6020B		1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Boron	20.4	2.00	0.321	mg/L	EPA 6020B		50	02/10/17 09:05	02/11/17 03:26	7020259	CSW
Cadmium	0.0006	0.0010	0.00007	mg/L	EPA 6020B	J	1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Calcium	351	25.0	1.55	mg/L	EPA 6020B		50	02/10/17 09:05	02/11/17 03:26	7020259	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Cobalt	0.0008	0.0100	0.0005	mg/L	EPA 6020B	J	1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	J	1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Molybdenum	0.0163	0.0100	0.0017	mg/L	EPA 6020B		1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Selenium	0.0114	0.0100	0.0010	mg/L	EPA 6020B		1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Thallium	0.0008	0.0010	0.0002	mg/L	EPA 6020B	J	1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Lithium	0.0196	0.0500	0.0021	mg/L	EPA 6020B	J	1	02/10/17 09:05	02/11/17 03:20	7020259	CSW
Mercury	0.00011	0.00050	0.000041	mg/L	EPA 7470A	J	1	02/09/17 10:35	02/09/17 14:38	7020210	MTC





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February 20, 2017

**Report No.: AAB0267**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020234 - SM 2540 C</b>											
<b>Blank (7020234-BLK1)</b>						Prepared & Analyzed: 02/09/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7020234-BS1)</b>						Prepared & Analyzed: 02/09/17					
Total Dissolved Solids	381	25	10	mg/L	400.00		95	84-108			
<b>Duplicate (7020234-DUP1)</b>			<b>Source: AAB0266-01</b>			Prepared & Analyzed: 02/09/17					
Total Dissolved Solids	122	25	10	mg/L		123			0.8	10	



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**Report No.: AAB0267**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020302 - EPA 300.0</b>											
<b>Blank (7020302-BLK1)</b>						Prepared: 02/10/17 Analyzed: 02/13/17					
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 (7020302-BS1)</b>						Prepared: 02/10/17 Analyzed: 02/13/17					
Chloride	10.8	0.25	0.01	mg/L	10.010		107	90-110			
Fluoride	10.6	0.30	0.004	mg/L	10.020		106	90-110			
Sulfate	10.7	1.0	0.09	mg/L	10.020		107	90-110			
<b>Matrix Spike (7020302-MS1)</b>						Source: AAB0266-01 Prepared: 02/10/17 Analyzed: 02/13/17					
Chloride	12.8	0.25	0.01	mg/L	10.010	2.30	105	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	ND	108	90-110			
Sulfate	12.3	1.0	0.09	mg/L	10.020	1.66	106	90-110			
<b>Matrix Spike (7020302-MS2)</b>						Source: AAB0318-01 Prepared: 02/10/17 Analyzed: 02/13/17					
Chloride	18.8	0.25	0.01	mg/L	10.010	9.54	93	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.14	107	90-110			
Sulfate	15.4	1.0	0.09	mg/L	10.020	5.17	102	90-110			
<b>Matrix Spike Dup (7020302-MSD1)</b>						Source: AAB0266-01 Prepared: 02/10/17 Analyzed: 02/13/17					
Chloride	12.8	0.25	0.01	mg/L	10.010	2.30	105	90-110	0.2	15	
Fluoride	10.8	0.30	0.004	mg/L	10.020	ND	108	90-110	0.06	15	
Sulfate	12.3	1.0	0.09	mg/L	10.020	1.66	106	90-110	0.06	15	



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**Report No.: AAB0267**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020210 - EPA 7470A</b>											
<b>Blank (7020210-BLK1)</b> Prepared & Analyzed: 02/09/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7020210-BS1)</b> Prepared & Analyzed: 02/09/17											
Mercury	0.00250	0.00050	0.000041	mg/L	2.5000E-3		100	80-120			
<b>Matrix Spike (7020210-MS1)</b> Source: AAB0244-01 Prepared & Analyzed: 02/09/17											
Mercury	0.00242	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125			
<b>Matrix Spike Dup (7020210-MSD1)</b> Source: AAB0244-01 Prepared & Analyzed: 02/09/17											
Mercury	0.00247	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125	2	20	
<b>Post Spike (7020210-PS1)</b> Source: AAB0244-01 Prepared & Analyzed: 02/09/17											
Mercury	1.73			ug/L	1.6667	-0.00948	104	80-120			
<b>Batch 7020259 - EPA 3005A</b>											
<b>Blank (7020259-BLK1)</b> Prepared: 02/10/17 Analyzed: 02/11/17											
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							



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February 20, 2017

**Report No.: AAB0267**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020259 - EPA 3005A</b>											
<b>LCS (7020259-BS1)</b>						Prepared: 02/10/17 Analyzed: 02/11/17					
Antimony	0.101	0.0030	0.0008	mg/L	0.10000		101	80-120			
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000		101	80-120			
Barium	0.0989	0.0100	0.0004	mg/L	0.10000		99	80-120			
Beryllium	0.101	0.0030	0.00008	mg/L	0.10000		101	80-120			
Boron	1.05	0.0400	0.0064	mg/L	1.0000		105	80-120			
Cadmium	0.101	0.0010	0.00007	mg/L	0.10000		101	80-120			
Calcium	0.995	0.500	0.0311	mg/L	1.0000		100	80-120			
Chromium	0.104	0.0100	0.0009	mg/L	0.10000		104	80-120			
Cobalt	0.0994	0.0100	0.0005	mg/L	0.10000		99	80-120			
Copper	0.100	0.0250	0.0005	mg/L	0.10000		100	80-120			
Lead	0.101	0.0050	0.0001	mg/L	0.10000		101	80-120			
Molybdenum	0.102	0.0100	0.0017	mg/L	0.10000		102	80-120			
Nickel	0.102	0.0100	0.0006	mg/L	0.10000		102	80-120			
Selenium	0.103	0.0100	0.0010	mg/L	0.10000		103	80-120			
Silver	0.0984	0.0100	0.0005	mg/L	0.10000		98	80-120			
Thallium	0.0991	0.0010	0.0002	mg/L	0.10000		99	80-120			
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000		105	80-120			
Zinc	0.101	0.0100	0.0021	mg/L	0.10000		101	80-120			
Lithium	0.0997	0.0500	0.0021	mg/L	0.10000		100	80-120			
<b>Matrix Spike (7020259-MS1)</b>						Source: AAB0244-02 Prepared: 02/10/17 Analyzed: 02/11/17					
Antimony	0.105	0.0030	0.0008	mg/L	0.10000	ND	105	75-125			
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125			
Barium	0.144	0.0100	0.0004	mg/L	0.10000	0.0391	105	75-125			
Beryllium	0.101	0.0030	0.00008	mg/L	0.10000	0.0002	101	75-125			
Boron	1.07	0.0400	0.0064	mg/L	1.0000	ND	107	75-125			
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000	ND	102	75-125			
Calcium	2.75	0.500	0.0311	mg/L	1.0000	1.70	105	75-125			
Chromium	0.106	0.0100	0.0009	mg/L	0.10000	ND	106	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Copper	0.105	0.0250	0.0005	mg/L	0.10000	0.0007	104	75-125			
Lead	0.103	0.0050	0.0001	mg/L	0.10000	0.0001	103	75-125			
Molybdenum	0.104	0.0100	0.0017	mg/L	0.10000	ND	104	75-125			
Nickel	0.107	0.0100	0.0006	mg/L	0.10000	0.0012	106	75-125			
Selenium	0.104	0.0100	0.0010	mg/L	0.10000	ND	104	75-125			
Silver	0.0984	0.0100	0.0005	mg/L	0.10000	ND	98	75-125			
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125			
Vanadium	0.107	0.0100	0.0071	mg/L	0.10000	ND	107	75-125			
Zinc	0.111	0.0100	0.0021	mg/L	0.10000	0.0037	107	75-125			
Lithium	0.0988	0.0500	0.0021	mg/L	0.10000	ND	99	75-125			



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 20, 2017

**Report No.: AAB0267**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020259 - EPA 3005A</b>											
<b>Matrix Spike Dup (7020259-MSD1)</b>			<b>Source: AAB0244-02</b>			Prepared: 02/10/17 Analyzed: 02/11/17					
Antimony	0.102	0.0030	0.0008	mg/L	0.10000	ND	102	75-125	3	20	
Arsenic	0.0998	0.0050	0.0016	mg/L	0.10000	ND	100	75-125	3	20	
Barium	0.140	0.0100	0.0004	mg/L	0.10000	0.0391	101	75-125	3	20	
Beryllium	0.106	0.0030	0.00008	mg/L	0.10000	0.0002	105	75-125	4	20	
Boron	1.09	0.0400	0.0064	mg/L	1.0000	ND	109	75-125	2	20	
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000	ND	102	75-125	0.06	20	
Calcium	2.70	0.500	0.0311	mg/L	1.0000	1.70	100	75-125	2	20	
Chromium	0.109	0.0100	0.0009	mg/L	0.10000	ND	109	75-125	4	20	
Cobalt	0.106	0.0100	0.0005	mg/L	0.10000	ND	106	75-125	4	20	
Copper	0.107	0.0250	0.0005	mg/L	0.10000	0.0007	107	75-125	2	20	
Lead	0.102	0.0050	0.0001	mg/L	0.10000	0.0001	102	75-125	1	20	
Molybdenum	0.105	0.0100	0.0017	mg/L	0.10000	ND	105	75-125	0.5	20	
Nickel	0.111	0.0100	0.0006	mg/L	0.10000	0.0012	110	75-125	4	20	
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125	3	20	
Silver	0.0998	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	1	20	
Thallium	0.0991	0.0010	0.0002	mg/L	0.10000	ND	99	75-125	3	20	
Vanadium	0.114	0.0100	0.0071	mg/L	0.10000	ND	114	75-125	6	20	
Zinc	0.108	0.0100	0.0021	mg/L	0.10000	0.0037	105	75-125	2	20	
Lithium	0.108	0.0500	0.0021	mg/L	0.10000	ND	108	75-125	9	20	
<b>Post Spike (7020259-PS1)</b>											
<b>Source: AAB0244-02</b>			Prepared: 02/10/17 Analyzed: 02/11/17								
Antimony	90.3			ug/L	100.00	0.124	90	80-120			
Arsenic	101			ug/L	100.00	0.343	101	80-120			
Barium	136			ug/L	100.00	39.1	97	80-120			
Beryllium	101			ug/L	100.00	0.234	101	80-120			
Boron	1090			ug/L	1000.0	4.75	108	80-120			
Cadmium	103			ug/L	100.00	0.0509	103	80-120			
Calcium	2800			ug/L	1000.0	1700	109	80-120			
Chromium	104			ug/L	100.00	0.143	104	80-120			
Cobalt	104			ug/L	100.00	0.299	103	80-120			
Copper	104			ug/L	100.00	0.699	103	80-120			
Lead	102			ug/L	100.00	0.122	102	80-120			
Molybdenum	101			ug/L	100.00	0.0247	101	80-120			
Nickel	106			ug/L	100.00	1.17	105	80-120			
Selenium	103			ug/L	100.00	0.356	102	80-120			
Silver	98.7			ug/L	100.00	0.0079	99	80-120			
Thallium	100			ug/L	100.00	0.0332	100	80-120			
Vanadium	108			ug/L	100.00	1.19	107	80-120			
Zinc	107			ug/L	100.00	3.68	104	80-120			
Lithium	106			ug/L	100.00	0.883	105	80-120			



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 20, 2017

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## Legend

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### 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

- 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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Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
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**LOG-IN CHECKLIST**

**Printed: 2/8/2017 10:41:57AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 02/08/17 08:10

**Work Order:** AAB0267

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 1

**#Containers:** 4

**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:**





**PACE ANALYTICAL SERVICES, LLC.**

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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: AAB0494**

**February 21, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

February 21, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
EQBL 021317	AAB0494-01	Water	02/13/17 10:45	02/14/17 12:00
FBL 021317	AAB0494-02	Water	02/13/17 10:55	02/14/17 12:00
BGWA-2	AAB0494-03	Ground Water	02/13/17 14:00	02/14/17 12:00
Dup-1	AAB0494-04	Ground Water	02/13/17 00:00	02/14/17 12:00
BGWA-28	AAB0494-05	Ground Water	02/13/17 15:32	02/14/17 12:00



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 21, 2017

Report No.: AAB0494

Project: CCR Event

Client ID: EQBL 021317

Lab Number ID: AAB0494-01

Date/Time Sampled: 2/13/2017 10:45:00AM

Date/Time Received: 2/14/2017 12:00:00PM

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	02/16/17 13:35	02/16/17 13:35	7020463	JPT
<b>Inorganic Anions</b>											
Chloride	0.14	0.25	0.01	mg/L	EPA 300.0	J	1	02/15/17 17:03	02/16/17 03:20	7020448	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/15/17 17:03	02/16/17 03:20	7020448	RLC
Sulfate	0.49	1.0	0.09	mg/L	EPA 300.0	J	1	02/15/17 17:03	02/16/17 03:20	7020448	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Calcium	0.0641	0.500	0.0311	mg/L	EPA 6020B	J	1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:07	7020393	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/20/17 11:45	02/20/17 17:44	7020551	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 21, 2017

Report No.: AAB0494

Project: CCR Event

Client ID: FBL 021317

Lab Number ID: AAB0494-02

Date/Time Sampled: 2/13/2017 10:55:00AM

Date/Time Received: 2/14/2017 12:00:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	20	25	10	mg/L	SM 2540 C	J	1	02/16/17 13:35	02/16/17 13:35	7020463	JPT
<b>Inorganic Anions</b>											
Chloride	0.13	0.25	0.01	mg/L	EPA 300.0	J	1	02/15/17 17:03	02/16/17 03:41	7020448	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/15/17 17:03	02/16/17 03:41	7020448	RLC
Sulfate	0.20	1.0	0.09	mg/L	EPA 300.0	J	1	02/15/17 17:03	02/16/17 03:41	7020448	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:13	7020393	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/20/17 11:45	02/20/17 17:47	7020551	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 21, 2017

Report No.: AAB0494

Project: CCR Event

Client ID: BGWA-2

Lab Number ID: AAB0494-03

Date/Time Sampled: 2/13/2017 2:00:00PM

Date/Time Received: 2/14/2017 12:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	214	25	10	mg/L	SM 2540 C		1	02/16/17 13:35	02/16/17 13:35	7020463	JPT
<b>Inorganic Anions</b>											
Chloride	2.1	0.25	0.01	mg/L	EPA 300.0		1	02/15/17 17:03	02/16/17 04:01	7020448	RLC
Fluoride	0.12	0.30	0.004	mg/L	EPA 300.0	J	1	02/15/17 17:03	02/16/17 04:01	7020448	RLC
Sulfate	6.4	1.0	0.09	mg/L	EPA 300.0		1	02/15/17 17:03	02/16/17 04:01	7020448	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Barium	0.218	0.0100	0.0004	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Calcium	31.2	25.0	1.55	mg/L	EPA 6020B		50	02/15/17 08:45	02/15/17 19:36	7020393	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Molybdenum	0.0020	0.0100	0.0017	mg/L	EPA 6020B	J	1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:30	7020393	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/20/17 11:45	02/20/17 17:49	7020551	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 2480 Maner Road  
 Atlanta GA, 30339

February 21, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0494

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AAB0494-04

Date/Time Sampled: 2/13/2017 12:00:00AM

Date/Time Received: 2/14/2017 12:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	199	25	10	mg/L	SM 2540 C		1	02/16/17 13:35	02/16/17 13:35	7020463	JPT
<b>Inorganic Anions</b>											
Chloride	2.1	0.25	0.01	mg/L	EPA 300.0		1	02/15/17 17:03	02/16/17 05:03	7020448	RLC
Fluoride	0.13	0.30	0.004	mg/L	EPA 300.0	J	1	02/15/17 17:03	02/16/17 05:03	7020448	RLC
Sulfate	6.5	1.0	0.09	mg/L	EPA 300.0		1	02/15/17 17:03	02/16/17 05:03	7020448	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Barium	0.206	0.0100	0.0004	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Calcium	30.5	25.0	1.55	mg/L	EPA 6020B		50	02/15/17 08:45	02/15/17 19:47	7020393	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Molybdenum	0.0018	0.0100	0.0017	mg/L	EPA 6020B	J	1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:42	7020393	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/20/17 11:45	02/20/17 17:56	7020551	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 21, 2017

**Report No.:** AAB0494

**Project:** CCR Event

**Client ID:** BGWA-28

**Lab Number ID:** AAB0494-05

**Date/Time Sampled:** 2/13/2017 3:32:00PM

**Date/Time Received:** 2/14/2017 12:00:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	263	25	10	mg/L	SM 2540 C		1	02/16/17 13:35	02/16/17 13:35	7020463	JPT
<b>Inorganic Anions</b>											
Chloride	20	0.25	0.01	mg/L	EPA 300.0		1	02/15/17 17:03	02/16/17 10:54	7020448	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/15/17 17:03	02/16/17 10:54	7020448	RLC
Sulfate	16	1.0	0.09	mg/L	EPA 300.0		1	02/15/17 17:03	02/16/17 10:54	7020448	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Barium	0.138	0.0100	0.0004	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Boron	0.0717	0.0400	0.0064	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Calcium	45.5	25.0	1.55	mg/L	EPA 6020B		50	02/15/17 08:45	02/15/17 19:59	7020393	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Selenium	0.0016	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/15/17 08:45	02/15/17 19:53	7020393	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/20/17 11:45	02/20/17 17:59	7020551	MTC



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**Report No.: AAB0494**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020463 - SM 2540 C</b>											
<b>Blank (7020463-BLK1)</b>						Prepared & Analyzed: 02/16/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7020463-BS1)</b>						Prepared & Analyzed: 02/16/17					
Total Dissolved Solids	395	25	10	mg/L	400.00		99	84-108			
<b>Duplicate (7020463-DUP1)</b>						Source: AAB0494-01			Prepared & Analyzed: 02/16/17		
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7020463-DUP2)</b>						Source: AAB0496-01			Prepared & Analyzed: 02/16/17		
Total Dissolved Solids	92	25	10	mg/L		104			12	10	QR-03





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**Report No.: AAB0494**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020448 - EPA 300.0</b>											
<b>Blank (7020448-BLK1)</b>											
						Prepared: 02/15/17 Analyzed: 02/16/17					
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 (7020448-BS1)</b>											
						Prepared: 02/15/17 Analyzed: 02/16/17					
Chloride	10.5	0.25	0.01	mg/L	10.010		105	90-110			
Fluoride	10.7	0.30	0.004	mg/L	10.020		107	90-110			
Sulfate	10.8	1.0	0.09	mg/L	10.020		108	90-110			
<b>Matrix Spike (7020448-MS1)</b>											
						Source: AAB0494-03			Prepared: 02/15/17 Analyzed: 02/16/17		
Chloride	12.6	0.25	0.01	mg/L	10.010	2.13	105	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.12	107	90-110			
Sulfate	16.8	1.0	0.09	mg/L	10.020	6.36	105	90-110			
<b>Matrix Spike Dup (7020448-MSD1)</b>											
						Source: AAB0494-03			Prepared: 02/15/17 Analyzed: 02/16/17		
Chloride	12.6	0.25	0.01	mg/L	10.010	2.13	105	90-110	0.2	15	
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.12	107	90-110	0.02	15	
Sulfate	16.9	1.0	0.09	mg/L	10.020	6.36	105	90-110	0.2	15	



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**Report No.: AAB0494**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020393 - EPA 3005A</b>											
<b>Blank (7020393-BLK1)</b>						Prepared & Analyzed: 02/15/17					
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							
<b>LCS (7020393-BS1)</b>						Prepared & Analyzed: 02/15/17					
Antimony	0.107	0.0030	0.0008	mg/L	0.10000		107	80-120			
Arsenic	0.100	0.0050	0.0016	mg/L	0.10000		100	80-120			
Barium	0.102	0.0100	0.0004	mg/L	0.10000		102	80-120			
Beryllium	0.107	0.0030	0.00008	mg/L	0.10000		107	80-120			
Boron	1.00	0.0400	0.0064	mg/L	1.0000		100	80-120			
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000		102	80-120			
Calcium	1.03	0.500	0.0311	mg/L	1.0000		103	80-120			
Chromium	0.0987	0.0100	0.0009	mg/L	0.10000		99	80-120			
Cobalt	0.0972	0.0100	0.0005	mg/L	0.10000		97	80-120			
Copper	0.0969	0.0250	0.0005	mg/L	0.10000		97	80-120			
Lead	0.105	0.0050	0.0001	mg/L	0.10000		105	80-120			
Molybdenum	0.0986	0.0100	0.0017	mg/L	0.10000		99	80-120			
Nickel	0.0995	0.0100	0.0006	mg/L	0.10000		100	80-120			
Selenium	0.0996	0.0100	0.0010	mg/L	0.10000		100	80-120			
Silver	0.0964	0.0100	0.0005	mg/L	0.10000		96	80-120			
Thallium	0.106	0.0010	0.0002	mg/L	0.10000		106	80-120			
Vanadium	0.0975	0.0100	0.0071	mg/L	0.10000		98	80-120			
Zinc	0.0988	0.0100	0.0021	mg/L	0.10000		99	80-120			
Lithium	0.106	0.0500	0.0021	mg/L	0.10000		106	80-120			



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**Report No.: AAB0494**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020393 - EPA 3005A</b>											
<b>Matrix Spike (7020393-MS1)</b>			<b>Source: AAB0410-01</b>				<b>Prepared &amp; Analyzed: 02/15/17</b>				
Antimony	0.113	0.0030	0.0008	mg/L	0.10000	ND	113	75-125			
Arsenic	0.100	0.0050	0.0016	mg/L	0.10000	ND	100	75-125			
Barium	0.115	0.0100	0.0004	mg/L	0.10000	0.0119	103	75-125			
Beryllium	0.0990	0.0030	0.00008	mg/L	0.10000	0.0001	99	75-125			
Boron	0.994	0.0400	0.0064	mg/L	1.0000	ND	99	75-125			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000	0.0001	104	75-125			
Calcium	22.6	2.50	0.155	mg/L	1.0000	21.2	144	75-125			QM-02
Chromium	0.101	0.0100	0.0009	mg/L	0.10000	ND	101	75-125			
Cobalt	0.0975	0.0100	0.0005	mg/L	0.10000	ND	98	75-125			
Copper	0.0963	0.0250	0.0005	mg/L	0.10000	ND	96	75-125			
Lead	0.0982	0.0050	0.0001	mg/L	0.10000	0.0002	98	75-125			
Molybdenum	0.104	0.0100	0.0017	mg/L	0.10000	ND	104	75-125			
Nickel	0.0981	0.0100	0.0006	mg/L	0.10000	0.0007	97	75-125			
Selenium	0.0958	0.0100	0.0010	mg/L	0.10000	ND	96	75-125			
Silver	0.0998	0.0100	0.0005	mg/L	0.10000	ND	100	75-125			
Thallium	0.100	0.0010	0.0002	mg/L	0.10000	ND	100	75-125			
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125			
Zinc	0.101	0.0100	0.0021	mg/L	0.10000	0.0026	98	75-125			
Lithium	0.0968	0.0500	0.0021	mg/L	0.10000	ND	97	75-125			
<b>Matrix Spike Dup (7020393-MSD1)</b>			<b>Source: AAB0410-01</b>				<b>Prepared &amp; Analyzed: 02/15/17</b>				
Antimony	0.109	0.0030	0.0008	mg/L	0.10000	ND	109	75-125	4	20	
Arsenic	0.0995	0.0050	0.0016	mg/L	0.10000	ND	100	75-125	0.7	20	
Barium	0.113	0.0100	0.0004	mg/L	0.10000	0.0119	101	75-125	2	20	
Beryllium	0.0963	0.0030	0.00008	mg/L	0.10000	0.0001	96	75-125	3	20	
Boron	0.967	0.0400	0.0064	mg/L	1.0000	ND	97	75-125	3	20	
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000	0.0001	101	75-125	3	20	
Calcium	21.9	2.50	0.155	mg/L	1.0000	21.2	70	75-125	3	20	QM-02
Chromium	0.101	0.0100	0.0009	mg/L	0.10000	ND	101	75-125	0.04	20	
Cobalt	0.0964	0.0100	0.0005	mg/L	0.10000	ND	96	75-125	1	20	
Copper	0.0966	0.0250	0.0005	mg/L	0.10000	ND	97	75-125	0.4	20	
Lead	0.103	0.0050	0.0001	mg/L	0.10000	0.0002	102	75-125	4	20	
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000	ND	103	75-125	1	20	
Nickel	0.0991	0.0100	0.0006	mg/L	0.10000	0.0007	98	75-125	1	20	
Selenium	0.0999	0.0100	0.0010	mg/L	0.10000	ND	100	75-125	4	20	
Silver	0.0992	0.0100	0.0005	mg/L	0.10000	ND	99	75-125	0.6	20	
Thallium	0.103	0.0010	0.0002	mg/L	0.10000	ND	103	75-125	3	20	
Vanadium	0.102	0.0100	0.0071	mg/L	0.10000	ND	102	75-125	3	20	
Zinc	0.103	0.0100	0.0021	mg/L	0.10000	0.0026	100	75-125	2	20	
Lithium	0.0994	0.0500	0.0021	mg/L	0.10000	ND	99	75-125	3	20	



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**Report No.: AAB0494**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020393 - EPA 3005A</b>											
<b>Post Spike (7020393-PS1)</b>			<b>Source: AAB0410-01</b>			<b>Prepared &amp; Analyzed: 02/15/17</b>					
Antimony	97.8			ug/L	100.00	0.606	97	80-120			
Arsenic	97.2			ug/L	100.00	0.520	97	80-120			
Barium	112			ug/L	100.00	11.9	100	80-120			
Beryllium	99.1			ug/L	100.00	0.101	99	80-120			
Boron	1000			ug/L	1000.0	5.01	99	80-120			
Cadmium	99.0			ug/L	100.00	0.126	99	80-120			
Calcium	21600			ug/L	1000.0	21200	41	80-120			QM-02
Chromium	99.4			ug/L	100.00	0.647	99	80-120			
Cobalt	95.6			ug/L	100.00	0.459	95	80-120			
Copper	95.2			ug/L	100.00	0.107	95	80-120			
Lead	101			ug/L	100.00	0.151	101	80-120			
Molybdenum	104			ug/L	100.00	0.325	103	80-120			
Nickel	96.9			ug/L	100.00	0.721	96	80-120			
Selenium	98.8			ug/L	100.00	0.494	98	80-120			
Silver	97.6			ug/L	100.00	0.0197	98	80-120			
Thallium	101			ug/L	100.00	0.0263	101	80-120			
Vanadium	101			ug/L	100.00	0.258	101	80-120			
Zinc	96.6			ug/L	100.00	2.59	94	80-120			
Lithium	97.7			ug/L	100.00	1.44	96	80-120			

**Batch 7020551 - EPA 7470A**

<b>Blank (7020551-BLK1)</b>					<b>Prepared &amp; Analyzed: 02/20/17</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7020551-BS1)</b>					<b>Prepared &amp; Analyzed: 02/20/17</b>						
Mercury	0.00241	0.00050	0.000041	mg/L	2.5000E-3		96	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
<b>Batch 7020551 - EPA 7470A</b>											
<b>Matrix Spike (7020551-MS1)</b>			<b>Source: AAB0494-03</b>			<b>Prepared &amp; Analyzed: 02/20/17</b>					
Mercury	0.00230	0.00050	0.000041	mg/L	2.5000E-3	ND	92	75-125			
<b>Matrix Spike Dup (7020551-MSD1)</b>			<b>Source: AAB0494-03</b>			<b>Prepared &amp; Analyzed: 02/20/17</b>					
Mercury	0.00234	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125	2	20	
<b>Post Spike (7020551-PS1)</b>			<b>Source: AAB0494-03</b>			<b>Prepared &amp; Analyzed: 02/20/17</b>					
Mercury	1.73			ug/L	1.6667	-0.00140	104	80-120			



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February 21, 2017

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## Legend

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### 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

- 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).

**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

CHAIN OF CUSTODY RECORD

CLIENT INFORMATION						ANALYSIS REQUESTED						CONTAINER TYPE	PRESERVATION	
CLIENT NAME: SOUTHERN COMPANY SERVICES						CONTAINER TYPE: P, D, F								
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 RALPH MCGEE BLVD SE 810185 ATLANTA, GA 30318						PRESERVATION: U, N, B						L A B I D N U M B E R	CONTAINER TYPE P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	PRESERVATION 1 - HCl, ≤6°C 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C 3 - HNO <sub>3</sub> 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen
REPORT TO: JOHN ABRAHAM			CC: MARIA DAVILLA HEATH MCCORLLE			# of								
REQUESTED COMPLETION DATE:			PO #: GPC10684198			CONTAINERS						*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		
PROJECT NAME/STATE: PLANT BOWEN ASH POND						PROJECT #:							REMARKS/ADDITIONAL INFORMATION	
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION									
02/13/17	1045	W		X	FBLO21317	4	1	1	2				1	
02/13/17	1055	W		X	FBLO21317	4	1	1	2				2	
02/13/17	1400	GW		X	BGWA-2	6	1	1	4				3	
02/13/17		GW		X	DUP-1	4	1	1	2				4	
02/13/17	1532	GW		X	BGWA-28	4	1	1	2				5	

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**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: 2/15/2017 10:21:36AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 02/14/17 12:00

**Work Order:** AAB0494

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 22

**Minimum Temp(C):** 2.0

**Maximum Temp(C):** 2.0

**Custody Seal(s) Used:** 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:**





**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: AAB0527**

**February 22, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 22, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-26	AAB0527-01	Ground Water	02/14/17 10:45	02/15/17 07:58
BGWA-27	AAB0527-02	Ground Water	02/14/17 10:45	02/15/17 07:58
BGWA-29	AAB0527-03	Ground Water	02/14/17 12:25	02/15/17 07:58
BGWA-6	AAB0527-04	Ground Water	02/14/17 12:40	02/15/17 07:58
BGWC-8	AAB0527-05	Ground Water	02/14/17 14:05	02/15/17 07:58



**PACE ANALYTICAL SERVICES, LLC.**

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

Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

February 22, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0527

Project: CCR Event

Client ID: BGWA-26

Lab Number ID: AAB0527-01

Date/Time Sampled: 2/14/2017 10:45:00AM

Date/Time Received: 2/15/2017 7:58:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	377	25	10	mg/L	SM 2540 C		1	02/16/17 13:35	02/16/17 13:35	7020463	JPT
<b>Inorganic Anions</b>											
Chloride	5.8	0.25	0.01	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/19/17 22:23	7020547	RLC
Fluoride	0.07	0.30	0.004	mg/L	EPA 300.0	J	1	02/19/17 10:21	02/19/17 22:23	7020547	RLC
Sulfate	24	1.0	0.09	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/19/17 22:23	7020547	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Barium	0.0421	0.0100	0.0004	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Boron	0.0091	0.0400	0.0064	mg/L	EPA 6020B	J	1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Calcium	24.1	5.00	0.311	mg/L	EPA 6020B		10	02/16/17 10:45	02/17/17 12:27	7020476	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Molybdenum	0.0043	0.0100	0.0017	mg/L	EPA 6020B	J	1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Lithium	0.0024	0.0500	0.0021	mg/L	EPA 6020B	J	1	02/16/17 10:45	02/16/17 19:51	7020476	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/20/17 11:45	02/20/17 19:14	7020551	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 22, 2017

Report No.: AAB0527

Project: CCR Event

Client ID: BGWA-27

Lab Number ID: AAB0527-02

Date/Time Sampled: 2/14/2017 10:45:00AM

Date/Time Received: 2/15/2017 7:58:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	310	25	10	mg/L	SM 2540 C		1	02/16/17 13:35	02/16/17 13:35	7020463	JPT
<b>Inorganic Anions</b>											
Chloride	15	0.25	0.01	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/19/17 22:44	7020547	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/19/17 10:21	02/19/17 22:44	7020547	RLC
Sulfate	10	1.0	0.09	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/19/17 22:44	7020547	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Barium	0.0395	0.0100	0.0004	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Boron	0.0129	0.0400	0.0064	mg/L	EPA 6020B	J	1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Calcium	39.4	25.0	1.55	mg/L	EPA 6020B		50	02/16/17 10:45	02/16/17 20:20	7020476	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:14	7020476	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/20/17 11:45	02/20/17 19:16	7020551	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 22, 2017

Report No.: AAB0527

Project: CCR Event

Client ID: BGWA-29

Lab Number ID: AAB0527-03

Date/Time Sampled: 2/14/2017 12:25:00PM

Date/Time Received: 2/15/2017 7:58:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	345	25	10	mg/L	SM 2540 C		1	02/16/17 13:35	02/16/17 13:35	7020463	JPT
<b>Inorganic Anions</b>											
Chloride	1.9	0.25	0.01	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/19/17 23:46	7020547	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/19/17 10:21	02/19/17 23:46	7020547	RLC
Sulfate	5.1	1.0	0.09	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/19/17 23:46	7020547	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Barium	0.0247	0.0100	0.0004	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Calcium	20.9	5.00	0.311	mg/L	EPA 6020B		10	02/16/17 10:45	02/17/17 12:33	7020476	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:26	7020476	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/20/17 11:45	02/20/17 19:19	7020551	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 22, 2017

**Report No.:** AAB0527

**Project:** CCR Event

**Client ID:** BGWA-6

**Lab Number ID:** AAB0527-04

**Date/Time Sampled:** 2/14/2017 12:40:00PM

**Date/Time Received:** 2/15/2017 7:58:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	405	25	10	mg/L	SM 2540 C		1	02/16/17 13:35	02/16/17 13:35	7020463	JPT
<b>Inorganic Anions</b>											
Chloride	8.8	0.25	0.01	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/20/17 00:06	7020547	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/19/17 10:21	02/20/17 00:06	7020547	RLC
Sulfate	20	1.0	0.09	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/20/17 00:06	7020547	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Barium	0.0114	0.0100	0.0004	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Boron	0.0114	0.0400	0.0064	mg/L	EPA 6020B	J	1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Calcium	51.1	25.0	1.55	mg/L	EPA 6020B		50	02/16/17 10:45	02/16/17 20:43	7020476	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:37	7020476	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 14:53	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

February 22, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAB0527

**Project:** CCR Event

**Client ID:** BGWC-8

**Lab Number ID:** AAB0527-05

**Date/Time Sampled:** 2/14/2017 2:05:00PM

**Date/Time Received:** 2/15/2017 7:58:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	367	25	10	mg/L	SM 2540 C		1	02/16/17 13:35	02/16/17 13:35	7020463	JPT
<b>Inorganic Anions</b>											
Chloride	2.0	0.25	0.01	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/20/17 00:27	7020547	RLC
Fluoride	0.02	0.30	0.004	mg/L	EPA 300.0	J	1	02/19/17 10:21	02/20/17 00:27	7020547	RLC
Sulfate	45	1.0	0.09	mg/L	EPA 300.0	B-01	1	02/19/17 10:21	02/20/17 00:27	7020547	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Barium	0.0299	0.0100	0.0004	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Boron	0.122	0.0400	0.0064	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Calcium	35.2	2.50	0.155	mg/L	EPA 6020B		5	02/16/17 10:45	02/16/17 21:06	7020476	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Molybdenum	0.0044	0.0100	0.0017	mg/L	EPA 6020B	J	1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/16/17 10:45	02/16/17 20:49	7020476	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/20/17 11:45	02/20/17 19:26	7020551	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 22, 2017

**Report No.: AAB0527**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020463 - SM 2540 C</b>											
<b>Blank (7020463-BLK1)</b>						Prepared & Analyzed: 02/16/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7020463-BS1)</b>						Prepared & Analyzed: 02/16/17					
Total Dissolved Solids	395	25	10	mg/L	400.00		99	84-108			
<b>Duplicate (7020463-DUP1)</b>						Source: AAB0494-01 Prepared & Analyzed: 02/16/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7020463-DUP2)</b>						Source: AAB0496-01 Prepared & Analyzed: 02/16/17					
Total Dissolved Solids	92	25	10	mg/L		104			12	10	QR-03





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February 22, 2017

**Report No.: AAB0527**

**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>						Prepared & Analyzed: 02/19/17					
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>						Prepared & Analyzed: 02/19/17					
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>						Source: AAB0527-02 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>						Source: AAB0527-02 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 22, 2017

**Report No.: AAB0527**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020476 - EPA 3005A</b>											
<b>Blank (7020476-BLK1)</b>						Prepared & Analyzed: 02/16/17					
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							
<b>LCS (7020476-BS1)</b>						Prepared & Analyzed: 02/16/17					
Antimony	0.110	0.0030	0.0008	mg/L	0.10000		110	80-120			
Arsenic	0.0971	0.0050	0.0016	mg/L	0.10000		97	80-120			
Barium	0.104	0.0100	0.0004	mg/L	0.10000		104	80-120			
Beryllium	0.0954	0.0030	0.00008	mg/L	0.10000		95	80-120			
Boron	0.987	0.0400	0.0064	mg/L	1.0000		99	80-120			
Cadmium	0.102	0.0010	0.00007	mg/L	0.10000		102	80-120			
Calcium	1.01	0.500	0.0311	mg/L	1.0000		101	80-120			
Chromium	0.103	0.0100	0.0009	mg/L	0.10000		103	80-120			
Cobalt	0.0994	0.0100	0.0005	mg/L	0.10000		99	80-120			
Copper	0.0952	0.0250	0.0005	mg/L	0.10000		95	80-120			
Lead	0.101	0.0050	0.0001	mg/L	0.10000		101	80-120			
Molybdenum	0.108	0.0100	0.0017	mg/L	0.10000		108	80-120			
Nickel	0.0978	0.0100	0.0006	mg/L	0.10000		98	80-120			
Selenium	0.0981	0.0100	0.0010	mg/L	0.10000		98	80-120			
Silver	0.101	0.0100	0.0005	mg/L	0.10000		101	80-120			
Thallium	0.103	0.0010	0.0002	mg/L	0.10000		103	80-120			
Vanadium	0.102	0.0100	0.0071	mg/L	0.10000		102	80-120			
Zinc	0.0980	0.0100	0.0021	mg/L	0.10000		98	80-120			
Lithium	0.0961	0.0500	0.0021	mg/L	0.10000		96	80-120			



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 22, 2017

**Report No.: AAB0527**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020476 - EPA 3005A</b>											
<b>Matrix Spike (7020476-MS1)</b>			<b>Source: AAB0527-05</b>				<b>Prepared &amp; Analyzed: 02/16/17</b>				
Antimony	0.106	0.0030	0.0008	mg/L	0.10000	ND	106	75-125			
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125			
Barium	0.130	0.0100	0.0004	mg/L	0.10000	0.0299	101	75-125			
Beryllium	0.0895	0.0030	0.00008	mg/L	0.10000	ND	90	75-125			
Boron	0.992	0.0400	0.0064	mg/L	1.0000	0.122	87	75-125			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125			
Calcium	48.9	25.0	1.55	mg/L	1.0000	35.2	NR	75-125			QM-02
Chromium	0.105	0.0100	0.0009	mg/L	0.10000	ND	105	75-125			
Cobalt	0.0990	0.0100	0.0005	mg/L	0.10000	ND	99	75-125			
Copper	0.0950	0.0250	0.0005	mg/L	0.10000	ND	95	75-125			
Lead	0.0995	0.0050	0.0001	mg/L	0.10000	ND	99	75-125			
Molybdenum	0.111	0.0100	0.0017	mg/L	0.10000	0.0044	107	75-125			
Nickel	0.100	0.0100	0.0006	mg/L	0.10000	ND	100	75-125			
Selenium	0.101	0.0100	0.0010	mg/L	0.10000	ND	101	75-125			
Silver	0.0995	0.0100	0.0005	mg/L	0.10000	ND	99	75-125			
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125			
Vanadium	0.108	0.0100	0.0071	mg/L	0.10000	ND	108	75-125			
Zinc	0.0975	0.0100	0.0021	mg/L	0.10000	ND	97	75-125			
Lithium	0.0910	0.0500	0.0021	mg/L	0.10000	ND	91	75-125			
<b>Matrix Spike Dup (7020476-MSD1)</b>			<b>Source: AAB0527-05</b>				<b>Prepared &amp; Analyzed: 02/16/17</b>				
Antimony	0.108	0.0030	0.0008	mg/L	0.10000	ND	108	75-125	2	20	
Arsenic	0.101	0.0050	0.0016	mg/L	0.10000	ND	101	75-125	0.7	20	
Barium	0.130	0.0100	0.0004	mg/L	0.10000	0.0299	100	75-125	0.5	20	
Beryllium	0.0894	0.0030	0.00008	mg/L	0.10000	ND	89	75-125	0.1	20	
Boron	1.00	0.0400	0.0064	mg/L	1.0000	0.122	88	75-125	0.8	20	
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125	0.09	20	
Calcium	40.2	25.0	1.55	mg/L	1.0000	35.2	495	75-125	20	20	QM-02
Chromium	0.105	0.0100	0.0009	mg/L	0.10000	ND	105	75-125	0.007	20	
Cobalt	0.0972	0.0100	0.0005	mg/L	0.10000	ND	97	75-125	2	20	
Copper	0.0941	0.0250	0.0005	mg/L	0.10000	ND	94	75-125	0.9	20	
Lead	0.0997	0.0050	0.0001	mg/L	0.10000	ND	100	75-125	0.2	20	
Molybdenum	0.114	0.0100	0.0017	mg/L	0.10000	0.0044	110	75-125	3	20	
Nickel	0.0989	0.0100	0.0006	mg/L	0.10000	ND	99	75-125	1	20	
Selenium	0.104	0.0100	0.0010	mg/L	0.10000	ND	104	75-125	3	20	
Silver	0.100	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	1	20	
Thallium	0.102	0.0010	0.0002	mg/L	0.10000	ND	102	75-125	0.4	20	
Vanadium	0.105	0.0100	0.0071	mg/L	0.10000	ND	105	75-125	3	20	
Zinc	0.0996	0.0100	0.0021	mg/L	0.10000	ND	100	75-125	2	20	
Lithium	0.0979	0.0500	0.0021	mg/L	0.10000	ND	98	75-125	7	20	



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 22, 2017

**Report No.: AAB0527**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020476 - EPA 3005A</b>											
<b>Post Spike (7020476-PS1)</b>			<b>Source: AAB0527-05</b>			<b>Prepared &amp; Analyzed: 02/16/17</b>					
Antimony	104			ug/L	100.00	0.0508	104	80-120			
Arsenic	103			ug/L	100.00	0.254	103	80-120			
Barium	129			ug/L	100.00	29.9	99	80-120			
Beryllium	88.1			ug/L	100.00	0.0084	88	80-120			
Boron	966			ug/L	1000.0	122	84	80-120			
Cadmium	99.6			ug/L	100.00	0.0111	100	80-120			
Calcium	39000			ug/L	1000.0	35200	382	80-120			QM-02
Chromium	105			ug/L	100.00	0.739	104	80-120			
Cobalt	98.7			ug/L	100.00	0.0509	99	80-120			
Copper	95.4			ug/L	100.00	0.0259	95	80-120			
Lead	98.0			ug/L	100.00	0.0618	98	80-120			
Molybdenum	108			ug/L	100.00	4.42	103	80-120			
Nickel	98.9			ug/L	100.00	0.358	99	80-120			
Selenium	101			ug/L	100.00	-0.499	101	80-120			
Silver	98.7			ug/L	100.00	-0.0018	99	80-120			
Thallium	99.7			ug/L	100.00	0.0434	100	80-120			
Vanadium	107			ug/L	100.00	-0.990	107	80-120			
Zinc	99.5			ug/L	100.00	0.753	99	80-120			
Lithium	90.0			ug/L	100.00	0.643	89	80-120			

**Batch 7020551 - EPA 7470A**

<b>Blank (7020551-BLK1)</b>				<b>Prepared &amp; Analyzed: 02/20/17</b>							
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7020551-BS1)</b>				<b>Prepared &amp; Analyzed: 02/20/17</b>							
Mercury	0.00241	0.00050	0.000041	mg/L	2.5000E-3		96	80-120			



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Attention: Mr. Joju Abraham

February 22, 2017

**Report No.: AAB0527**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020551 - EPA 7470A</b>											
<b>Matrix Spike (7020551-MS1)</b>			<b>Source: AAB0494-03</b>			<b>Prepared &amp; Analyzed: 02/20/17</b>					
Mercury	0.00230	0.00050	0.000041	mg/L	2.5000E-3	ND	92	75-125			
<b>Matrix Spike Dup (7020551-MSD1)</b>			<b>Source: AAB0494-03</b>			<b>Prepared &amp; Analyzed: 02/20/17</b>					
Mercury	0.00234	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125	2	20	
<b>Post Spike (7020551-PS1)</b>			<b>Source: AAB0494-03</b>			<b>Prepared &amp; Analyzed: 02/20/17</b>					
Mercury	1.73			ug/L	1.6667	-0.00140	104	80-120			
<b>Batch 7020584 - EPA 7470A</b>											
<b>Blank (7020584-BLK1)</b>						<b>Prepared &amp; Analyzed: 02/21/17</b>					
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7020584-BS1)</b>						<b>Prepared &amp; Analyzed: 02/21/17</b>					
Mercury	0.00246	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			
<b>Matrix Spike (7020584-MS1)</b>			<b>Source: AAB0586-02</b>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
Mercury	0.00241	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125			
<b>Matrix Spike Dup (7020584-MSD1)</b>			<b>Source: AAB0586-02</b>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
Mercury	0.00238	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125	1	20	
<b>Post Spike (7020584-PS1)</b>			<b>Source: AAB0586-02</b>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
Mercury	1.70			ug/L	1.6667	-0.00501	102	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 22, 2017

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## Legend

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### 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

- 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.**

CHAIN OF CUSTODY RECORD



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										L A B  I D E N T I F I C A T I O N N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:	P	P	P											
Southern Company Services 241 Ralph McGill Bldg SE 150185 Atlanta, GA 30308 404-506-7239					PRESERVATION:											P - PLASTIC	1 - HCl, ≤6°C		
REPORT TO: Joia Abraham					# of											A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
REQUESTED COMPLETION DATE:					C O N T A I N E R S											G - CLEAR GLASS	3 - HNO <sub>3</sub>		
PROJECT NAME/STATE: Plant Bowen - Ash Pond CLR					↓											V - VOA VIAL	4 - NaOH, ≤6°C		
PROJECT #:					Metals App. III + IV											S - STERILE	5 - NaOH/ZnAc, ≤6°C		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION														
2/14/17	1045	GW	X	X	BGWA-26	4	1	1	2										
2/14/17	1045	GW	X	X	BGWA-27	4	1	1	2										
2/14/17	1225	GW	X	X	BGWA-29	4	1	1	2										
2/14/17	1240	GW	X	X	BGWA-6	4	1	1	2										
2/14/17	1405	GW	X	X	BGWA-8	4	1	1	2										
SAMPLED BY AND TITLE: Robert Hill / Michael Patinkin					DATE/TIME: 2/14/17 1430					RELINQUISHED BY: [Signature]					DATE/TIME: 2/15/17 0758				
RECEIVED BY:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:				
LABORATORY: [Signature]					DATE/TIME: 02/15/17 0758					SAMPLE SHIPPED VIA: CLIENT					FOR LAB USE ONLY				
Checked: [Signature]					Temperature: 1°C Min: 1°C Max:					Custody Seal: Intact					LAB #: AA-B0527				
No. NA Yes No NA					# of Coolers: 1					Cooler ID:					Entered into LIMS: MA				
Tracking #:																			

Page 15 of 16



**PACE ANALYTICAL SERVICES, LLC.**

Environmental Monitoring & Laboratory Analysis  
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**LOG-IN CHECKLIST**

**Printed: 2/16/2017 8:36:11AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 02/15/17 07:58

**Work Order:** AAB0527

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 20

**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:**





**PACE ANALYTICAL SERVICES, LLC.**

Environmental Monitoring & Laboratory Analysis  
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(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: AAB0586**

**February 24, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel", written over a horizontal line.

Project Manager

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All test results relate only to the samples analyzed.



**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 24, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
Dup-2	AAB0586-01	Ground Water	02/15/17 00:00	02/16/17 07:59
BGWC-7	AAB0586-02	Ground Water	02/15/17 11:15	02/16/17 07:59
BGWC-12	AAB0586-03	Ground Water	02/15/17 14:15	02/16/17 07:59
BGWC-9	AAB0586-04	Ground Water	02/15/17 12:06	02/16/17 07:59
BGWC-11	AAB0586-05	Ground Water	02/15/17 13:35	02/16/17 07:59
EQBL021517	AAB0586-06	Water	02/15/17 16:15	02/16/17 07:59
FBL021517	AAB0586-07	Water	02/15/17 16:25	02/16/17 07:59



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 Atlanta GA, 30339

February 24, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAB0586

**Project:** CCR Event

**Client ID:** Dup-2

**Lab Number ID:** AAB0586-01

**Date/Time Sampled:** 2/15/2017 12:00:00AM

**Date/Time Received:** 2/16/2017 7:59:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	592	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	39	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 03:11	7020617	RLC
Fluoride	0.15	0.30	0.004	mg/L	EPA 300.0	J	1	02/21/17 16:27	02/22/17 03:11	7020617	RLC
Sulfate	660	50	4.6	mg/L	EPA 300.0	B-01	50	02/21/17 16:27	02/23/17 02:33	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Barium	0.0277	0.0100	0.0004	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 18:31	7020517	CSW
Boron	0.825	0.0400	0.0064	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Calcium	85.7	25.0	1.55	mg/L	EPA 6020B		50	02/17/17 13:40	02/20/17 18:52	7020517	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 18:46	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 14:56	7020584	MTC



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February 24, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAB0586

**Project:** CCR Event

**Client ID:** BGWC-7

**Lab Number ID:** AAB0586-02

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

**Date/Time Received:** 2/16/2017 7:59:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	968	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	12	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 03:31	7020617	RLC
Fluoride	0.18	0.30	0.004	mg/L	EPA 300.0	J	1	02/21/17 16:27	02/22/17 03:31	7020617	RLC
Sulfate	510	50	4.6	mg/L	EPA 300.0	B-01	50	02/21/17 16:27	02/23/17 02:54	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:09	7020517	CSW
Arsenic	0.0030	0.0050	0.0016	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 19:09	7020517	CSW
Barium	0.0390	0.0100	0.0004	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:09	7020517	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 18:36	7020517	CSW
Boron	2.01	0.0400	0.0064	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:09	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:09	7020517	CSW
Calcium	163	25.0	1.55	mg/L	EPA 6020B		50	02/17/17 13:40	02/20/17 19:15	7020517	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:09	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:09	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:09	7020517	CSW
Molybdenum	0.0018	0.0100	0.0017	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 19:09	7020517	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:09	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:09	7020517	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 18:36	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 14:58	7020584	MTC



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Attention: Mr. Joju Abraham

February 24, 2017

**Report No.:** AAB0586

**Project:** CCR Event

**Client ID:** BGWC-12

**Lab Number ID:** AAB0586-03

**Date/Time Sampled:** 2/15/2017 2:15:00PM

**Date/Time Received:** 2/16/2017 7:59:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	562	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	39	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 04:33	7020617	RLC
Fluoride	0.33	0.30	0.004	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 04:33	7020617	RLC
Sulfate	190	20	1.8	mg/L	EPA 300.0	B-01	20	02/21/17 16:27	02/23/17 03:16	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:21	7020517	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:21	7020517	CSW
Barium	0.0290	0.0100	0.0004	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:21	7020517	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 18:42	7020517	CSW
Boron	0.886	0.0400	0.0064	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:21	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:21	7020517	CSW
Calcium	90.7	25.0	1.55	mg/L	EPA 6020B		50	02/17/17 13:40	02/20/17 19:27	7020517	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:21	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:21	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:21	7020517	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:21	7020517	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:21	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:21	7020517	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 18:42	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 15:00	7020584	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 24, 2017

**Report No.:** AAB0586

**Project:** CCR Event

**Client ID:** BGWC-9

**Lab Number ID:** AAB0586-04

**Date/Time Sampled:** 2/15/2017 12:06:00PM

**Date/Time Received:** 2/16/2017 7:59:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	452	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	38	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 06:18	7020617	RLC
Fluoride	0.46	0.30	0.004	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 06:18	7020617	RLC
Sulfate	120	20	1.8	mg/L	EPA 300.0	B-01	20	02/21/17 16:27	02/23/17 03:38	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:32	7020517	CSW
Arsenic	0.0033	0.0050	0.0016	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 19:32	7020517	CSW
Barium	0.0299	0.0100	0.0004	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:32	7020517	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 18:48	7020517	CSW
Boron	0.707	0.0400	0.0064	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:32	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:32	7020517	CSW
Calcium	74.6	25.0	1.55	mg/L	EPA 6020B		50	02/17/17 13:40	02/20/17 19:38	7020517	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:32	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:32	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:32	7020517	CSW
Molybdenum	0.0027	0.0100	0.0017	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 19:32	7020517	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:32	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:32	7020517	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 18:48	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 15:03	7020584	MTC



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Attention: Mr. Joju Abraham

February 24, 2017

**Report No.:** AAB0586

**Project:** CCR Event

**Client ID:** BGWC-11

**Lab Number ID:** AAB0586-05

**Date/Time Sampled:** 2/15/2017 1:35:00PM

**Date/Time Received:** 2/16/2017 7:59:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	322	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	9.2	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 06:39	7020617	RLC
Fluoride	0.13	0.30	0.004	mg/L	EPA 300.0	J	1	02/21/17 16:27	02/22/17 06:39	7020617	RLC
Sulfate	94	10	0.92	mg/L	EPA 300.0	B-01	10	02/21/17 16:27	02/23/17 04:00	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:44	7020517	CSW
Arsenic	0.0046	0.0050	0.0016	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 19:44	7020517	CSW
Barium	0.0217	0.0100	0.0004	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:44	7020517	CSW
Beryllium	ND	0.0030	0.0004	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 18:54	7020517	CSW
Boron	0.225	0.0400	0.0064	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:44	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:44	7020517	CSW
Calcium	45.6	25.0	1.55	mg/L	EPA 6020B		50	02/17/17 13:40	02/20/17 19:49	7020517	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:44	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:44	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:44	7020517	CSW
Molybdenum	0.0031	0.0100	0.0017	mg/L	EPA 6020B	J	1	02/17/17 13:40	02/20/17 19:44	7020517	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:44	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:44	7020517	CSW
Lithium	ND	0.0500	0.0103	mg/L	EPA 6020B		5	02/17/17 13:40	02/21/17 18:54	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 15:10	7020584	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 24, 2017

Report No.: AAB0586

Project: CCR Event

Client ID: EQBL021517

Lab Number ID: AAB0586-06

Date/Time Sampled: 2/15/2017 4:15:00PM

Date/Time Received: 2/16/2017 7:59:00AM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	12	25	10	mg/L	SM 2540 C	J	1	02/20/17 14:58	02/20/17 14:58	7020559	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 07:00	7020617	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 07:00	7020617	RLC
Sulfate	0.18	1.0	0.09	mg/L	EPA 300.0	J, B-01	1	02/21/17 16:27	02/22/17 07:00	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/17/17 13:40	02/21/17 19:11	7020517	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 19:55	7020517	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/17/17 13:40	02/21/17 19:11	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 15:12	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

February 24, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0586

Project: CCR Event

Client ID: FBL021517

Lab Number ID: AAB0586-07

Date/Time Sampled: 2/15/2017 4:25:00PM

Date/Time Received: 2/16/2017 7:59:00AM

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	02/20/17 14:58	02/20/17 14:58	7020559	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 07:22	7020617	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 07:22	7020617	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 07:22	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/17/17 13:40	02/21/17 19:16	7020517	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/17/17 13:40	02/20/17 20:01	7020517	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/17/17 13:40	02/21/17 19:16	7020517	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 15:15	7020584	MTC



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February 24, 2017

**Report No.: AAB0586**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020559 - SM 2540 C</b>											
<b>Blank (7020559-BLK1)</b>						Prepared & Analyzed: 02/20/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7020559-BS1)</b>						Prepared & Analyzed: 02/20/17					
Total Dissolved Solids	405	25	10	mg/L	400.00		101	84-108			
<b>Duplicate (7020559-DUP1)</b>						Source: AAB0586-07			Prepared & Analyzed: 02/20/17		
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7020559-DUP2)</b>						Source: AAB0596-05			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 24, 2017

**Report No.: AAB0586**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020617 - EPA 300.0</b>											
<b>Blank (7020617-BLK1)</b> Prepared: 02/21/17 Analyzed: 02/22/17											
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	0.28	1.0	0.09	mg/L							J
<b>LCS (7020617-BS1)</b> Prepared: 02/21/17 Analyzed: 02/22/17											
Chloride	10.7	0.25	0.01	mg/L	10.010		107	90-110			
Fluoride	10.9	0.30	0.004	mg/L	10.020		109	90-110			
Sulfate	10.8	1.0	0.09	mg/L	10.020		108	90-110			
<b>Matrix Spike (7020617-MS1)</b> Source: AAB0586-02 Prepared: 02/21/17 Analyzed: 02/22/17											
Chloride	21.0	0.25	0.01	mg/L	10.010	11.5	95	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.18	106	90-110			
Sulfate	251	1.0	0.09	mg/L	10.020	264	NR	90-110			QM-02
<b>Matrix Spike (7020617-MS2)</b> Source: AAB0716-01 Prepared: 02/21/17 Analyzed: 02/22/17											
Chloride	12.7	0.25	0.01	mg/L	10.010	2.40	102	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.04	107	90-110			
Sulfate	11.2	1.0	0.09	mg/L	10.020	0.98	102	90-110			
<b>Matrix Spike Dup (7020617-MSD1)</b> Source: AAB0586-02 Prepared: 02/21/17 Analyzed: 02/22/17											
Chloride	21.0	0.25	0.01	mg/L	10.010	11.5	95	90-110	0.01	15	
Fluoride	10.9	0.30	0.004	mg/L	10.020	0.18	107	90-110	0.6	15	
Sulfate	251	1.0	0.09	mg/L	10.020	264	NR	90-110	0.03	15	QM-02



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Attention: Mr. Joju Abraham

February 24, 2017

**Report No.: AAB0586**

**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			



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 24, 2017

**Report No.: AAB0586**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020517 - EPA 3005A</b>											
<b>Matrix Spike (7020517-MS1)</b>			<b>Source: AAB0586-01</b>				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			
<b>Matrix Spike Dup (7020517-MSD1)</b>			<b>Source: AAB0586-01</b>				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	QM-02
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 24, 2017

**Report No.: AAB0586**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020517 - EPA 3005A</b>											
<b>Post Spike (7020517-PS1)</b>			<b>Source: AAB0586-01</b>			<b>Prepared: 02/17/17 Analyzed: 02/21/17</b>					
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**

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



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 24, 2017

**Report No.: AAB0586**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020584 - EPA 7470A</b>											
<b>Matrix Spike (7020584-MS1)</b>			<b>Source: AAB0586-02</b>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
Mercury	0.00241	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125			
<b>Matrix Spike Dup (7020584-MSD1)</b>			<b>Source: AAB0586-02</b>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
Mercury	0.00238	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125	1	20	
<b>Post Spike (7020584-PS1)</b>			<b>Source: AAB0586-02</b>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
Mercury	1.70			ug/L	1.6667	-0.00501	102	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 24, 2017

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## Legend

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### 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

- 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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110 Technology Parkway, Peachtree Corners, GA 30092  
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**LOG-IN CHECKLIST**

**Printed: 2/17/2017 11:54:05AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 02/16/17 07:59

**Work Order:** AAB0586

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 7

**#Containers:** 30

**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:**



**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: AAB0667**

**February 27, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel" is written over a horizontal line.

Project Manager

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All test results relate only to the samples analyzed.



**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

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-16	AAB0667-01	Ground Water	02/16/17 10:45	02/17/17 15:00
BGWC-17	AAB0667-02	Ground Water	02/16/17 11:50	02/17/17 15:00
BGWC-10	AAB0667-03	Ground Water	02/16/17 13:05	02/17/17 15:00
BGWC-18	AAB0667-04	Ground Water	02/16/17 13:50	02/17/17 15:00
BGWC-19	AAB0667-05	Ground Water	02/16/17 15:00	02/17/17 15:00



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 2480 Maner Road  
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Attention: Mr. Joju Abraham

February 27, 2017

Report No.: AAB0667

Project: CCR Event

Client ID: BGWC-16

Lab Number ID: AAB0667-01

Date/Time Sampled: 2/16/2017 10:45:00AM

Date/Time Received: 2/17/2017 3:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	685	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	46	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 07:43	7020617	RLC
Fluoride	0.31	0.30	0.004	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 07:43	7020617	RLC
Sulfate	380	50	4.6	mg/L	EPA 300.0	B-01	50	02/21/17 16:27	02/23/17 04:21	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Barium	0.0315	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Boron	1.73	0.400	0.0642	mg/L	EPA 6020B		10	02/21/17 10:45	02/23/17 17:39	7020579	CSW
Cadmium	0.0015	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Calcium	124	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 21:25	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Cobalt	0.0054	0.0100	0.0005	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Selenium	0.0012	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Thallium	0.0003	0.0010	0.0002	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:19	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:00	7020585	MTC



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February 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0667

Project: CCR Event

Client ID: BGWC-17

Lab Number ID: AAB0667-02

Date/Time Sampled: 2/16/2017 11:50:00AM

Date/Time Received: 2/17/2017 3:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	434	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	40	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 08:04	7020617	RLC
Fluoride	0.51	0.30	0.004	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 08:04	7020617	RLC
Sulfate	120	20	1.8	mg/L	EPA 300.0	B-01	20	02/21/17 16:27	02/23/17 04:43	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Barium	0.0187	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Boron	1.63	0.400	0.0642	mg/L	EPA 6020B		10	02/21/17 10:45	02/23/17 17:45	7020579	CSW
Cadmium	0.0001	0.0010	0.00007	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Calcium	65.5	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 21:48	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:42	7020579	CSW
Mercury	0.00017	0.00050	0.000041	mg/L	EPA 7470A	J	1	02/21/17 11:25	02/21/17 16:02	7020585	MTC



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Attention: Mr. Joju Abraham

February 27, 2017

Report No.: AAB0667

Project: CCR Event

Client ID: BGWC-10

Lab Number ID: AAB0667-03

Date/Time Sampled: 2/16/2017 1:05:00PM

Date/Time Received: 2/17/2017 3:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	433	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	22	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 08:25	7020617	RLC
Fluoride	0.38	0.30	0.004	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 08:25	7020617	RLC
Sulfate	110	10	0.92	mg/L	EPA 300.0	B-01	10	02/21/17 16:27	02/23/17 05:05	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Arsenic	0.0081	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Barium	0.0621	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Boron	0.482	0.0400	0.0064	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Calcium	53.2	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 21:59	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Molybdenum	0.0039	0.0100	0.0017	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 21:54	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:05	7020585	MTC



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 Atlanta GA, 30339

February 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0667

Project: CCR Event

Client ID: BGWC-18

Lab Number ID: AAB0667-04

Date/Time Sampled: 2/16/2017 1:50:00PM

Date/Time Received: 2/17/2017 3:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	364	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	19	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 08:47	7020617	RLC
Fluoride	0.38	0.30	0.004	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 08:47	7020617	RLC
Sulfate	92	10	0.92	mg/L	EPA 300.0	B-01	10	02/21/17 16:27	02/23/17 06:54	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Barium	0.0309	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Boron	0.753	0.0400	0.0064	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Cadmium	0.0002	0.0010	0.00007	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Calcium	53.7	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 22:11	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Lead	0.0002	0.0050	0.0001	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:05	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:07	7020585	MTC





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February 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0667

Project: CCR Event

Client ID: BGWC-19

Lab Number ID: AAB0667-05

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

Date/Time Received: 2/17/2017 3:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	488	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	31	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 09:08	7020617	RLC
Fluoride	0.60	0.30	0.004	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 09:08	7020617	RLC
Sulfate	130	10	0.92	mg/L	EPA 300.0	B-01	10	02/21/17 16:27	02/23/17 07:16	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Barium	0.0407	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Boron	0.680	0.0400	0.0064	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Calcium	64.7	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 22:22	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:17	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:09	7020585	MTC



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**Report No.: AAB0667**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020559 - SM 2540 C</b>											
<b>Blank (7020559-BLK1)</b>						Prepared & Analyzed: 02/20/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7020559-BS1)</b>						Prepared & Analyzed: 02/20/17					
Total Dissolved Solids	405	25	10	mg/L	400.00		101	84-108			
<b>Duplicate (7020559-DUP1)</b>						Source: AAB0586-07 Prepared & Analyzed: 02/20/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7020559-DUP2)</b>						Source: AAB0596-05 Prepared & Analyzed: 02/20/17					
Total Dissolved Solids	3810	25	10	mg/L		3820			0.2	10	



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**Report No.: AAB0667**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020617 - EPA 300.0</b>											
<b>Blank (7020617-BLK1)</b>						Prepared: 02/21/17 Analyzed: 02/22/17					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	0.28	1.0	0.09	mg/L							J
<b>LCS (7020617-BS1)</b>						Prepared: 02/21/17 Analyzed: 02/22/17					
Chloride	10.7	0.25	0.01	mg/L	10.010		107	90-110			
Fluoride	10.9	0.30	0.004	mg/L	10.020		109	90-110			
Sulfate	10.8	1.0	0.09	mg/L	10.020		108	90-110			
<b>Matrix Spike (7020617-MS1)</b>						Source: AAB0586-02 Prepared: 02/21/17 Analyzed: 02/22/17					
Chloride	21.0	0.25	0.01	mg/L	10.010	11.5	95	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.18	106	90-110			
Sulfate	251	1.0	0.09	mg/L	10.020	264	NR	90-110			QM-02
<b>Matrix Spike (7020617-MS2)</b>						Source: AAB0716-01 Prepared: 02/21/17 Analyzed: 02/22/17					
Chloride	12.7	0.25	0.01	mg/L	10.010	2.40	102	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.04	107	90-110			
Sulfate	11.2	1.0	0.09	mg/L	10.020	0.98	102	90-110			
<b>Matrix Spike Dup (7020617-MSD1)</b>						Source: AAB0586-02 Prepared: 02/21/17 Analyzed: 02/22/17					
Chloride	21.0	0.25	0.01	mg/L	10.010	11.5	95	90-110	0.01	15	
Fluoride	10.9	0.30	0.004	mg/L	10.020	0.18	107	90-110	0.6	15	
Sulfate	251	1.0	0.09	mg/L	10.020	264	NR	90-110	0.03	15	QM-02



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**Report No.: AAB0667**

**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			



**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.: AAB0667**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020579 - EPA 3005A</b>											
<b>Matrix Spike (7020579-MS1)</b>			<b>Source: AAB0667-01</b>				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			
<b>Matrix Spike Dup (7020579-MSD1)</b>			<b>Source: AAB0667-01</b>				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	QM-02
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	QM-02
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	J
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.: AAB0667**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020579 - EPA 3005A</b>											
<b>Post Spike (7020579-PS1)</b>			<b>Source: AAB0667-01</b>			<b>Prepared: 02/21/17 Analyzed: 02/22/17</b>					
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**

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



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

**Report No.: AAB0667**

**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>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
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>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
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>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
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

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## Legend

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### 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

- 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



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					L A B I D N U M B E R ↓	CONTAINER TYPE		PRESERVATION						
Southern Company Services					CONTAINER TYPE:	P	P	P											
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE BLDG 5 Atlanta, GA 30308					PRESERVATION:	3	7	3											
REPORT TO: <u>Joju Abraham</u> CC: <u>Maria Padilla</u>					# of CONTAINERS ↓	Mchab Am. III & IV EPA 6012 + EPA 2420 Cl. F. 504 EPA 300 TDS 5172540L Radon 226 + 228 SW-846 7315 + 9320					*MATRIX CODES:								
REQUESTED COMPLETION DATE:											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								
PROJECT NAME/STATE: Plant Bowen-Ash Pond CLR																			
PROJECT #:																			
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION														
2/16/17	1045	GW		X	BGWL-16	4	1	1	2							1			
2/16/17	1150	GW		X	BGWL-17	4	1	1	2							2			
2/16/17	1305	GW		X	BGWL-10	4	1	1	2						3				
2/16/17	1350	GW		X	BGWL-18	4	1	1	2						4				
2/16/17	1500	GW		X	BGWL-19	4	1	1	2						5				
SAMPLED BY AND TITLE: <u>Robert Mull / Michael Patinkin</u>					DATE/TIME: <u>2/16/17 1530</u>					RELINQUISHED BY: <u>Robert Mull 2/16/17</u>					DATE/TIME: <u>2/17/17 1500</u>				
RECEIVED BY:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:				
ANALYZED BY LAB: <u>Zalman</u>					DATE/TIME: <u>02/17/17 1500</u>					SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER <u>CLIENT</u> OTHER FS					FOR LAB USE ONLY LAB #: <u>AA00667</u> Entered into LIMS: Tracking #:				
Checked: No NA Ice Yes No NA					Temperature: <u>1°C</u> Min: <u>1°C</u> Max:					Custody Seal: <u>Intact</u> Broken Not Present					# of Coolers: Cooler ID:				



**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 8:20:29AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 02/17/17 15:00

**Work Order:** AAB0667

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 20

**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:**



**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: AAB0668**

**February 24, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 24, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-21	AAB0668-01	Ground Water	02/17/17 10:20	02/17/17 15:00
BGWC-20	AAB0668-02	Ground Water	02/17/17 11:00	02/17/17 15:00
BGWC-22	AAB0668-03	Ground Water	02/17/17 12:10	02/17/17 15:00



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 24, 2017

Report No.: AAB0668

Project: CCR Event

Client ID: BGWC-21

Lab Number ID: AAB0668-01

Date/Time Sampled: 2/17/2017 10:20:00AM

Date/Time Received: 2/17/2017 3:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	236	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	5.6	0.25	0.01	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 09:29	7020617	RLC
Fluoride	0.08	0.30	0.004	mg/L	EPA 300.0	J	1	02/21/17 16:27	02/22/17 09:29	7020617	RLC
Sulfate	57	5.0	0.46	mg/L	EPA 300.0	B-01	5	02/21/17 16:27	02/23/17 07:37	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Barium	0.0483	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Boron	0.0685	0.0400	0.0064	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Calcium	41.0	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 22:34	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:28	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:12	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

February 24, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0668

Project: CCR Event

Client ID: BGWC-20

Lab Number ID: AAB0668-02

Date/Time Sampled: 2/17/2017 11:00:00AM

Date/Time Received: 2/17/2017 3:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1160	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	140	25	1.3	mg/L	EPA 300.0		100	02/21/17 16:27	02/23/17 07:59	7020617	RLC
Fluoride	0.06	0.30	0.004	mg/L	EPA 300.0	J	1	02/21/17 16:27	02/22/17 11:15	7020617	RLC
Sulfate	710	100	9.2	mg/L	EPA 300.0	B-01	100	02/21/17 16:27	02/23/17 07:59	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Barium	0.0316	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Boron	3.63	2.00	0.321	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 22:57	7020579	CSW
Cadmium	0.00008	0.0010	0.00007	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Calcium	221	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 22:57	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Molybdenum	0.0148	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Lithium	0.0253	0.0500	0.0021	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 22:51	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:14	7020585	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

February 24, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAB0668

**Project:** CCR Event

**Client ID:** BGWC-22

**Lab Number ID:** AAB0668-03

**Date/Time Sampled:** 2/17/2017 12:10:00PM

**Date/Time Received:** 2/17/2017 3:00:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2200	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	570	25	1.3	mg/L	EPA 300.0		100	02/21/17 16:27	02/23/17 08:21	7020617	RLC
Fluoride	0.39	0.30	0.004	mg/L	EPA 300.0		1	02/21/17 16:27	02/22/17 11:36	7020617	RLC
Sulfate	740	100	9.2	mg/L	EPA 300.0	B-01	100	02/21/17 16:27	02/23/17 08:21	7020617	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Arsenic	0.0023	0.0050	0.0016	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Barium	0.0927	0.0100	0.0004	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Boron	12.2	2.00	0.321	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 23:08	7020579	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Calcium	434	25.0	1.55	mg/L	EPA 6020B		50	02/21/17 10:45	02/22/17 23:08	7020579	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Cobalt	0.0122	0.0100	0.0005	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Molybdenum	0.0660	0.0100	0.0017	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Thallium	0.0006	0.0010	0.0002	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Lithium	0.0125	0.0500	0.0021	mg/L	EPA 6020B	J	1	02/21/17 10:45	02/22/17 23:02	7020579	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/21/17 11:25	02/21/17 16:16	7020585	MTC



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February 24, 2017

**Report No.: AAB0668**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020598 - SM 2540 C</b>											
<b>Blank (7020598-BLK1)</b>						Prepared & Analyzed: 02/21/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7020598-BS1)</b>						Prepared & Analyzed: 02/21/17					
Total Dissolved Solids	391	25	10	mg/L	400.00		98	84-108			
<b>Duplicate (7020598-DUP1)</b>						Source: AAB0672-03 Prepared & Analyzed: 02/21/17					
Total Dissolved Solids	4660	25	10	mg/L		4600			1	10	





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**Report No.: AAB0668**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020617 - EPA 300.0</b>											
<b>Blank (7020617-BLK1)</b>						Prepared: 02/21/17 Analyzed: 02/22/17					
Chloride	ND	0.25	0.01	mg/L							
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	0.28	1.0	0.09	mg/L							J
<b>LCS (7020617-BS1)</b>						Prepared: 02/21/17 Analyzed: 02/22/17					
Chloride	10.7	0.25	0.01	mg/L	10.010		107	90-110			
Fluoride	10.9	0.30	0.004	mg/L	10.020		109	90-110			
Sulfate	10.8	1.0	0.09	mg/L	10.020		108	90-110			
<b>Matrix Spike (7020617-MS1)</b>						<b>Source: AAB0586-02</b> Prepared: 02/21/17 Analyzed: 02/22/17					
Chloride	21.0	0.25	0.01	mg/L	10.010	11.5	95	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.18	106	90-110			
Sulfate	251	1.0	0.09	mg/L	10.020	264	NR	90-110			QM-02
<b>Matrix Spike (7020617-MS2)</b>						<b>Source: AAB0716-01</b> Prepared: 02/21/17 Analyzed: 02/22/17					
Chloride	12.7	0.25	0.01	mg/L	10.010	2.40	102	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.04	107	90-110			
Sulfate	11.2	1.0	0.09	mg/L	10.020	0.98	102	90-110			
<b>Matrix Spike Dup (7020617-MSD1)</b>						<b>Source: AAB0586-02</b> Prepared: 02/21/17 Analyzed: 02/22/17					
Chloride	21.0	0.25	0.01	mg/L	10.010	11.5	95	90-110	0.01	15	
Fluoride	10.9	0.30	0.004	mg/L	10.020	0.18	107	90-110	0.6	15	
Sulfate	251	1.0	0.09	mg/L	10.020	264	NR	90-110	0.03	15	QM-02



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**Report No.: AAB0668**

**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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February 24, 2017

**Report No.: AAB0668**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020579 - EPA 3005A</b>											
<b>Matrix Spike (7020579-MS1)</b>			<b>Source: AAB0667-01</b>				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	1.35	145	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			
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			
<b>Matrix Spike Dup (7020579-MSD1)</b>			<b>Source: AAB0667-01</b>				Prepared: 02/21/17 Analyzed: 02/22/17				
Antimony	0.0202	0.0030	0.0008	mg/L	0.10000	ND	20	75-125	138	20	
Arsenic	0.0219	0.0050	0.0016	mg/L	0.10000	ND	22	75-125	131	20	
Barium	0.0238	0.0100	0.0004	mg/L	0.10000	0.0315	NR	75-125	139	20	
Beryllium	0.0159	0.0030	0.00008	mg/L	0.10000	ND	16	75-125	143	20	
Boron	2.46	2.00	0.321	mg/L	1.0000	1.35	111	75-125	13	20	
Cadmium	0.0222	0.0010	0.00007	mg/L	0.10000	0.0015	21	75-125	129	20	
Calcium	115	25.0	1.55	mg/L	1.0000	124	NR	75-125	9	20	
Chromium	0.0226	0.0100	0.0009	mg/L	0.10000	ND	23	75-125	130	20	
Cobalt	0.0219	0.0100	0.0005	mg/L	0.10000	0.0054	16	75-125	132	20	
Copper	0.0211	0.0250	0.0005	mg/L	0.10000	ND	21	75-125	131	20	J
Lead	0.0182	0.0050	0.0001	mg/L	0.10000	ND	18	75-125	139	20	
Molybdenum	0.0181	0.0100	0.0017	mg/L	0.10000	ND	18	75-125	142	20	
Nickel	0.0226	0.0100	0.0006	mg/L	0.10000	0.0036	19	75-125	131	20	
Selenium	0.0243	0.0100	0.0010	mg/L	0.10000	0.0012	23	75-125	125	20	
Silver	0.0185	0.0100	0.0005	mg/L	0.10000	ND	18	75-125	136	20	
Thallium	0.0176	0.0010	0.0002	mg/L	0.10000	0.0003	17	75-125	142	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	0.0187	0.0500	0.0021	mg/L	0.10000	ND	19	75-125	136	20	J



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**Report No.: AAB0668**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020579 - EPA 3005A</b>											
<b>Post Spike (7020579-PS1)</b>			<b>Source: AAB0667-01</b>			<b>Prepared: 02/21/17 Analyzed: 02/22/17</b>					
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	1350	155	80-120			
Cadmium	102			ug/L	100.00	1.48	100	80-120			
Calcium	124000			ug/L	1000.0	124000	NR	80-120			
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**

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



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**Report No.: AAB0668**

**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>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
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>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
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>			<b>Prepared &amp; Analyzed: 02/21/17</b>					
Mercury	1.74			ug/L	1.6667	-0.00249	104	80-120			



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February 24, 2017

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## Legend

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### 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

- 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



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

PAGE: 1 OF 1

CLIENT NAME: SOUTHERN COMPANY SERVICES					ANALYSIS REQUESTED					L A B  I D N U M B E R  ↓	CONTAINER TYPE		PRESERVATION										
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 RALPH MCGILL BLD SE B1035 ATLANTA, GA 30303					CONTAINER TYPE: P I P						P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	1 - HCl, ≤6°C		2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C									
REPORT TO: JOJU ABRHAM CC: MARIA PABILLA					PRESERVATION: # of							3 - HNO <sub>3</sub>		4 - NaOH, ≤6°C									
REQUESTED COMPLETION DATE:					CONTAINERS ↓							5 - NaOH/ZnAc, ≤6°C		6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C									
PROJECT NAME/STATE: PLANT BOWEN ASH POND					METALS APP III & III EPA 6020 & EPA 7470 Cl, F, SO <sub>4</sub> EPA 300 TDS 5M 2540C RADIUM 226 & 228 SW-846 9315 & 9320					7 - ≤6°C not frozen		*MATRIX CODES:											
PROJECT #:										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													
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of						REMARKS/ADDITIONAL INFORMATION											
04/17/17	1020	GW	X		BCWC-21	4	1	1	2						1								
04/17/17	1100	GW	X		BCWC-20	4	1	1	2						2								
04/17/17	1210	GW	X		BCWC-22	4	1	1	2						3								
SAMPLED BY AND TITLE: ROBERT MULL MICHAEL PATRICK					DATE/TIME: 02/17/17 1300					RELINQUISHED BY: Kent S Mull					DATE/TIME: 2/17/17 1500					FOR LAB USE ONLY			
RECEIVED BY:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:					LAB #: AAD0668			
RECEIVED BY LAB: Walman					DATE/TIME: 02/17/17 1500					SAMPLE SHIPPED VIA: UPS					CLIENT: (circled)					Entered into LIMS: MA			
Checked: No NA Yes No NA					Temperature: 1°C Min: 1°C Max:					Custody Seal: (circled) Intact Broken Not Present					# of Coolers: (circled)					Cooler ID:			

Page 13 of 14



**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 8:26:39AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 02/17/17 15:00

**Work Order:** AAB0668

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 3

**#Containers:** 12

**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:**





**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: AAB0709**

**February 27, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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  
(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>
FBL022017	AAB0709-01	Water	02/20/17 10:00	02/21/17 11:40
EQBL022017	AAB0709-02	Water	02/20/17 10:05	02/21/17 11:40
BGWC-25	AAB0709-03	Ground Water	02/20/17 11:16	02/21/17 11:40
BGWC-23	AAB0709-04	Ground Water	02/20/17 11:30	02/21/17 11:40
BGWC-24	AAB0709-05	Ground Water	02/20/17 14:15	02/21/17 11:40
Dup-3	AAB0709-06	Ground Water	02/20/17 00:00	02/21/17 11:40



**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.: AAB0709

Project: CCR Event

Client ID: FBL022017

Lab Number ID: AAB0709-01

Date/Time Sampled: 2/20/2017 10:00:00AM

Date/Time Received: 2/21/2017 11:40:00AM

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	02/23/17 11:30	02/23/17 11:30	7020691	JPT
<b>Inorganic Anions</b>											
Chloride	0.07	0.25	0.01	mg/L	EPA 300.0	J	1	02/23/17 11:24	02/23/17 16:34	7020696	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 16:34	7020696	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 16:34	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:21	7020619	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/24/17 10:20	02/24/17 13:44	7020713	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.:** AAB0709  
**Client ID:** EQBL022017

**Project:** CCR Event  
**Lab Number ID:** AAB0709-02

**Date/Time Sampled:** 2/20/2017 10:05:00AM

**Date/Time Received:** 2/21/2017 11:40:00AM

**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	02/23/17 11:30	02/23/17 11:30	7020691	JPT
<b>Inorganic Anions</b>											
Chloride	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	02/23/17 11:24	02/23/17 16:54	7020696	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 16:54	7020696	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 16:54	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Boron	ND	0.0400	0.0064	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Calcium	ND	0.500	0.0311	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Molybdenum	ND	0.0100	0.0017	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:27	7020619	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/24/17 10:20	02/24/17 13:46	7020713	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

February 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0709

Project: CCR Event

Client ID: BGWC-25

Lab Number ID: AAB0709-03

Date/Time Sampled: 2/20/2017 11:16:00AM

Date/Time Received: 2/21/2017 11:40:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	251	25	10	mg/L	SM 2540 C		1	02/23/17 11:30	02/23/17 11:30	7020691	JPT
<b>Inorganic Anions</b>											
Chloride	4.2	0.25	0.01	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 17:15	7020696	RLC
Fluoride	0.16	0.30	0.004	mg/L	EPA 300.0	J	1	02/23/17 11:24	02/23/17 17:15	7020696	RLC
Sulfate	24	1.0	0.09	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 17:15	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Arsenic	0.0029	0.0050	0.0016	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Barium	0.0275	0.0100	0.0004	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Boron	0.0154	0.0400	0.0064	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Calcium	40.7	25.0	1.55	mg/L	EPA 6020B		50	02/22/17 09:45	02/24/17 18:56	7020619	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Lead	0.0004	0.0050	0.0001	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Molybdenum	0.0024	0.0100	0.0017	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 18:51	7020619	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/24/17 10:20	02/24/17 13:49	7020713	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

February 27, 2017

Report No.: AAB0709

Project: CCR Event

Client ID: BGWC-23

Lab Number ID: AAB0709-04

Date/Time Sampled: 2/20/2017 11:30:00AM

Date/Time Received: 2/21/2017 11:40:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1720	25	10	mg/L	SM 2540 C		1	02/23/17 11:30	02/23/17 11:30	7020691	JPT
<b>Inorganic Anions</b>											
Chloride	470	25	1.3	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 17:05	7020696	RLC
Fluoride	0.09	0.30	0.004	mg/L	EPA 300.0	J	1	02/23/17 11:24	02/23/17 18:58	7020696	RLC
Sulfate	520	100	9.2	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 17:05	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Arsenic	0.0025	0.0050	0.0016	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Barium	0.0813	0.0100	0.0004	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Boron	5.70	0.0400	0.0064	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Calcium	323	25.0	1.55	mg/L	EPA 6020B		50	02/22/17 09:45	02/24/17 19:08	7020619	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Molybdenum	0.0122	0.0100	0.0017	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Lithium	0.0110	0.0500	0.0021	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 19:02	7020619	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/24/17 10:20	02/24/17 13:51	7020713	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

February 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAB0709

Project: CCR Event

Client ID: BGWC-24

Lab Number ID: AAB0709-05

Date/Time Sampled: 2/20/2017 2:15:00PM

Date/Time Received: 2/21/2017 11:40:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4200	25	10	mg/L	SM 2540 C		1	02/23/17 11:30	02/23/17 11:30	7020691	JPT
<b>Inorganic Anions</b>											
Chloride	1900	25	1.3	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 17:26	7020696	RLC
Fluoride	0.65	0.30	0.004	mg/L	EPA 300.0		1	02/23/17 11:24	02/23/17 20:00	7020696	RLC
Sulfate	610	100	9.2	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 17:26	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Arsenic	0.0063	0.0050	0.0016	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Barium	0.0999	0.0100	0.0004	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Boron	31.4	2.00	0.321	mg/L	EPA 6020B		50	02/22/17 09:45	02/24/17 19:19	7020619	CSW
Cadmium	0.0028	0.0010	0.00007	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Calcium	823	125	7.77	mg/L	EPA 6020B		250	02/22/17 09:45	02/25/17 14:03	7020619	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Cobalt	0.0027	0.0100	0.0005	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Molybdenum	0.0026	0.0100	0.0017	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Selenium	0.0044	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Thallium	0.0003	0.0010	0.0002	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Lithium	0.0053	0.0500	0.0021	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 19:13	7020619	CSW
Mercury	0.00005	0.00050	0.000041	mg/L	EPA 7470A	J	1	02/24/17 10:20	02/24/17 13:58	7020713	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

February 27, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAB0709

**Project:** CCR Event

**Client ID:** Dup-3

**Lab Number ID:** AAB0709-06

**Date/Time Sampled:** 2/20/2017 12:00:00AM

**Date/Time Received:** 2/21/2017 11:40:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1800	25	10	mg/L	SM 2540 C		1	02/23/17 11:30	02/23/17 11:30	7020691	JPT
<b>Inorganic Anions</b>											
Chloride	450	25	1.3	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 17:47	7020696	RLC
Fluoride	0.09	0.30	0.004	mg/L	EPA 300.0	J	1	02/23/17 11:24	02/23/17 20:41	7020696	RLC
Sulfate	500	100	9.2	mg/L	EPA 300.0		100	02/23/17 11:24	02/24/17 17:47	7020696	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Arsenic	0.0027	0.0050	0.0016	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Barium	0.0815	0.0100	0.0004	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Boron	6.04	0.0400	0.0064	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Calcium	313	25.0	1.55	mg/L	EPA 6020B		50	02/22/17 09:45	02/24/17 19:31	7020619	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Molybdenum	0.0121	0.0100	0.0017	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Selenium	ND	0.0100	0.0010	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Lithium	0.0114	0.0500	0.0021	mg/L	EPA 6020B	J	1	02/22/17 09:45	02/24/17 19:25	7020619	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/24/17 10:20	02/24/17 14:01	7020713	MTC





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February 27, 2017

**Report No.: AAB0709**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020691 - SM 2540 C</b>											
<b>Blank (7020691-BLK1)</b>						Prepared & Analyzed: 02/23/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7020691-BS1)</b>						Prepared & Analyzed: 02/23/17					
Total Dissolved Solids	398	25	10	mg/L	400.00		100	84-108			
<b>Duplicate (7020691-DUP1)</b>						Source: AAB0709-01			Prepared & Analyzed: 02/23/17		
Total Dissolved Solids	ND	25	10	mg/L		10				10	
<b>Duplicate (7020691-DUP2)</b>						Source: AAB0709-03			Prepared & Analyzed: 02/23/17		
Total Dissolved Solids	236	25	10	mg/L		251			6	10	



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**Report No.: AAB0709**

**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



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**Report No.: AAB0709**

**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 7020619 - EPA 3005A**

**Blank (7020619-BLK1)**

Prepared: 02/22/17 Analyzed: 02/24/17

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 (7020619-BS1)**

Prepared: 02/22/17 Analyzed: 02/24/17

Antimony	0.0993	0.0030	0.0008	mg/L	0.10000		99	80-120			
Arsenic	0.0982	0.0050	0.0016	mg/L	0.10000		98	80-120			
Barium	0.0956	0.0100	0.0004	mg/L	0.10000		96	80-120			
Beryllium	0.0971	0.0030	0.00008	mg/L	0.10000		97	80-120			
Boron	0.937	0.0400	0.0064	mg/L	1.0000		94	80-120			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000		104	80-120			
Calcium	0.979	0.500	0.0311	mg/L	1.0000		98	80-120			
Chromium	0.107	0.0100	0.0009	mg/L	0.10000		107	80-120			
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120			
Copper	0.103	0.0250	0.0005	mg/L	0.10000		103	80-120			
Lead	0.0970	0.0050	0.0001	mg/L	0.10000		97	80-120			
Molybdenum	0.0957	0.0100	0.0017	mg/L	0.10000		96	80-120			
Nickel	0.103	0.0100	0.0006	mg/L	0.10000		103	80-120			
Selenium	0.0996	0.0100	0.0010	mg/L	0.10000		100	80-120			
Silver	0.0978	0.0100	0.0005	mg/L	0.10000		98	80-120			
Thallium	0.0991	0.0010	0.0002	mg/L	0.10000		99	80-120			
Vanadium	0.106	0.0100	0.0071	mg/L	0.10000		106	80-120			
Zinc	0.103	0.0100	0.0021	mg/L	0.10000		103	80-120			
Lithium	0.0991	0.0500	0.0021	mg/L	0.10000		99	80-120			



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February 27, 2017

**Report No.: AAB0709**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020619 - EPA 3005A</b>											
<b>Matrix Spike (7020619-MS1)</b>			<b>Source: AAB0709-03</b>			<b>Prepared: 02/22/17 Analyzed: 02/24/17</b>					
Antimony	0.101	0.0030	0.0008	mg/L	0.10000	ND	101	75-125			
Arsenic	0.107	0.0050	0.0016	mg/L	0.10000	0.0029	104	75-125			
Barium	0.122	0.0100	0.0004	mg/L	0.10000	0.0275	95	75-125			
Beryllium	0.104	0.0030	0.00008	mg/L	0.10000	ND	104	75-125			
Boron	0.974	0.0400	0.0064	mg/L	1.0000	0.0154	96	75-125			
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125			
Calcium	39.7	25.0	1.55	mg/L	1.0000	40.7	NR	75-125			QM-02
Chromium	0.110	0.0100	0.0009	mg/L	0.10000	ND	110	75-125			
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Copper	0.104	0.0250	0.0005	mg/L	0.10000	ND	104	75-125			
Lead	0.0975	0.0050	0.0001	mg/L	0.10000	0.0004	97	75-125			
Molybdenum	0.103	0.0100	0.0017	mg/L	0.10000	0.0024	100	75-125			
Nickel	0.108	0.0100	0.0006	mg/L	0.10000	ND	108	75-125			
Selenium	0.103	0.0100	0.0010	mg/L	0.10000	ND	103	75-125			
Silver	0.0970	0.0100	0.0005	mg/L	0.10000	ND	97	75-125			
Thallium	0.101	0.0010	0.0002	mg/L	0.10000	ND	101	75-125			
Vanadium	0.112	0.0100	0.0071	mg/L	0.10000	ND	112	75-125			
Zinc	0.102	0.0100	0.0021	mg/L	0.10000	ND	102	75-125			
Lithium	0.102	0.0500	0.0021	mg/L	0.10000	ND	102	75-125			
<b>Matrix Spike Dup (7020619-MSD1)</b>			<b>Source: AAB0709-03</b>			<b>Prepared: 02/22/17 Analyzed: 02/24/17</b>					
Antimony	0.103	0.0030	0.0008	mg/L	0.10000	ND	103	75-125	2	20	
Arsenic	0.105	0.0050	0.0016	mg/L	0.10000	0.0029	102	75-125	2	20	
Barium	0.127	0.0100	0.0004	mg/L	0.10000	0.0275	99	75-125	4	20	
Beryllium	0.0993	0.0030	0.00008	mg/L	0.10000	ND	99	75-125	4	20	
Boron	0.973	0.0400	0.0064	mg/L	1.0000	0.0154	96	75-125	0.1	20	
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000	ND	105	75-125	2	20	
Calcium	43.2	25.0	1.55	mg/L	1.0000	40.7	241	75-125	8	20	QM-02
Chromium	0.111	0.0100	0.0009	mg/L	0.10000	ND	111	75-125	1	20	
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125	0.8	20	
Copper	0.102	0.0250	0.0005	mg/L	0.10000	ND	102	75-125	2	20	
Lead	0.0961	0.0050	0.0001	mg/L	0.10000	0.0004	96	75-125	1	20	
Molybdenum	0.104	0.0100	0.0017	mg/L	0.10000	0.0024	102	75-125	1	20	
Nickel	0.105	0.0100	0.0006	mg/L	0.10000	ND	105	75-125	2	20	
Selenium	0.0998	0.0100	0.0010	mg/L	0.10000	ND	100	75-125	3	20	
Silver	0.0958	0.0100	0.0005	mg/L	0.10000	ND	96	75-125	1	20	
Thallium	0.0984	0.0010	0.0002	mg/L	0.10000	ND	98	75-125	2	20	
Vanadium	0.113	0.0100	0.0071	mg/L	0.10000	ND	113	75-125	0.7	20	
Zinc	0.104	0.0100	0.0021	mg/L	0.10000	ND	104	75-125	2	20	
Lithium	0.0995	0.0500	0.0021	mg/L	0.10000	ND	99	75-125	2	20	



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February 27, 2017

**Report No.: AAB0709**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020619 - EPA 3005A</b>											
<b>Post Spike (7020619-PS1)</b>			<b>Source: AAB0709-03</b>			<b>Prepared: 02/22/17 Analyzed: 02/24/17</b>					
Antimony	95.0			ug/L	100.00	0.254	95	80-120			
Arsenic	105			ug/L	100.00	2.87	103	80-120			
Barium	124			ug/L	100.00	27.5	97	80-120			
Beryllium	99.5			ug/L	100.00	0.0070	99	80-120			
Boron	954			ug/L	1000.0	15.4	94	80-120			
Cadmium	102			ug/L	100.00	-0.0085	102	80-120			
Calcium	40200			ug/L	1000.0	40700	NR	80-120			QM-02
Chromium	110			ug/L	100.00	0.198	110	80-120			
Cobalt	101			ug/L	100.00	0.236	101	80-120			
Copper	101			ug/L	100.00	-0.0416	101	80-120			
Lead	93.2			ug/L	100.00	0.407	93	80-120			
Molybdenum	105			ug/L	100.00	2.42	103	80-120			
Nickel	104			ug/L	100.00	0.150	104	80-120			
Selenium	100			ug/L	100.00	-0.414	100	80-120			
Silver	98.9			ug/L	100.00	0.0038	99	80-120			
Thallium	95.6			ug/L	100.00	0.0243	96	80-120			
Vanadium	109			ug/L	100.00	0.231	109	80-120			
Zinc	102			ug/L	100.00	1.70	100	80-120			
Lithium	100			ug/L	100.00	0.0861	100	80-120			

**Batch 7020713 - EPA 7470A**

<b>Blank (7020713-BLK1)</b>					<b>Prepared &amp; Analyzed: 02/24/17</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7020713-BS1)</b>					<b>Prepared &amp; Analyzed: 02/24/17</b>						
Mercury	0.00238	0.00050	0.000041	mg/L	2.5000E-3		95	80-120			



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February 27, 2017

**Report No.: AAB0709**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020713 - EPA 7470A</b>											
<b>Matrix Spike (7020713-MS1)</b>			<b>Source: AAB0789-01</b>			<b>Prepared &amp; Analyzed: 02/24/17</b>					
Mercury	0.00231	0.00050	0.000041	mg/L	2.5000E-3	ND	92	75-125			
<b>Matrix Spike Dup (7020713-MSD1)</b>			<b>Source: AAB0789-01</b>			<b>Prepared &amp; Analyzed: 02/24/17</b>					
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125	2	20	
<b>Post Spike (7020713-PS1)</b>			<b>Source: AAB0789-01</b>			<b>Prepared &amp; Analyzed: 02/24/17</b>					
Mercury	1.64			ug/L	1.6667	-0.00567	98	80-120			



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 27, 2017

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## Legend

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### 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

**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, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED										LAB NUMBER	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:		PRESERVATION:		P		F		P			P				
Southern Company Services					P		3		7		3									
241 Ralph McGill Blvd SE 310165 Atlanta, GA 30308					# of															
REPORT TO: <u>Saja Abraham</u>					C		CONTAINERS		↓											
REQUESTED COMPLETION DATE:					O		↓													
PROJECT NAME/STATE:					CONTAINERS		↓													
PROJECT #:					CONTAINERS		↓													
Plant Bowen Ashford CCR					CONTAINERS		↓													
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of														
2/20/17	1000	W		X	FBL022017	4														
2/20/17	1005	W		X	QBL022017	4														
2/20/17	1116	GW		X	BGWC-25	4														
2/20/17	1130	GW		X	BGWC-23	6														
2/20/17	1415	GW		X	BGWC-24	4														
2/20/17	/	GW		X	Dup-3	4														
SAMPLED BY AND TITLE: <u>Forest Hamrick</u>					DATE/TIME: <u>2/20/17 1600</u>					RELINQUISHED BY: <u>Scott Edell</u>					DATE/TIME: <u>2/21/17 1056</u>					
RECEIVED BY: <u>[Signature]</u>					DATE/TIME: <u>2/21/17 1056</u>					RELINQUISHED BY:					DATE/TIME:					
SAMPLED BY LAB: <u>[Signature]</u>					DATE/TIME: <u>02/21/17 1140</u>					SAMPLE SHIPPED VIA: <u>COURIER</u>					CLIENT OTHER FS					
Temp: <u>1°C</u> Min: <u>1°C</u> Max: <u>1°C</u>					Custody Seal: <u>[Signature]</u>					# of Coolers: <u>1</u>					Cooler ID:					





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**LOG-IN CHECKLIST**

**Printed: 2/22/2017 3:03:46PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 02/21/17 11:40

**Work Order:** AAB0709

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 6

**#Containers:** 26

**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:**



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**Laboratory Report**

**Prepared For:**

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

**Attention: Mr. Joju Abraham**

**Report Number: AAB0740**

**February 28, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

February 28, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-14	AAB0740-01	Ground Water	02/21/17 10:10	02/22/17 08:25



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Attention: Mr. Joju Abraham

February 28, 2017

Report No.: AAB0740

Project: CCR Event

Client ID: BGWC-14

Lab Number ID: AAB0740-01

Date/Time Sampled: 2/21/2017 10:10:00AM

Date/Time Received: 2/22/2017 8:25:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	589	25	10	mg/L	SM 2540 C		1	02/23/17 11:30	02/23/17 11:30	7020691	JPT
<b>Inorganic Anions</b>											
Chloride	37	0.25	0.01	mg/L	EPA 300.0		1	02/26/17 12:42	02/26/17 15:15	7020783	RLC
Fluoride	0.35	0.30	0.004	mg/L	EPA 300.0		1	02/26/17 12:42	02/26/17 15:15	7020783	RLC
Sulfate	210	10	0.92	mg/L	EPA 300.0		10	02/26/17 12:42	02/27/17 19:49	7020783	RLC
<b>Metals, Total</b>											
Antimony	0.0013	0.0030	0.0008	mg/L	EPA 6020B	J	1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Arsenic	ND	0.0050	0.0016	mg/L	EPA 6020B		1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Barium	0.0789	0.0100	0.0004	mg/L	EPA 6020B		1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Beryllium	ND	0.0030	0.00008	mg/L	EPA 6020B		1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Boron	0.809	0.0400	0.0064	mg/L	EPA 6020B		1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Cadmium	ND	0.0010	0.00007	mg/L	EPA 6020B		1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Calcium	102	25.0	1.55	mg/L	EPA 6020B		50	02/23/17 14:50	02/25/17 16:10	7020699	CSW
Chromium	ND	0.0100	0.0009	mg/L	EPA 6020B		1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Lead	ND	0.0050	0.0001	mg/L	EPA 6020B		1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Molybdenum	0.0076	0.0100	0.0017	mg/L	EPA 6020B	J	1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Selenium	0.0011	0.0100	0.0010	mg/L	EPA 6020B	J	1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Thallium	ND	0.0010	0.0002	mg/L	EPA 6020B		1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Lithium	ND	0.0500	0.0021	mg/L	EPA 6020B		1	02/23/17 14:50	02/25/17 16:05	7020699	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	02/24/17 10:20	02/24/17 14:10	7020713	MTC



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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 7020691 - SM 2540 C</b>											
<b>Blank (7020691-BLK1)</b>						Prepared & Analyzed: 02/23/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7020691-BS1)</b>						Prepared & Analyzed: 02/23/17					
Total Dissolved Solids	398	25	10	mg/L	400.00		100	84-108			
<b>Duplicate (7020691-DUP1)</b>						Source: AAB0709-01			Prepared & Analyzed: 02/23/17		
Total Dissolved Solids	ND	25	10	mg/L		10				10	
<b>Duplicate (7020691-DUP2)</b>						Source: AAB0709-03			Prepared & Analyzed: 02/23/17		
Total Dissolved Solids	236	25	10	mg/L		251			6	10	



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**Report No.: AAB0740**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020783 - EPA 300.0</b>											
<b>Blank (7020783-BLK1)</b>						Prepared & Analyzed: 02/26/17					
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 (7020783-BS1)</b>						Prepared & Analyzed: 02/26/17					
Chloride	10.4	0.25	0.01	mg/L	10.010		104	90-110			
Fluoride	10.3	0.30	0.004	mg/L	10.020		103	90-110			
Sulfate	10.5	1.0	0.09	mg/L	10.020		105	90-110			
<b>Matrix Spike (7020783-MS1)</b>						Source: AAB0789-02 Prepared & Analyzed: 02/26/17					
Chloride	12.4	0.25	0.01	mg/L	10.010	2.02	104	90-110			
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.14	102	90-110			
Sulfate	15.9	1.0	0.09	mg/L	10.020	6.08	98	90-110			
<b>Matrix Spike (7020783-MS2)</b>						Source: AAB0789-04 Prepared & Analyzed: 02/26/17					
Chloride	13.8	0.25	0.01	mg/L	10.010	3.23	105	90-110			
Fluoride	10.7	0.30	0.004	mg/L	10.020	0.16	105	90-110			
Sulfate	13.3	1.0	0.09	mg/L	10.020	2.99	103	90-110			
<b>Matrix Spike Dup (7020783-MSD1)</b>						Source: AAB0789-02 Prepared & Analyzed: 02/26/17					
Chloride	12.5	0.25	0.01	mg/L	10.010	2.02	104	90-110	0.6	15	
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.14	103	90-110	0.4	15	
Sulfate	16.0	1.0	0.09	mg/L	10.020	6.08	99	90-110	0.4	15	



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**Report No.: AAB0740**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020699 - EPA 3005A</b>											
<b>Blank (7020699-BLK1)</b>						Prepared: 02/23/17 Analyzed: 02/25/17					
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							
<b>LCS (7020699-BS1)</b>						Prepared: 02/23/17 Analyzed: 02/25/17					
Antimony	0.107	0.0030	0.0008	mg/L	0.10000		107	80-120			
Arsenic	0.0985	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	0.102	0.0030	0.00008	mg/L	0.10000		102	80-120			
Boron	1.02	0.0400	0.0064	mg/L	1.0000		102	80-120			
Cadmium	0.105	0.0010	0.00007	mg/L	0.10000		105	80-120			
Calcium	0.995	0.500	0.0311	mg/L	1.0000		100	80-120			
Chromium	0.107	0.0100	0.0009	mg/L	0.10000		107	80-120			
Cobalt	0.0980	0.0100	0.0005	mg/L	0.10000		98	80-120			
Copper	0.102	0.0250	0.0005	mg/L	0.10000		102	80-120			
Lead	0.101	0.0050	0.0001	mg/L	0.10000		101	80-120			
Molybdenum	0.109	0.0100	0.0017	mg/L	0.10000		109	80-120			
Nickel	0.103	0.0100	0.0006	mg/L	0.10000		103	80-120			
Selenium	0.0997	0.0100	0.0010	mg/L	0.10000		100	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	0.104	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	0.0985	0.0500	0.0021	mg/L	0.10000		98	80-120			



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**Report No.: AAB0740**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020699 - EPA 3005A</b>											
<b>Matrix Spike (7020699-MS1)</b>			<b>Source: AAB0741-01</b>				<b>Prepared: 02/23/17 Analyzed: 02/25/17</b>				
Antimony	0.113	0.0030	0.0008	mg/L	0.10000	0.0057	107	75-125			
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125			
Barium	0.120	0.0100	0.0004	mg/L	0.10000	0.0178	103	75-125			
Beryllium	0.105	0.0030	0.00008	mg/L	0.10000	ND	105	75-125			
Boron	1.06	0.0400	0.0064	mg/L	1.0000	0.0218	104	75-125			
Cadmium	0.104	0.0010	0.00007	mg/L	0.10000	ND	104	75-125			
Calcium	32.4	25.0	1.55	mg/L	1.0000	31.7	70	75-125			QM-02
Chromium	0.105	0.0100	0.0009	mg/L	0.10000	0.0010	104	75-125			
Cobalt	0.0976	0.0100	0.0005	mg/L	0.10000	ND	98	75-125			
Copper	0.104	0.0250	0.0005	mg/L	0.10000	ND	104	75-125			
Lead	0.100	0.0050	0.0001	mg/L	0.10000	ND	100	75-125			
Molybdenum	0.112	0.0100	0.0017	mg/L	0.10000	0.0049	107	75-125			
Nickel	0.101	0.0100	0.0006	mg/L	0.10000	0.0007	101	75-125			
Selenium	0.0984	0.0100	0.0010	mg/L	0.10000	ND	98	75-125			
Silver	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Thallium	0.104	0.0010	0.0002	mg/L	0.10000	ND	104	75-125			
Vanadium	0.109	0.0100	0.0071	mg/L	0.10000	ND	109	75-125			
Zinc	0.106	0.0100	0.0021	mg/L	0.10000	0.0049	101	75-125			
Lithium	0.103	0.0500	0.0021	mg/L	0.10000	ND	103	75-125			
<b>Matrix Spike Dup (7020699-MSD1)</b>			<b>Source: AAB0741-01</b>				<b>Prepared: 02/23/17 Analyzed: 02/25/17</b>				
Antimony	0.113	0.0030	0.0008	mg/L	0.10000	0.0057	108	75-125	0.7	20	
Arsenic	0.102	0.0050	0.0016	mg/L	0.10000	ND	102	75-125	0.4	20	
Barium	0.123	0.0100	0.0004	mg/L	0.10000	0.0178	105	75-125	2	20	
Beryllium	0.109	0.0030	0.00008	mg/L	0.10000	ND	109	75-125	4	20	
Boron	1.02	0.0400	0.0064	mg/L	1.0000	0.0218	100	75-125	4	20	
Cadmium	0.103	0.0010	0.00007	mg/L	0.10000	ND	103	75-125	2	20	
Calcium	32.6	25.0	1.55	mg/L	1.0000	31.7	89	75-125	0.6	20	
Chromium	0.111	0.0100	0.0009	mg/L	0.10000	0.0010	110	75-125	5	20	
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125	4	20	
Copper	0.104	0.0250	0.0005	mg/L	0.10000	ND	104	75-125	0.2	20	
Lead	0.102	0.0050	0.0001	mg/L	0.10000	ND	102	75-125	2	20	
Molybdenum	0.111	0.0100	0.0017	mg/L	0.10000	0.0049	106	75-125	0.8	20	
Nickel	0.103	0.0100	0.0006	mg/L	0.10000	0.0007	103	75-125	2	20	
Selenium	0.100	0.0100	0.0010	mg/L	0.10000	ND	100	75-125	2	20	
Silver	0.105	0.0100	0.0005	mg/L	0.10000	ND	105	75-125	2	20	
Thallium	0.107	0.0010	0.0002	mg/L	0.10000	ND	107	75-125	3	20	
Vanadium	0.114	0.0100	0.0071	mg/L	0.10000	ND	114	75-125	5	20	
Zinc	0.111	0.0100	0.0021	mg/L	0.10000	0.0049	106	75-125	4	20	
Lithium	0.104	0.0500	0.0021	mg/L	0.10000	ND	104	75-125	0.9	20	





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Attention: Mr. Joju Abraham

February 28, 2017

**Report No.: AAB0740**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020699 - EPA 3005A</b>											
<b>Post Spike (7020699-PS1)</b>			<b>Source: AAB0741-01</b>			<b>Prepared: 02/23/17 Analyzed: 02/25/17</b>					
Antimony	101			ug/L	100.00	5.71	95	80-120			
Arsenic	107			ug/L	100.00	0.925	106	80-120			
Barium	117			ug/L	100.00	17.8	99	80-120			
Beryllium	112			ug/L	100.00	0.0014	112	80-120			
Boron	1100			ug/L	1000.0	21.8	108	80-120			
Cadmium	104			ug/L	100.00	-0.0021	104	80-120			
Calcium	32700			ug/L	1000.0	31700	104	80-120			
Chromium	111			ug/L	100.00	1.03	110	80-120			
Cobalt	96.9			ug/L	100.00	0.167	97	80-120			
Copper	106			ug/L	100.00	0.267	106	80-120			
Lead	101			ug/L	100.00	0.0835	101	80-120			
Molybdenum	114			ug/L	100.00	4.94	109	80-120			
Nickel	101			ug/L	100.00	0.653	100	80-120			
Selenium	101			ug/L	100.00	0.920	100	80-120			
Silver	102			ug/L	100.00	0.0060	102	80-120			
Thallium	103			ug/L	100.00	0.0169	103	80-120			
Vanadium	113			ug/L	100.00	0.937	112	80-120			
Zinc	122			ug/L	100.00	4.93	118	80-120			
Lithium	107			ug/L	100.00	0.225	107	80-120			

**Batch 7020713 - EPA 7470A**

<b>Blank (7020713-BLK1)</b>					<b>Prepared &amp; Analyzed: 02/24/17</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7020713-BS1)</b>					<b>Prepared &amp; Analyzed: 02/24/17</b>						
Mercury	0.00238	0.00050	0.000041	mg/L	2.5000E-3		95	80-120			



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February 28, 2017

**Report No.: AAB0740**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7020713 - EPA 7470A</b>											
<b>Matrix Spike (7020713-MS1)</b>			<b>Source: AAB0789-01</b>			<b>Prepared &amp; Analyzed: 02/24/17</b>					
Mercury	0.00231	0.00050	0.000041	mg/L	2.5000E-3	ND	92	75-125			
<b>Matrix Spike Dup (7020713-MSD1)</b>			<b>Source: AAB0789-01</b>			<b>Prepared &amp; Analyzed: 02/24/17</b>					
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125	2	20	
<b>Post Spike (7020713-PS1)</b>			<b>Source: AAB0789-01</b>			<b>Prepared &amp; Analyzed: 02/24/17</b>					
Mercury	1.64			ug/L	1.6667	-0.00567	98	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 28, 2017

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## Legend

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### 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

**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, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED										L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
Southern Company Services					CONTAINER TYPE:	P	P	P										P - PLASTIC	1 - HCl, ≤6°C
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B101B5 Atlanta, GA 30308					PRESERVATION:	3	7	3									A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REPORT TO: Jojo Abraham					# of												G - CLEAR GLASS	3 - HNO <sub>3</sub>	
REQUESTED COMPLETION DATE:					C O N T A I N E R S  ↓												V - VOA VIAL	4 - NaOH, ≤6°C	
PROJECT NAME/STATE: Plant Bowen Ash Pond																	S - STERILE	5 - NaOH/ZnAc, ≤6°C	
PROJECT #:																	O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
																		7 - ≤6°C not frozen	
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of											REMARKS/ADDITIONAL INFORMATION		
2/21/17	1010	GW		X	BGWC-14	4	netals app III + II	CPA 6070 + 7470	CF, 504 CPA 300	TDS SA 25406	Radium 226 + 228	SU-846 9315 + 9320							

SAMPLED BY AND TITLE: Forrest Howerd / Michael Patrick		DATE/TIME: 2/21/17 1200	RELINQUISHED BY: MICHAEL PATRICK	DATE/TIME: 02/22/17 0825	LAB #: AA00740
RECEIVED BY: Dalman		DATE/TIME: 02/22/17 0825	RELINQUISHED BY:	DATE/TIME:	Entered into LIMS: MR
TEMPERATURE: 3°C Min: 3°C Max:		SAMPLE SHIPPED VIA: UPS FED-EX <input checked="" type="checkbox"/> USPS <input type="checkbox"/> COURIER <input type="checkbox"/> CLIENT <input checked="" type="checkbox"/> OTHER FS <input type="checkbox"/>		Tracking #:	
Checked: No NA <input checked="" type="checkbox"/> Yes No NA <input type="checkbox"/>		Custody Seal: Intact Broken Not Present <input checked="" type="checkbox"/>		# of Coolers: <input checked="" type="checkbox"/> Cooler ID:	

Page 11 of 12



**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: 2/23/2017 1:05:25PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 02/22/17 08:25

**Work Order:** AAB0740

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 1

**#Containers:** 4

**Minimum Temp(C):** 3.0

**Maximum Temp(C):** 3.0

**Custody Seal(s) Used:** 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:**

March 13, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30210855

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on February 15, 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 Bowen  
Pace Project No.: 30210855

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen

Pace Project No.: 30210855

<b>Lab ID</b>	<b>Sample ID</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Date Received</b>
30210855001	EQBL021317	Water	02/13/17 10:45	02/15/17 10:15
30210855002	FBL021317	Water	02/13/17 10:55	02/15/17 10:15
30210855003	BGWA-2	Water	02/13/17 14:00	02/15/17 10:15
30210855004	Dup-1	Water	02/13/17 00:00	02/15/17 10:15
30210855005	BGWA-28	Water	02/13/17 15:32	02/15/17 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30210855

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30210855001	EQBL021317	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30210855002	FBL021317	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30210855003	BGWA-2	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30210855004	Dup-1	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30210855005	BGWA-28	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 Bowen  
Pace Project No.: 30210855

Sample: EQBL021317		Lab ID: 30210855001	Collected: 02/13/17 10:45	Received: 02/15/17 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0581 ± 0.0840 (0.180)</b> C:92% T:NA	pCi/L	02/28/17 10:06	13982-63-3	
Radium-228	EPA 9320	<b>0.326 ± 0.422 (0.897)</b> C:63% T:79%	pCi/L	03/06/17 12:55	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.384 ± 0.506 (1.08)</b>	pCi/L	03/07/17 11:08	7440-14-4	

Sample: FBL021317		Lab ID: 30210855002	Collected: 02/13/17 10:55	Received: 02/15/17 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0381 ± 0.113 (0.275)</b> C:93% T:NA	pCi/L	02/28/17 10:06	13982-63-3	
Radium-228	EPA 9320	<b>0.201 ± 0.453 (1.00)</b> C:63% T:77%	pCi/L	02/28/17 11:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.239 ± 0.566 (1.28)</b>	pCi/L	03/07/17 07:48	7440-14-4	

Sample: BGWA-2		Lab ID: 30210855003	Collected: 02/13/17 14:00	Received: 02/15/17 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.627 ± 0.226 (0.269)</b> C:96% T:NA	pCi/L	02/28/17 10:06	13982-63-3	
Radium-228	EPA 9320	<b>0.242 ± 0.441 (0.942)</b> C:59% T:75%	pCi/L	02/28/17 11:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.869 ± 0.667 (1.21)</b>	pCi/L	03/07/17 07:48	7440-14-4	

Sample: Dup-1		Lab ID: 30210855004	Collected: 02/13/17 00:00	Received: 02/15/17 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.386 ± 0.221 (0.280)</b> C:94% T:NA	pCi/L	03/07/17 09:19	13982-63-3	
Radium-228	EPA 9320	<b>0.412 ± 0.409 (0.842)</b> C:69% T:80%	pCi/L	03/09/17 12:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.798 ± 0.630 (1.12)</b>	pCi/L	03/13/17 16:52	7440-14-4	

Sample: BGWA-28		Lab ID: 30210855005	Collected: 02/13/17 15:32	Received: 02/15/17 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.378 ± 0.220 (0.279)</b> C:90% T:NA	pCi/L	03/07/17 09:19	13982-63-3	
Radium-228	EPA 9320	<b>0.185 ± 0.361 (0.797)</b> C:60% T:84%	pCi/L	03/09/17 12:27	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30210855

**Sample: BGWA-28**      **Lab ID: 30210855005**      Collected: 02/13/17 15:32      Received: 02/15/17 10:15      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>0.563 ± 0.581 (1.08)</b>	pCi/L	03/13/17 16:52	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30210855

QC Batch: 250847

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30210855004, 30210855005

METHOD BLANK: 1234239

Matrix: Water

Associated Lab Samples: 30210855004, 30210855005

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 Bowen

Pace Project No.: 30210855

---

QC Batch:	249871	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30210855001, 30210855002, 30210855003		

---

METHOD BLANK:	1229540	Matrix:	Water
Associated Lab Samples:	30210855001, 30210855002, 30210855003		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0609 ± 0.0786 (0.161) C:95% T:NA	pCi/L	02/28/17 10:04	

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 Bowen

Pace Project No.: 30210855

QC Batch: 250848

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30210855004, 30210855005

METHOD BLANK: 1234244

Matrix: Water

Associated Lab Samples: 30210855004, 30210855005

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30210855

QC Batch: 249801

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30210855001, 30210855002, 30210855003

METHOD BLANK: 1229199

Matrix: Water

Associated Lab Samples: 30210855001, 30210855002, 30210855003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.115 ± 0.394 (0.938) C:56% T:78%	pCi/L	02/28/17 11:47	

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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## QUALIFIERS

Project: Plant Bowen

Pace Project No.: 30210855

### 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: AAB0494

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 3/9/2017

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

WO#: 30210855



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	EQBL021317	G	2/13/2017 10:45	AAB0494-01	W	2				X	
2	FBL021317	G	2/13/2017 10:55	AAB0494-02	W	2				X	001
3	BGWA-2	G	2/13/2017 14:00	AAB0494-03	GW	4				X	002
4	Dup-1	G	2/13/2017 0:00	AAB0494-04	GW	2				X	003
5	BGWA-28	G	2/13/2017 15:32	AAB0494-05	GW	2				X	004
6											005
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>Charles Ford</i>	2/17/17 1700	<i>R Big Pace</i>	2/15/17	1015
2					
3					

Cooler Temperature on Receipt <u>N/A</u> °C	Custody Seal <b>Y</b> or <b>(N)</b>	Received on Ice <b>Y</b> or <b>(N)</b>	Sample Intact <b>(Y)</b> or <b>N</b>
---	-------------------------------------	--	--------------------------------------

\*\*\*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

KEH



Client Name: Paul Atlanta

Project # 30210855

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 0812 51023306

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: KEH 2/15/17

Comments:	Yes	No	N/A	
Chain of Custody Present:	<input checked="" type="checkbox"/>			1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>			2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>			3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>			4.
Sample Labels match COC:	<input checked="" type="checkbox"/>			5.
-Includes date/time/ID Matrix: <u>WY</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>			6.
Short Hold Time Analysis (<72hr remaining):		<input checked="" type="checkbox"/>		7.
Rush Turn Around Time Requested:		<input checked="" type="checkbox"/>		8.
Sufficient Volume:	<input checked="" type="checkbox"/>			9.
Correct Containers Used:	<input checked="" type="checkbox"/>			10.
-Pace Containers Used:	<input checked="" type="checkbox"/>			
Containers Intact:	<input checked="" type="checkbox"/>			11.
Orthophosphate field filtered			<input checked="" type="checkbox"/>	12.
Organic Samples checked for dechlorination:			<input checked="" type="checkbox"/>	13.
Filtered volume received for Dissolved tests			<input checked="" type="checkbox"/>	14.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>			15. <u>PH 22</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/>			
exceptions: VOA, coliform, TOC, O&G, Phenolics				
				Initial when completed: <u>KEH</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			<input checked="" type="checkbox"/>	16.
Trip Blank Present:			<input checked="" type="checkbox"/>	17.
Trip Blank Custody Seals Present			<input checked="" type="checkbox"/>	
Rad Aqueous Samples Screened > 0.5 mrem/hr		<input checked="" type="checkbox"/>		Initial when completed: <u>KEH</u> Date: <u>2/15/17</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.

CHAIN OF CUSTODY RECORD



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										L A B I D N U M B E R	CONTAINER TYPE	PRESERVATION							
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:	PRESERVATION:	# of																	
SUTHERLAND COMPANY SERVICES														P - PLASTIC	1 - HCl, ≤6°C						
241 SHELTON AVENUE SWY ST PLASS ATLANTA, GA 30308														A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C						
REPORT TO: BOB BELANDER	CC: MARIA DANIEL- HEALTH INSURANCE													G - CLEAR GLASS	3 - HNO <sub>3</sub>						
REQUESTED COMPLETION DATE:	PO #: 65010855-28													V - VOA VIAL	4 - NaOH, ≤6°C						
PROJECT NAME/STATE: PLANT COVER RSN POND														S - STERILE	5 - NaOH/ZnAc, ≤6°C						
PROJECT #:														O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C						
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	CONTAINERS								*MATRIX CODES:							
02/13/17	1048	IV	X		FBL-0317	4								DW - DRINKING WATER	S - SOIL						
02/13/17	1445	IV	X		FBL-0317	4								WW - WASTEWATER	SL - SLUDGE						
02/13/17	1700	GW	X		BWA-2	6								GW - GROUNDWATER	SD - SOLID						
02/13/17	1700	GW	X		BWA-1	4								SW - SURFACE WATER	A - AIR						
02/13/17	1432	GW	X		BWA-2?	4								ST - STORM WATER	L - LIQUID						
														W - WATER	P - PRODUCT						
													REMARKS/ADDITIONAL INFORMATION								
													1								
													2								
													3								
													4								
													5								
SAMPLED BY AND TITLE:		DATE/TIME:	RELINQUISHED BY:		DATE/TIME:	FOR LAB USE ONLY		LAB #:		Entered into LIMS:		Tracking #:									
Cindy Mardis #1		02/13/17 1600	Cindy Mardis #1		2/13/17 1600	HAB0494															
RECEIVED BY:		DATE/TIME:	RELINQUISHED BY:		DATE/TIME:	SAMPLE SHIPPED VIA:		UPS		FED-EX		USPS		COURIER		CLIENT		OTHER		FS	
Cindy Mardis #1		2/13/17 1600	Cindy Mardis #1		2/13/17 1600	COURIER															
RECEIVED BY LAB:		DATE/TIME:	CUSTODY SEAL:		# of Coolers		Cooler ID:														
Cindy Mardis #1		2/14/17 1200	Intact Broken Not Present		1																
pH checked:		Temperature:																			
Yes No NA		7°C Min 7°C Max																			



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 3/6/2017  
Worklist: 34331  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1234239	
MB concentration:	-0.004	
M/B Counting Uncertainty:	0.092	
MB MDC:	0.284	
MB Numerical Performance Indicator:	-0.08	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
LCSD (Y or N)?	N	
LCS34331	LCSD34331	
Count Date:	3/7/2017	
Spike I.D.:	17-003	
Spike Concentration (pCi/mL):	38.231	
Volume Used (mL):	0.25	
Aliquot Volume (L, g, F):	0.509	
Target Conc. (pCi/L, g, F):	18.783	
Uncertainty (Calculated):	0.884	
Result (pCi/L, g, F):	15.590	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.200	
Numerical Performance Indicator:	-4.20	
Percent Recovery:	83.00%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30211139001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30211139001DUP	
Sample Result (pCi/L, g, F):	0.106	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.145	
Sample Duplicate Result (pCi/L, g, F):	0.089	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.132	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.168	30211139001
Duplicate RPD:	17.22%	30211139001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*Mu 3/13/17*

## Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: JC2  
Date: 2/23/2017  
Worklist: 34131  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1229540
MB concentration:	0.061
M/B Counting Uncertainty:	0.078
MB MDC:	0.161
MB Numerical Performance Indicator:	1.53
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS34131	LCSD34131
Count Date:	2/28/2017		
Spike I.D.:	17-003		
Spike Concentration (pCi/mL):	38.231		
Volume Used (mL):	0.25		
Aliquot Volume (L, g, F):	0.511		
Target Conc. (pCi/L, g, F):	18.709		
Uncertainty (Calculated):	0.880		
Result (pCi/L, g, F):	14.972		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.891		
Numerical Performance Indicator:	-5.85		
Percent Recovery:	80.03%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	
Sample I.D.:	30209862001		
Duplicate Sample I.D.:	30209862001DUP		
Sample Result (pCi/L, g, F):	0.106		
Sample Result Counting Uncertainty (pCi/L, g, F):	0.095		
Sample Duplicate Result (pCi/L, g, F):	0.026		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.090		
Are sample and/or duplicate results below MDC?	See Below ##		
Duplicate Numerical Performance Indicator:	1.196	30209862001	
Duplicate RPD:	121.71%	30209862001DUP	
Duplicate Status vs Numerical Indicator:	N/A		
Duplicate Status vs RPD:	Fail***		

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*(M 3/13/17)*

*25x mdc numerical indicator = 3 acceptable*

*(M 3/13/17)*



## Quality Control Sample Performance Assessment

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

Test: Ra-228  
Analyst: JLW  
Date: 2/22/2017  
Worklist: 34123  
Matrix: DW

Method Blank Assessment		
MB Sample ID	1229199	
MB concentration:	-0.115	
M/B Counting Uncertainty:	0.393	
MB MDC:	0.938	
MB Numerical Performance Indicator:	-0.57	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCS (Y or N)?	N
	LCS34123		LCS34123
Count Date:	2/28/2017		
Spike I.D.:	16-027		
Spike Concentration (pCi/mL):	25.187		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.799		
Target Conc. (pCi/L, g, F):	6.302		
Uncertainty (Calculated):	0.454		
Result (pCi/L, g, F):	5.336		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.843		
Numerical Performance Indicator:	-1.98		
Percent Recovery:	84.67%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
Sample Collection Date:	2/13/2017
Sample I.D.	30210855002
Sample MS I.D.	30210855002MS
Sample MSD I.D.	
Spike I.D.:	16-027
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	25.312
Spike Volume Used in MS (mL):	0.20
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	0.800
MS Target Conc. (pCi/L, g, F):	6.329
MSD Aliquot (L, g, F):	
MSD Target Conc. (pCi/L, g, F):	
Spike uncertainty (calculated):	0.456
Sample Result:	0.201
Sample Result Counting Uncertainty (pCi/L, g, F):	0.452
Sample Matrix Spike Result:	4.943
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	0.851
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
MS Numerical Performance Indicator:	-2.919
MSD Numerical Performance Indicator:	
MS Percent Recovery:	74.92%
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	N/A
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	Pass
MSD Status vs Recovery:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30210855003	
Duplicate Sample I.D.	30210855003DUP	
Sample Result (pCi/L, g, F):	0.242	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.439	
Sample Duplicate Result (pCi/L, g, F):	0.566	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.457	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.004	30210855003
Duplicate RPD:	80.27%	30210855003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*1.5x mdc numerical indicator < 3 acceptable*

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

*Mr 3/13/17*



## Quality Control Sample Performance Assessment

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

Test: Ra-228  
Analyst: JJY  
Date: 3/6/2017  
Worklist: 34332  
Matrix: DW

Method Blank Assessment		
MB Sample ID	1234244	
MB concentration:	-0.160	
M/B Counting Uncertainty:	0.355	
MB MDC:	0.860	
MB Numerical Performance Indicator:	-0.89	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCS/D (Y or N)?	N
		LCS34332	LCS/D34332
Count Date:		1/0/1900	
Spike I.D.:		17-005	
Spike Concentration (pCi/mL):	34246395.882		
Volume Used (mL):			
Aliquot Volume (L, g, F):	0.800		
Target Conc. (pCi/L, g, F):	0.000		
Uncertainty (Calculated):	0.000		
Result (pCi/L, g, F):	#VALUE!		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	#VALUE!		
Numerical Performance Indicator:	#VALUE!		
Percent Recovery:	#VALUE!		
Status vs Numerical Indicator:	#VALUE!		
Status vs Recovery:	#VALUE!		

*LCS Re-weighed due to low yield.*

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30210856001	
Duplicate Sample I.D.:	30210856001DUP	
Sample Result (pCi/L, g, F):	-0.147	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.331	
Sample Duplicate Result (pCi/L, g, F):	0.362	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.366	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.022	30210856001
Duplicate RPD:	475.54%	30210856001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail*	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

#VALUE!

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

*LCS x MDC numerical indicator < 3 acceptable*

*3/13/17*

*2/3/13/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JJY  
Date: 3/10/2017  
Worklist: 34332  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	
MB concentration:	
M/B Counting Uncertainty:	
MB MDC:	
MB Numerical Performance Indicator:	
MB Status vs Numerical Indicator:	
MB Status vs. MDC:	

Laboratory Control Sample Assessment	LCS/D (Y or N)?	N
	LCS34332	LCS/D34332
Count Date:	3/13/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	25.050	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.800	
Target Conc. (pCi/L, g, F):	6.264	
Uncertainty (Calculated):	0.451	
Result (pCi/L, g, F):	5.039	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.769	
Numerical Performance Indicator:	-2.69	
Percent Recovery:	80.45%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment	
Sample I.D.:	
Duplicate Sample I.D.:	
Sample Result (pCi/L, g, F):	
Sample Result Counting Uncertainty (pCi/L, g, F):	
Sample Duplicate Result (pCi/L, g, F):	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	
Duplicate RPD:	
Duplicate Status vs Numerical Indicator:	
Duplicate Status vs RPD:	

Enter Duplicate sample IDs if other than LCS/LCSD in the space below.

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*Re-ingrowth of LCS was due to low uranium yield ~5%  
Nu 3/13/17*



March 13, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30210947

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on February 16, 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 Bowen

Pace Project No.: 30210947

### 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 Bowen

Pace Project No.: 30210947

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30210947001	BGWA-26	Water	02/14/17 10:45	02/16/17 10:00
30210947002	BGWA-27	Water	02/14/17 10:45	02/16/17 10:00
30210947003	BGWA-29	Water	02/14/17 12:25	02/16/17 10:00
30210947004	BGWA-6	Water	02/14/17 12:40	02/16/17 10:00
30210947005	BGWC-8	Water	02/14/17 14:05	02/16/17 10:00

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30210947

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30210947001	BGWA-26	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30210947002	BGWA-27	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30210947003	BGWA-29	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30210947004	BGWA-6	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30210947005	BGWC-8	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 Bowen  
Pace Project No.: 30210947

Sample: <b>BGWA-26</b>		Lab ID: <b>30210947001</b>	Collected: 02/14/17 10:45	Received: 02/16/17 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>0.162 ± 0.160 (0.281)</b>		pCi/L	03/07/17 09:19	13982-63-3	
		<b>C:88% T:NA</b>					
Radium-228	EPA 9320	<b>0.962 ± 0.447 (0.721)</b>		pCi/L	03/09/17 12:27	15262-20-1	
		<b>C:66% T:80%</b>					
Total Radium	Total Radium Calculation	<b>1.12 ± 0.607 (1.00)</b>		pCi/L	03/13/17 16:52	7440-14-4	

Sample: <b>BGWA-27</b>		Lab ID: <b>30210947002</b>	Collected: 02/14/17 10:45	Received: 02/16/17 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>0.291 ± 0.194 (0.274)</b>		pCi/L	03/07/17 09:19	13982-63-3	
		<b>C:93% T:NA</b>					
Radium-228	EPA 9320	<b>0.695 ± 0.434 (0.793)</b>		pCi/L	03/09/17 12:28	15262-20-1	
		<b>C:59% T:82%</b>					
Total Radium	Total Radium Calculation	<b>0.986 ± 0.628 (1.07)</b>		pCi/L	03/13/17 16:52	7440-14-4	

Sample: <b>BGWA-29</b>		Lab ID: <b>30210947003</b>	Collected: 02/14/17 12:25	Received: 02/16/17 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>0.105 ± 0.202 (0.465)</b>		pCi/L	03/07/17 09:19	13982-63-3	
		<b>C:87% T:NA</b>					
Radium-228	EPA 9320	<b>-0.290 ± 0.655 (1.55)</b>		pCi/L	03/09/17 12:26	15262-20-1	
		<b>C:58% T:78%</b>					
Total Radium	Total Radium Calculation	<b>0.105 ± 0.857 (2.02)</b>		pCi/L	03/13/17 16:52	7440-14-4	

Sample: <b>BGWA-6</b>		Lab ID: <b>30210947004</b>	Collected: 02/14/17 12:40	Received: 02/16/17 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>0.0818 ± 0.139 (0.310)</b>		pCi/L	03/07/17 09:19	13982-63-3	
		<b>C:91% T:NA</b>					
Radium-228	EPA 9320	<b>0.278 ± 0.562 (1.24)</b>		pCi/L	03/09/17 12:26	15262-20-1	
		<b>C:57% T:78%</b>					
Total Radium	Total Radium Calculation	<b>0.360 ± 0.701 (1.55)</b>		pCi/L	03/13/17 16:52	7440-14-4	

Sample: <b>BGWC-8</b>		Lab ID: <b>30210947005</b>	Collected: 02/14/17 14:05	Received: 02/16/17 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>0.131 ± 0.148 (0.280)</b>		pCi/L	03/07/17 09:19	13982-63-3	
		<b>C:90% T:NA</b>					
Radium-228	EPA 9320	<b>0.505 ± 0.546 (1.15)</b>		pCi/L	03/09/17 12:26	15262-20-1	
		<b>C:86% T:72%</b>					

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen  
Pace Project No.: 30210947

**Sample: BGWC-8**      **Lab ID: 30210947005**      Collected: 02/14/17 14:05      Received: 02/16/17 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>0.636 ± 0.694 (1.43)</b>	pCi/L	03/13/17 16:52	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30210947

QC Batch: 250848

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30210947001, 30210947002, 30210947003, 30210947004, 30210947005

METHOD BLANK: 1234244

Matrix: Water

Associated Lab Samples: 30210947001, 30210947002, 30210947003, 30210947004, 30210947005

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.

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## QUALIFIERS

Project: Plant Bowen

Pace Project No.: 30210947

### 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, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED					CONTAINER TYPE	PRESERVATION											
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:	P	P	P														
Southern Company Services																						
241 Ralph McGill Blvd SE 30185					PRESERVATION:	3	7	3														
Atlanta, GA 30308 404-506-2239					# of																	
REPORT TO: John Abraham					CONTAINERS	↓	Metals App. III + IV	EPA 6010 + EPA 7470	C.F. 504 EPA 300	TDX SM 25406	Bismuth 7160 + 7208	SL-846 9515 + 9520										
REQUESTED COMPLETION DATE: PO #: GPL 10684198																						
PROJECT NAME/STATE: Plant Bowen - Ash Pond CLR																						
PROJECT #:																						
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION																	
2/14/17	1045	GW		X	BGWA-26	4	1	1	2													
2/14/17	1045	GW		X	BGWA-27	4	1	1	2													
2/14/17	1225	GW		X	BGWA-29	4	1	1	2													
2/14/17	1240	GW		X	BGWA-6	4	1	1	2													
2/14/17	1405	GW		X	BGWA-8	4	1	1	2													
SAMPLED BY AND TITLE: Robert Hill / Michael Patinkin					DATE/TIME: 2/14/17 1430	RELINQUISHED BY: [Signature]					DATE/TIME: 2/15/17 0758	FOR LAB USE ONLY										
RECEIVED BY:					DATE/TIME:	RELINQUISHED BY:					DATE/TIME:	LAB #: AAB0527										
RECEIVED BY LAB: [Signature]					DATE/TIME: 02/15/17 0758	SAMPLE SHIPPED VIA: CLIENT					Entered into LIMS: [Signature]											
pH checked: Yes No NA					Temperature: Min: 12 Max:	Custody Seal: Intact Broken Not Present					Tracking #: [Signature]											

Sample Condition Upon Receipt Pittsburgh

30210947

ARM



Client Name: Pace GA Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 0812 51023118

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing to 6°C

Date and Initials of person examining contents: ARM 2/10/17

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>NI</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.
All containers needing preservation are found to be in compliance with EPA recommendation.	/			<u>PHL2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed <u>ARM</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>ARM</u> Date: <u>2/10/17</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

Test: Ra-228  
Analyst: JJY  
Date: 3/6/2017  
Worklist: 34332  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1234244	
MB concentration:	-0.160	
M/B Counting Uncertainty:	0.355	
MB MDC:	0.860	
MB Numerical Performance Indicator:	-0.89	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS34332	LCSD34332
Count Date:	1/0/1900		
Spike I.D.:	17-005		
Spike Concentration (pCi/mL):	34246395.882		
Volume Used (mL):			
Aliquot Volume (L, g, F):	0.800		
Target Conc. (pCi/L, g, F):	0.000		
Uncertainty (Calculated):	0.000		
Result (pCi/L, g, F):	#VALUE!		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	#VALUE!		
Numerical Performance Indicator:	#VALUE!		
Percent Recovery:	#VALUE!		
Status vs Numerical Indicator:	#VALUE!		
Status vs Recovery:	#VALUE!		

*LCIS  
Re-prepare the  
due to low yield.*

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30210856001	
Duplicate Sample I.D.:	30210856001DUP	
Sample Result (pCi/L, g, F):	-0.147	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.331	
Sample Duplicate Result (pCi/L, g, F):	0.362	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.366	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.022	30210856001
Duplicate RPD:	475.54%	30210856001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

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

*LCIS x MDC numerical indicator < 3 acceptable*

*3/13/17*

*Mu 3/13/17*



## Quality Control Sample Performance Assessment

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

Test: Ra-228  
Analyst: JJY  
Date: 3/10/2017  
Worklist: 34332  
Matrix: DW

Method Blank Assessment	
MB Sample ID	
MB concentration:	
M/B Counting Uncertainty:	
MB MDC:	
MB Numerical Performance Indicator:	
MB Status vs Numerical Indicator:	
MB Status vs. MDC:	

Laboratory Control Sample Assessment	LCS (Y or N)?	N
LCS34332		LCS34332
Count Date:	3/13/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	25.050	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.800	
Target Conc. (pCi/L, g, F):	6.264	
Uncertainty (Calculated):	0.451	
Result (pCi/L, g, F):	5.039	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.769	
Numerical Performance Indicator:	-2.69	
Percent Recovery:	80.45%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:		
Duplicate Sample I.D.:		
Sample Result (pCi/L, g, F):		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Duplicate Result (pCi/L, g, F):		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:		
Duplicate RPD:		
Duplicate Status vs Numerical Indicator:		
Duplicate Status vs RPD:		

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*Re-ingrowth of LCS was due to low yttrium yield ~5%*

*Mu 3/13/17*

## Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: JC2  
Date: 3/6/2017  
Worklist: 34331  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1234239
MB concentration:	-0.004
M/B Counting Uncertainty:	0.092
MB MDC:	0.284
MB Numerical Performance Indicator:	-0.08
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS (Y or N)?	LCSD (Y or N)?
		Y	N
		LCS34331	LCSD34331
Count Date:	3/7/2017		
Spike I.D.:	17-003		
Spike Concentration (pCi/mL):	38.231		
Volume Used (mL):	0.25		
Aliquot Volume (L, g, F):	0.509		
Target Conc. (pCi/L, g, F):	18.783		
Uncertainty (Calculated):	0.884		
Result (pCi/L, g, F):	15.590		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.200		
Numerical Performance Indicator:	-4.20		
Percent Recovery:	83.00%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30211139001	
Duplicate Sample I.D.:	30211139001DUP	
Sample Result (pCi/L, g, F):	0.106	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.145	
Sample Duplicate Result (pCi/L, g, F):	0.089	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.132	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.168	30211139001
Duplicate RPD:	17.22%	30211139001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*Mu 3/13/17*

March 13, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30211139

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 Bowen

Pace Project No.: 30211139

### 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 Bowen

Pace Project No.: 30211139

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30211139001	Dup-2	Water	02/15/17 00:00	02/17/17 11:00
30211139002	BGWC-7	Water	02/15/17 11:15	02/17/17 11:00
30211139003	BGWC-12	Water	02/15/17 14:15	02/17/17 11:00
30211139004	BGWC-9	Water	02/15/17 12:06	02/17/17 11:00
30211139005	BGWC-11	Water	02/15/17 13:35	02/17/17 11:00
30211139006	EQBL021517	Water	02/15/17 16:15	02/17/17 11:00
30211139007	FBL021517	Water	02/15/17 16:25	02/17/17 11:00

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen  
Pace Project No.: 30211139

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30211139001	Dup-2	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30211139002	BGWC-7	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30211139003	BGWC-12	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30211139004	BGWC-9	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30211139005	BGWC-11	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30211139006	EQBL021517	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	JAL	1
30211139007	FBL021517	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 Bowen  
Pace Project No.: 30211139

Sample: Dup-2		Lab ID: 30211139001	Collected: 02/15/17 00:00	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
Radium-226	EPA 9315	<b>0.106 ± 0.146 (0.304)</b> C:93% T:NA	pCi/L	03/07/17 09:19	13982-63-3	
Radium-228	EPA 9320	<b>-0.0788 ± 0.343 (0.820)</b> C:69% T:80%	pCi/L	03/13/17 12:34	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.106 ± 0.489 (1.12)</b>	pCi/L	03/13/17 16:52	7440-14-4	

Sample: BGWC-7		Lab ID: 30211139002	Collected: 02/15/17 11:15	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
Radium-226	EPA 9315	<b>0.758 ± 0.307 (0.278)</b> C:93% T:NA	pCi/L	03/07/17 10:53	13982-63-3	
Radium-228	EPA 9320	<b>0.424 ± 0.390 (0.793)</b> C:69% T:81%	pCi/L	03/13/17 12:34	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.18 ± 0.697 (1.07)</b>	pCi/L	03/13/17 16:52	7440-14-4	

Sample: BGWC-12		Lab ID: 30211139003	Collected: 02/15/17 14:15	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
Radium-226	EPA 9315	<b>0.0143 ± 0.101 (0.280)</b> C:93% T:NA	pCi/L	03/07/17 10:53	13982-63-3	
Radium-228	EPA 9320	<b>0.215 ± 0.552 (1.23)</b> C:50% T:83%	pCi/L	03/13/17 12:34	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.229 ± 0.653 (1.51)</b>	pCi/L	03/13/17 16:52	7440-14-4	

Sample: BGWC-9		Lab ID: 30211139004	Collected: 02/15/17 12:06	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
Radium-226	EPA 9315	<b>0.155 ± 0.160 (0.290)</b> C:85% T:NA	pCi/L	03/07/17 10:53	13982-63-3	
Radium-228	EPA 9320	<b>0.585 ± 0.306 (0.535)</b> C:98% T:80%	pCi/L	03/13/17 12:34	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.740 ± 0.466 (0.825)</b>	pCi/L	03/13/17 16:52	7440-14-4	

Sample: BGWC-11		Lab ID: 30211139005	Collected: 02/15/17 13:35	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
Radium-226	EPA 9315	<b>0.136 ± 0.162 (0.325)</b> C:89% T:NA	pCi/L	03/07/17 10:53	13982-63-3	
Radium-228	EPA 9320	<b>0.324 ± 0.700 (1.54)</b> C:49% T:79%	pCi/L	03/13/17 12:34	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30211139

<b>Sample: BGWC-11</b>		<b>Lab ID: 30211139005</b>	Collected: 02/15/17 13:35	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>0.460 ± 0.862 (1.87)</b>	pCi/L	03/13/17 16:52	7440-14-4	

<b>Sample: EQBL021517</b>		<b>Lab ID: 30211139006</b>	Collected: 02/15/17 16:15	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
Radium-226	EPA 9315	<b>0.00281 ± 0.0850 (0.255)</b> C:97% T:NA	pCi/L	03/07/17 10:53	13982-63-3	
Radium-228	EPA 9320	<b>0.336 ± 0.419 (0.886)</b> C:65% T:81%	pCi/L	03/13/17 12:35	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.339 ± 0.504 (1.14)</b>	pCi/L	03/13/17 16:52	7440-14-4	

<b>Sample: FBL021517</b>		<b>Lab ID: 30211139007</b>	Collected: 02/15/17 16:25	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
Radium-226	EPA 9315	<b>0.0428 ± 0.110 (0.269)</b> C:93% T:NA	pCi/L	03/07/17 10:53	13982-63-3	
Radium-228	EPA 9320	<b>0.533 ± 0.523 (1.07)</b> C:53% T:79%	pCi/L	03/13/17 12:35	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.576 ± 0.633 (1.34)</b>	pCi/L	03/13/17 16:52	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30211139

QC Batch: 250847

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30211139001, 30211139002, 30211139003, 30211139004, 30211139005, 30211139006, 30211139007

METHOD BLANK: 1234239

Matrix: Water

Associated Lab Samples: 30211139001, 30211139002, 30211139003, 30211139004, 30211139005, 30211139006, 30211139007

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 Bowen

Pace Project No.: 30211139

QC Batch: 250848

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30211139001, 30211139002, 30211139003, 30211139004, 30211139005, 30211139006, 30211139007

METHOD BLANK: 1234244

Matrix: Water

Associated Lab Samples: 30211139001, 30211139002, 30211139003, 30211139004, 30211139005, 30211139006, 30211139007

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 Bowen

Pace Project No.: 30211139

### 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.

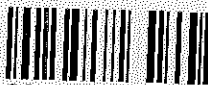
TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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WO#: 30211139



30211139

Chain of Custody



Workorder: AAB0586

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 3/13/2017

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	Radium 226, 228, Total																		

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	Dup-2	G	2/15/2017 0:00	AAB0586-01	GW	2				X	001
2	BGWC-7	G	2/15/2017 11:15	AAB0586-02	GW	2				X	002
3	BGWC-12	G	2/15/2017 14:15	AAB0586-03	GW	4				X	003
4	BGWC-9	G	2/15/2017 12:06	AAB0586-04	GW	2				X	004
5	BGWC-11	G	2/15/2017 13:35	AAB0586-05	GW	2				X	005
6	EQBL021517	G	2/15/2017 16:15	AAB0586-06	W	2				X	006
7	FBL021517	G	2/15/2017 16:25	AAB0586-07	W	2				X	007
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			Ash/here/Pace	2-17-17/100	
2					
3					

Cooler Temperature on Receipt NA °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 Services, Inc  
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
(770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME				ANALYSIS REQUESTED										CONTAINER TYPE	PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:				CONTAINER TYPE	P	F	T									
REPORT TO:				# of	CONTAINERS	METALS APP III & IV EPA 6020 + EPA 7470	Cl, F, SO4 EPA 3000	TDS SM 2.540C	RADIUM 226 & 228 SW BYG, 9315, 9320							
REQUESTED COMPLETION DATE:																
PROJECT NAME/STATE:				MATRIX CODES:												
PROJECT #:				DW - DRINKING WATER S - SOIL												
Collection DATE				WW - WASTEWATER SL - SLUDGE												
Collection TIME				GW - GROUNDWATER SD - SOLID												
MATRIX CODE*				SW - SURFACE WATER A - AIR												
COM P				ST - STORM WATER L - LIQUID												
GRA B				W - WATER P - PRODUCT												
SAMPLE IDENTIFICATION				REMARKS/ADDITIONAL INFORMATION												
02/15/17	---	GW	X	MUP-2	4	1	1	2								1
02/15/17	1115	GW	X	BGWC-7	4	1	1	2								2
02/15/17	1415	GW	X	BGWC-12	6	1	1	4								3
02/15/17	1206	GW	X	BGWC-9	4	1	1	2								4
02/15/17	1335	GW	X	BGWC-11	4	1	1	2								5
02/15/17	1615	GW	X	EBL021517	4	1	1	2								6
02/15/17	1625	GW	X	FBL021517	4	1	1	2								7

SAMPLED BY AND TITLE: ROBERT MULL / MICHAEL OFFINEN	DATE/TIME: 02/15/17 1700	RELINQUISHED BY: Robert Mull	DATE/TIME: 2/16/17 0759	FOR LAB USE ONLY LAB #: AA100586
RECEIVED BY:	DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	Entered into LIMS: MR
RECEIVED BY LAB: M. Lauman	DATE/TIME: 02/16/17 0759	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS	Tracking #:	
Checks: <input checked="" type="checkbox"/> Sealed <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Ice <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Temperature: 10C Min 10C Max	Custody Seal: <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Broken <input type="checkbox"/> Not Present	# of Coolers:	Cooler ID:

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, GA

Project # 30211139

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5102 4060

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: UQR 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: <u>N/A</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>PHL2</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>UQR</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>UQR</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.



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JJY  
Date: 3/6/2017  
Worklist: 34332  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1234244	
MB concentration:	-0.160	
M/B Counting Uncertainty:	0.355	
MB MDC:	0.860	
MB Numerical Performance Indicator:	-0.89	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS34332	LCS34332
Count Date:	1/0/1900		
Spike I.D.:	17-005		
Spike Concentration (pCi/mL):	34246395.882		
Volume Used (mL):			
Aliquot Volume (L, g, F):	0.800		
Target Conc. (pCi/L, g, F):	0.000		
Uncertainty (Calculated):	0.000		
Result (pCi/L, g, F):	#VALUE!		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	#VALUE!		
Numerical Performance Indicator:	#VALUE!		
Percent Recovery:	#VALUE!		
Status vs Numerical Indicator:	#VALUE!		
Status vs Recovery:	#VALUE!		

*LCIS  
Re-ingredient  
See to low yield.*

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30210856001	
Duplicate Sample I.D.:	30210856001DUP	
Sample Result (pCi/L, g, F):	-0.147	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.331	
Sample Duplicate Result (pCi/L, g, F):	0.362	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.366	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.022	30210856001
Duplicate RPD:	475.54%	30210856001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

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

*LC x MDC numerical indicator < 3 acceptable*

*3/13/17*

*Mu 3/13/17*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JJY  
Date: 3/10/2017  
Worklist: 34332  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	
MB concentration:	
M/B Counting Uncertainty:	
MB MDC:	
MB Numerical Performance Indicator:	
MB Status vs Numerical Indicator:	
MB Status vs. MDC:	

Laboratory Control Sample Assessment	LCS (Y or N)?	N
LCS34332		LCS34332
Count Date:	3/13/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	25.050	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.800	
Target Conc. (pCi/L, g, F):	6.264	
Uncertainty (Calculated):	0.451	
Result (pCi/L, g, F):	5.039	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.769	
Numerical Performance Indicator:	-2.69	
Percent Recovery:	80.45%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment	
Sample I.D.:	
Duplicate Sample I.D.:	
Sample Result (pCi/L, g, F):	
Sample Result Counting Uncertainty (pCi/L, g, F):	
Sample Duplicate Result (pCi/L, g, F):	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Are sample and/or duplicate results below MDC?	See Below ##
Duplicate Numerical Performance Indicator:	
Duplicate RPD:	
Duplicate Status vs Numerical Indicator:	
Duplicate Status vs RPD:	

Enter Duplicate sample IDs if other than LCS/LCSD in the space below.

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*Re-ingrowth of LCS was due to low yield < 5%  
Nu 3/13/17*



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 3/6/2017  
Worklist: 34331  
Matrix: DW

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

### Method Blank Assessment

MB Sample ID: 1234239  
MB concentration: -0.004  
M/B Counting Uncertainty: 0.092  
MB MDC: 0.284  
MB Numerical Performance Indicator: -0.08  
MB Status vs Numerical Indicator: N/A  
MB Status vs. MDC: Pass

### Laboratory Control Sample Assessment

	LCSD (Y or N)?	N
	LCSD34331	LCSD34331
Count Date:	3/7/2017	
Spike I.D.:	17-003	
Spike Concentration (pCi/mL):	38.231	
Volume Used (mL):	0.25	
Aliquot Volume (L, g, F):	0.509	
Target Conc. (pCi/L, g, F):	18.783	
Uncertainty (Calculated):	0.884	
Result (pCi/L, g, F):	15.590	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.200	
Numerical Performance Indicator:	-4.20	
Percent Recovery:	83.00%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

### Sample Matrix Spike Control Assessment

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):  
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:

### Duplicate Sample Assessment

Sample I.D.: 30211139001  
Duplicate Sample I.D.: 30211139001DUP  
Sample Result (pCi/L, g, F): 0.106  
Sample Result Counting Uncertainty (pCi/L, g, F): 0.145  
Sample Duplicate Result (pCi/L, g, F): 0.089  
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F): 0.132  
Are sample and/or duplicate results below MDC? See Below ##  
Duplicate Numerical Performance Indicator: 0.168  
Duplicate RPD: 17.22%  
Duplicate Status vs Numerical Indicator: N/A  
Duplicate Status vs RPD: Pass

Enter Duplicate sample IDs if other than LCS/LCSD in the space below.

30211139001  
30211139001DUP

### Matrix Spike/Matrix Spike Duplicate Sample Assessment

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:  
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:

*M 3/13/17*

March 14, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30211329

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on February 20, 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 Bowen  
Pace Project No.: 30211329

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen

Pace Project No.: 30211329

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30211329001	BGWC-16	Water	02/16/17 10:45	02/20/17 09:10
30211329002	BGWC-17	Water	02/16/17 11:50	02/20/17 09:10
30211329003	BGWC-10	Water	02/16/17 13:05	02/20/17 09:10
30211329004	BGWC-18	Water	02/16/17 13:50	02/20/17 09:10
30211329005	BGWC-19	Water	02/16/17 15:00	02/20/17 09:10

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30211329

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30211329001	BGWC-16	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211329002	BGWC-17	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211329003	BGWC-10	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211329004	BGWC-18	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211329005	BGWC-19	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 Bowen  
Pace Project No.: 30211329

Sample: <b>BGWC-16</b>		Lab ID: <b>30211329001</b>	Collected: 02/16/17 10:45	Received: 02/20/17 09:10	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.174 ± 0.167 (0.304)</b> C:95% T:NA	pCi/L	03/07/17 12:47	13982-63-3	
Radium-228	EPA 9320	<b>0.0157 ± 0.520 (1.20)</b> C:56% T:76%	pCi/L	03/11/17 13:45	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.190 ± 0.687 (1.50)</b>	pCi/L	03/13/17 13:18	7440-14-4	

Sample: <b>BGWC-17</b>		Lab ID: <b>30211329002</b>	Collected: 02/16/17 11:50	Received: 02/20/17 09:10	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0286 ± 0.104 (0.271)</b> C:88% T:NA	pCi/L	03/07/17 12:47	13982-63-3	
Radium-228	EPA 9320	<b>0.442 ± 0.577 (1.23)</b> C:52% T:83%	pCi/L	03/11/17 13:45	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.471 ± 0.681 (1.50)</b>	pCi/L	03/13/17 13:18	7440-14-4	

Sample: <b>BGWC-10</b>		Lab ID: <b>30211329003</b>	Collected: 02/16/17 13:05	Received: 02/20/17 09:10	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 ± 0.234 (0.276)</b> C:88% T:NA	pCi/L	03/07/17 12:47	13982-63-3	
Radium-228	EPA 9320	<b>0.524 ± 0.478 (0.977)</b> C:59% T:89%	pCi/L	03/11/17 13:45	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.966 ± 0.712 (1.25)</b>	pCi/L	03/13/17 13:18	7440-14-4	

Sample: <b>BGWC-18</b>		Lab ID: <b>30211329004</b>	Collected: 02/16/17 13:50	Received: 02/20/17 09:10	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.150 ± 0.206 (0.444)</b> C:88% T:NA	pCi/L	03/07/17 12:47	13982-63-3	
Radium-228	EPA 9320	<b>0.0216 ± 0.575 (1.33)</b> C:49% T:78%	pCi/L	03/11/17 13:45	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.172 ± 0.781 (1.77)</b>	pCi/L	03/13/17 13:18	7440-14-4	

Sample: <b>BGWC-19</b>		Lab ID: <b>30211329005</b>	Collected: 02/16/17 15:00	Received: 02/20/17 09:10	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.350 ± 0.214 (0.294)</b> C:91% T:NA	pCi/L	03/07/17 12:47	13982-63-3	
Radium-228	EPA 9320	<b>-0.0502 ± 0.476 (1.12)</b> C:59% T:78%	pCi/L	03/11/17 13:45	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30211329

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**Sample: BGWC-19**      **Lab ID: 30211329005**      Collected: 02/16/17 15:00      Received: 02/20/17 09:10      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>0.350 ± 0.690 (1.41)</b>	pCi/L	03/13/17 13:18	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30211329

QC Batch: 250850

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30211329001, 30211329002, 30211329003, 30211329004, 30211329005

METHOD BLANK: 1234248

Matrix: Water

Associated Lab Samples: 30211329001, 30211329002, 30211329003, 30211329004, 30211329005

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 Bowen  
Pace Project No.: 30211329

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QC Batch: 250851 Analysis Method: EPA 9320  
QC Batch Method: EPA 9320 Analysis Description: 9320 Radium 228  
Associated Lab Samples: 30211329001, 30211329002, 30211329003, 30211329004, 30211329005

---

METHOD BLANK: 1234252 Matrix: Water  
Associated Lab Samples: 30211329001, 30211329002, 30211329003, 30211329004, 30211329005

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 Bowen

Pace Project No.: 30211329

### 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: AAB0667

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 3/14/2017

<b>Report To:</b> Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)-734-4200	<b>Subcontract To:</b> Pace - Pittsburgh 1638 Roseytown Road Stes. 2,3,4 Greensburg, PA 15601 Phone (724) 850-5600	<b>Requested Analysis</b>
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**WO# : 30211329**

30211329

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-16	G	2/16/2017 10:45	AAB0667-01	GW	2				X	001
2	BGWC-17	G	2/16/2017 11:50	AAB0667-02	GW	2				X	002
3	BGWC-10	G	2/16/2017 13:05	AAB0667-03	GW	2				X	003
4	BGWC-18	G	2/16/2017 13:50	AAB0667-04	GW	2				X	004
5	BGWC-19	G	2/16/2017 15:00	AAB0667-05	GW	2				X	005
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			<i>Whitson/Pace</i>	2-20-17/10910	
2					
3					

Cooler Temperature on Receipt NA °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 Services, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED					LAB NUMBER	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE BLDG 5</u> <u>Atlanta, GA 30308</u>					CONTAINER TYPE: <u>P</u> <u>P</u> <u>P</u>							P - PLASTIC	1 - HCl, ≤6°C	
REPORT TO: <u>Joju Abraham</u> CC: <u>Maria Patilla</u>					PRESERVATION: <u>3</u> <u>7</u> <u>3</u>							A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REQUESTED COMPLETION DATE:					# of							G - CLEAR GLASS	3 - HNO <sub>3</sub>	
PROJECT NAME/STATE: <u>Plant Bowen-Ash Pond CCR</u>					CONTAINERS							V - VOA VIAL	4 - NaOH, ≤6°C	
PROJECT #:													S - STERILE	5 - NaOH/ZnAc, ≤6°C
Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAPE									O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C
SAMPLE IDENTIFICATION														7 - ≤6°C not frozen
<u>2/16/17</u>	<u>1045</u>	<u>GW</u>	<u>X</u>	<u>BGWL-16</u>		<u>4</u>	<u>1</u>	<u>1</u>	<u>2</u>				*MATRIX CODES:	
<u>2/16/17</u>	<u>1150</u>	<u>GW</u>	<u>X</u>	<u>BGWL-17</u>		<u>4</u>	<u>1</u>	<u>1</u>	<u>2</u>				DW - DRINKING WATER	S - SOIL
<u>2/16/17</u>	<u>1305</u>	<u>GW</u>	<u>X</u>	<u>BGWL-10</u>		<u>4</u>	<u>1</u>	<u>1</u>	<u>2</u>			WW - WASTEWATER	SL - SLUDGE	
<u>2/16/17</u>	<u>1350</u>	<u>GW</u>	<u>X</u>	<u>BGWL-18</u>		<u>4</u>	<u>1</u>	<u>1</u>	<u>2</u>			GW - GROUNDWATER	SD - SOLID	
<u>2/16/17</u>	<u>1500</u>	<u>GW</u>	<u>X</u>	<u>BGWL-19</u>		<u>4</u>	<u>1</u>	<u>1</u>	<u>2</u>			SW - SURFACE WATER	A - AIR	
												ST - STORM WATER	L - LIQUID	
											W - WATER	P - PRODUCT		
SAMPLED BY AND TITLE: <u>Robert Mull / Michael Estekin</u>					RELINQUISHED BY: <u>Robert Mull</u>					DATE/TIME: <u>2/17/17 1500</u>				
RECEIVED BY: <u>Joju Abraham</u>					RECEIVED BY: <u>Joju Abraham</u>					DATE/TIME: <u>02/17/17 1500</u>				
RECEIVED BY LAB: <u>Joju Abraham</u>					SAMPLE SHIPPED VIA: <u>CLIENT</u>					LAB #: <u>AAB0667</u>				
pH checked: <u>Yes</u>					Temperature: <u>10</u> Min: <u>10</u> Max: <u>10</u>					Entered into LIMS: <u>no</u>				
Custody Seal: <u>Intact</u>					# of Coolers: <u>0</u>					Cooler ID: <u>no</u>				
Tracking #:														

Sample Condition Upon Receipt Pittsburgh



30211329

Client Name: Pace, GA

Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5102 4530

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 \_\_\_\_\_ °C    Correction Factor: \_\_\_\_\_ °C    Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: QAH 2-20-17

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.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PHL2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>QAH</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>QAH</u> Date: <u>2-20-17</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

Test: Ra-228  
Analyst: JLW  
Date: 3/6/2017  
Worklist: 34334  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1234252	
MB concentration:	0.430	
M/B Counting Uncertainty:	0.426	
MB MDC:	0.892	
MB Numerical Performance Indicator:	1.98	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS34334	LCS34334
Count Date:	3/11/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	25.066	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.800	
Target Conc. (pCi/L, g, F):	6.267	
Uncertainty (Calculated):	0.451	
Result (pCi/L, g, F):	5.867	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.730	
Numerical Performance Indicator:	-0.91	
Percent Recovery:	93.63%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30211330003	
Duplicate Sample I.D.:	30211330003DUP	
Sample Result (pCi/L, g, F):	0.390	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.494	
Sample Duplicate Result (pCi/L, g, F):	0.705	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.433	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.939	30211330003
Duplicate RPD:	57.46%	30211330003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*results < 5x MDC, numerical indicator < 3 acceptable*

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

*3/14/17*



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 3/6/2017  
Worklist: 34333  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1234248
MB concentration:	-0.050
M/B Counting Uncertainty:	0.051
MB MDC:	0.252
MB Numerical Performance Indicator:	-1.90
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS34333	LCSD34333
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 Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30211403001	
Duplicate Sample I.D.:	30211403001DUP	
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	30211403001
Duplicate RPD:	3.45%	30211403001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*OK 3/14/17*

March 14, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30211330

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on February 20, 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: Plant Bowen

Pace Project No.: 30211330

### 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 Bowen  
Pace Project No.: 30211330

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30211330001	BGWC-21	Water	02/17/17 10:20	02/20/17 09:10
30211330002	BGWC-20	Water	02/17/17 11:00	02/20/17 09:10
30211330003	BGWC-22	Water	02/17/17 12:10	02/20/17 09:10

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30211330

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30211330001	BGWC-21	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211330002	BGWC-20	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211330003	BGWC-22	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 Bowen

Pace Project No.: 30211330

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.106 ± 0.139 (0.281)</b> C:85% T:NA	pCi/L	03/07/17 12:47	13982-63-3	
Radium-228		EPA 9320	<b>0.0868 ± 0.631 (1.44)</b> C:44% T:85%	pCi/L	03/11/17 13:46	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.193 ± 0.770 (1.72)</b>	pCi/L	03/13/17 13:18	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.514 ± 0.258 (0.303)</b> C:90% T:NA	pCi/L	03/07/17 12:47	13982-63-3	
Radium-228		EPA 9320	<b>0.832 ± 0.580 (1.13)</b> C:52% T:88%	pCi/L	03/11/17 13:46	15262-20-1	
Total Radium		Total Radium Calculation	<b>1.35 ± 0.838 (1.43)</b>	pCi/L	03/13/17 13:18	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.951 ± 0.341 (0.268)</b> C:92% T:NA	pCi/L	03/07/17 14:50	13982-63-3	
Radium-228		EPA 9320	<b>0.390 ± 0.499 (1.06)</b> C:57% T:82%	pCi/L	03/11/17 13:46	15262-20-1	
Total Radium		Total Radium Calculation	<b>1.34 ± 0.840 (1.33)</b>	pCi/L	03/13/17 13:18	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: Plant Bowen

Pace Project No.: 30211330

### 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: AAB0668

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 3/14/2017

<b>Report To:</b> Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)-734-4200	<b>Subcontract To:</b> Pace - Pittsburgh 1638 Roseytown Road Stes. 2,3,4 Greensburg, PA 15601 Phone (724) 850-5600	<b>Requested Analysis:</b>  <b>WO# : 30211330</b> 
---	---	---

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-21	G	2/17/2017 10:20	AAB0668-01	GW	2				X	001
2	BGWC-20	G	2/17/2017 11:00	AAB0668-02	GW	2				X	002
3	BGWC-22	G	2/17/2017 12:10	AAB0668-03	GW	2				X	003
4											
5											
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			Ashley Hore / Pace	2-20-17/0910	
2					
3					

Cooler Temperature on Receipt <u>N/A</u> °C	Custody Seal Y or <u>N</u>	Received on Ice Y or <u>N</u>	Sample Intact <u>Y</u> 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



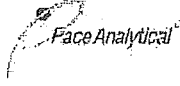
Pace Analytical Services, Inc  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME: SOUTHEAST COMPANY SERVICES					ANALYSIS REQUESTED										CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 RALPH MCGILL BLDG SE B10135 ATLANTA, GA 30303					CONTAINER TYPE	P	F	P									P - PLASTIC	1 - HCl, 56°C	
REPORT TO: JOJU AERATHAN					PRESERVATION:	I	I	I								A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , 56°C		
REQUESTED COMPLETION DATE:					# of											G - CLEAR GLASS	3 - HNO <sub>3</sub>		
PROJECT NAME/STATE: PLANT GOWEN ASH DOND					CONTAINERS ↓	METALS APP III & III EPA 60120 & EPA 71470 C.I.F, 504 EPA 300 TDS RADON 22-C X 228 SW-846 9315 X 9220										V - VOA VIAL	4 - NaOH, 56°C		
PROJECT #:																S - STERILE	5 - NaOH/ZnAc, 56°C		
Collection DATE	Collection TIME	MATRIX CODE*	COM P	GRA B												SAMPLE IDENTIFICATION	O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , 56°C	
02/13/17	1030	GW		X												BGWC-21		7 - 56°C not frozen	
02/17/17	1100	GW		X												BGWC-20		*MATRIX CODES:	
02/17/17	1210	GW		X												BGWC-22		DW - DRINKING WATER	S - SOIL
																		WW - WASTEWATER	SL - SLUDGE
																		GW - GROUNDWATER	SD - SOLID
																		SW - SURFACE WATER	A - AIR
																		ST - STORM WATER	L - LIQUID
							W - WATER	P - PRODUCT											
REMARKS/ADDITIONAL INFORMATION																			
SAMPLED BY AND TITLE: ROBERT MULL MICHAEL PATRICK					DATE/TIME: 02/17/17 1308	RELINQUISHED BY: <i>Robert Mull</i>					DATE/TIME: 2/17/17 1500	FOR LAB USE ONLY							
RECEIVED BY:					DATE/TIME:	RECEIVED BY:					DATE/TIME:	LAB #: <i>AA00668</i>							
RECEIVED BY LAB: <i>Malman</i>					DATE/TIME: 02/17/17 1500	SAMPLE SHIPPED VIA: <input checked="" type="radio"/> CLIENT					Entered Into LIMS: <i>MR</i>								
pH checked: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA					Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Temperature: <i>1°C</i> Min. <i>1°C</i> Max.					Custody Seal: <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Broken <input type="checkbox"/> Not Present					Tracking #:			

Sample Condition Upon Receipt Pittsburgh

ANL



Client Name: Pace, GA 30211330 Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 0812 5102 4530

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing to 6°C

Date and Initials of person examining contents: QAR 2-20-17

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.
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>QAR</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>QAR</u> Date: <u>2-20-17</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

Test: Ra-228  
Analyst: JLW  
Date: 3/6/2017  
Worklist: 34334  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1234252	
MB concentration:	0.430	
M/B Counting Uncertainty:	0.426	
MB MDC:	0.892	
MB Numerical Performance Indicator:	1.98	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS34334	LCSD34334
Count Date:	3/11/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	25.066	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.800	
Target Conc. (pCi/L, g, F):	6.267	
Uncertainty (Calculated):	0.451	
Result (pCi/L, g, F):	5.867	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.730	
Numerical Performance Indicator:	-0.91	
Percent Recovery:	93.63%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30211330003	
Duplicate Sample I.D.:	30211330003DUP	
Sample Result (pCi/L, g, F):	0.390	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.494	
Sample Duplicate Result (pCi/L, g, F):	0.705	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.433	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.939	30211330003
Duplicate RPD:	57.46%	30211330003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*results < 5x MDC, numerical indicator < 3 acceptable*

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

*DW 3/14/17*





## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 3/6/2017  
Worklist: 34333  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1234248
MB concentration:	-0.050
M/B Counting Uncertainty:	0.051
MB MDC:	0.252
MB Numerical Performance Indicator:	-1.90
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS/D (Y or N)?	N
		LCS34333	LCS/D34333
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 Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30211403001	
Duplicate Sample I.D.:	30211403001DUP	
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	30211403001
Duplicate RPD:	3.45%	30211403001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*OK 3/14/17*

March 16, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30211537

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on February 22, 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 Bowen  
Pace Project No.: 30211537

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: Plant Bowen

Pace Project No.: 30211537

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30211537001	FBL022017	Water	02/20/17 10:00	02/22/17 10:30
30211537002	EQBL022017	Water	02/20/17 10:05	02/22/17 10:30
30211537003	BGWC-25	Water	02/20/17 11:16	02/22/17 10:30
30211537004	BGWC-23	Water	02/20/17 11:30	02/22/17 10:30
30211537005	BGWC-24	Water	02/20/17 14:15	02/22/17 10:30
30211537006	Dup-3	Water	02/20/17 00:00	02/22/17 10:30

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### SAMPLE ANALYTE COUNT

Project: Plant Bowen

Pace Project No.: 30211537

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30211537001	FBL022017	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211537002	EQBL022017	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211537003	BGWC-25	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211537004	BGWC-23	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211537005	BGWC-24	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30211537006	Dup-3	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 Bowen  
Pace Project No.: 30211537

Sample: <b>FBL022017</b>		Lab ID: <b>30211537001</b>	Collected: 02/20/17 10:00	Received: 02/22/17 10:30	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0245 ± 0.0969 (0.256)</b> C:93% T:NA	pCi/L	03/07/17 14:50	13982-63-3	
Radium-228	EPA 9320	<b>-0.108 ± 0.339 (0.838)</b> C:59% T:79%	pCi/L	03/11/17 13:47	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.0245 ± 0.436 (1.09)</b>	pCi/L	03/13/17 13:18	7440-14-4	

Sample: <b>EQBL022017</b>		Lab ID: <b>30211537002</b>	Collected: 02/20/17 10:05	Received: 02/22/17 10:30	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.397 ± 0.205 (0.246)</b> C:111% T:NA	pCi/L	03/07/17 14:50	13982-63-3	
Radium-228	EPA 9320	<b>0.214 ± 0.403 (0.885)</b> C:60% T:81%	pCi/L	03/11/17 13:47	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.611 ± 0.608 (1.13)</b>	pCi/L	03/13/17 13:18	7440-14-4	

Sample: <b>BGWC-25</b>		Lab ID: <b>30211537003</b>	Collected: 02/20/17 11:16	Received: 02/22/17 10:30	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.102 ± 0.129 (0.265)</b> C:90% T:NA	pCi/L	03/08/17 08:16	13982-63-3	
Radium-228	EPA 9320	<b>0.445 ± 0.451 (0.921)</b> C:50% T:82%	pCi/L	03/11/17 13:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.547 ± 0.580 (1.19)</b>	pCi/L	03/13/17 13:18	7440-14-4	

Sample: <b>BGWC-23</b>		Lab ID: <b>30211537004</b>	Collected: 02/20/17 11:30	Received: 02/22/17 10:30	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.488 ± 0.226 (0.262)</b> C:91% T:NA	pCi/L	03/08/17 08:16	13982-63-3	
Radium-228	EPA 9320	<b>0.396 ± 0.445 (0.927)</b> C:51% T:86%	pCi/L	03/11/17 13:48	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.884 ± 0.671 (1.19)</b>	pCi/L	03/13/17 13:18	7440-14-4	

Sample: <b>BGWC-24</b>		Lab ID: <b>30211537005</b>	Collected: 02/20/17 14:15	Received: 02/22/17 10:30	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.02 ± 0.319 (0.242)</b> C:96% T:NA	pCi/L	03/08/17 10:42	13982-63-3	
Radium-228	EPA 9320	<b>1.66 ± 0.607 (0.863)</b> C:59% T:86%	pCi/L	03/11/17 13:48	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30211537

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	<b>2.68 ± 0.926 (1.11)</b>	pCi/L	03/13/17 13:18	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.608 ± 0.286 (0.328)</b> C:94% T:NA	pCi/L	03/09/17 08:55	13982-63-3	
Radium-228	EPA 9320	<b>0.705 ± 0.477 (0.900)</b> C:56% T:81%	pCi/L	03/15/17 12:12	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.31 ± 0.763 (1.23)</b>	pCi/L	03/16/17 12:23	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30211537

QC Batch: 250850

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30211537001, 30211537002, 30211537003, 30211537004, 30211537005

METHOD BLANK: 1234248

Matrix: Water

Associated Lab Samples: 30211537001, 30211537002, 30211537003, 30211537004, 30211537005

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.

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30211537

QC Batch: 251402

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30211537006

METHOD BLANK: 1236939

Matrix: Water

Associated Lab Samples: 30211537006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0711 ± 0.137 (0.311) C:100% T:NA	pCi/L	03/09/17 08:55	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30211537

QC Batch: 251823

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30211537006

METHOD BLANK: 1238953

Matrix: Water

Associated Lab Samples: 30211537006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.459 ± 0.401 (0.808) C:64% T:86%	pCi/L	03/15/17 12:12	

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 Bowen

Pace Project No.: 30211537

### 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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Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, GB

Project # 30211537

30211537

ANL

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5102 5147

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents QCN 2-22-17

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.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PHL2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>QNA</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>QNR</u> Date: <u>2-22-17</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.**

Test: Ra-228  
Analyst: JLW  
Date: 3/6/2017  
Worklist: 34334  
Matrix: DW

Method Blank Assessment		
MB Sample ID	1234252	
MB concentration:	0.430	
M/B Counting Uncertainty:	0.426	
MB MDC:	0.892	
MB Numerical Performance Indicator:	1.98	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCS/D (Y or N)?	N
	LCS34334		LCS/D34334
Count Date:	3/11/2017		
Spike I.D.:	17-005		
Spike Concentration (pCi/mL):	25.066		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.800		
Target Conc. (pCi/L, g, F):	6.267		
Uncertainty (Calculated):	0.451		
Result (pCi/L, g, F):	5.867		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.730		
Numerical Performance Indicator:	-0.91		
Percent Recovery:	93.63%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30211330003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30211330003DUP	
Sample Result (pCi/L, g, F):	0.390	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.494	
Sample Duplicate Result (pCi/L, g, F):	0.705	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.433	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.939	30211330003
Duplicate RPD:	57.46%	30211330003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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

Test: Ra-226  
Analyst: JC2  
Date: 3/9/2017  
Worklist: 34416  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1236939
MB concentration:	0.071
M/B Counting Uncertainty:	0.137
MB MDC:	0.311
MB Numerical Performance Indicator:	1.02
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS34416	LCSD34416
Count Date:	3/10/2017		
Spike I.D.:	17-003		
Spike Concentration (pCi/mL):	38.231		
Volume Used (mL):	0.25		
Aliquot Volume (L, g, F):	0.507		
Target Conc. (pCi/L, g, F):	18.837		
Uncertainty (Calculated):	0.886		
Result (pCi/L, g, F):	15.438		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.167		
Numerical Performance Indicator:	-4.55		
Percent Recovery:	81.95%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30211537006	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30211537006DUP	
Sample Result (pCi/L, g, F):	0.608	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.272	
Sample Duplicate Result (pCi/L, g, F):	0.852	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.330	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.117	30211537006
Duplicate RPD:	33.36%	30211537006DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

## Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: JC2  
Date: 3/6/2017  
Worklist: 34333  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1234248	
MB concentration:	-0.050	
M/B Counting Uncertainty:	0.051	
MB MDC:	0.252	
MB Numerical Performance Indicator:	-1.90	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCS (Y or N)?	N
	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 Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30211403001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30211403001DUP	
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	30211403001
Duplicate RPD:	3.45%	30211403001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*Handwritten signature and date: JC2 3/16/17*





## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 3/13/2017  
Worklist: 34510  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1238953
MB concentration:	0.459
M/B Counting Uncertainty:	0.393
MB MDC:	0.808
MB Numerical Performance Indicator:	2.29
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	Y
	LCS34510	LCS34510
Count Date:	3/15/2017	3/15/2017
Spike I.D.:	17-005	17-005
Spike Concentration (pCi/mL):	25.034	25.034
Volume Used (mL):	0.20	0.20
Aliquot Volume (L, g, F):	0.813	0.809
Target Conc. (pCi/L, g, F):	6.158	6.191
Uncertainty (Calculated):	0.443	0.446
Result (pCi/L, g, F):	5.061	7.125
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.628	0.720
Numerical Performance Indicator:	-2.80	2.16
Percent Recovery:	82.20%	115.08%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	LCS34510	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCS34510	
Sample Result (pCi/L, g, F):	5.061	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.628	
Sample Duplicate Result (pCi/L, g, F):	7.125	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.720	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	-4.235	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	33.33%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

March 17, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: Plant Bowen  
Pace Project No.: 30211647

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on February 23, 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 Bowen

Pace Project No.: 30211647

### 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 Bowen

Pace Project No.: 30211647

<b>Lab ID</b>	<b>Sample ID</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Date Received</b>
30211647001	BGWC-14	Water	02/21/17 10:10	02/23/17 09:40

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**SAMPLE ANALYTE COUNT**

Project: Plant Bowen  
Pace Project No.: 30211647

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30211647001	BGWC-14	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 Bowen

Pace Project No.: 30211647

**Sample: BGWC-14**      **Lab ID: 30211647001**      Collected: 02/21/17 10:10      Received: 02/23/17 09:40      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 ± 0.611 (0.343)</b> C:95% T:NA	pCi/L	03/09/17 08:55	13982-63-3	
Radium-228	EPA 9320	<b>2.70 ± 0.755 (0.871)</b> C:67% T:88%	pCi/L	03/15/17 11:42	15262-20-1	
Total Radium	Total Radium Calculation	<b>5.10 ± 1.37 (1.21)</b>	pCi/L	03/16/17 12:23	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30211647

QC Batch: 251402

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30211647001

METHOD BLANK: 1236939

Matrix: Water

Associated Lab Samples: 30211647001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0711 ± 0.137 (0.311) C:100% T:NA	pCi/L	03/09/17 08:55	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: Plant Bowen

Pace Project No.: 30211647

QC Batch: 251823

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30211647001

METHOD BLANK: 1238953

Matrix: Water

Associated Lab Samples: 30211647001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.459 ± 0.401 (0.808) C:64% T:86%	pCi/L	03/15/17 12:12	

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 Bowen

Pace Project No.: 30211647

### 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: AAB0740

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 2/17/2017

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	

WO#: 30211647

30211647

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-14	G	2/21/2017 10:10	AAB0740-01	GW	2				X	001
2											
3											
4											
5											
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			Doherty/Pace	2-23-17/0940	
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 COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.



Sample Condition Upon Receipt Pittsburgh

30211647

AM



Client Name: Pace, GA Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5102 5412

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: AMR 2-23-17

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 Matrix: <u>WT</u>	X	X		5. <u>ID on bottle is GWC-14</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: -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. <u>PHL2</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>AMR</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>AMR</u> Date: <u>2-23-17</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

Test: Ra-228  
Analyst: JLW  
Date: 3/13/2017  
Worklist: 34510  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1238953	
MB concentration:	0.459	
M/B Counting Uncertainty:	0.393	
MB MDC:	0.808	
MB Numerical Performance Indicator:	2.29	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS/D (Y or N)?	Y
	LCS34510	LCS34510
Count Date:	3/15/2017	3/15/2017
Spike I.D.:	17-005	17-005
Spike Concentration (pCi/mL):	25.034	25.034
Volume Used (mL):	0.20	0.20
Aliquot Volume (L, g, F):	0.813	0.809
Target Conc. (pCi/L, g, F):	6.158	6.191
Uncertainty (Calculated):	0.443	0.446
Result (pCi/L, g, F):	5.061	7.125
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.628	0.720
Numerical Performance Indicator:	-2.80	2.16
Percent Recovery:	82.20%	115.08%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	LCS34510	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCS34510	
Sample Result (pCi/L, g, F):	5.061	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.628	
Sample Duplicate Result (pCi/L, g, F):	7.125	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.720	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	-4.235	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	33.33%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*JLW 3/17/17*



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 3/9/2017  
Worklist: 34416  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID		1236939
MB concentration:		0.071
M/B Counting Uncertainty:		0.137
MB MDC:		0.311
MB Numerical Performance Indicator:		1.02
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCS34416	LCSD34416
Count Date:		3/10/2017
Spike I.D.:		17-003
Spike Concentration (pCi/mL):		38.231
Volume Used (mL):		0.25
Aliquot Volume (L, g, F):		0.507
Target Conc. (pCi/L, g, F):		18.837
Uncertainty (Calculated):		0.886
Result (pCi/L, g, F):		15.438
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		1.167
Numerical Performance Indicator:		-4.55
Percent Recovery:		81.95%
Status vs Numerical Indicator:		N/A
Status vs Recovery:		Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30211537006	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30211537006DUP	
Sample Result (pCi/L, g, F):	0.608	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.272	
Sample Duplicate Result (pCi/L, g, F):	0.852	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.330	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.117	30211537006
Duplicate RPD:	33.36%	30211537006DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Handwritten signature and date: 3/17/17*



May 16, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAD0791 Plant Bowen  
Pace Project No.: 30216904

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on April 24, 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: AAD0791 Plant Bowen

Pace Project No.: 30216904

### 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: AAD0791 Plant Bowen

Pace Project No.: 30216904

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30216904001	BGWC-22	Water	04/20/17 10:12	04/24/17 09:00
30216904002	BGWC-25	Water	04/20/17 11:00	04/24/17 09:00
30216904003	Dup-3	Water	04/20/17 00:00	04/24/17 09:00
30216904004	FBL042017	Water	04/20/17 12:30	04/24/17 09:00
30216904005	EQBL042017	Water	04/20/17 12:40	04/24/17 09:00

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAD0791 Plant Bowen

Pace Project No.: 30216904

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30216904001	BGWC-22	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1
30216904002	BGWC-25	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1
30216904003	Dup-3	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1
30216904004	FBL042017	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1
30216904005	EQBL042017	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAD0791 Plant Bowen

Pace Project No.: 30216904

Sample: <b>BGWC-22</b>		Lab ID: <b>30216904001</b>	Collected: 04/20/17 10:12	Received: 04/24/17 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>0.924 ± 0.254 (0.139)</b> C:99% T:NA	pCi/L	05/01/17 08:19	13982-63-3	
Radium-228	EPA 9320	<b>1.43 ± 0.616 (1.000)</b> C:79% T:74%	pCi/L	05/04/17 18:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.35 ± 0.870 (1.14)</b>	pCi/L	05/16/17 15:47	7440-14-4	

Sample: <b>BGWC-25</b>		Lab ID: <b>30216904002</b>	Collected: 04/20/17 11:00	Received: 04/24/17 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>0.0595 ± 0.0816 (0.171)</b> C:88% T:NA	pCi/L	05/01/17 08:19	13982-63-3	
Radium-228	EPA 9320	<b>-0.0924 ± 0.356 (0.860)</b> C:82% T:76%	pCi/L	05/04/17 18:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.0595 ± 0.438 (1.03)</b>	pCi/L	05/16/17 15:47	7440-14-4	

Sample: <b>Dup-3</b>		Lab ID: <b>30216904003</b>	Collected: 04/20/17 00:00	Received: 04/24/17 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>1.33 ± 0.324 (0.153)</b> C:93% T:NA	pCi/L	05/01/17 09:58	13982-63-3	
Radium-228	EPA 9320	<b>0.940 ± 0.480 (0.821)</b> C:78% T:78%	pCi/L	05/04/17 18:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.27 ± 0.804 (0.974)</b>	pCi/L	05/16/17 15:47	7440-14-4	

Sample: <b>FBL042017</b>		Lab ID: <b>30216904004</b>	Collected: 04/20/17 12:30	Received: 04/24/17 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>0.0231 ± 0.0682 (0.170)</b> C:90% T:NA	pCi/L	05/01/17 08:19	13982-63-3	
Radium-228	EPA 9320	<b>0.389 ± 0.391 (0.803)</b> C:81% T:78%	pCi/L	05/04/17 18:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.412 ± 0.459 (0.973)</b>	pCi/L	05/16/17 15:47	7440-14-4	

Sample: <b>EQBL042017</b>		Lab ID: <b>30216904005</b>	Collected: 04/20/17 12:40	Received: 04/24/17 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>0.0346 ± 0.0689 (0.160)</b> C:97% T:NA	pCi/L	05/01/17 08:19	13982-63-3	
Radium-228	EPA 9320	<b>0.302 ± 0.447 (0.964)</b> C:78% T:72%	pCi/L	05/04/17 18:27	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAD0791 Plant Bowen

Pace Project No.: 30216904

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**Sample: EQBL042017**      **Lab ID: 30216904005**      Collected: 04/20/17 12:40      Received: 04/24/17 09:00      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>0.337 ± 0.516 (1.12)</b>	pCi/L	05/16/17 15:47	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0791 Plant Bowen

Pace Project No.: 30216904

QC Batch: 256301

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30216904001, 30216904002, 30216904003, 30216904004, 30216904005

METHOD BLANK: 1262529

Matrix: Water

Associated Lab Samples: 30216904001, 30216904002, 30216904003, 30216904004, 30216904005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0102 ± 0.0679 (0.185) C:100% T:NA	pCi/L	04/29/17 17:31	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0791 Plant Bowen

Pace Project No.: 30216904

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QC Batch:	256379	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30216904001, 30216904002, 30216904003, 30216904004, 30216904005		

---

METHOD BLANK:	1263006	Matrix:	Water
Associated Lab Samples:	30216904001, 30216904002, 30216904003, 30216904004, 30216904005		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.389 ± 0.383 (0.785) C:82% T:66%	pCi/L	05/04/17 12:06	

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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## QUALIFIERS

Project: AAD0791 Plant Bowen

Pace Project No.: 30216904

### 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

WO#: 30216904



Workorder: AAD0791

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 5/16/2017

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				Radium 226, 228, Total												
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix		Preserved Containers				LAB USE ONLY							
1	BGWC-22	G	4/20/2017 10:12	AAD0791-01	GW		4					X						001
2	BGWC-25	G	4/20/2017 11:00	AAD0791-02	GW		2					X						002
3	Dup-3	G	4/20/2017 0:00	AAD0791-03	GW		2					X						003
4	FBL042017	G	4/20/2017 12:30	AAD0791-04	W		2					X						004
5	EQBL042017	G	4/20/2017 12:40	AAD0791-05	W		2					X						005
6																		
7																		
8																		
9																		
10																		
Transfers	Released By	Date/Time	Received By	Date/Time	Comments													
1			Ashley Pace	4-24-17/0900														
2																		
3																		

Cooler Temperature on Receipt	<u>NA</u> °C	Custody Seal <u>Y</u> or <u>N</u>	Received on Ice <u>Y</u> or <u>N</u>	Sample Intact <u>Y</u> or <u>N</u>
-------------------------------	--------------	-----------------------------------	--------------------------------------	------------------------------------

\*\*\*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.

30216904

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:					ANALYSIS REQUESTED										CONTAINER TYPE	PRESERVATION									
Southern Community Services					CONTAINER TYPE:	1	2	3																	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					PRESERVATION:	3	4	3																	
241 Ralph McGill Blvd NE 30185 Atlanta GA 30308					# of																				
REPORT TO:					CONTAINERS	↓	MULLIS AVE. 100 & 101	EPA 600/2-7110	CIVIL 501 EPA 300	TOX 602510	Radium 226 & 228	SAR 6046 93153 9320													
JOHN ABRAHAM		CC: KIANA PATELLA																							
REQUESTED COMPLETION DATE:		PO #: GP 1068498																							
PROJECT NAME/STATE:					PLUMB RADIUM AND LEAD PAINT CCR																				
PROJECT #:																									
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	↓																			
4/20/17	1012	GW		X	R610C-22	6	1	1	4																
4/20/17	1100	GW		X	R610C-25	4	1	1	2																
4/20/17	-	GW		X	Dup-3	4	1	1	2																
4/20/17	1230	W		X	FRLO42017	4	1	1	2																
4/20/17	1240	W		X	EQBLO42017	4	1	1	2																

SAMPLED BY AND TITLE:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		FOR LAB USE ONLY	
RECEIVED BY: Mike Nguyen		4/20/17 @ 1330						LAB #: XAD0791	
RECEIVED BY LAB: Charles Sanders		4/21/17 1425		RECEIVED BY:		DATE/TIME:		Entered into LIMS: (initials)	
pH checked: Yes No NA		Temperature: 21 Min 21 Max		SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS		Cooler ID:		Tracking #:	
Custody Seal: Intact Broken Not Present N/A									

Sample Condition Upon Receipt Pittsburgh

ANL



Client Name: Pdæ, GA

Project # 30216904

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7789 6548 7398

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

Thermometer Used MIA 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: DNK 4-24-17

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.
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>DNK</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>DNK</u> Date: <u>4-24-17</u>

PHL2

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

Test: Ra-228  
Analyst: JJY  
Date: 4/28/2017  
Worklist: 35288  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1263008	
MB concentration:	0.389	
M/B Counting Uncertainty:	0.376	
MB MDC:	0.785	
MB Numerical Performance Indicator:	2.02	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS35288	LCSD35288
Count Date:	5/4/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	24.624	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.808	
Target Conc. (pCi/L, g, F):	6.095	
Uncertainty (Calculated):	0.439	
Result (pCi/L, g, F):	6.974	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.742	
Numerical Performance Indicator:	2.00	
Percent Recovery:	114.43%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment
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):
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:

Duplicate Sample Assessment	LCSD (Y or N)?	N
Sample I.D.:	30216750002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30216750002DUP	
Sample Result (pCi/L, g, F):	2.058	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.516	
Sample Duplicate Result (pCi/L, g, F):	2.615	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.526	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.480	30216750002
Duplicate RPD:	23.81%	30216750002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment
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:

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

Comments:

*Handwritten signature/initials*



## Quality Control Sample Performance Assessment

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

Test: Ra-226  
Analyst: JC2  
Date: 4/26/2017  
Worklist: 35277  
Matrix: DW

Method Blank Assessment		
MB Sample ID	1262529	
MB concentration:	0.010	
M/B Counting Uncertainty:	0.068	
MB MDC:	0.185	
MB Numerical Performance Indicator:	0.29	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCSD35277	LCSD35277
Count Date:	4/28/2017	
Spike I.D.:	17-003	
Spike Concentration (pCi/mL):	38.229	
Volume Used (mL):	0.25	
Aliquot Volume (L, g, F):	0.503	
Target Conc. (pCi/L, g, F):	19.004	
Uncertainty (Calculated):	0.894	
Result (pCi/L, g, F):	15.521	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.736	
Numerical Performance Indicator:	-5.90	
Percent Recovery:	81.67%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30216750003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30216750003DUP	
Sample Result (pCi/L, g, F):	0.141	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.108	
Sample Duplicate Result (pCi/L, g, F):	0.115	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.091	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.355	
Duplicate RPD:	20.00%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:



**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: AAD0550**

**April 21, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

April 21, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-2	AAD0550-01	Ground Water	04/13/17 10:50	04/14/17 14:30
BGWA-6	AAD0550-02	Ground Water	04/13/17 12:10	04/14/17 14:30
BGWA-28	AAD0550-03	Ground Water	04/13/17 12:10	04/14/17 14:30
BGWA-26	AAD0550-04	Ground Water	04/13/17 14:00	04/14/17 14:30
BGWA-27	AAD0550-05	Ground Water	04/13/17 14:25	04/14/17 14:30
BGWC-8	AAD0550-06	Ground Water	04/14/17 10:16	04/14/17 14:30
BGWA-29	AAD0550-07	Ground Water	04/14/17 11:05	04/14/17 14:30





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 21, 2017

Report No.: AAD0550

Project: CCR Event

Client ID: BGWA-2

Lab Number ID: AAD0550-01

Date/Time Sampled: 4/13/2017 10:50:00AM

Date/Time Received: 4/14/2017 2:30:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	211	25	10	mg/L	SM 2540 C		1	04/18/17 11:45	04/18/17 11:45	7040519	JPT
<b>Inorganic Anions</b>											
Chloride	2.1	0.25	0.01	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 19:32	7040536	RLC
Fluoride	0.10	0.30	0.004	mg/L	EPA 300.0	J	1	04/18/17 15:28	04/18/17 19:32	7040536	RLC
Sulfate	4.9	1.0	0.09	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 19:32	7040536	RLC
<b>Metals, Total</b>											
Antimony	0.0004	0.0030	0.0003	mg/L	EPA 6020B	B-01, J	1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Arsenic	0.0017	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Barium	0.190	0.0100	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Boron	0.0084	0.0400	0.0060	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Calcium	30.5	25.0	0.522	mg/L	EPA 6020B		50	04/18/17 08:45	04/19/17 13:47	7040495	CSW
Chromium	0.0005	0.0100	0.0003	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Molybdenum	0.0025	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Thallium	0.00009	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 13:41	7040495	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/17/17 10:00	04/17/17 14:29	7040449	MTC



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

Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 21, 2017

Report No.: AAD0550

Project: CCR Event

Client ID: BGWA-6

Lab Number ID: AAD0550-02

Date/Time Sampled: 4/13/2017 12:10:00PM

Date/Time Received: 4/14/2017 2:30:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	349	25	10	mg/L	SM 2540 C		1	04/18/17 11:45	04/18/17 11:45	7040519	JPT
<b>Inorganic Anions</b>											
Chloride	10	0.25	0.01	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 19:52	7040536	RLC
Fluoride	0.04	0.30	0.004	mg/L	EPA 300.0	J	1	04/18/17 15:28	04/18/17 19:52	7040536	RLC
Sulfate	21	1.0	0.09	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 19:52	7040536	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Arsenic	0.0007	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Barium	0.0115	0.0100	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Boron	0.0195	0.0400	0.0060	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Calcium	53.4	25.0	0.522	mg/L	EPA 6020B		50	04/18/17 08:45	04/19/17 14:40	7040495	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Thallium	0.0001	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:34	7040495	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/17/17 10:00	04/17/17 14:31	7040449	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 21, 2017

Report No.: AAD0550

Project: CCR Event

Client ID: BGWA-28

Lab Number ID: AAD0550-03

Date/Time Sampled: 4/13/2017 12:10:00PM

Date/Time Received: 4/14/2017 2:30:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	257	25	10	mg/L	SM 2540 C		1	04/18/17 11:45	04/18/17 11:45	7040519	JPT
<b>Inorganic Anions</b>											
Chloride	22	0.25	0.01	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 20:13	7040536	RLC
Fluoride	0.03	0.30	0.004	mg/L	EPA 300.0	J	1	04/18/17 15:28	04/18/17 20:13	7040536	RLC
Sulfate	15	1.0	0.09	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 20:13	7040536	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Arsenic	0.0009	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Barium	0.192	0.0100	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Boron	0.0922	0.0400	0.0060	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Calcium	48.7	25.0	0.522	mg/L	EPA 6020B		50	04/18/17 08:45	04/19/17 14:51	7040495	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Molybdenum	0.0014	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:45	7040495	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/17/17 10:00	04/17/17 14:34	7040449	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 21, 2017

Report No.: AAD0550

Project: CCR Event

Client ID: BGWA-26

Lab Number ID: AAD0550-04

Date/Time Sampled: 4/13/2017 2:00:00PM

Date/Time Received: 4/14/2017 2:30:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	190	25	10	mg/L	SM 2540 C		1	04/18/17 11:45	04/18/17 11:45	7040519	JPT
<b>Inorganic Anions</b>											
Chloride	5.0	0.25	0.01	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 21:15	7040536	RLC
Fluoride	0.09	0.30	0.004	mg/L	EPA 300.0	J	1	04/18/17 15:28	04/18/17 21:15	7040536	RLC
Sulfate	17	1.0	0.09	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 21:15	7040536	RLC
<b>Metals, Total</b>											
Antimony	0.0003	0.0030	0.0003	mg/L	EPA 6020B	B-01, J	1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Arsenic	0.0032	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Barium	0.0487	0.0100	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Boron	0.0076	0.0400	0.0060	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Calcium	35.8	25.0	0.522	mg/L	EPA 6020B		50	04/18/17 08:45	04/19/17 15:03	7040495	CSW
Chromium	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Lead	0.0003	0.0050	0.00007	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Molybdenum	0.0041	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Lithium	0.0023	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 14:57	7040495	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/17/17 10:00	04/17/17 14:36	7040449	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 21, 2017

Report No.: AAD0550

Project: CCR Event

Client ID: BGWA-27

Lab Number ID: AAD0550-05

Date/Time Sampled: 4/13/2017 2:25:00PM

Date/Time Received: 4/14/2017 2:30:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	275	25	10	mg/L	SM 2540 C		1	04/18/17 11:45	04/18/17 11:45	7040519	JPT
<b>Inorganic Anions</b>											
Chloride	15	0.25	0.01	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 21:35	7040536	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 21:35	7040536	RLC
Sulfate	10	1.0	0.09	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 21:35	7040536	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Arsenic	0.0006	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Barium	0.0396	0.0100	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Boron	0.0202	0.0400	0.0060	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Calcium	42.7	25.0	0.522	mg/L	EPA 6020B		50	04/18/17 08:45	04/19/17 15:14	7040495	CSW
Chromium	0.0006	0.0100	0.0003	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:08	7040495	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/17/17 10:00	04/17/17 14:39	7040449	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 21, 2017

Report No.: AAD0550

Project: CCR Event

Client ID: BGWC-8

Lab Number ID: AAD0550-06

Date/Time Sampled: 4/14/2017 10:16:00AM

Date/Time Received: 4/14/2017 2:30:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	184	25	10	mg/L	SM 2540 C		1	04/18/17 11:45	04/18/17 11:45	7040519	JPT
<b>Inorganic Anions</b>											
Chloride	1.7	0.25	0.01	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 23:19	7040536	RLC
Fluoride	0.02	0.30	0.004	mg/L	EPA 300.0	J	1	04/18/17 15:28	04/18/17 23:19	7040536	RLC
Sulfate	27	1.0	0.09	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 23:19	7040536	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Arsenic	0.0007	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Barium	0.0275	0.0100	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Boron	0.0540	0.0400	0.0060	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Calcium	37.5	25.0	0.522	mg/L	EPA 6020B		50	04/18/17 08:45	04/19/17 15:25	7040495	CSW
Chromium	0.0011	0.0100	0.0003	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Molybdenum	0.0013	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:20	7040495	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/17/17 10:00	04/17/17 14:41	7040449	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 21, 2017

Report No.: AAD0550

Project: CCR Event

Client ID: BGWA-29

Lab Number ID: AAD0550-07

Date/Time Sampled: 4/14/2017 11:05:00AM

Date/Time Received: 4/14/2017 2:30:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	119	25	10	mg/L	SM 2540 C		1	04/18/17 11:45	04/18/17 11:45	7040519	JPT
<b>Inorganic Anions</b>											
Chloride	1.5	0.25	0.01	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 23:39	7040536	RLC
Fluoride	0.01	0.30	0.004	mg/L	EPA 300.0	J	1	04/18/17 15:28	04/18/17 23:39	7040536	RLC
Sulfate	4.4	1.0	0.09	mg/L	EPA 300.0		1	04/18/17 15:28	04/18/17 23:39	7040536	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Arsenic	0.0006	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Barium	0.0231	0.0100	0.0003	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Calcium	20.7	25.0	0.522	mg/L	EPA 6020B	J	50	04/18/17 08:45	04/19/17 15:48	7040495	CSW
Chromium	0.0005	0.0100	0.0003	mg/L	EPA 6020B	J	1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/18/17 08:45	04/19/17 15:43	7040495	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/17/17 10:00	04/17/17 14:43	7040449	MTC



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Attention: Mr. Joju Abraham

April 21, 2017

**Report No.: AAD0550**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040519 - SM 2540 C</b>											
<b>Blank (7040519-BLK1)</b>						Prepared & Analyzed: 04/18/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7040519-BS1)</b>						Prepared & Analyzed: 04/18/17					
Total Dissolved Solids	401	25	10	mg/L	400.00		100	84-108			
<b>Duplicate (7040519-DUP1)</b>			<b>Source: AAD0550-04</b>			Prepared & Analyzed: 04/18/17					
Total Dissolved Solids	196	25	10	mg/L		190			3	10	





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April 21, 2017

**Report No.: AAD0550**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040536 - EPA 300.0</b>											
<b>Blank (7040536-BLK1)</b>						Prepared & Analyzed: 04/18/17					
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 (7040536-BS1)</b>						Prepared & Analyzed: 04/18/17					
Chloride	10.0	0.25	0.01	mg/L	10.010		100	90-110			
Fluoride	10.2	0.30	0.004	mg/L	10.020		102	90-110			
Sulfate	10.0	1.0	0.09	mg/L	10.020		100	90-110			
<b>Matrix Spike (7040536-MS1)</b>						Source: AAD0550-03 Prepared & Analyzed: 04/18/17					
Chloride	29.9	0.25	0.01	mg/L	10.010	21.9	79	90-110			QM-02
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.03	103	90-110			
Sulfate	24.0	1.0	0.09	mg/L	10.020	15.3	87	90-110			QM-02
<b>Matrix Spike (7040536-MS2)</b>						Source: AAD0550-07 Prepared: 04/18/17 Analyzed: 04/19/17					
Chloride	11.8	0.25	0.01	mg/L	10.010	1.50	103	90-110			
Fluoride	10.5	0.30	0.004	mg/L	10.020	0.01	105	90-110			
Sulfate	14.5	1.0	0.09	mg/L	10.020	4.43	100	90-110			
<b>Matrix Spike Dup (7040536-MSD1)</b>						Source: AAD0550-03 Prepared & Analyzed: 04/18/17					
Chloride	29.9	0.25	0.01	mg/L	10.010	21.9	80	90-110	0.2	15	QM-02
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.03	103	90-110	0.09	15	
Sulfate	24.1	1.0	0.09	mg/L	10.020	15.3	88	90-110	0.2	15	QM-02



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April 21, 2017

**Report No.: AAD0550**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040449 - EPA 7470A</b>											
<b>Blank (7040449-BLK1)</b> Prepared & Analyzed: 04/17/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7040449-BS1)</b> Prepared & Analyzed: 04/17/17											
Mercury	0.00225	0.00050	0.000041	mg/L	2.5000E-3		90	80-120			
<b>Matrix Spike (7040449-MS1)</b> Source: AAD0550-01 Prepared & Analyzed: 04/17/17											
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (7040449-MSD1)</b> Source: AAD0550-01 Prepared & Analyzed: 04/17/17											
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	2	20	
<b>Post Spike (7040449-PS1)</b> Source: AAD0550-01 Prepared & Analyzed: 04/17/17											
Mercury	1.64			ug/L	1.6667	-0.00582	98	80-120			
<b>Batch 7040495 - EPA 3005A</b>											
<b>Blank (7040495-BLK1)</b> Prepared: 04/18/17 Analyzed: 04/19/17											
Antimony	0.0004	0.0030	0.0003	mg/L							J
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

April 21, 2017

**Report No.: AAD0550**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040495 - EPA 3005A</b>											
<b>LCS (7040495-BS1)</b>						Prepared: 04/18/17 Analyzed: 04/19/17					
Antimony	0.104	0.0030	0.0003	mg/L	0.10000		104	80-120			
Arsenic	0.102	0.0050	0.0004	mg/L	0.10000		102	80-120			
Barium	0.100	0.0100	0.0003	mg/L	0.10000		100	80-120			
Beryllium	0.111	0.0030	0.00007	mg/L	0.10000		111	80-120			
Boron	1.10	0.0400	0.0060	mg/L	1.0000		110	80-120			
Cadmium	0.103	0.0010	0.00006	mg/L	0.10000		103	80-120			
Calcium	1.01	0.500	0.0104	mg/L	1.0000		101	80-120			
Chromium	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120			
Cobalt	0.0983	0.0100	0.0005	mg/L	0.10000		98	80-120			
Copper	0.100	0.0250	0.0003	mg/L	0.10000		100	80-120			
Lead	0.103	0.0050	0.00007	mg/L	0.10000		103	80-120			
Molybdenum	0.103	0.0100	0.0006	mg/L	0.10000		103	80-120			
Nickel	0.0990	0.0100	0.0003	mg/L	0.10000		99	80-120			
Selenium	0.104	0.0100	0.0014	mg/L	0.10000		104	80-120			
Silver	0.101	0.0100	0.0003	mg/L	0.10000		101	80-120			
Thallium	0.105	0.0010	0.00005	mg/L	0.10000		105	80-120			
Vanadium	0.103	0.0100	0.0014	mg/L	0.10000		103	80-120			
Zinc	0.0949	0.0100	0.0013	mg/L	0.10000		95	80-120			
Lithium	0.107	0.0500	0.0011	mg/L	0.10000		107	80-120			

<b>Matrix Spike (7040495-MS1)</b>				<b>Source: AAD0550-05</b>			Prepared: 04/18/17 Analyzed: 04/19/17				
Antimony	0.100	0.0030	0.0003	mg/L	0.10000	ND	100	75-125			
Arsenic	0.102	0.0050	0.0004	mg/L	0.10000	0.0006	101	75-125			
Barium	0.138	0.0100	0.0003	mg/L	0.10000	0.0396	98	75-125			
Beryllium	0.104	0.0030	0.00007	mg/L	0.10000	ND	104	75-125			
Boron	1.02	0.0400	0.0060	mg/L	1.0000	0.0202	100	75-125			
Cadmium	0.104	0.0010	0.00006	mg/L	0.10000	ND	104	75-125			
Calcium	43.0	25.0	0.522	mg/L	1.0000	42.7	22	75-125			QM-02
Chromium	0.101	0.0100	0.0003	mg/L	0.10000	0.0006	100	75-125			
Cobalt	0.0961	0.0100	0.0005	mg/L	0.10000	ND	96	75-125			
Copper	0.0955	0.0250	0.0003	mg/L	0.10000	ND	96	75-125			
Lead	0.0987	0.0050	0.00007	mg/L	0.10000	ND	99	75-125			
Molybdenum	0.101	0.0100	0.0006	mg/L	0.10000	ND	101	75-125			
Nickel	0.0963	0.0100	0.0003	mg/L	0.10000	ND	96	75-125			
Selenium	0.104	0.0100	0.0014	mg/L	0.10000	ND	104	75-125			
Silver	0.0978	0.0100	0.0003	mg/L	0.10000	ND	98	75-125			
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	ND	101	75-125			
Vanadium	0.103	0.0100	0.0014	mg/L	0.10000	ND	103	75-125			
Zinc	0.0967	0.0100	0.0013	mg/L	0.10000	ND	97	75-125			
Lithium	0.104	0.0500	0.0011	mg/L	0.10000	ND	104	75-125			



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Attention: Mr. Joju Abraham

April 21, 2017

**Report No.: AAD0550**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040495 - EPA 3005A</b>											
<b>Matrix Spike Dup (7040495-MSD1)</b>			<b>Source: AAD0550-05</b>			<b>Prepared: 04/18/17 Analyzed: 04/19/17</b>					
Antimony	0.101	0.0030	0.0003	mg/L	0.10000	ND	101	75-125	0.9	20	
Arsenic	0.103	0.0050	0.0004	mg/L	0.10000	0.0006	102	75-125	1	20	
Barium	0.140	0.0100	0.0003	mg/L	0.10000	0.0396	100	75-125	1	20	
Beryllium	0.103	0.0030	0.00007	mg/L	0.10000	ND	103	75-125	2	20	
Boron	1.04	0.0400	0.0060	mg/L	1.0000	0.0202	102	75-125	2	20	
Cadmium	0.103	0.0010	0.00006	mg/L	0.10000	ND	103	75-125	0.7	20	
Calcium	42.9	25.0	0.522	mg/L	1.0000	42.7	18	75-125	0.1	20	QM-02
Chromium	0.105	0.0100	0.0003	mg/L	0.10000	0.0006	104	75-125	4	20	
Cobalt	0.0957	0.0100	0.0005	mg/L	0.10000	ND	96	75-125	0.4	20	
Copper	0.0966	0.0250	0.0003	mg/L	0.10000	ND	97	75-125	1	20	
Lead	0.101	0.0050	0.00007	mg/L	0.10000	ND	101	75-125	2	20	
Molybdenum	0.0995	0.0100	0.0006	mg/L	0.10000	ND	99	75-125	2	20	
Nickel	0.0979	0.0100	0.0003	mg/L	0.10000	ND	98	75-125	2	20	
Selenium	0.104	0.0100	0.0014	mg/L	0.10000	ND	104	75-125	0.2	20	
Silver	0.0984	0.0100	0.0003	mg/L	0.10000	ND	98	75-125	0.6	20	
Thallium	0.104	0.0010	0.00005	mg/L	0.10000	ND	104	75-125	2	20	
Vanadium	0.105	0.0100	0.0014	mg/L	0.10000	ND	105	75-125	2	20	
Zinc	0.0972	0.0100	0.0013	mg/L	0.10000	ND	97	75-125	0.5	20	
Lithium	0.103	0.0500	0.0011	mg/L	0.10000	ND	103	75-125	0.6	20	
<b>Post Spike (7040495-PS1)</b>											
<b>Source: AAD0550-05</b>			<b>Prepared: 04/18/17 Analyzed: 04/19/17</b>								
Antimony	93.9			ug/L	100.00	0.0987	94	80-120			
Arsenic	105			ug/L	100.00	0.558	105	80-120			
Barium	139			ug/L	100.00	39.6	100	80-120			
Beryllium	111			ug/L	100.00	0.0124	111	80-120			
Boron	1050			ug/L	1000.0	20.2	103	80-120			
Cadmium	102			ug/L	100.00	-0.0176	102	80-120			
Calcium	44900			ug/L	1000.0	42700	212	80-120			QM-02
Chromium	106			ug/L	100.00	0.552	106	80-120			
Cobalt	98.6			ug/L	100.00	0.0227	99	80-120			
Copper	101			ug/L	100.00	0.135	101	80-120			
Lead	99.1			ug/L	100.00	0.0308	99	80-120			
Molybdenum	102			ug/L	100.00	0.307	102	80-120			
Nickel	102			ug/L	100.00	0.115	102	80-120			
Selenium	103			ug/L	100.00	0.711	102	80-120			
Silver	98.8			ug/L	100.00	0.00003	99	80-120			
Thallium	102			ug/L	100.00	0.0296	102	80-120			
Vanadium	108			ug/L	100.00	1.07	107	80-120			
Zinc	96.4			ug/L	100.00	0.918	96	80-120			
Lithium	107			ug/L	100.00	0.336	106	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

April 21, 2017

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## Legend

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### 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

- 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**



**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: <u>Southern Company Services</u>		<b>ANALYSIS REQUESTED</b>				L A B  I D  N U M B E R  ↓	<b>CONTAINER TYPE</b>		<b>PRESERVATION</b>	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B10185</u> <u>Atlanta, GA 30308</u>		CONTAINER TYPE: <u>P</u> <u>P</u> <u>P</u> <u>P</u>						P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	1 - HCl, ≤6°C 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C 3 - HNO <sub>3</sub> 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen	
REPORT TO: <u>Joju Abraham</u> CC: <u>Marcia Padilla</u>		PRESERVATION: <u>3</u> <u>3</u> <u>7</u> <u>3</u>						<b>*MATRIX CODES:</b>		
REQUESTED COMPLETION DATE: _____ PO#: <u>GPL10084198</u>		# of CONTAINERS ↓						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		
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond</u> <u>CR &amp; Bowen State GW</u>							<b>REMARKS/ADDITIONAL INFORMATION</b>			
PROJECT #: _____										
Collection DATE	Collection TIME	MATRX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	↓				
<u>4/13/17</u>	<u>1050</u>	<u>GW</u>		<u>X</u>	<u>B6WA-2</u>	<u>4</u>	<u>X</u>	<u>X</u>	<u>1</u> <u>2</u>	
<u>4/13/17</u>	<u>1210</u>	<u>GW</u>		<u>X</u>	<u>B6WA-6</u>	<u>4</u>	<u>X</u>	<u>X</u>	<u>1</u> <u>2</u>	
<u>4/13/17</u>	<u>1210</u>	<u>GW</u>		<u>X</u>	<u>B6WA-28</u>	<u>4</u>	<u>X</u>	<u>X</u>	<u>1</u> <u>2</u>	
<u>4/13/17</u>	<u>1400</u>	<u>GW</u>		<u>X</u>	<u>B6WA-26</u>	<u>4</u>	<u>X</u>	<u>X</u>	<u>1</u> <u>2</u>	
<u>4/13/17</u>	<u>1425</u>	<u>GW</u>		<u>X</u>	<u>B6WA-27</u>	<u>4</u>	<u>X</u>	<u>X</u>	<u>1</u> <u>2</u>	
SAMPLED BY AND TITLE: <u>Robert Mull / Michael Patinkin</u>		DATE/TIME: <u>4/13/17 1515</u>	RELINQUISHED BY: <u>[Signature]</u>			DATE/TIME: <u>04/14/17 1430</u>	<b>FOR LAB USE ONLY</b>			
RECEIVED BY: _____		DATE/TIME: _____	RELINQUISHED BY: _____			DATE/TIME: _____	LAB #: <u>AA00550</u> Entered into LIMS: <u>MR</u> Tracking #: _____			
RECEIVED BY LAB: <u>[Signature]</u>		DATE/TIME: <u>04/14/17 1430</u>	SAMPLE SHIPPED VIA: <u>CLIENT</u>							
checked: <u>ES</u> No NA	Ice: <u>Yes</u> No NA	Temperature: <u>32</u> Min: <u>32</u> Max:	Custody Seal: <u>Intact</u> Broken Not Present: <u>N/A</u>			# of Coolers: <u>0</u>	Cooler ID: _____			

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**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: 4/17/2017 9:39:13AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 04/14/17 14:30

**Work Order:** AAD0550

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 7

**#Containers:** 28

**Minimum Temp(C):** 3.0

**Maximum Temp(C):** 3.0

**Custody Seal(s) Used:** 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:**



May 09, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAD0550 Plant Bowen  
Pace Project No.: 30216253

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on April 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

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

Project: AAD0550 Plant Bowen  
Pace Project No.: 30216253

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAD0550 Plant Bowen

Pace Project No.: 30216253

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30216253001	BGWA-2	Water	04/13/17 10:50	04/17/17 09:05
30216253002	BGWA-6	Water	04/13/17 12:10	04/17/17 09:05
30216253003	BGWA-28	Water	04/13/17 12:10	04/17/17 09:05
30216253004	BGWA-26	Water	04/13/17 14:00	04/17/17 09:05
30216253005	BGWA-27	Water	04/13/17 14:25	04/17/17 09:05
30216253006	BGWC-8	Water	04/14/17 10:16	04/17/17 09:05
30216253007	BGWA-29	Water	04/14/17 11:05	04/17/17 09:05

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAD0550 Plant Bowen  
Pace Project No.: 30216253

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30216253001	BGWA-2	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30216253002	BGWA-6	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30216253003	BGWA-28	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30216253004	BGWA-26	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30216253005	BGWA-27	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30216253006	BGWC-8	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30216253007	BGWA-29	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: AAD0550 Plant Bowen

Pace Project No.: 30216253

Sample: BGWA-2		Lab ID: 30216253001	Collected: 04/13/17 10:50	Received: 04/17/17 09:05	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.775 ± 0.346	(0.455)	pCi/L	04/27/17 08:21	13982-63-3	
		C:86% T:NA					
Radium-228	EPA 9320	0.431 ± 0.389	(0.791)	pCi/L	04/29/17 13:28	15262-20-1	
		C:79% T:80%					
Total Radium	Total Radium Calculation	1.21 ± 0.735	(1.25)	pCi/L	05/09/17 13:11	7440-14-4	

Sample: BGWA-6		Lab ID: 30216253002	Collected: 04/13/17 12:10	Received: 04/17/17 09:05	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.0867 ± 0.133	(0.283)	pCi/L	04/27/17 08:21	13982-63-3	
		C:84% T:NA					
Radium-228	EPA 9320	0.300 ± 0.409	(0.874)	pCi/L	04/29/17 13:28	15262-20-1	
		C:78% T:75%					
Total Radium	Total Radium Calculation	0.387 ± 0.542	(1.16)	pCi/L	05/09/17 13:11	7440-14-4	

Sample: BGWA-28		Lab ID: 30216253003	Collected: 04/13/17 12:10	Received: 04/17/17 09:05	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.424 ± 0.246	(0.340)	pCi/L	04/27/17 08:21	13982-63-3	
		C:88% T:NA					
Radium-228	EPA 9320	0.394 ± 0.361	(0.733)	pCi/L	04/29/17 13:28	15262-20-1	
		C:80% T:81%					
Total Radium	Total Radium Calculation	0.818 ± 0.607	(1.07)	pCi/L	05/09/17 13:11	7440-14-4	

Sample: BGWA-26		Lab ID: 30216253004	Collected: 04/13/17 14:00	Received: 04/17/17 09:05	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.407 ± 0.262	(0.384)	pCi/L	04/27/17 08:21	13982-63-3	
		C:73% T:NA					
Radium-228	EPA 9320	0.628 ± 0.412	(0.784)	pCi/L	04/29/17 13:28	15262-20-1	
		C:85% T:75%					
Total Radium	Total Radium Calculation	1.04 ± 0.674	(1.17)	pCi/L	05/09/17 13:11	7440-14-4	

Sample: BGWA-27		Lab ID: 30216253005	Collected: 04/13/17 14:25	Received: 04/17/17 09:05	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	0.347 ± 0.169	(0.227)	pCi/L	04/27/17 12:20	13982-63-3	
		C:78% T:NA					
Radium-228	EPA 9320	0.480 ± 0.355	(0.695)	pCi/L	04/29/17 13:28	15262-20-1	
		C:84% T:82%					

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAD0550 Plant Bowen

Pace Project No.: 30216253

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	<b>0.827 ± 0.524 (0.922)</b>	pCi/L	05/09/17 13:11	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.130 ± 0.122 (0.228)</b> C:74% T:NA	pCi/L	04/27/17 12:20	13982-63-3	
Radium-228	EPA 9320	<b>-0.145 ± 0.267 (0.659)</b> C:85% T:81%	pCi/L	04/29/17 13:29	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.130 ± 0.389 (0.887)</b>	pCi/L	05/09/17 13:11	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0529 ± 0.0987 (0.218)</b> C:92% T:NA	pCi/L	04/27/17 12:20	13982-63-3	
Radium-228	EPA 9320	<b>0.750 ± 0.454 (0.854)</b> C:80% T:77%	pCi/L	04/29/17 13:29	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.803 ± 0.553 (1.07)</b>	pCi/L	05/09/17 13:11	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0550 Plant Bowen

Pace Project No.: 30216253

QC Batch: 256244 Analysis Method: EPA 9315

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

Associated Lab Samples: 30216253001, 30216253002, 30216253003, 30216253004, 30216253005, 30216253006, 30216253007

METHOD BLANK: 1262380 Matrix: Water

Associated Lab Samples: 30216253001, 30216253002, 30216253003, 30216253004, 30216253005, 30216253006, 30216253007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0396 ± 0.117 (0.291) C:98% T:NA	pCi/L	04/27/17 08:21	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0550 Plant Bowen

Pace Project No.: 30216253

QC Batch: 256378

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30216253001, 30216253002, 30216253003, 30216253004, 30216253005, 30216253006, 30216253007

METHOD BLANK: 1263005

Matrix: Water

Associated Lab Samples: 30216253001, 30216253002, 30216253003, 30216253004, 30216253005, 30216253006, 30216253007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0143 ± 0.302 (0.709) C:82% T:77%	pCi/L	04/29/17 13:28	

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: AAD0550 Plant Bowen  
Pace Project No.: 30216253

### 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

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

WO#: 30216253



30216253



Chain of Custody

Workorder: AAD0550

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 5/9/2017

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWA-2	G	4/13/2017 10:50	AAD0550-01	GW	2				X	001
2	BGWA-6	G	4/13/2017 12:10	AAD0550-02	GW	2				X	002
3	BGWA-28	G	4/13/2017 12:10	AAD0550-03	GW	2				X	003
4	BGWA-26	G	4/13/2017 14:00	AAD0550-04	GW	2				X	004
5	BGWA-27	G	4/13/2017 14:25	AAD0550-05	GW	2				X	005
6	BGWC-8	G	4/14/2017 10:16	AAD0550-06	GW	2				X	006
7	BGWA-29	G	4/14/2017 11:05	AAD0550-07	GW	2				X	007
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>M. Almon</i>	4/14/17	<i>Whitney Rose Pace</i>	4-17-17/0905	
2					
3					

Cooler Temperature on Receipt <u>NA</u> °C	Custody Seal <u>Y</u> or <u>N</u>	Received on Ice <u>Y</u> or <u>N</u>	Sample Intact <u>Y</u> or <u>N</u>
--	-----------------------------------	--------------------------------------	------------------------------------

\*\*\*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.

30216253

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: <u>Southern Company Services</u>				ANALYSIS REQUESTED										LAB NUMBER	CONTAINER TYPE		PRESERVATION																																																																																									
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE BDRS Atlanta, GA 30308</u>				CONTAINER TYPE:	P	P	P	P									P - PLASTIC	1 - HCl, ≤6°C																																																																																								
REPORT TO: <u>Joju Abraham</u> CC: <u>Maria Padilla</u>				PRESERVATION:	3	3	7	3								A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C																																																																																									
REQUESTED COMPLETION DATE: _____ PO#: <u>GPL1068419R</u>				# of												G - CLEAR GLASS	3 - HNO <sub>3</sub>																																																																																									
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond CCR &amp; Bowen State GW</u>				CONTAINERS											V - VOA VIAL	4 - NaOH, ≤6°C																																																																																										
PROJECT #: _____															S - STERILE	5 - NaOH/ZnAc, ≤6°C																																																																																										
Collection DATE	Collection TIME	MATRIX CODE*	COMP												O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C																																																																																										
																7 - ≤6°C not frozen																																																																																										
															*MATRIX CODES:																																																																																											
															DW - DRINKING WATER	S - SOIL																																																																																										
														WW - WASTEWATER	SL - SLUDGE																																																																																											
														GW - GROUNDWATER	SD - SOLID																																																																																											
														SW - SURFACE WATER	A - AIR																																																																																											
														ST - STORM WATER	L - LIQUID																																																																																											
														W - WATER	P - PRODUCT																																																																																											
REMARKS/ADDITIONAL INFORMATION																																																																																																										
<table border="1"> <tr> <td>4/13/17</td> <td>1050</td> <td>GW</td> <td>X</td> <td>B6WA-2</td> <td>4</td> <td>X</td> <td>X</td> <td>1</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <td>4/13/17</td> <td>1210</td> <td>GW</td> <td>X</td> <td>B6WA-6</td> <td>4</td> <td>X</td> <td>X</td> <td>1</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2</td> </tr> <tr> <td>4/13/17</td> <td>1210</td> <td>GW</td> <td>X</td> <td>B6WA-28</td> <td>4</td> <td>X</td> <td>X</td> <td>1</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3</td> </tr> <tr> <td>4/13/17</td> <td>1400</td> <td>GW</td> <td>X</td> <td>B6WA-26</td> <td>4</td> <td>X</td> <td>X</td> <td>1</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4</td> </tr> <tr> <td>4/13/17</td> <td>1425</td> <td>GW</td> <td>X</td> <td>B6WA-27</td> <td>4</td> <td>X</td> <td>X</td> <td>1</td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> </tr> </table>																	4/13/17	1050	GW	X	B6WA-2	4	X	X	1	2								1	4/13/17	1210	GW	X	B6WA-6	4	X	X	1	2								2	4/13/17	1210	GW	X	B6WA-28	4	X	X	1	2								3	4/13/17	1400	GW	X	B6WA-26	4	X	X	1	2								4	4/13/17	1425	GW	X	B6WA-27	4	X	X	1	2								5
4/13/17	1050	GW	X	B6WA-2	4	X	X	1	2								1																																																																																									
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4/13/17	1425	GW	X	B6WA-27	4	X	X	1	2								5																																																																																									
SAMPLED BY AND TITLE: <u>Robert Mull / Michael Patinkin</u>				DATE/TIME: <u>4/13/17 1515</u>	RELINQUISHED BY: <u>[Signature]</u>				DATE/TIME: <u>04/14/17 1430</u>	FOR LAB USE ONLY																																																																																																
RECEIVED BY: <u>[Signature]</u>				DATE/TIME: _____	RELINQUISHED BY: _____				DATE/TIME: _____	LAB #: <u>AA00550</u>																																																																																																
RECEIVED BY LAB: <u>[Signature]</u>				DATE/TIME: <u>04/14/17 1430</u>	SAMPLE SHIPPED VIA: _____				Entered into LIMS: <u>[Signature]</u>																																																																																																	
pH checked: Yes No NA				Temperature: _____				COURIER: _____				Tracking #: _____																																																																																														
Custody Seal: Intact Broken Not Present				COURIER: _____				COURIER: _____				COURIER: _____																																																																																														

CHAIN OF CUSTODY RECORD



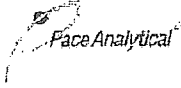
Pace Analytical Services, LLC - Atlanta GA  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>				ANALYSIS REQUESTED				LAB ID RECEIVED	CONTAINER TYPE		PRESERVATION			
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308</u>				CONTAINER TYPE: <u>3</u>	<u>3</u>	<u>7</u>	<u>3</u>			P - PLASTIC	1 - HCl, ≤6°C			
REPORT TO: <u>Joia Abraham</u> CC: <u>Maria Padilla</u>				PRESERVATION: <u>3</u>	<u>3</u>	<u>7</u>	<u>3</u>			A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C			
REQUESTED COMPLETION DATE: _____				# of						G - CLEAR GLASS	3 - HNO <sub>3</sub>			
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond</u>				CONTAINERS						V - VOA VIAL	4 - NaOH, ≤6°C			
PROJECT #: _____										S - STERILE	5 - NaOH/ZnAc, ≤6°C			
Collection DATE	Collection TIME	MATRIX CODE*	COMP		GRAPE	SAMPLE IDENTIFICATION					O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C		
												7 - ≤6°C not frozen		
<u>4/14/17</u>	<u>1016</u>	<u>GW</u>			<u>X</u>	<u>B6WL-8</u>	<u>4</u>					*MATRIX CODES:		
<u>4/14/17</u>	<u>1105</u>	<u>GW</u>			<u>X</u>	<u>B6WA-29</u>	<u>4</u>					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			
SAMPLED BY AND TITLE: <u>Robert Hill / Michael Patrick</u>				DATE/TIME: <u>4/14/17 1200</u>	RELINQUISHED BY: <u>[Signature]</u>	DATE/TIME: <u>4/15/17 1430</u>	REMARKS/ADDITIONAL INFORMATION							
RECEIVED BY: <u>[Signature]</u>				DATE/TIME: _____	RELINQUISHED BY: _____	DATE/TIME: _____	FOR LAB USE ONLY							
RECEIVED BY LAB: <u>[Signature]</u>				DATE/TIME: <u>4/14/17 1430</u>	SAMPLE SHIPPED VIA: <u>UPS</u>	DATE/TIME: _____	LAB #: <u>AAD0550</u>							
Temp. Checked: <u>Yes</u> No NA				Temp. Mon: <u>30</u> Non <u>32</u> Max	Custody Seal: <u>Intact</u> Broken Not Present N/A	# of Coolers: _____	Entered into LIMS: <u>[Signature]</u>							
							Tracking #: _____							

Sample Condition Upon Receipt Pittsburgh

ANL



Client Name: Pace, GA

Project # 30216253

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5103 7243

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 \_\_\_\_\_ °C    Correction Factor: \_\_\_\_\_ °C    Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: Ugah 4-17-17

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: <u>W1</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.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PHLZ</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>Ugah</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>Ugah</u> Date: <u>4-17-17</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.



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 4/27/2017  
Worklist: 35287  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1263005
MB concentration:	-0.014
M/B Counting Uncertainty:	0.302
MB MDC:	0.709
MB Numerical Performance Indicator:	-0.09
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS (Y or N)?	Y
	LCS35287	LCS35287	
Count Date:	4/29/2017	4/29/2017	
Spike I.D.:	17-005	17-005	
Spike Concentration (pCi/mL):	24.664	24.664	
Volume Used (mL):	0.20	0.20	
Aliquot Volume (L, g, F):	0.809	0.817	
Target Conc. (pCi/L, g, F):	6.095	6.041	
Uncertainty (Calculated):	0.439	0.435	
Result (pCi/L, g, F):	6.050	5.551	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.733	0.627	
Numerical Performance Indicator:	-0.10	-1.26	
Percent Recovery:	99.26%	91.90%	
Status vs Numerical Indicator:	N/A	N/A	
Status vs Recovery:	Pass	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS35287	
Duplicate Sample I.D.:	LCSD35287	
Sample Result (pCi/L, g, F):	6.050	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.733	
Sample Duplicate Result (pCi/L, g, F):	5.551	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.627	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	1.014	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	7.71%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*JLW*





## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: LAL  
Date: 4/26/2017  
Worklist: 35270  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID:	1262380
MB concentration:	0.040
M/B Counting Uncertainty:	0.117
MB MDC:	0.291
MB Numerical Performance Indicator:	0.67
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS35270	LCS35270
Count Date:	4/28/2017	
Spike I.D.:	17-003	
Spike Concentration (pCi/mL):	38.229	
Volume Used (mL):	0.25	
Aliquot Volume (L, g, F):	0.506	
Target Conc. (pCi/L, g, F):	18.891	
Uncertainty (Calculated):	0.889	
Result (pCi/L, g, F):	15.356	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.734	
Numerical Performance Indicator:	-6.01	
Percent Recovery:	81.29%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30216664001	
Duplicate Sample I.D.:	30216664001DUP	
Sample Result (pCi/L, g, F):	0.130	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.108	
Sample Duplicate Result (pCi/L, g, F):	0.217	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.103	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.141	
Duplicate RPD:	50.05%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LAL*

*[Signature]*



**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: AAD0653**

**April 25, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 25, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-9	AAD0653-01	Ground Water	04/17/17 13:00	04/18/17 14:45
BGWC-30	AAD0653-02	Ground Water	04/17/17 10:35	04/18/17 14:45
Dup-1	AAD0653-03	Ground Water	04/17/17 00:00	04/18/17 14:45
FBL041717	AAD0653-04	Water	04/17/17 15:25	04/18/17 14:45
EQBL041717	AAD0653-05	Water	04/17/17 15:35	04/18/17 14:45



**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

April 25, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0653

Project: CCR Event

Client ID: BGWC-9

Lab Number ID: AAD0653-01

Date/Time Sampled: 4/17/2017 1:00:00PM

Date/Time Received: 4/18/2017 2:45:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	388	25	10	mg/L	SM 2540 C		1	04/21/17 13:33	04/21/17 13:33	7040662	JPT
<b>Inorganic Anions</b>											
Chloride	35	0.25	0.01	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 14:30	7040608	RLC
Fluoride	0.14	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 14:30	7040608	RLC
Sulfate	110	10	0.92	mg/L	EPA 300.0		10	04/20/17 10:01	04/21/17 11:42	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Arsenic	0.0028	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Barium	0.0318	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Boron	0.675	0.0400	0.0060	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Calcium	65.6	25.0	0.522	mg/L	EPA 6020B		50	04/20/17 09:05	04/21/17 10:26	7040597	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Molybdenum	0.0025	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Lithium	0.0013	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:20	7040597	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/19/17 09:30	04/19/17 13:29	7040534	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

April 25, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0653

Project: CCR Event

Client ID: BGWC-30

Lab Number ID: AAD0653-02

Date/Time Sampled: 4/17/2017 10:35:00AM

Date/Time Received: 4/18/2017 2:45:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2180	25	10	mg/L	SM 2540 C		1	04/21/17 13:33	04/21/17 13:33	7040662	JPT
<b>Inorganic Anions</b>											
Chloride	770	25	1.3	mg/L	EPA 300.0		100	04/20/17 10:01	04/21/17 12:03	7040608	RLC
Fluoride	0.36	0.30	0.004	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 15:32	7040608	RLC
Sulfate	400	100	9.2	mg/L	EPA 300.0		100	04/20/17 10:01	04/21/17 12:03	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Arsenic	0.0017	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Barium	0.192	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Boron	21.8	2.00	0.302	mg/L	EPA 6020B		50	04/20/17 09:05	04/21/17 10:37	7040597	CSW
Cadmium	0.0002	0.0010	0.00006	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Calcium	415	25.0	0.522	mg/L	EPA 6020B		50	04/20/17 09:05	04/21/17 10:37	7040597	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Cobalt	0.0009	0.0100	0.0005	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Molybdenum	0.0178	0.0100	0.0006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Selenium	0.0082	0.0100	0.0014	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Thallium	0.0007	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Lithium	0.0169	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:32	7040597	CSW
Mercury	0.00004	0.00050	0.000041	mg/L	EPA 7470A	J	1	04/19/17 09:30	04/19/17 13:32	7040534	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 25, 2017

**Report No.:** AAD0653

**Project:** CCR Event

**Client ID:** Dup-1

**Lab Number ID:** AAD0653-03

**Date/Time Sampled:** 4/17/2017 12:00:00AM

**Date/Time Received:** 4/18/2017 2:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2240	25	10	mg/L	SM 2540 C		1	04/21/17 13:33	04/21/17 13:33	7040662	JPT
<b>Inorganic Anions</b>											
Chloride	750	25	1.3	mg/L	EPA 300.0		100	04/20/17 10:01	04/21/17 12:23	7040608	RLC
Fluoride	0.33	0.30	0.004	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 15:53	7040608	RLC
Sulfate	400	100	9.2	mg/L	EPA 300.0		100	04/20/17 10:01	04/21/17 12:23	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Arsenic	0.0018	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Barium	0.190	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Boron	23.8	2.00	0.302	mg/L	EPA 6020B		50	04/20/17 09:05	04/21/17 10:49	7040597	CSW
Cadmium	0.0002	0.0010	0.00006	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Calcium	416	25.0	0.522	mg/L	EPA 6020B		50	04/20/17 09:05	04/21/17 10:49	7040597	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Cobalt	0.0008	0.0100	0.0005	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Molybdenum	0.0174	0.0100	0.0006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Selenium	0.0074	0.0100	0.0014	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Thallium	0.0006	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Lithium	0.0169	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:43	7040597	CSW
Mercury	0.00004	0.00050	0.000041	mg/L	EPA 7470A	J	1	04/19/17 09:30	04/19/17 13:34	7040534	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 25, 2017

Report No.: AAD0653

Project: CCR Event

Client ID: FBL041717

Lab Number ID: AAD0653-04

Date/Time Sampled: 4/17/2017 3:25:00PM

Date/Time Received: 4/18/2017 2:45:00PM

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	04/21/17 13:33	04/21/17 13:33	7040662	JPT
<b>Inorganic Anions</b>											
Chloride	0.21	0.25	0.01	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 16:13	7040608	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 16:13	7040608	RLC
Sulfate	0.10	1.0	0.09	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 16:13	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Boron	0.0260	0.0400	0.0060	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Calcium	ND	0.500	0.0104	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 10:55	7040597	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/19/17 09:30	04/19/17 13:36	7040534	MTC



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Attention: Mr. Joju Abraham

April 25, 2017

Report No.: AAD0653  
 Client ID: EQBL041717

Project: CCR Event  
 Lab Number ID: AAD0653-05

Date/Time Sampled: 4/17/2017 3:35:00PM

Date/Time Received: 4/18/2017 2:45:00PM

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	04/21/17 13:33	04/21/17 13:33	7040662	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 17:56	7040608	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 17:56	7040608	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 17:56	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Boron	0.0067	0.0400	0.0060	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Calcium	0.0153	0.500	0.0104	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:37	7040597	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/19/17 09:30	04/19/17 13:39	7040534	MTC



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Attention: Mr. Joju Abraham

April 25, 2017

**Report No.: AAD0653**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040662 - SM 2540 C</b>											
<b>Blank (7040662-BLK1)</b>						Prepared & Analyzed: 04/21/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7040662-BS1)</b>						Prepared & Analyzed: 04/21/17					
Total Dissolved Solids	407	25	10	mg/L	400.00		102	84-108			
<b>Duplicate (7040662-DUP1)</b>						Source: AAD0653-05 Prepared & Analyzed: 04/21/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7040662-DUP2)</b>						Source: AAD0665-01 Prepared & Analyzed: 04/21/17					
Total Dissolved Solids	958	25	10	mg/L		944			1	10	



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April 25, 2017

**Report No.: AAD0653**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040608 - EPA 300.0</b>											
<b>Blank (7040608-BLK1)</b>						Prepared & Analyzed: 04/20/17					
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 (7040608-BS1)</b>						Prepared & Analyzed: 04/20/17					
Chloride	9.73	0.25	0.01	mg/L	10.010		97	90-110			
Fluoride	9.95	0.30	0.004	mg/L	10.020		99	90-110			
Sulfate	9.85	1.0	0.09	mg/L	10.020		98	90-110			
<b>Matrix Spike (7040608-MS1)</b>						Source: AAD0653-01 Prepared & Analyzed: 04/20/17					
Chloride	41.5	0.25	0.01	mg/L	10.010	35.0	64	90-110			QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.14	100	90-110			
Sulfate	101	1.0	0.09	mg/L	10.020	102	NR	90-110			QM-02
<b>Matrix Spike (7040608-MS2)</b>						Source: AAD0711-07 Prepared & Analyzed: 04/20/17					
Chloride	119	0.25	0.01	mg/L	10.010	122	NR	90-110			QM-02
Fluoride	10.3	0.30	0.004	mg/L	10.020	0.005	103	90-110			
Sulfate	322	1.0	0.09	mg/L	10.020	340	NR	90-110			QM-02
<b>Matrix Spike Dup (7040608-MSD1)</b>						Source: AAD0653-01 Prepared & Analyzed: 04/20/17					
Chloride	41.5	0.25	0.01	mg/L	10.010	35.0	64	90-110	0.02	15	QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.14	100	90-110	0.4	15	
Sulfate	101	1.0	0.09	mg/L	10.020	102	NR	90-110	0.06	15	QM-02





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April 25, 2017

**Report No.: AAD0653**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040534 - EPA 7470A</b>											
<b>Blank (7040534-BLK1)</b> Prepared & Analyzed: 04/19/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7040534-BS1)</b> Prepared & Analyzed: 04/19/17											
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3		96	80-120			
<b>Matrix Spike (7040534-MS1)</b> Source: AAD0601-01 Prepared & Analyzed: 04/19/17											
Mercury	0.00229	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (7040534-MSD1)</b> Source: AAD0601-01 Prepared & Analyzed: 04/19/17											
Mercury	0.00226	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125	1	20	
<b>Post Spike (7040534-PS1)</b> Source: AAD0601-01 Prepared & Analyzed: 04/19/17											
Mercury	1.72			ug/L	1.6667	-0.00110	103	80-120			
<b>Batch 7040597 - EPA 3005A</b>											
<b>Blank (7040597-BLK1)</b> Prepared & Analyzed: 04/20/17											
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	0.0015	0.0100	0.0013	mg/L							J
Lithium	ND	0.0500	0.0011	mg/L							



**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

April 25, 2017

**Report No.: AAD0653**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040597 - EPA 3005A</b>											
<b>LCS (7040597-BS1)</b>						Prepared & Analyzed: 04/20/17					
Antimony	0.0996	0.0030	0.0003	mg/L	0.10000		100	80-120			
Arsenic	0.0964	0.0050	0.0004	mg/L	0.10000		96	80-120			
Barium	0.0949	0.0100	0.0003	mg/L	0.10000		95	80-120			
Beryllium	0.0972	0.0030	0.00007	mg/L	0.10000		97	80-120			
Boron	1.02	0.0400	0.0060	mg/L	1.0000		102	80-120			
Cadmium	0.100	0.0010	0.00006	mg/L	0.10000		100	80-120			
Calcium	1.02	0.500	0.0104	mg/L	1.0000		102	80-120			
Chromium	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120			
Cobalt	0.0985	0.0100	0.0005	mg/L	0.10000		98	80-120			
Copper	0.100	0.0250	0.0003	mg/L	0.10000		100	80-120			
Lead	0.0951	0.0050	0.00007	mg/L	0.10000		95	80-120			
Molybdenum	0.101	0.0100	0.0006	mg/L	0.10000		101	80-120			
Nickel	0.101	0.0100	0.0003	mg/L	0.10000		101	80-120			
Selenium	0.0998	0.0100	0.0014	mg/L	0.10000		100	80-120			
Silver	0.0976	0.0100	0.0003	mg/L	0.10000		98	80-120			
Thallium	0.0957	0.0010	0.00005	mg/L	0.10000		96	80-120			
Vanadium	0.103	0.0100	0.0014	mg/L	0.10000		103	80-120			
Zinc	0.103	0.0100	0.0013	mg/L	0.10000		103	80-120			
Lithium	0.106	0.0500	0.0011	mg/L	0.10000		106	80-120			
<b>Matrix Spike (7040597-MS1)</b>						Source: AAD0601-02 Prepared & Analyzed: 04/20/17					
Antimony	0.100	0.0030	0.0003	mg/L	0.10000	ND	100	75-125			
Arsenic	0.0981	0.0050	0.0004	mg/L	0.10000	ND	98	75-125			
Barium	0.119	0.0100	0.0003	mg/L	0.10000	0.0233	96	75-125			
Beryllium	0.0975	0.0030	0.00007	mg/L	0.10000	ND	97	75-125			
Boron	1.02	0.0400	0.0060	mg/L	1.0000	ND	102	75-125			
Cadmium	0.101	0.0010	0.00006	mg/L	0.10000	ND	101	75-125			
Calcium	4.26	0.500	0.0104	mg/L	1.0000	3.34	92	75-125			
Chromium	0.109	0.0100	0.0003	mg/L	0.10000	0.0016	107	75-125			
Cobalt	0.100	0.0100	0.0005	mg/L	0.10000	ND	100	75-125			
Copper	0.101	0.0250	0.0003	mg/L	0.10000	ND	101	75-125			
Lead	0.0979	0.0050	0.00007	mg/L	0.10000	0.0001	98	75-125			
Molybdenum	0.105	0.0100	0.0006	mg/L	0.10000	ND	105	75-125			
Nickel	0.103	0.0100	0.0003	mg/L	0.10000	0.0006	103	75-125			
Selenium	0.103	0.0100	0.0014	mg/L	0.10000	ND	103	75-125			
Silver	0.101	0.0100	0.0003	mg/L	0.10000	ND	101	75-125			
Thallium	0.0979	0.0010	0.00005	mg/L	0.10000	ND	98	75-125			
Vanadium	0.109	0.0100	0.0014	mg/L	0.10000	0.0014	108	75-125			
Zinc	0.105	0.0100	0.0013	mg/L	0.10000	0.0030	103	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

April 25, 2017

**Report No.: AAD0653**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040597 - EPA 3005A</b>											
<b>Matrix Spike Dup (7040597-MSD1)</b>			<b>Source: AAD0601-02</b>			<b>Prepared: 04/20/17 Analyzed: 04/21/17</b>					
Antimony	0.107	0.0030	0.0003	mg/L	0.10000	ND	107	75-125	6	20	
Arsenic	0.101	0.0050	0.0004	mg/L	0.10000	ND	101	75-125	3	20	
Barium	0.127	0.0100	0.0003	mg/L	0.10000	0.0233	104	75-125	7	20	
Beryllium	0.103	0.0030	0.00007	mg/L	0.10000	ND	103	75-125	5	20	
Boron	1.03	0.0400	0.0060	mg/L	1.0000	ND	103	75-125	1	20	
Cadmium	0.104	0.0010	0.00006	mg/L	0.10000	ND	104	75-125	3	20	
Calcium	4.43	0.500	0.0104	mg/L	1.0000	3.34	109	75-125	4	20	
Chromium	0.109	0.0100	0.0003	mg/L	0.10000	0.0016	107	75-125	0.05	20	
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125	2	20	
Copper	0.101	0.0250	0.0003	mg/L	0.10000	ND	101	75-125	0.7	20	
Lead	0.0993	0.0050	0.00007	mg/L	0.10000	0.0001	99	75-125	1	20	
Molybdenum	0.104	0.0100	0.0006	mg/L	0.10000	ND	104	75-125	1	20	
Nickel	0.104	0.0100	0.0003	mg/L	0.10000	0.0006	104	75-125	1	20	
Selenium	0.104	0.0100	0.0014	mg/L	0.10000	ND	104	75-125	0.2	20	
Silver	0.0994	0.0100	0.0003	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.0993	0.0010	0.00005	mg/L	0.10000	ND	99	75-125	1	20	
Vanadium	0.105	0.0100	0.0014	mg/L	0.10000	0.0014	103	75-125	4	20	
Zinc	0.101	0.0100	0.0013	mg/L	0.10000	0.0030	98	75-125	4	20	
Lithium	0.101	0.0500	0.0011	mg/L	0.10000	ND	101	75-125	4	20	
<b>Post Spike (7040597-PS1)</b>			<b>Source: AAD0601-02</b>			<b>Prepared: 04/20/17 Analyzed: 04/21/17</b>					
Antimony	100			ug/L	100.00	0.146	100	80-120			
Arsenic	106			ug/L	100.00	0.0354	106	80-120			
Barium	128			ug/L	100.00	23.3	104	80-120			
Beryllium	101			ug/L	100.00	0.0367	101	80-120			
Boron	1060			ug/L	1000.0	5.19	105	80-120			
Cadmium	104			ug/L	100.00	0.0157	104	80-120			
Calcium	4350			ug/L	1000.0	3340	101	80-120			
Chromium	111			ug/L	100.00	1.62	109	80-120			
Cobalt	103			ug/L	100.00	0.160	103	80-120			
Copper	109			ug/L	100.00	0.173	109	80-120			
Lead	101			ug/L	100.00	0.121	101	80-120			
Molybdenum	108			ug/L	100.00	0.158	107	80-120			
Nickel	112			ug/L	100.00	0.584	112	80-120			
Selenium	100			ug/L	100.00	1.02	99	80-120			
Silver	101			ug/L	100.00	-0.0007	101	80-120			
Thallium	102			ug/L	100.00	0.0194	102	80-120			
Vanadium	109			ug/L	100.00	1.38	108	80-120			
Zinc	106			ug/L	100.00	2.98	104	80-120			
Lithium	108			ug/L	100.00	0.381	107	80-120			



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 25, 2017

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## Legend

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### 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

**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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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 25, 2017

## Report Notes

The sample type was not listed on the COC. CFH

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:		ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION										
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:	PRESERVATION:		# of	C	O	N	T	A	I		N	E	R	P	A	S	T						
Southern Company Services		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
241 Ralph McGill Blvd NE B1085 Atlanta, GA 30308		3	7	3																					
REPORT TO: Joey Abraham		CONTAINERS																							
REQUESTED COMPLETION DATE: 6/21/0684198		Mobile App. III v.11 EPA 600/4-70 C1F504 EPA 305 EPA 816-D-04-001 Rudman 226428 SUD-846 931519320																							
PROJECT NAME/STATE: Plant Based AsU Prod. CO2																									
PROJECT #:																									
Collection DATE	Collection TIME	MATRIX CODE*	C	O	M	P	G	R	A	B	SAMPLE IDENTIFICATION											REMARKS/ADDITIONAL INFORMATION			
4/17/17	1300	GW									BOWC-9										4	1	1	2	1
4/17/17	1035	GW									BOWC-30										6	1	1	4	2
4/17/17	-	GW									DUP-1										4	1	1	2	3
4/17/17	1525	W									EPA04177										4	1	1	2	4
4/17/17	1535	W									EPA04177										4	1	1	2	5

SAMPLED BY AND TITLE: RECEIVED BY: RECEIVED BY LAB: DATE/TIME: 4/17/17 @ 1644 RELINQUISHED BY: DATE/TIME: 0655/4/18/17 LAB #: FOR LAB USE ONLY AAD0653

checked: No NA Yes No NA Temperature: 48 Min: 48 Max: SAMPLE SHIPPED VIA: COURIER CLIENT OTHER FS Tracking #: Entered into LIMS: Custody Seal: Intact Broken Not Present N/A # of Coolers: Cooler ID:

Page 15 of 16

received by: Mike Nguyen 4/18/17 1048



**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: 4/19/2017 3:17:17PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 04/18/17 14:45

**Work Order:** AAD0653

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 22

**Minimum Temp(C):** 4.0

**Maximum Temp(C):** 4.0

**Custody Seal(s) Used:** Yes

**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	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:**

The sample type was not listed on the COC. CFH

May 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAD0653 Plant Bowen  
Pace Project No.: 30216666

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on April 20, 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: AAD0653 Plant Bowen  
Pace Project No.: 30216666

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAD0653 Plant Bowen

Pace Project No.: 30216666

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30216666001	BGWC-9	Water	04/17/17 13:00	04/20/17 10:30
30216666002	BGWC-30	Water	04/17/17 10:35	04/20/17 10:30
30216666003	Dup-1	Water	04/17/17 00:00	04/20/17 10:30
30216666004	FBL041717	Water	04/17/17 15:25	04/20/17 10:30
30216666005	EQBL041717	Water	04/17/17 15:35	04/20/17 10:30

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAD0653 Plant Bowen

Pace Project No.: 30216666

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30216666001	BGWC-9	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30216666002	BGWC-30	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30216666003	Dup-1	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30216666004	FBL041717	EPA 9315	LAL	1
		EPA 9320	JJY	1
		Total Radium Calculation	CMC	1
30216666005	EQBL041717	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	CMC	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAD0653 Plant Bowen

Pace Project No.: 30216666

Sample: <b>BGWC-9</b>		Lab ID: <b>30216666001</b>	Collected: 04/17/17 13:00	Received: 04/20/17 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.467 ± 0.236 (0.290)</b>		pCi/L	04/28/17 08:29	13982-63-3	
		<b>C:79% T:NA</b>					
Radium-228	EPA 9320	<b>0.297 ± 0.283 (0.577)</b>		pCi/L	04/29/17 13:29	15262-20-1	
		<b>C:84% T:88%</b>					
Total Radium	Total Radium Calculation	<b>0.764 ± 0.519 (0.867)</b>		pCi/L	05/10/17 09:45	7440-14-4	

Sample: <b>BGWC-30</b>		Lab ID: <b>30216666002</b>	Collected: 04/17/17 10:35	Received: 04/20/17 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.96 ± 0.471 (0.235)</b>		pCi/L	04/28/17 08:16	13982-63-3	
		<b>C:100% T:NA</b>					
Radium-228	EPA 9320	<b>0.774 ± 0.387 (0.674)</b>		pCi/L	04/29/17 13:29	15262-20-1	
		<b>C:84% T:84%</b>					
Total Radium	Total Radium Calculation	<b>2.73 ± 0.858 (0.909)</b>		pCi/L	05/10/17 09:45	7440-14-4	

Sample: <b>Dup-1</b>		Lab ID: <b>30216666003</b>	Collected: 04/17/17 00:00	Received: 04/20/17 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.76 ± 0.445 (0.259)</b>		pCi/L	04/28/17 08:17	13982-63-3	
		<b>C:97% T:NA</b>					
Radium-228	EPA 9320	<b>1.12 ± 0.420 (0.618)</b>		pCi/L	04/29/17 13:29	15262-20-1	
		<b>C:82% T:87%</b>					
Total Radium	Total Radium Calculation	<b>2.88 ± 0.865 (0.877)</b>		pCi/L	05/10/17 09:45	7440-14-4	

Sample: <b>FBL041717</b>		Lab ID: <b>30216666004</b>	Collected: 04/17/17 15:25	Received: 04/20/17 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>-0.0403 ± 0.0405 (0.142)</b>		pCi/L	04/28/17 12:01	13982-63-3	
		<b>C:103% T:NA</b>					
Radium-228	EPA 9320	<b>0.191 ± 0.399 (0.882)</b>		pCi/L	05/04/17 12:06	15262-20-1	
		<b>C:81% T:67%</b>					
Total Radium	Total Radium Calculation	<b>0.191 ± 0.440 (1.02)</b>		pCi/L	05/10/17 09:45	7440-14-4	

Sample: <b>EQBL041717</b>		Lab ID: <b>30216666005</b>	Collected: 04/17/17 15:35	Received: 04/20/17 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.00888 ± 0.0735 (0.199)</b>		pCi/L	04/29/17 17:31	13982-63-3	
		<b>C:101% T:NA</b>					
Radium-228	EPA 9320	<b>0.673 ± 0.467 (0.907)</b>		pCi/L	05/04/17 12:06	15262-20-1	
		<b>C:86% T:63%</b>					

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAD0653 Plant Bowen  
Pace Project No.: 30216666

**Sample: EQBL041717**      **Lab ID: 30216666005**      Collected: 04/17/17 15:35      Received: 04/20/17 10:30      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>0.682 ± 0.541 (1.11)</b>	pCi/L	05/10/17 09:45	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0653 Plant Bowen

Pace Project No.: 30216666

QC Batch: 256244 Analysis Method: EPA 9315

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

Associated Lab Samples: 30216666001, 30216666002, 30216666003, 30216666004

METHOD BLANK: 1262380 Matrix: Water

Associated Lab Samples: 30216666001, 30216666002, 30216666003, 30216666004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0396 ± 0.117 (0.291) C:98% T:NA	pCi/L	04/27/17 08:21	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0653 Plant Bowen

Pace Project No.: 30216666

QC Batch: 256301

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30216666005

METHOD BLANK: 1262529

Matrix: Water

Associated Lab Samples: 30216666005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0102 ± 0.0679 (0.185) C:100% T:NA	pCi/L	04/29/17 17:31	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0653 Plant Bowen

Pace Project No.: 30216666

QC Batch: 256379

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30216666004, 30216666005

METHOD BLANK: 1263006

Matrix: Water

Associated Lab Samples: 30216666004, 30216666005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.389 ± 0.383 (0.785) C:82% T:66%	pCi/L	05/04/17 12:06	

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.

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0653 Plant Bowen

Pace Project No.: 30216666

QC Batch: 256378

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30216666001, 30216666002, 30216666003

METHOD BLANK: 1263005

Matrix: Water

Associated Lab Samples: 30216666001, 30216666002, 30216666003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0143 ± 0.302 (0.709) C:82% T:77%	pCi/L	04/29/17 13:28	

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### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: AAD0653 Plant Bowen

Pace Project No.: 30216666

### 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: AAD0653

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 5/12/2017

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

WO#: 30216666

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HN03					
1	BGWC-9	G	4/17/2017 13:00	AAD0653-01	GW	2				X	
2	BGWC-30	G	4/17/2017 10:35	AAD0653-02	GW	4				X	001
3	Dup-1	G	4/17/2017 0:00	AAD0653-03	GW	2				X	002
4	FBL041717	G	4/17/2017 15:25	AAD0653-04	GW	2				X	003
5	EQBL041717	G	4/17/2017 15:35	AAD0653-05	GW	2				X	004
6											005
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	4/19/17 1730	<i>[Signature]</i>	4-20-17 1030	
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 COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

30216666

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:					ANALYSIS REQUESTED					L A B I D N U M B E R	CONTAINER TYPE	PRESERVATION
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:							
REPORT TO:					PRESERVATION:							
REQUESTED COMPLETION DATE:					# of							
PROJECT NAME/STATE:					CONTAINERS							
PROJECT #:												
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION							
4/12/17	1300	GW			2017-9	4	1	1	2			1
4/17/17	1035	GW			BLW-30	6	1	1	4			2
4/17/17	-	GW			DW-1	4	1	1	2			3
4/17/17	1525	W			EBD-177	4	1	1	2			4
4/17/17	1535	W			EBD-177	4	1	1	2			5

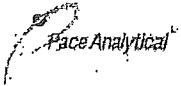
SAMPLED BY AND TITLE:	DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	FOR LAB USE ONLY
RECEIVED BY:	DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	LAB #: AA00653
RECEIVED BY LAB:	DATE/TIME:	SAMPLE SHIPPED VIA:	DATE/TIME:	Entered into LIMS: GH
pH checked:	Temperature:	UPS FED-EX USPS COURIER CLIENT OTHER FS	Cooler ID:	Tracking #:
Yes No NA	Min: 4°C Max:	Intact Broken Not Present N/A		

Received by: Mike Nguyen 4/18/17 1048

Sample Condition Upon Receipt Pittsburgh

30216666

RTB



Client Name: Pace, GA Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking # 6812 5103 8011

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ADRB 4-20-17

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.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PH12</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>ADRB</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>ADRB</u> Date: <u>4-20-17</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

Test: Ra-228  
Analyst: JLW  
Date: 4/27/2017  
Worklist: 35287  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1263005	
MB concentration:	-0.014	
M/B Counting Uncertainty:	0.302	
MB MDC:	0.709	
MB Numerical Performance Indicator:	-0.09	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	Y
	LCSD35287	LCSD35287
Count Date:	4/29/2017	4/29/2017
Spike I.D.:	17-005	17-005
Spike Concentration (pCi/mL):	24.664	24.664
Volume Used (mL):	0.20	0.20
Aliquot Volume (L, g, F):	0.809	0.817
Target Conc. (pCi/L, g, F):	6.095	6.041
Uncertainty (Calculated):	0.439	0.435
Result (pCi/L, g, F):	6.050	5.551
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.733	0.627
Numerical Performance Indicator:	-0.10	-1.26
Percent Recovery:	99.26%	91.90%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	LCSD35287	Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
Duplicate Sample I.D.:	LCSD35287	
Sample Result (pCi/L, g, F):	6.050	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.733	
Sample Duplicate Result (pCi/L, g, F):	5.551	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.627	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	1.014	
(Based on the LCSD/LCSD Percent Recoveries) Duplicate RPD:	7.71%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*04/27/17*





## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JJY  
Date: 4/28/2017  
Worklist: 35288  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1263006	
MB concentration:	0.389	
M/B Counting Uncertainty:	0.376	
MB MDC:	0.785	
MB Numerical Performance Indicator:	2.02	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS35288	LCSD35288
Count Date:	5/4/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	24.624	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.808	
Target Conc. (pCi/L, g, F):	6.095	
Uncertainty (Calculated):	0.439	
Result (pCi/L, g, F):	6.974	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.742	
Numerical Performance Indicator:	2.00	
Percent Recovery:	114.43%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30216750002	Enter Duplicate sample IDs if other than LCSD/LCSD in the space below.
Duplicate Sample I.D.	30216750002DUP	
Sample Result (pCi/L, g, F):	2.058	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.516	
Sample Duplicate Result (pCi/L, g, F):	2.615	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.526	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.480	
Duplicate RPD:	23.81%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*Ames JJJ*



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 4/26/2017  
Worklist: 35277  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1262529
MB concentration:	0.010
M/B Counting Uncertainty:	0.068
MB MDC:	0.185
MB Numerical Performance Indicator:	0.29
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS35277	LCSD35277
Count Date:	4/28/2017		
Spike I.D.:	17-003		
Spike Concentration (pCi/mL):	38.229		
Volume Used (mL):	0.25		
Aliquot Volume (L, g, F):	0.503		
Target Conc. (pCi/L, g, F):	19.004		
Uncertainty (Calculated):	0.894		
Result (pCi/L, g, F):	15.521		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.736		
Numerical Performance Indicator:	-5.90		
Percent Recovery:	81.67%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30216750003	Enter Duplicate
Duplicate Sample I.D.:	30216750003DUP	sample IDs if
Sample Result (pCi/L, g, F):	0.141	other than
Sample Result Counting Uncertainty (pCi/L, g, F):	0.108	LCS/LCSD in the
Sample Duplicate Result (pCi/L, g, F):	0.115	space below.
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.091	
Are sample and/or duplicate results below MDC?:	See Below ##	
Duplicate Numerical Performance Indicator:	0.355	30216750003
Duplicate RPD:	20.00%	30216750003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*Amstutz*





## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: LAL  
Date: 4/26/2017  
Worklist: 35270  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID		1262380
MB concentration:		0.040
M/B Counting Uncertainty:		0.117
MB MDC:		0.291
MB Numerical Performance Indicator:		0.67
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	Y	N
	LCS35270	LCSD35270
Count Date:	4/28/2017	
Spike I.D.:	17-003	
Spike Concentration (pCi/mL):	38.229	
Volume Used (mL):	0.25	
Aliquot Volume (L, g, F):	0.506	
Target Conc. (pCi/L, g, F):	18.891	
Uncertainty (Calculated):	0.889	
Result (pCi/L, g, F):	15.356	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.734	
Numerical Performance Indicator:	-6.01	
Percent Recovery:	81.29%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30216664001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30216664001DUP	
Sample Result (pCi/L, g, F):	0.130	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.108	
Sample Duplicate Result (pCi/L, g, F):	0.217	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.103	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.141	30216664001
Duplicate RPD:	50.05%	30216664001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Amie*  
*05/11/17*



**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: AAD0665**

**April 27, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

Project Manager

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All test results relate only to the samples analyzed.



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 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>
BGWC-7	AAD0665-01	Ground Water	04/18/17 09:20	04/19/17 08:00
BGWC-12	AAD0665-02	Ground Water	04/18/17 12:20	04/19/17 08:00
BGWC-16	AAD0665-03	Ground Water	04/18/17 14:40	04/19/17 08:00
BGWC-10	AAD0665-04	Ground Water	04/18/17 11:50	04/19/17 08:00
BGWC-11	AAD0665-05	Ground Water	04/18/17 14:30	04/19/17 08:00



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

April 27, 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.



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

April 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0665

Project: CCR Event

Client ID: BGWC-7

Lab Number ID: AAD0665-01

Date/Time Sampled: 4/18/2017 9:20:00AM

Date/Time Received: 4/19/2017 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	944	25	10	mg/L	SM 2540 C		1	04/21/17 13:33	04/21/17 13:33	7040662	JPT
<b>Inorganic Anions</b>											
Chloride	12	0.25	0.01	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 18:17	7040608	RLC
Fluoride	0.11	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 18:17	7040608	RLC
Sulfate	450	50	4.6	mg/L	EPA 300.0		50	04/20/17 10:01	04/21/17 12:44	7040608	RLC
<b>Metals, Total</b>											
Antimony	0.0003	0.0030	0.0003	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Arsenic	0.0029	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Barium	0.0392	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Boron	2.58	2.00	0.302	mg/L	EPA 6020B		50	04/20/17 09:05	04/21/17 18:53	7040597	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Calcium	155	25.0	0.522	mg/L	EPA 6020B		50	04/20/17 09:05	04/21/17 18:53	7040597	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Cobalt	0.0005	0.0100	0.0005	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Molybdenum	0.0103	0.0100	0.0006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Lithium	0.0086	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 18:47	7040597	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/19/17 09:30	04/19/17 13:41	7040534	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 27, 2017

Report No.: AAD0665

Project: CCR Event

Client ID: BGWC-12

Lab Number ID: AAD0665-02

Date/Time Sampled: 4/18/2017 12:20:00PM

Date/Time Received: 4/19/2017 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	955	25	10	mg/L	SM 2540 C		1	04/21/17 13:33	04/21/17 13:33	7040662	JPT
<b>Inorganic Anions</b>											
Chloride	39	0.25	0.01	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 18:38	7040608	RLC
Fluoride	0.006	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 18:38	7040608	RLC
Sulfate	220	10	0.92	mg/L	EPA 300.0		10	04/20/17 10:01	04/21/17 13:05	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Arsenic	0.0009	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Barium	0.0294	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Boron	0.941	0.0400	0.0060	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Calcium	94.8	25.0	0.522	mg/L	EPA 6020B		50	04/20/17 09:05	04/21/17 19:04	7040597	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Thallium	0.00009	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 18:58	7040597	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/19/17 09:30	04/19/17 13:48	7040534	MTC



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 Atlanta GA, 30339

April 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0665

Project: CCR Event

Client ID: BGWC-16

Lab Number ID: AAD0665-03

Date/Time Sampled: 4/18/2017 2:40:00PM

Date/Time Received: 4/19/2017 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	621	25	10	mg/L	SM 2540 C		1	04/21/17 13:33	04/21/17 13:33	7040662	JPT
<b>Inorganic Anions</b>											
Chloride	41	0.25	0.01	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 18:58	7040608	RLC
Fluoride	0.02	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 18:58	7040608	RLC
Sulfate	290	20	1.8	mg/L	EPA 300.0		20	04/20/17 10:01	04/21/17 13:25	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Arsenic	0.0007	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Barium	0.0272	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Boron	1.77	0.400	0.302	mg/L	EPA 6020B		50	04/20/17 09:05	04/21/17 19:16	7040597	CSW
Cadmium	0.0012	0.0010	0.00006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Calcium	120	25.0	0.522	mg/L	EPA 6020B		50	04/20/17 09:05	04/21/17 19:16	7040597	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Cobalt	0.0054	0.0100	0.0005	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Thallium	0.0002	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:10	7040597	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/19/17 09:30	04/19/17 13:51	7040534	MTC



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April 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0665

Project: CCR Event

Client ID: BGWC-10

Lab Number ID: AAD0665-04

Date/Time Sampled: 4/18/2017 11:50:00AM

Date/Time Received: 4/19/2017 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	349	25	10	mg/L	SM 2540 C		1	04/21/17 13:33	04/21/17 13:33	7040662	JPT
<b>Inorganic Anions</b>											
Chloride	21	0.25	0.01	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 19:19	7040608	RLC
Fluoride	0.12	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 19:19	7040608	RLC
Sulfate	110	10	0.92	mg/L	EPA 300.0		10	04/20/17 10:01	04/21/17 13:46	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Arsenic	0.0084	0.0050	0.0004	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Barium	0.0545	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Boron	0.515	0.0400	0.0060	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Calcium	58.0	25.0	0.522	mg/L	EPA 6020B		50	04/20/17 09:05	04/21/17 19:27	7040597	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Molybdenum	0.0032	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Lithium	0.0011	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 19:21	7040597	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/19/17 09:30	04/19/17 13:53	7040534	MTC





**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

April 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0665

Project: CCR Event

Client ID: BGWC-11

Lab Number ID: AAD0665-05

Date/Time Sampled: 4/18/2017 2:30:00PM

Date/Time Received: 4/19/2017 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	277	25	10	mg/L	SM 2540 C		1	04/21/17 13:33	04/21/17 13:33	7040662	JPT
<b>Inorganic Anions</b>											
Chloride	9.9	0.25	0.01	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 19:40	7040608	RLC
Fluoride	0.14	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 19:40	7040608	RLC
Sulfate	84	10	0.92	mg/L	EPA 300.0		10	04/20/17 10:01	04/25/17 19:21	7040608	RLC
<b>Metals, Total</b>											
Antimony	0.0004	0.0030	0.0003	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Arsenic	0.0028	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Barium	0.0212	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Boron	0.223	0.0400	0.0060	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Calcium	42.4	2.50	0.0522	mg/L	EPA 6020B		5	04/20/17 09:05	04/21/17 11:54	7040597	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Molybdenum	0.0027	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/20/17 09:05	04/21/17 11:43	7040597	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/19/17 09:30	04/19/17 13:55	7040534	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

April 27, 2017

**Report No.: AAD0665**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040662 - SM 2540 C</b>											
<b>Blank (7040662-BLK1)</b>						Prepared & Analyzed: 04/21/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7040662-BS1)</b>						Prepared & Analyzed: 04/21/17					
Total Dissolved Solids	407	25	10	mg/L	400.00		102	84-108			
<b>Duplicate (7040662-DUP1)</b>						Source: AAD0653-05 Prepared & Analyzed: 04/21/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7040662-DUP2)</b>						Source: AAD0665-01 Prepared & Analyzed: 04/21/17					
Total Dissolved Solids	958	25	10	mg/L		944			1	10	



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

April 27, 2017

**Report No.: AAD0665**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040608 - EPA 300.0</b>											
<b>Blank (7040608-BLK1)</b>						Prepared & Analyzed: 04/20/17					
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 (7040608-BS1)</b>						Prepared & Analyzed: 04/20/17					
Chloride	9.73	0.25	0.01	mg/L	10.010		97	90-110			
Fluoride	9.95	0.30	0.004	mg/L	10.020		99	90-110			
Sulfate	9.85	1.0	0.09	mg/L	10.020		98	90-110			
<b>Matrix Spike (7040608-MS1)</b>						Source: AAD0653-01 Prepared & Analyzed: 04/20/17					
Chloride	41.5	0.25	0.01	mg/L	10.010	35.0	64	90-110			QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.14	100	90-110			
Sulfate	101	1.0	0.09	mg/L	10.020	102	NR	90-110			QM-02
<b>Matrix Spike (7040608-MS2)</b>						Source: AAD0711-07 Prepared & Analyzed: 04/20/17					
Chloride	119	0.25	0.01	mg/L	10.010	122	NR	90-110			QM-02
Fluoride	10.3	0.30	0.004	mg/L	10.020	0.005	103	90-110			
Sulfate	322	1.0	0.09	mg/L	10.020	340	NR	90-110			QM-02
<b>Matrix Spike Dup (7040608-MSD1)</b>						Source: AAD0653-01 Prepared & Analyzed: 04/20/17					
Chloride	41.5	0.25	0.01	mg/L	10.010	35.0	64	90-110	0.02	15	QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.14	100	90-110	0.4	15	
Sulfate	101	1.0	0.09	mg/L	10.020	102	NR	90-110	0.06	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

April 27, 2017

**Report No.: AAD0665**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040534 - EPA 7470A</b>											
<b>Blank (7040534-BLK1)</b> Prepared & Analyzed: 04/19/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7040534-BS1)</b> Prepared & Analyzed: 04/19/17											
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3		96	80-120			
<b>Matrix Spike (7040534-MS1)</b> Source: AAD0601-01 Prepared & Analyzed: 04/19/17											
Mercury	0.00229	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (7040534-MSD1)</b> Source: AAD0601-01 Prepared & Analyzed: 04/19/17											
Mercury	0.00226	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125	1	20	
<b>Post Spike (7040534-PS1)</b> Source: AAD0601-01 Prepared & Analyzed: 04/19/17											
Mercury	1.72			ug/L	1.6667	-0.00110	103	80-120			
<b>Batch 7040597 - EPA 3005A</b>											
<b>Blank (7040597-BLK1)</b> Prepared & Analyzed: 04/20/17											
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	0.0015	0.0100	0.0013	mg/L							J
Lithium	ND	0.0500	0.0011	mg/L							



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 27, 2017

**Report No.: AAD0665**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040597 - EPA 3005A</b>											
<b>LCS (7040597-BS1)</b>						Prepared & Analyzed: 04/20/17					
Antimony	0.0996	0.0030	0.0003	mg/L	0.10000		100	80-120			
Arsenic	0.0964	0.0050	0.0004	mg/L	0.10000		96	80-120			
Barium	0.0949	0.0100	0.0003	mg/L	0.10000		95	80-120			
Beryllium	0.0972	0.0030	0.00007	mg/L	0.10000		97	80-120			
Boron	1.02	0.0400	0.0060	mg/L	1.0000		102	80-120			
Cadmium	0.100	0.0010	0.00006	mg/L	0.10000		100	80-120			
Calcium	1.02	0.500	0.0104	mg/L	1.0000		102	80-120			
Chromium	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120			
Cobalt	0.0985	0.0100	0.0005	mg/L	0.10000		98	80-120			
Copper	0.100	0.0250	0.0003	mg/L	0.10000		100	80-120			
Lead	0.0951	0.0050	0.00007	mg/L	0.10000		95	80-120			
Molybdenum	0.101	0.0100	0.0006	mg/L	0.10000		101	80-120			
Nickel	0.101	0.0100	0.0003	mg/L	0.10000		101	80-120			
Selenium	0.0998	0.0100	0.0014	mg/L	0.10000		100	80-120			
Silver	0.0976	0.0100	0.0003	mg/L	0.10000		98	80-120			
Thallium	0.0957	0.0010	0.00005	mg/L	0.10000		96	80-120			
Vanadium	0.103	0.0100	0.0014	mg/L	0.10000		103	80-120			
Zinc	0.103	0.0100	0.0013	mg/L	0.10000		103	80-120			
Lithium	0.106	0.0500	0.0011	mg/L	0.10000		106	80-120			
<b>Matrix Spike (7040597-MS1)</b>						Source: AAD0601-02 Prepared & Analyzed: 04/20/17					
Antimony	0.100	0.0030	0.0003	mg/L	0.10000	ND	100	75-125			
Arsenic	0.0981	0.0050	0.0004	mg/L	0.10000	ND	98	75-125			
Barium	0.119	0.0100	0.0003	mg/L	0.10000	0.0233	96	75-125			
Beryllium	0.0975	0.0030	0.00007	mg/L	0.10000	ND	97	75-125			
Boron	1.02	0.0400	0.0060	mg/L	1.0000	ND	102	75-125			
Cadmium	0.101	0.0010	0.00006	mg/L	0.10000	ND	101	75-125			
Calcium	4.26	0.500	0.0104	mg/L	1.0000	3.34	92	75-125			
Chromium	0.109	0.0100	0.0003	mg/L	0.10000	0.0016	107	75-125			
Cobalt	0.100	0.0100	0.0005	mg/L	0.10000	ND	100	75-125			
Copper	0.101	0.0250	0.0003	mg/L	0.10000	ND	101	75-125			
Lead	0.0979	0.0050	0.00007	mg/L	0.10000	0.0001	98	75-125			
Molybdenum	0.105	0.0100	0.0006	mg/L	0.10000	ND	105	75-125			
Nickel	0.103	0.0100	0.0003	mg/L	0.10000	0.0006	103	75-125			
Selenium	0.103	0.0100	0.0014	mg/L	0.10000	ND	103	75-125			
Silver	0.101	0.0100	0.0003	mg/L	0.10000	ND	101	75-125			
Thallium	0.0979	0.0010	0.00005	mg/L	0.10000	ND	98	75-125			
Vanadium	0.109	0.0100	0.0014	mg/L	0.10000	0.0014	108	75-125			
Zinc	0.105	0.0100	0.0013	mg/L	0.10000	0.0030	103	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

April 27, 2017

**Report No.: AAD0665**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040597 - EPA 3005A</b>											
<b>Matrix Spike Dup (7040597-MSD1)</b>			<b>Source: AAD0601-02</b>			<b>Prepared: 04/20/17 Analyzed: 04/21/17</b>					
Antimony	0.107	0.0030	0.0003	mg/L	0.10000	ND	107	75-125	6	20	
Arsenic	0.101	0.0050	0.0004	mg/L	0.10000	ND	101	75-125	3	20	
Barium	0.127	0.0100	0.0003	mg/L	0.10000	0.0233	104	75-125	7	20	
Beryllium	0.103	0.0030	0.00007	mg/L	0.10000	ND	103	75-125	5	20	
Boron	1.03	0.0400	0.0060	mg/L	1.0000	ND	103	75-125	1	20	
Cadmium	0.104	0.0010	0.00006	mg/L	0.10000	ND	104	75-125	3	20	
Calcium	4.43	0.500	0.0104	mg/L	1.0000	3.34	109	75-125	4	20	
Chromium	0.109	0.0100	0.0003	mg/L	0.10000	0.0016	107	75-125	0.05	20	
Cobalt	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125	2	20	
Copper	0.101	0.0250	0.0003	mg/L	0.10000	ND	101	75-125	0.7	20	
Lead	0.0993	0.0050	0.00007	mg/L	0.10000	0.0001	99	75-125	1	20	
Molybdenum	0.104	0.0100	0.0006	mg/L	0.10000	ND	104	75-125	1	20	
Nickel	0.104	0.0100	0.0003	mg/L	0.10000	0.0006	104	75-125	1	20	
Selenium	0.104	0.0100	0.0014	mg/L	0.10000	ND	104	75-125	0.2	20	
Silver	0.0994	0.0100	0.0003	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.0993	0.0010	0.00005	mg/L	0.10000	ND	99	75-125	1	20	
Vanadium	0.105	0.0100	0.0014	mg/L	0.10000	0.0014	103	75-125	4	20	
Zinc	0.101	0.0100	0.0013	mg/L	0.10000	0.0030	98	75-125	4	20	
Lithium	0.101	0.0500	0.0011	mg/L	0.10000	ND	101	75-125	4	20	
<b>Post Spike (7040597-PS1)</b>											
<b>Source: AAD0601-02</b>			<b>Prepared: 04/20/17 Analyzed: 04/21/17</b>								
Antimony	100			ug/L	100.00	0.146	100	80-120			
Arsenic	106			ug/L	100.00	0.0354	106	80-120			
Barium	128			ug/L	100.00	23.3	104	80-120			
Beryllium	101			ug/L	100.00	0.0367	101	80-120			
Boron	1060			ug/L	1000.0	5.19	105	80-120			
Cadmium	104			ug/L	100.00	0.0157	104	80-120			
Calcium	4350			ug/L	1000.0	3340	101	80-120			
Chromium	111			ug/L	100.00	1.62	109	80-120			
Cobalt	103			ug/L	100.00	0.160	103	80-120			
Copper	109			ug/L	100.00	0.173	109	80-120			
Lead	101			ug/L	100.00	0.121	101	80-120			
Molybdenum	108			ug/L	100.00	0.158	107	80-120			
Nickel	112			ug/L	100.00	0.584	112	80-120			
Selenium	100			ug/L	100.00	1.02	99	80-120			
Silver	101			ug/L	100.00	-0.0007	101	80-120			
Thallium	102			ug/L	100.00	0.0194	102	80-120			
Vanadium	109			ug/L	100.00	1.38	108	80-120			
Zinc	106			ug/L	100.00	2.98	104	80-120			
Lithium	108			ug/L	100.00	0.381	107	80-120			



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 27, 2017

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## Legend

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### 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

**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:					ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:		PRESERVATION:		# of		C O N T A I N E R S								
Safford Company Services					P	P	P										P - PLASTIC	1 - HCl, ≤6°C	
241 Ralph McGill Blvd NE 30185 Atlanta, GA 30308					3	7	3										A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REPORT TO: Tony Abraham																	G - CLEAR GLASS	3 - HNO <sub>3</sub>	
REQUESTED COMPLETION DATE:																	V - VOA VIAL	4 - NaOH, ≤6°C	
PROJECT NAME/STATE:																	S - STERILE	5 - NaOH/ZnAc, ≤6°C	
PROJECT #:																	O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
																	*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 O M P	G R A B	SAMPLE IDENTIFICATION														
4/18/17	0920	GW		*	B6WX-17	4													1
4/18/17	1220	GW		*	B6WX-12	4													2
4/18/17	1440	GW		*	B6WX-16	4													3
4/18/17	1150	GW		*	B6WX-10	4													4
4/18/17	1430	GW		*	B6WX-11	4													5
SAMPLED BY AND TITLE:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:				
Michael Padilla					4/18/17 @ 1530					Michael Padilla					4/19/17 @ 0800				
RECEIVED BY:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:				
Michael Padilla																			
RECEIVED BY LAB:					DATE/TIME:					SAMPLE SHIPPED VIA:					FOR LAB USE ONLY				
P. Rahman					4/19/17 0800					UPS FED-EX USPS COURIER CLIENT OTHER FS					LAB #: AAD0665				
Packed: No NA					Temperature: 10°C Min 12°C Max					Custody Seal: Intact Broken Not Present N/A					Entered into LIMS: MK				
Iced: Yes No NA										# of Coolers: 0 Cooler ID:					Tracking #:				





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Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
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**LOG-IN CHECKLIST**

**Printed: 4/20/2017 11:09:39AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 04/19/17 08:00

**Work Order:** AAD0665

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 20

**Minimum Temp(C):** 1.0

**Maximum Temp(C):** 1.0

**Custody Seal(s) Used:** 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:**

May 11, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAD0665 Plant Bowen  
Pace Project No.: 30216668

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on April 20, 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: AAD0665 Plant Bowen  
Pace Project No.: 30216668

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAD0665 Plant Bowen

Pace Project No.: 30216668

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30216668001	BGWC-7	Water	04/18/17 09:20	04/20/17 10:30
30216668002	BGWC-12	Water	04/18/17 12:20	04/20/17 10:30
30216668003	BGWC-16	Water	04/18/17 14:40	04/20/17 10:30
30216668004	BGWC-10	Water	04/18/17 11:50	04/20/17 10:30
30216668005	BGWC-11	Water	04/18/17 14:30	04/20/17 10:30

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAD0665 Plant Bowen  
Pace Project No.: 30216668

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30216668001	BGWC-7	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	CMC	1
30216668002	BGWC-12	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	CMC	1
30216668003	BGWC-16	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	CMC	1
30216668004	BGWC-10	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	CMC	1
30216668005	BGWC-11	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	CMC	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAD0665 Plant Bowen

Pace Project No.: 30216668

Sample: <b>BGWC-7</b>		Lab ID: <b>30216668001</b>	Collected: 04/18/17 09:20	Received: 04/20/17 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.707 ± 0.242 (0.194)</b>		pCi/L	04/29/17 17:31	13982-63-3	
		<b>C:90% T:NA</b>					
Radium-228	EPA 9320	<b>0.552 ± 0.372 (0.711)</b>		pCi/L	05/04/17 12:02	15262-20-1	
		<b>C:79% T:82%</b>					
Total Radium	Total Radium Calculation	<b>1.26 ± 0.614 (0.905)</b>		pCi/L	05/10/17 09:45	7440-14-4	

Sample: <b>BGWC-12</b>		Lab ID: <b>30216668002</b>	Collected: 04/18/17 12:20	Received: 04/20/17 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0114 ± 0.0822 (0.221)</b>		pCi/L	04/29/17 17:31	13982-63-3	
		<b>C:88% T:NA</b>					
Radium-228	EPA 9320	<b>-0.00995 ± 0.300 (0.697)</b>		pCi/L	05/04/17 16:41	15262-20-1	
		<b>C:83% T:89%</b>					
Total Radium	Total Radium Calculation	<b>0.0114 ± 0.382 (0.918)</b>		pCi/L	05/10/17 09:45	7440-14-4	

Sample: <b>BGWC-16</b>		Lab ID: <b>30216668003</b>	Collected: 04/18/17 14:40	Received: 04/20/17 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.299 ± 0.150 (0.168)</b>		pCi/L	04/29/17 17:31	13982-63-3	
		<b>C:100% T:NA</b>					
Radium-228	EPA 9320	<b>0.221 ± 0.406 (0.888)</b>		pCi/L	05/04/17 16:41	15262-20-1	
		<b>C:71% T:79%</b>					
Total Radium	Total Radium Calculation	<b>0.520 ± 0.556 (1.06)</b>		pCi/L	05/10/17 09:45	7440-14-4	

Sample: <b>BGWC-10</b>		Lab ID: <b>30216668004</b>	Collected: 04/18/17 11:50	Received: 04/20/17 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.460 ± 0.189 (0.192)</b>		pCi/L	04/29/17 17:31	13982-63-3	
		<b>C:95% T:NA</b>					
Radium-228	EPA 9320	<b>0.552 ± 0.442 (0.881)</b>		pCi/L	05/04/17 16:41	15262-20-1	
		<b>C:76% T:74%</b>					
Total Radium	Total Radium Calculation	<b>1.01 ± 0.631 (1.07)</b>		pCi/L	05/10/17 09:45	7440-14-4	

Sample: <b>BGWC-11</b>		Lab ID: <b>30216668005</b>	Collected: 04/18/17 14:30	Received: 04/20/17 10:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0627 ± 0.121 (0.280)</b>		pCi/L	04/29/17 17:31	13982-63-3	
		<b>C:82% T:NA</b>					
Radium-228	EPA 9320	<b>0.225 ± 0.306 (0.654)</b>		pCi/L	05/04/17 16:41	15262-20-1	
		<b>C:83% T:81%</b>					

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAD0665 Plant Bowen

Pace Project No.: 30216668

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**Sample: BGWC-11**      **Lab ID: 30216668005**      Collected: 04/18/17 14:30      Received: 04/20/17 10:30      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>0.288 ± 0.427 (0.934)</b>	pCi/L	05/10/17 09:45	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0665 Plant Bowen

Pace Project No.: 30216668

QC Batch: 256301 Analysis Method: EPA 9315

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

Associated Lab Samples: 30216668001, 30216668002, 30216668003, 30216668004, 30216668005

METHOD BLANK: 1262529 Matrix: Water

Associated Lab Samples: 30216668001, 30216668002, 30216668003, 30216668004, 30216668005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0102 ± 0.0679 (0.185) C:100% T:NA	pCi/L	04/29/17 17:31	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0665 Plant Bowen

Pace Project No.: 30216668

QC Batch: 256379

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30216668001, 30216668002, 30216668003, 30216668004, 30216668005

METHOD BLANK: 1263006

Matrix: Water

Associated Lab Samples: 30216668001, 30216668002, 30216668003, 30216668004, 30216668005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.389 ± 0.383 (0.785) C:82% T:66%	pCi/L	05/04/17 12:06	

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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## QUALIFIERS

Project: AAD0665 Plant Bowen  
Pace Project No.: 30216668

### 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: AAD0665

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 5/12/2017

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

WO#: 30216668



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-7	G	4/18/2017 9:20	AAD0665-01	GW	2				X	001
2	BGWC-12	G	4/18/2017 12:20	AAD0665-02	GW	2				X	002
3	BGWC-16	G	4/18/2017 14:40	AAD0665-03	GW	2				X	003
4	BGWC-10	G	4/18/2017 11:50	AAD0665-04	GW	2				X	004
5	BGWC-11	G	4/18/2017 14:30	AAD0665-05	GW	2				X	005
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>M. Aluman</i>	04/19/17	<i>Walter Pae</i>	4/20/17/1030	
2					
3					

Cooler Temperature on Receipt 11.5 °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.

30216668

CHAIN OF CUSTODY RECORD



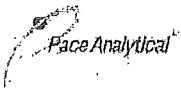
Pace Analytical Services, LLC - Atlanta GA  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:	P	P	P											
PROJECT NAME/STATE:					PRESERVATION:	3	7	3											
PROJECT #:					# of														
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	C O N T A I N E R S													
4/18/17	0920	GW		K	RGW-7	↓													
4/18/17	1220	GW		K	RGW-12	↓													
4/18/17	1440	GW		K	RGW-16	↓													
4/18/17	1150	GW		X	RGW-10	↓													
4/18/17	1430	GW		K	RGW-11	↓													

*Vertical text in container column: Models APPROX 400, EPA 602D, 1470, C/F 50° EP-300, PDS S-2510, Rodman 226 & 228, SLO-816 93151320*

FOR LAB USE ONLY  
 LAB #: **AA-0665**  
 Entered into LIMS: **ML**  
 Tracking #:



Client Name: Pace, GA Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking # 6812 5103 8011

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ADR 4-20-17

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.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PHL2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>ADR</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>ADR</u> Date: <u>4-20-17</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

Test: Ra-226  
Analyst: JC2  
Date: 4/26/2017  
Worklist: 35277  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1262529	
MB concentration:	0.010	
M/B Counting Uncertainty:	0.068	
MB MDC:	0.185	
MB Numerical Performance Indicator:	0.29	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCSD35277	LCSD35277
Count Date:	4/28/2017	
Spike I.D.:	17-003	
Spike Concentration (pCi/mL):	38,229	
Volume Used (mL):	0.25	
Aliquot Volume (L, g, F):	0.503	
Target Conc. (pCi/L, g, F):	19,004	
Uncertainty (Calculated):	0.894	
Result (pCi/L, g, F):	15,521	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.736	
Numerical Performance Indicator:	-5.90	
Percent Recovery:	81.67%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30216750003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30216750003DUP	
Sample Result (pCi/L, g, F):	0.141	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.108	
Sample Duplicate Result (pCi/L, g, F):	0.115	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.091	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.355	30216750003
Duplicate RPD:	20.00%	30216750003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*Handwritten signature/initials*





## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JJY  
Date: 4/28/2017  
Worklist: 35288  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1263006	
MB concentration:	0.389	
M/B Counting Uncertainty:	0.376	
MB MDC:	0.785	
MB Numerical Performance Indicator:	2.02	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS35288	LCS35288
Count Date:	5/4/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	24.624	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.808	
Target Conc. (pCi/L, g, F):	6.095	
Uncertainty (Calculated):	0.439	
Result (pCi/L, g, F):	6.974	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.742	
Numerical Performance Indicator:	2.00	
Percent Recovery:	114.43%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30216750002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30216750002DUP	
Sample Result (pCi/L, g, F):	2.058	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.516	
Sample Duplicate Result (pCi/L, g, F):	2.615	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.526	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.480	
Duplicate RPD:	23.81%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*Handwritten signature/initials in blue ink.*



**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: AAD0711**

**April 27, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

Project Manager

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All test results relate only to the samples analyzed.





**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

April 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>
Dup-2	AAD0711-01	Ground Water	04/19/17 00:00	04/20/17 08:20
BGWC-24	AAD0711-02	Ground Water	04/19/17 11:06	04/20/17 08:20
BGWC-19	AAD0711-03	Ground Water	04/19/17 12:26	04/20/17 08:20
BGWC-23	AAD0711-04	Ground Water	04/19/17 14:00	04/20/17 08:20
BGWC-17	AAD0711-05	Ground Water	04/19/17 10:00	04/20/17 08:20
BGWC-18	AAD0711-06	Ground Water	04/19/17 11:20	04/20/17 08:20
BGWC-20	AAD0711-07	Ground Water	04/19/17 13:00	04/20/17 08:20
BGWC-21	AAD0711-08	Ground Water	04/19/17 15:05	04/20/17 08:20



**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

April 27, 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

April 27, 2017

**Report No.:** AAD0711

**Project:** CCR Event

**Client ID:** Dup-2

**Lab Number ID:** AAD0711-01

**Date/Time Sampled:** 4/19/2017 12:00:00AM

**Date/Time Received:** 4/20/2017 8:20:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4670	25	10	mg/L	SM 2540 C		1	04/24/17 18:50	04/24/17 18:50	7040718	JPT
<b>Inorganic Anions</b>											
Chloride	1900	25	1.3	mg/L	EPA 300.0		100	04/20/17 10:01	04/21/17 14:27	7040608	RLC
Fluoride	0.76	0.30	0.004	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 20:00	7040608	RLC
Sulfate	610	100	9.2	mg/L	EPA 300.0		100	04/20/17 10:01	04/21/17 14:27	7040608	RLC
<b>Metals, Total</b>											
Antimony	0.0005	0.0030	0.0003	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Arsenic	0.0055	0.0050	0.0004	mg/L	EPA 6020B		1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Barium	0.113	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Beryllium	0.0002	0.0030	0.00007	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Boron	30.7	2.00	0.302	mg/L	EPA 6020B		50	04/21/17 09:10	04/21/17 20:36	7040646	CSW
Cadmium	0.0038	0.0010	0.00006	mg/L	EPA 6020B		1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Calcium	917	1250	26.1	mg/L	EPA 6020B	J	2500	04/21/17 09:10	04/25/17 14:09	7040646	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Cobalt	0.0033	0.0100	0.0005	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Molybdenum	0.0019	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Selenium	0.0044	0.0100	0.0014	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Thallium	0.0004	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Lithium	0.0057	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/21/17 20:30	7040646	CSW
Mercury	0.00013	0.00050	0.000041	mg/L	EPA 7470A	J	1	04/25/17 09:20	04/25/17 14:04	7040685	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 27, 2017

Report No.: AAD0711

Project: CCR Event

Client ID: BGWC-24

Lab Number ID: AAD0711-02

Date/Time Sampled: 4/19/2017 11:06:00AM

Date/Time Received: 4/20/2017 8:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4680	25	10	mg/L	SM 2540 C		1	04/24/17 18:50	04/24/17 18:50	7040718	JPT
<b>Inorganic Anions</b>											
Chloride	1900	25	1.3	mg/L	EPA 300.0		100	04/20/17 10:01	04/21/17 14:48	7040608	RLC
Fluoride	0.21	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 20:21	7040608	RLC
Sulfate	600	100	9.2	mg/L	EPA 300.0		100	04/20/17 10:01	04/21/17 14:48	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Arsenic	0.0051	0.0050	0.0004	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Barium	0.114	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Boron	31.4	2.00	0.302	mg/L	EPA 6020B		50	04/21/17 09:10	04/24/17 14:13	7040646	KLH
Cadmium	0.0035	0.0010	0.00006	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Calcium	893	1250	26.1	mg/L	EPA 6020B	J	2500	04/21/17 09:10	04/25/17 14:15	7040646	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Cobalt	0.0032	0.0100	0.0005	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Molybdenum	0.0020	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Selenium	0.0046	0.0100	0.0014	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Thallium	0.0004	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Lithium	0.0055	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:08	7040646	KLH
Mercury	0.00016	0.00050	0.000041	mg/L	EPA 7470A	J	1	04/25/17 09:20	04/25/17 14:07	7040685	MTC



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April 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0711

Project: CCR Event

Client ID: BGWC-19

Lab Number ID: AAD0711-03

Date/Time Sampled: 4/19/2017 12:26:00PM

Date/Time Received: 4/20/2017 8:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	396	25	10	mg/L	SM 2540 C		1	04/24/17 18:50	04/24/17 18:50	7040718	JPT
<b>Inorganic Anions</b>											
Chloride	30	0.25	0.01	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 20:42	7040608	RLC
Fluoride	0.09	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 20:42	7040608	RLC
Sulfate	140	10	0.92	mg/L	EPA 300.0		10	04/20/17 10:01	04/21/17 16:31	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Arsenic	0.0015	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Barium	0.0420	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Beryllium	0.00008	0.0030	0.00007	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Boron	0.701	0.0400	0.0060	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Calcium	69.5	25.0	0.522	mg/L	EPA 6020B		50	04/21/17 09:10	04/24/17 14:25	7040646	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Lead	0.0006	0.0050	0.00007	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Thallium	0.00006	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:19	7040646	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:09	7040685	MTC



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 Atlanta GA, 30339

April 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0711

Project: CCR Event

Client ID: BGWC-23

Lab Number ID: AAD0711-04

Date/Time Sampled: 4/19/2017 2:00:00PM

Date/Time Received: 4/20/2017 8:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1800	25	10	mg/L	SM 2540 C		1	04/24/17 18:50	04/24/17 18:50	7040718	JPT
<b>Inorganic Anions</b>											
Chloride	420	25	1.3	mg/L	EPA 300.0		100	04/20/17 10:01	04/21/17 16:52	7040608	RLC
Fluoride	0.03	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 21:02	7040608	RLC
Sulfate	490	100	9.2	mg/L	EPA 300.0		100	04/20/17 10:01	04/21/17 16:52	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Arsenic	0.0032	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Barium	0.0870	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Boron	8.79	2.00	0.302	mg/L	EPA 6020B		50	04/21/17 09:10	04/24/17 14:36	7040646	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Calcium	298	250	5.22	mg/L	EPA 6020B		500	04/21/17 09:10	04/25/17 14:21	7040646	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Molybdenum	0.0124	0.0100	0.0006	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Lithium	0.0105	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:30	7040646	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:16	7040685	MTC



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 Atlanta GA, 30339

April 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0711

Project: CCR Event

Client ID: BGWC-17

Lab Number ID: AAD0711-05

Date/Time Sampled: 4/19/2017 10:00:00AM

Date/Time Received: 4/20/2017 8:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	415	25	10	mg/L	SM 2540 C		1	04/24/17 18:50	04/24/17 18:50	7040718	JPT
<b>Inorganic Anions</b>											
Chloride	38	0.25	0.01	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 22:46	7040608	RLC
Fluoride	0.18	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 22:46	7040608	RLC
Sulfate	110	10	0.92	mg/L	EPA 300.0		10	04/20/17 10:01	04/21/17 17:12	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Arsenic	0.0012	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Barium	0.0183	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Boron	1.47	0.0400	0.0060	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Cadmium	0.0001	0.0010	0.00006	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Calcium	68.9	25.0	0.522	mg/L	EPA 6020B		50	04/21/17 09:10	04/24/17 14:48	7040646	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Thallium	0.00008	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:42	7040646	KLH
Mercury	0.00014	0.00050	0.000041	mg/L	EPA 7470A	J	1	04/25/17 09:20	04/25/17 14:19	7040685	MTC



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 Atlanta GA, 30339

April 27, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAD0711

**Project:** CCR Event

**Client ID:** BGWC-18

**Lab Number ID:** AAD0711-06

**Date/Time Sampled:** 4/19/2017 11:20:00AM

**Date/Time Received:** 4/20/2017 8:20:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	337	25	10	mg/L	SM 2540 C		1	04/24/17 18:50	04/24/17 18:50	7040718	JPT
<b>Inorganic Anions</b>											
Chloride	13	0.25	0.01	mg/L	EPA 300.0		1	04/20/17 10:01	04/20/17 23:06	7040608	RLC
Fluoride	0.08	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 23:06	7040608	RLC
Sulfate	80	10	0.92	mg/L	EPA 300.0		10	04/20/17 10:01	04/25/17 19:42	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Arsenic	0.0013	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Barium	0.0325	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Boron	0.762	0.0400	0.0060	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Cadmium	0.00009	0.0010	0.00006	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Calcium	57.1	25.0	0.522	mg/L	EPA 6020B		50	04/21/17 09:10	04/24/17 14:59	7040646	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 14:53	7040646	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:21	7040685	MTC





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 Atlanta GA, 30339

April 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0711

Project: CCR Event

Client ID: BGWC-20

Lab Number ID: AAD0711-07

Date/Time Sampled: 4/19/2017 1:00:00PM

Date/Time Received: 4/20/2017 8:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1180	25	10	mg/L	SM 2540 C		1	04/24/17 18:50	04/24/17 18:50	7040718	JPT
<b>Inorganic Anions</b>											
Chloride	140	5.0	0.26	mg/L	EPA 300.0		20	04/20/17 10:01	04/21/17 17:54	7040608	RLC
Fluoride	0.005	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/20/17 23:27	7040608	RLC
Sulfate	610	20	1.8	mg/L	EPA 300.0		20	04/20/17 10:01	04/21/17 17:54	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Arsenic	0.0020	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Barium	0.0367	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Boron	4.68	2.00	0.302	mg/L	EPA 6020B		50	04/21/17 09:10	04/24/17 15:23	7040646	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Calcium	240	25.0	0.522	mg/L	EPA 6020B		50	04/21/17 09:10	04/24/17 15:23	7040646	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Molybdenum	0.0120	0.0100	0.0006	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Lithium	0.0233	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 15:18	7040646	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:23	7040685	MTC



**PACE ANALYTICAL SERVICES, LLC.**

Environmental Monitoring & Laboratory Analysis  
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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

April 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0711

Project: CCR Event

Client ID: BGWC-21

Lab Number ID: AAD0711-08

Date/Time Sampled: 4/19/2017 3:05:00PM

Date/Time Received: 4/20/2017 8:20:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	247	25	10	mg/L	SM 2540 C		1	04/24/17 18:50	04/24/17 18:50	7040718	JPT
<b>Inorganic Anions</b>											
Chloride	5.0	0.25	0.01	mg/L	EPA 300.0		1	04/20/17 10:01	04/21/17 00:08	7040608	RLC
Fluoride	0.04	0.30	0.004	mg/L	EPA 300.0	J	1	04/20/17 10:01	04/21/17 00:08	7040608	RLC
Sulfate	52	10	0.92	mg/L	EPA 300.0		10	04/20/17 10:01	04/25/17 20:02	7040608	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Arsenic	0.0020	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Barium	0.0486	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Boron	0.0743	0.0400	0.0060	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Calcium	39.4	25.0	0.522	mg/L	EPA 6020B		50	04/21/17 09:10	04/24/17 15:35	7040646	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Molybdenum	0.0014	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/21/17 09:10	04/24/17 15:29	7040646	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:26	7040685	MTC



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April 27, 2017

**Report No.: AAD0711**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040718 - SM 2540 C</b>											
<b>Blank (7040718-BLK1)</b>						Prepared & Analyzed: 04/24/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7040718-BS1)</b>						Prepared & Analyzed: 04/24/17					
Total Dissolved Solids	402	25	10	mg/L	400.00		100	84-108			
<b>Duplicate (7040718-DUP1)</b>			<b>Source: AAD0711-04</b>			Prepared & Analyzed: 04/24/17					
Total Dissolved Solids	1870	25	10	mg/L		1800			3	10	



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**Report No.: AAD0711**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040608 - EPA 300.0</b>											
<b>Blank (7040608-BLK1)</b>						Prepared & Analyzed: 04/20/17					
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 (7040608-BS1)</b>						Prepared & Analyzed: 04/20/17					
Chloride	9.73	0.25	0.01	mg/L	10.010		97	90-110			
Fluoride	9.95	0.30	0.004	mg/L	10.020		99	90-110			
Sulfate	9.85	1.0	0.09	mg/L	10.020		98	90-110			
<b>Matrix Spike (7040608-MS1)</b>						Source: AAD0653-01 Prepared & Analyzed: 04/20/17					
Chloride	41.5	0.25	0.01	mg/L	10.010	35.0	64	90-110			QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.14	100	90-110			
Sulfate	101	1.0	0.09	mg/L	10.020	102	NR	90-110			QM-02
<b>Matrix Spike (7040608-MS2)</b>						Source: AAD0711-07 Prepared & Analyzed: 04/20/17					
Chloride	119	0.25	0.01	mg/L	10.010	122	NR	90-110			QM-02
Fluoride	10.3	0.30	0.004	mg/L	10.020	0.005	103	90-110			
Sulfate	322	1.0	0.09	mg/L	10.020	340	NR	90-110			QM-02
<b>Matrix Spike Dup (7040608-MSD1)</b>						Source: AAD0653-01 Prepared & Analyzed: 04/20/17					
Chloride	41.5	0.25	0.01	mg/L	10.010	35.0	64	90-110	0.02	15	QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.14	100	90-110	0.4	15	
Sulfate	101	1.0	0.09	mg/L	10.020	102	NR	90-110	0.06	15	QM-02



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**Report No.: AAD0711**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040646 - EPA 3005A</b>											
<b>Blank (7040646-BLK1)</b>						Prepared & Analyzed: 04/21/17					
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							
<b>LCS (7040646-BS1)</b>						Prepared & Analyzed: 04/21/17					
Antimony	0.100	0.0030	0.0003	mg/L	0.10000		100	80-120			
Arsenic	0.0977	0.0050	0.0004	mg/L	0.10000		98	80-120			
Barium	0.0963	0.0100	0.0003	mg/L	0.10000		96	80-120			
Beryllium	0.0977	0.0030	0.00007	mg/L	0.10000		98	80-120			
Boron	1.01	0.0400	0.0060	mg/L	1.0000		101	80-120			
Cadmium	0.104	0.0010	0.00006	mg/L	0.10000		104	80-120			
Calcium	0.974	0.500	0.0104	mg/L	1.0000		97	80-120			
Chromium	0.0991	0.0100	0.0003	mg/L	0.10000		99	80-120			
Cobalt	0.0975	0.0100	0.0005	mg/L	0.10000		98	80-120			
Copper	0.0977	0.0250	0.0003	mg/L	0.10000		98	80-120			
Lead	0.0977	0.0050	0.00007	mg/L	0.10000		98	80-120			
Molybdenum	0.0963	0.0100	0.0006	mg/L	0.10000		96	80-120			
Nickel	0.0967	0.0100	0.0003	mg/L	0.10000		97	80-120			
Selenium	0.0960	0.0100	0.0014	mg/L	0.10000		96	80-120			
Silver	0.0957	0.0100	0.0003	mg/L	0.10000		96	80-120			
Thallium	0.0977	0.0010	0.00005	mg/L	0.10000		98	80-120			
Vanadium	0.101	0.0100	0.0014	mg/L	0.10000		101	80-120			
Zinc	0.100	0.0100	0.0013	mg/L	0.10000		100	80-120			
Lithium	0.101	0.0500	0.0011	mg/L	0.10000		101	80-120			



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April 27, 2017

**Report No.: AAD0711**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040646 - EPA 3005A</b>											
<b>Matrix Spike (7040646-MS1)</b>			<b>Source: AAD0711-05</b>				<b>Prepared &amp; Analyzed: 04/21/17</b>				
Antimony	0.102	0.0030	0.0003	mg/L	0.10000	ND	102	75-125			
Arsenic	0.101	0.0050	0.0004	mg/L	0.10000	0.0012	100	75-125			
Barium	0.129	0.0100	0.0003	mg/L	0.10000	0.0183	110	75-125			
Beryllium	0.0985	0.0030	0.00007	mg/L	0.10000	ND	99	75-125			
Boron	2.95	2.00	0.302	mg/L	1.0000	1.47	148	75-125			QM-02
Cadmium	0.103	0.0010	0.00006	mg/L	0.10000	0.0001	102	75-125			
Calcium	69.0	25.0	0.522	mg/L	1.0000	68.9	12	75-125			QM-02
Chromium	0.103	0.0100	0.0003	mg/L	0.10000	ND	103	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Copper	0.0993	0.0250	0.0003	mg/L	0.10000	ND	99	75-125			
Lead	0.0974	0.0050	0.00007	mg/L	0.10000	ND	97	75-125			
Molybdenum	0.0988	0.0100	0.0006	mg/L	0.10000	ND	99	75-125			
Nickel	0.102	0.0100	0.0003	mg/L	0.10000	0.0005	102	75-125			
Selenium	0.0987	0.0100	0.0014	mg/L	0.10000	ND	99	75-125			
Silver	0.0928	0.0100	0.0003	mg/L	0.10000	ND	93	75-125			
Thallium	0.0989	0.0010	0.00005	mg/L	0.10000	0.00008	99	75-125			
Vanadium	0.107	0.0100	0.0014	mg/L	0.10000	ND	107	75-125			
Zinc	0.102	0.0100	0.0013	mg/L	0.10000	ND	102	75-125			
Lithium	0.101	0.0500	0.0011	mg/L	0.10000	ND	101	75-125			
<b>Matrix Spike Dup (7040646-MSD1)</b>			<b>Source: AAD0711-05</b>				<b>Prepared &amp; Analyzed: 04/21/17</b>				
Antimony	0.101	0.0030	0.0003	mg/L	0.10000	ND	101	75-125	1	20	
Arsenic	0.0987	0.0050	0.0004	mg/L	0.10000	0.0012	98	75-125	2	20	
Barium	0.113	0.0100	0.0003	mg/L	0.10000	0.0183	95	75-125	13	20	
Beryllium	0.0982	0.0030	0.00007	mg/L	0.10000	ND	98	75-125	0.4	20	
Boron	2.84	2.00	0.302	mg/L	1.0000	1.47	138	75-125	4	20	QM-02
Cadmium	0.101	0.0010	0.00006	mg/L	0.10000	0.0001	100	75-125	2	20	
Calcium	67.0	25.0	0.522	mg/L	1.0000	68.9	NR	75-125	3	20	QM-02
Chromium	0.101	0.0100	0.0003	mg/L	0.10000	ND	101	75-125	1	20	
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125	0.2	20	
Copper	0.0976	0.0250	0.0003	mg/L	0.10000	ND	98	75-125	2	20	
Lead	0.0962	0.0050	0.00007	mg/L	0.10000	ND	96	75-125	1	20	
Molybdenum	0.100	0.0100	0.0006	mg/L	0.10000	ND	100	75-125	1	20	
Nickel	0.102	0.0100	0.0003	mg/L	0.10000	0.0005	101	75-125	0.3	20	
Selenium	0.0982	0.0100	0.0014	mg/L	0.10000	ND	98	75-125	0.4	20	
Silver	0.0917	0.0100	0.0003	mg/L	0.10000	ND	92	75-125	1	20	
Thallium	0.0962	0.0010	0.00005	mg/L	0.10000	0.00008	96	75-125	3	20	
Vanadium	0.0998	0.0100	0.0014	mg/L	0.10000	ND	100	75-125	6	20	
Zinc	0.0980	0.0100	0.0013	mg/L	0.10000	ND	98	75-125	4	20	
Lithium	0.0979	0.0500	0.0011	mg/L	0.10000	ND	98	75-125	3	20	



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Attention: Mr. Joju Abraham

April 27, 2017

**Report No.: AAD0711**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040646 - EPA 3005A</b>											
<b>Post Spike (7040646-PS1)</b>			<b>Source: AAD0711-05</b>			<b>Prepared &amp; Analyzed: 04/21/17</b>					
Antimony	91.4			ug/L	100.00	-0.134	91	80-120			
Arsenic	98.8			ug/L	100.00	1.19	98	80-120			
Barium	117			ug/L	100.00	18.3	99	80-120			
Beryllium	96.0			ug/L	100.00	0.0375	96	80-120			
Boron	3090			ug/L	1000.0	1470	163	80-120			QM-02
Cadmium	101			ug/L	100.00	0.117	101	80-120			
Calcium	71900			ug/L	1000.0	68900	303	80-120			QM-02
Chromium	101			ug/L	100.00	0.189	101	80-120			
Cobalt	99.3			ug/L	100.00	0.144	99	80-120			
Copper	98.6			ug/L	100.00	0.0792	98	80-120			
Lead	96.3			ug/L	100.00	0.0148	96	80-120			
Molybdenum	101			ug/L	100.00	0.0821	101	80-120			
Nickel	99.0			ug/L	100.00	0.524	98	80-120			
Selenium	98.0			ug/L	100.00	0.437	98	80-120			
Silver	92.0			ug/L	100.00	0.0027	92	80-120			
Thallium	97.5			ug/L	100.00	0.0801	97	80-120			
Vanadium	107			ug/L	100.00	1.19	106	80-120			
Zinc	99.7			ug/L	100.00	0.801	99	80-120			
Lithium	98.2			ug/L	100.00	0.621	98	80-120			

**Batch 7040685 - EPA 7470A**

<b>Blank (7040685-BLK1)</b>				<b>Prepared &amp; Analyzed: 04/25/17</b>							
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7040685-BS1)</b>				<b>Prepared &amp; Analyzed: 04/25/17</b>							
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3		99	80-120			



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April 27, 2017

**Report No.: AAD0711**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040685 - EPA 7470A</b>											
<b>Matrix Spike (7040685-MS1)</b>			<b>Source: AAD0711-01</b>			<b>Prepared &amp; Analyzed: 04/25/17</b>					
Mercury	0.00229	0.00050	0.000041	mg/L	2.5000E-3	0.00013	86	75-125			
<b>Matrix Spike Dup (7040685-MSD1)</b>			<b>Source: AAD0711-01</b>			<b>Prepared &amp; Analyzed: 04/25/17</b>					
Mercury	0.00226	0.00050	0.000041	mg/L	2.5000E-3	0.00013	85	75-125	1	20	
<b>Post Spike (7040685-PS1)</b>			<b>Source: AAD0711-01</b>			<b>Prepared &amp; Analyzed: 04/25/17</b>					
Mercury	1.59			ug/L	1.6667	0.0874	90	80-120			





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Attention: Mr. Joju Abraham

April 27, 2017

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## Legend

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### 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

**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				ANALYSIS REQUESTED										LAB ID NUMBER	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 RALPH MCGILL BLVD NE BLDG 5 ATLANTA, GA 30308				CONTAINER TYPE: P P P		PRESERVATION:									P - PLASTIC	1 - HCl, ≤6°C		
REPORT TO: JON ADRIAN		CC: MARIA PADILLA		CONTAINERS	# of										A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
REQUESTED COMPLETION DATE:		PO #: 6P-10624198													G - CLEAR GLASS	3 - HNO <sub>3</sub>		
PROJECT NAME/STATE: PLANT BOWEN ASH POND CER															V - VOA VIAL	4 - NaOH, ≤6°C		
PROJECT #:															S - STERILE	5 - NaOH/ZnAc, ≤6°C		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P G R A B		SAMPLE IDENTIFICATION										O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C		
															*MATRIX CODES:			
															DW - DRINKING WATER	S - SOIL		
															WW - WASTEWATER	SL - SLUDGE		
															GW - GROUNDWATER	SD - SOLID		
															SW - SURFACE WATER	A - AIR		
														ST - STORM WATER	L - LIQUID			
														W - WATER	P - PRODUCT			
REMARKS/ADDITIONAL INFORMATION																		
SAMPLED BY AND TITLE: ROBERT WELLS KEVIN STEPHENS/DIKRUEL PATRICK				DATE/TIME: 04/19/17 1600				RELINQUISHED BY: <i>[Signature]</i>				DATE/TIME: 04/20/17 0820				FOR LAB USE ONLY		
RECEIVED BY: <i>[Signature]</i>				DATE/TIME:				RELINQUISHED BY:				DATE/TIME:				LAB #: AAD0711		
RECEIVED BY LAB: <i>[Signature]</i>				DATE/TIME: 04/20/17 0820				SAMPLE SHIPPED VIA: <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FED-EX <input type="checkbox"/> USPS <input type="checkbox"/> COURIER <input checked="" type="checkbox"/> GLEN <input type="checkbox"/> OTHER <input type="checkbox"/> FS				Entered into LIMS: <i>[Signature]</i>				Tracking #:		
Checked: <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	Ice: <input checked="" type="checkbox"/> No <input type="checkbox"/> NA	Temperature: 1°C Min 12°C Max	Custody Seal: <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Broken <input type="checkbox"/> Not Present <input type="checkbox"/> N/A	# of Coolers: <input checked="" type="checkbox"/>	Cooler ID:													

Page 19 of 20



**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: 4/20/2017 11:22:07AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 04/20/17 08:20

**Work Order:** AAD0711

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 8

**#Containers:** 34

**Minimum Temp(C):** 1.0

**Maximum Temp(C):** 1.0

**Custody Seal(s) Used:** 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:**

May 15, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAD0711 Plant Bowen  
Pace Project No.: 30216750

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on April 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: AAD0711 Plant Bowen

Pace Project No.: 30216750

### 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: AAD0711 Plant Bowen

Pace Project No.: 30216750

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30216750001	Dup-2	Water	04/19/17 00:00	04/21/17 09:50
30216750002	BGWC-24	Water	04/19/17 11:06	04/21/17 09:50
30216750003	BGWC-19	Water	04/19/17 12:26	04/21/17 09:50
30216750004	BGWC-23	Water	04/19/17 14:00	04/21/17 09:50
30216750005	BGWC-17	Water	04/19/17 10:00	04/21/17 09:50
30216750006	BGWC-18	Water	04/19/17 11:20	04/21/17 09:50
30216750007	BGWC-20	Water	04/19/17 13:00	04/21/17 09:50
30216750008	BGWC-21	Water	04/19/17 15:05	04/21/17 09:50

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAD0711 Plant Bowen  
Pace Project No.: 30216750

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30216750001	Dup-2	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1
30216750002	BGWC-24	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1
30216750003	BGWC-19	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1
30216750004	BGWC-23	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1
30216750005	BGWC-17	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1
30216750006	BGWC-18	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1
30216750007	BGWC-20	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1
30216750008	BGWC-21	EPA 9315	JC2	1
		EPA 9320	JJY	1
		Total Radium Calculation	RMK	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAD0711 Plant Bowen  
Pace Project No.: 30216750

Sample: Dup-2		Lab ID: 30216750001	Collected: 04/19/17 00:00	Received: 04/21/17 09:50	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.73 ± 0.432 (0.221)</b> C:81% T:NA	pCi/L	04/29/17 17:31	13982-63-3	
Radium-228	EPA 9320	<b>2.00 ± 0.632 (0.818)</b> C:85% T:85%	pCi/L	05/04/17 18:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.73 ± 1.06 (1.04)</b>	pCi/L	05/15/17 16:15	7440-14-4	

Sample: BGWC-24		Lab ID: 30216750002	Collected: 04/19/17 11:06	Received: 04/21/17 09:50	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.75 ± 0.417 (0.194)</b> C:94% T:NA	pCi/L	04/29/17 17:31	13982-63-3	
Radium-228	EPA 9320	<b>2.06 ± 0.634 (0.810)</b> C:78% T:74%	pCi/L	05/04/17 12:06	15262-20-1	
Total Radium	Total Radium Calculation	<b>3.81 ± 1.05 (1.00)</b>	pCi/L	05/15/17 16:15	7440-14-4	

Sample: BGWC-19		Lab ID: 30216750003	Collected: 04/19/17 12:26	Received: 04/21/17 09:50	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.141 ± 0.110 (0.176)</b> C:99% T:NA	pCi/L	04/29/17 17:31	13982-63-3	
Radium-228	EPA 9320	<b>0.833 ± 0.549 (1.08)</b> C:82% T:78%	pCi/L	05/04/17 16:42	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.974 ± 0.659 (1.26)</b>	pCi/L	05/15/17 16:15	7440-14-4	

Sample: BGWC-23		Lab ID: 30216750004	Collected: 04/19/17 14:00	Received: 04/21/17 09:50	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.660 ± 0.226 (0.179)</b> C:96% T:NA	pCi/L	04/29/17 17:24	13982-63-3	
Radium-228	EPA 9320	<b>0.288 ± 0.436 (0.942)</b> C:78% T:79%	pCi/L	05/04/17 16:42	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.948 ± 0.662 (1.12)</b>	pCi/L	05/15/17 16:15	7440-14-4	

Sample: BGWC-17		Lab ID: 30216750005	Collected: 04/19/17 10:00	Received: 04/21/17 09:50	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.167 ± 0.128 (0.216)</b> C:96% T:NA	pCi/L	04/29/17 17:24	13982-63-3	
Radium-228	EPA 9320	<b>0.483 ± 0.492 (1.03)</b> C:80% T:83%	pCi/L	05/04/17 16:42	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAD0711 Plant Bowen  
Pace Project No.: 30216750

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-17</b> <b>Lab ID: 30216750005</b> Collected: 04/19/17 10:00      Received: 04/21/17 09:50      Matrix: Water PWS:      Site ID:      Sample Type:						
Total Radium	Total Radium Calculation	<b>0.650 ± 0.620 (1.25)</b>	pCi/L	05/15/17 16:15	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-18</b> <b>Lab ID: 30216750006</b> Collected: 04/19/17 11:20      Received: 04/21/17 09:50      Matrix: Water PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.154 ± 0.111 (0.179)</b> C:92% T:NA	pCi/L	05/01/17 08:19	13982-63-3	
Radium-228	EPA 9320	<b>0.550 ± 0.547 (1.14)</b> C:76% T:72%	pCi/L	05/04/17 16:42	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.704 ± 0.658 (1.32)</b>	pCi/L	05/15/17 16:15	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-20</b> <b>Lab ID: 30216750007</b> Collected: 04/19/17 13:00      Received: 04/21/17 09:50      Matrix: Water PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.521 ± 0.184 (0.153)</b> C:98% T:NA	pCi/L	05/01/17 08:19	13982-63-3	
Radium-228	EPA 9320	<b>0.955 ± 0.608 (1.17)</b> C:81% T:63%	pCi/L	05/04/17 16:42	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.48 ± 0.792 (1.32)</b>	pCi/L	05/15/17 16:15	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-21</b> <b>Lab ID: 30216750008</b> Collected: 04/19/17 15:05      Received: 04/21/17 09:50      Matrix: Water PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.197 ± 0.128 (0.194)</b> C:84% T:NA	pCi/L	05/01/17 08:19	13982-63-3	
Radium-228	EPA 9320	<b>0.291 ± 0.393 (0.839)</b> C:81% T:75%	pCi/L	05/04/17 18:27	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.488 ± 0.521 (1.03)</b>	pCi/L	05/15/17 16:15	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0711 Plant Bowen

Pace Project No.: 30216750

---

QC Batch:	256301	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30216750001, 30216750002, 30216750003, 30216750004, 30216750005, 30216750006, 30216750007, 30216750008		

---

METHOD BLANK:	1262529	Matrix:	Water
Associated Lab Samples:	30216750001, 30216750002, 30216750003, 30216750004, 30216750005, 30216750006, 30216750007, 30216750008		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0102 ± 0.0679 (0.185) C:100% T:NA	pCi/L	04/29/17 17:31	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0711 Plant Bowen

Pace Project No.: 30216750

---

QC Batch:	256379	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30216750001, 30216750002, 30216750003, 30216750004, 30216750005, 30216750006, 30216750007, 30216750008		

---

METHOD BLANK:	1263006	Matrix:	Water
Associated Lab Samples:	30216750001, 30216750002, 30216750003, 30216750004, 30216750005, 30216750006, 30216750007, 30216750008		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.389 ± 0.383 (0.785) C:82% T:66%	pCi/L	05/04/17 12:06	

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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## QUALIFIERS

Project: AAD0711 Plant Bowen  
Pace Project No.: 30216750

### 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, LLC - Atlanta GA  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

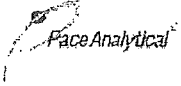
30216750

PAGE: / OF /

CLIENT NAME: SOUTHERN COMPANY SERVICES				ANALYSIS REQUESTED							LAB NUMBER	CONTAINER TYPE		PRESERVATION														
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 RALPH MCCELL BLVD NE BLDG 5 ATLANTA, GA 30308				CONTAINER TYPE:	P	P	P						P - PLASTIC	1 - HCl, ≤6°C														
REPORT TO: JOHN ABRAHAM				CC: MARIA PADILLA	PRESERVATION:							A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C															
REQUESTED COMPLETION DATE:				PO#: GP-10684198	# of							G - CLEAR GLASS	3 - HNO <sub>3</sub>															
PROJECT NAME/STATE: PLANT BOWEN ASH POND CER				CONTAINERS ↓	METALS BY HX II EPA 8160, F470 C1, F, SO4 EPA 820 TDG RADUM 226K 228 SM-876 9318 9320	C	O	N	I	D	U	S	B	E	R													
PROJECT #:																												
Collection DATE	Collection TIME	MATRIX CODE*	COMPARABLE													SAMPLE IDENTIFICATION												
04/19/17		GW	X													DUP-2	4		1	1	2							
04/19/17	1100	GW	X													BGWC-24	6		1	1	4							
04/19/17	1220	GW	X													BGWC-19	4		1	1	2							
04/19/17	1400	GW	X													BGWC-23	4		1	1	2							
04/19/17	1000	GW	X													BGWC-17	4		1	1	2							
04/19/17	1120	GW	X													BGWC-18	4		1	1	2							
04/19/17	1300	GW	X													BGWC-20	4		1	1	2							
04/19/17	1500	GW	X	BGWC-21	4		1	1	2																			
SAMPLED BY AND TITLE: ROBERT AVILA KEVIN STEPHENSON/ GILGEL PATRICK				DATE/TIME: 04/19/17 1600	RELINQUISHED BY: [Signature]	DATE/TIME: 04/20/17 0820	FOR LAB USE ONLY																					
RECEIVED BY: [Signature]				DATE/TIME: 04/20/17 0820	RELINQUISHED BY:	DATE/TIME:	LAB #:	AAD0711																				
RECEIVED BY LAB: [Signature]				DATE/TIME: 04/20/17 0820	SAMPLE SHIPPED VIA:	DATE/TIME:	Entered into LIMS:	MR																				
pH checked: Yes/No NA				Temp: Min/Max	CUSTOMER: UPS FED-EX USPS COURIER CLIENT OTHER FS	Tracking #:																						
Custody Seal: Intact/Broken Not Present N/A				# of Coolers:	Cooler ID:																							

Sample Condition Upon Receipt Pittsburgh

ANL



Client Name: Pace, GA

Project # 30216750

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5103 8180

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ANL 4-21-17

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.
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>ANL</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>ANL</u> Date: <u>4-21-17</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

Test: Ra-228  
Analyst: JJY  
Date: 4/28/2017  
Worklist: 35288  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1263006	
MB concentration:	0.389	
M/B Counting Uncertainty:	0.376	
MB MDC:	0.785	
MB Numerical Performance Indicator:	2.02	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS35288	LCS35288
Count Date:	5/4/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	24.624	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.808	
Target Conc. (pCi/L, g, F):	6.095	
Uncertainty (Calculated):	0.439	
Result (pCi/L, g, F):	6.974	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.742	
Numerical Performance Indicator:	2.00	
Percent Recovery:	114.43%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30216750002	
Duplicate Sample I.D.:	30216750002DUP	
Sample Result (pCi/L, g, F):	2.058	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.516	
Sample Duplicate Result (pCi/L, g, F):	2.615	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.526	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.480	
Duplicate RPD:	23.81%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*Handwritten signature and date: JJY 5/15/17*





## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 4/26/2017  
Worklist: 35277  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1262529	
MB concentration:	0.010	
M/B Counting Uncertainty:	0.068	
MB MDC:	0.185	
MB Numerical Performance Indicator:	0.29	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCS35277	LCSD35277
Count Date:	4/28/2017	
Spike I.D.:	17-003	
Spike Concentration (pCi/mL):	38.229	
Volume Used (mL):	0.25	
Aliquot Volume (L, g, F):	0.503	
Target Conc. (pCi/L, g, F):	19.004	
Uncertainty (Calculated):	0.894	
Result (pCi/L, g, F):	15.521	
LC/LCSD Counting Uncertainty (pCi/L, g, F):	0.736	
Numerical Performance Indicator:	-5.90	
Percent Recovery:	81.67%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30216750003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30216750003DUP	
Sample Result (pCi/L, g, F):	0.141	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.108	
Sample Duplicate Result (pCi/L, g, F):	0.115	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.091	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.355	
Duplicate RPD:	20.00%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*Handwritten signature/initials*



**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: AAD0786**

**April 27, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

April 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>
FBL 042117	AAD0786-01	Water	04/21/17 09:45	04/21/17 13:25
EQBL 042117	AAD0786-02	Water	04/21/17 09:50	04/21/17 13:25
BGWC-14	AAD0786-03	Ground Water	04/21/17 09:30	04/21/17 13:25
BGWC-15	AAD0786-04	Ground Water	04/21/17 10:40	04/21/17 13:25



**PACE ANALYTICAL SERVICES, LLC.**

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Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 27, 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.



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 27, 2017

Report No.: AAD0786

Project: CCR Event

Client ID: FBL 042117

Lab Number ID: AAD0786-01

Date/Time Sampled: 4/21/2017 9:45:00AM

Date/Time Received: 4/21/2017 1:25:00PM

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	04/25/17 16:35	04/25/17 16:35	7040752	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 13:30	7040703	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 13:30	7040703	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 13:30	7040703	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Boron	0.0181	0.0400	0.0060	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Calcium	0.0289	0.500	0.0104	mg/L	EPA 6020B	B-01, J	1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:09	7040732	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:31	7040685	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 27, 2017

Report No.: AAD0786

Project: CCR Event

Client ID: EQBL 042117

Lab Number ID: AAD0786-02

Date/Time Sampled: 4/21/2017 9:50:00AM

Date/Time Received: 4/21/2017 1:25:00PM

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	04/25/17 16:35	04/25/17 16:35	7040752	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 13:51	7040703	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 13:51	7040703	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 13:51	7040703	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Barium	0.0006	0.0100	0.0003	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Boron	0.0116	0.0400	0.0060	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Calcium	0.123	0.500	0.0104	mg/L	EPA 6020B	B-01, J	1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:14	7040732	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:33	7040685	MTC



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 Atlanta GA, 30339

April 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0786

Project: CCR Event

Client ID: BGWC-14

Lab Number ID: AAD0786-03

Date/Time Sampled: 4/21/2017 9:30:00AM

Date/Time Received: 4/21/2017 1:25:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	620	25	10	mg/L	SM 2540 C		1	04/25/17 16:35	04/25/17 16:35	7040752	JPT
<b>Inorganic Anions</b>											
Chloride	37	0.25	0.01	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 14:11	7040703	RLC
Fluoride	0.04	0.30	0.004	mg/L	EPA 300.0	J	1	04/23/17 18:03	04/25/17 14:11	7040703	RLC
Sulfate	220	10	0.92	mg/L	EPA 300.0		10	04/23/17 18:03	04/25/17 18:19	7040703	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Arsenic	0.0039	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Barium	0.0871	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Boron	0.820	0.0400	0.0060	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Calcium	101	25.0	0.522	mg/L	EPA 6020B	B-01	50	04/24/17 08:15	04/25/17 23:37	7040732	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Molybdenum	0.0052	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:32	7040732	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:35	7040685	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 27, 2017

Report No.: AAD0786

Project: CCR Event

Client ID: BGWC-15

Lab Number ID: AAD0786-04

Date/Time Sampled: 4/21/2017 10:40:00AM

Date/Time Received: 4/21/2017 1:25:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Arsenic	0.0024	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Barium	0.0883	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Boron	0.0795	0.0400	0.0060	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Calcium	131	25.0	0.522	mg/L	EPA 6020B	B-01	50	04/24/17 08:15	04/25/17 23:49	7040732	CSW
Chromium	0.0013	0.0100	0.0003	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Cobalt	0.0022	0.0100	0.0005	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Molybdenum	0.0190	0.0100	0.0006	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Thallium	0.0001	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:43	7040732	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:38	7040685	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

April 27, 2017

**Report No.: AAD0786**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040752 - SM 2540 C</b>											
<b>Blank (7040752-BLK1)</b>						Prepared & Analyzed: 04/25/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7040752-BS1)</b>						Prepared & Analyzed: 04/25/17					
Total Dissolved Solids	414	25	10	mg/L	400.00		104	84-108			
<b>Duplicate (7040752-DUP1)</b>						Prepared & Analyzed: 04/25/17					
						Source: AAD0786-03					
Total Dissolved Solids	601	25	10	mg/L		620			3	10	



**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

April 27, 2017

**Report No.: AAD0786**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040703 - EPA 300.0</b>											
<b>Blank (7040703-BLK1)</b>						Prepared: 04/23/17 Analyzed: 04/25/17					
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 (7040703-BS1)</b>						Prepared: 04/23/17 Analyzed: 04/25/17					
Chloride	9.84	0.25	0.01	mg/L	10.010		98	90-110			
Fluoride	9.92	0.30	0.004	mg/L	10.020		99	90-110			
Sulfate	9.91	1.0	0.09	mg/L	10.020		99	90-110			
<b>Matrix Spike (7040703-MS1)</b>						<b>Source: AAD0786-03</b> Prepared: 04/23/17 Analyzed: 04/25/17					
Chloride	43.2	0.25	0.01	mg/L	10.010	36.9	63	90-110			QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.04	101	90-110			
Sulfate	164	1.0	0.09	mg/L	10.020	171	NR	90-110			QM-02
<b>Matrix Spike Dup (7040703-MSD1)</b>						<b>Source: AAD0786-03</b> Prepared: 04/23/17 Analyzed: 04/25/17					
Chloride	43.2	0.25	0.01	mg/L	10.010	36.9	63	90-110	0.02	15	QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.04	102	90-110	0.6	15	
Sulfate	164	1.0	0.09	mg/L	10.020	171	NR	90-110	0.002	15	QM-02



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April 27, 2017

**Report No.: AAD0786**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040685 - EPA 7470A</b>											
<b>Blank (7040685-BLK1)</b> Prepared & Analyzed: 04/25/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7040685-BS1)</b> Prepared & Analyzed: 04/25/17											
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3		99	80-120			
<b>Matrix Spike (7040685-MS1)</b> Source: AAD0711-01 Prepared & Analyzed: 04/25/17											
Mercury	0.00229	0.00050	0.000041	mg/L	2.5000E-3	0.00013	86	75-125			
<b>Matrix Spike Dup (7040685-MSD1)</b> Source: AAD0711-01 Prepared & Analyzed: 04/25/17											
Mercury	0.00226	0.00050	0.000041	mg/L	2.5000E-3	0.00013	85	75-125	1	20	
<b>Post Spike (7040685-PS1)</b> Source: AAD0711-01 Prepared & Analyzed: 04/25/17											
Mercury	1.59			ug/L	1.6667	0.0874	90	80-120			
<b>Batch 7040732 - EPA 3005A</b>											
<b>Blank (7040732-BLK1)</b> Prepared & Analyzed: 04/25/17											
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	0.0153	0.500	0.0104	mg/L							J
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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 2480 Maner Road  
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Attention: Mr. Joju Abraham

April 27, 2017

**Report No.: AAD0786**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040732 - EPA 3005A</b>											
<b>LCS (7040732-BS1)</b>						Prepared & Analyzed: 04/25/17					
Antimony	0.103	0.0030	0.0003	mg/L	0.10000		103	80-120			
Arsenic	0.100	0.0050	0.0004	mg/L	0.10000		100	80-120			
Barium	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			
Beryllium	0.0968	0.0030	0.00007	mg/L	0.10000		97	80-120			
Boron	0.971	0.0400	0.0060	mg/L	1.0000		97	80-120			
Cadmium	0.104	0.0010	0.00006	mg/L	0.10000		104	80-120			
Calcium	0.994	0.500	0.0104	mg/L	1.0000		99	80-120			
Chromium	0.0988	0.0100	0.0003	mg/L	0.10000		99	80-120			
Cobalt	0.0990	0.0100	0.0005	mg/L	0.10000		99	80-120			
Copper	0.100	0.0250	0.0003	mg/L	0.10000		100	80-120			
Lead	0.100	0.0050	0.00007	mg/L	0.10000		100	80-120			
Molybdenum	0.105	0.0100	0.0006	mg/L	0.10000		105	80-120			
Nickel	0.100	0.0100	0.0003	mg/L	0.10000		100	80-120			
Selenium	0.102	0.0100	0.0014	mg/L	0.10000		102	80-120			
Silver	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120			
Thallium	0.103	0.0010	0.00005	mg/L	0.10000		103	80-120			
Vanadium	0.0997	0.0100	0.0014	mg/L	0.10000		100	80-120			
Zinc	0.101	0.0100	0.0013	mg/L	0.10000		101	80-120			
Lithium	0.100	0.0500	0.0011	mg/L	0.10000		100	80-120			
<b>Matrix Spike (7040732-MS1)</b>						Source: AAD0791-01 Prepared & Analyzed: 04/25/17					
Antimony	0.105	0.0030	0.0003	mg/L	0.10000	ND	105	75-125			
Arsenic	0.111	0.0050	0.0004	mg/L	0.10000	0.0028	109	75-125			
Barium	0.190	0.0100	0.0003	mg/L	0.10000	0.0860	104	75-125			
Beryllium	0.0923	0.0030	0.00007	mg/L	0.10000	ND	92	75-125			
Boron	14.7	2.00	0.302	mg/L	1.0000	13.3	138	75-125			QM-02
Cadmium	0.102	0.0010	0.00006	mg/L	0.10000	ND	102	75-125			
Calcium	455	250	5.22	mg/L	1.0000	422	NR	75-125			QM-02
Chromium	0.108	0.0100	0.0003	mg/L	0.10000	ND	108	75-125			
Cobalt	0.114	0.0100	0.0005	mg/L	0.10000	0.0116	103	75-125			
Copper	0.0953	0.0250	0.0003	mg/L	0.10000	0.0003	95	75-125			
Lead	0.0920	0.0050	0.00007	mg/L	0.10000	ND	92	75-125			
Molybdenum	0.168	0.0100	0.0006	mg/L	0.10000	0.0662	102	75-125			
Nickel	0.106	0.0100	0.0003	mg/L	0.10000	0.0058	101	75-125			
Selenium	0.106	0.0100	0.0014	mg/L	0.10000	ND	106	75-125			
Silver	0.0915	0.0100	0.0003	mg/L	0.10000	ND	91	75-125			
Thallium	0.0988	0.0010	0.00005	mg/L	0.10000	0.0006	98	75-125			
Vanadium	0.114	0.0100	0.0014	mg/L	0.10000	ND	114	75-125			
Zinc	0.0992	0.0100	0.0013	mg/L	0.10000	0.0021	97	75-125			
Lithium	0.109	0.0500	0.0011	mg/L	0.10000	0.0120	97	75-125			



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 27, 2017

**Report No.: AAD0786**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040732 - EPA 3005A</b>											
<b>Matrix Spike Dup (7040732-MSD1)</b>			<b>Source: AAD0791-01</b>			<b>Prepared &amp; Analyzed: 04/25/17</b>					
Antimony	0.103	0.0030	0.0003	mg/L	0.10000	ND	103	75-125	2	20	
Arsenic	0.110	0.0050	0.0004	mg/L	0.10000	0.0028	107	75-125	2	20	
Barium	0.190	0.0100	0.0003	mg/L	0.10000	0.0860	104	75-125	0.2	20	
Beryllium	0.0915	0.0030	0.00007	mg/L	0.10000	ND	91	75-125	1	20	
Boron	15.0	2.00	0.302	mg/L	1.0000	13.3	163	75-125	2	20	QM-02
Cadmium	0.0994	0.0010	0.00006	mg/L	0.10000	ND	99	75-125	3	20	
Calcium	432	250	5.22	mg/L	1.0000	422	NR	75-125	5	20	QM-02
Chromium	0.103	0.0100	0.0003	mg/L	0.10000	ND	103	75-125	4	20	
Cobalt	0.113	0.0100	0.0005	mg/L	0.10000	0.0116	102	75-125	0.8	20	
Copper	0.0949	0.0250	0.0003	mg/L	0.10000	0.0003	95	75-125	0.4	20	
Lead	0.0938	0.0050	0.00007	mg/L	0.10000	ND	94	75-125	2	20	
Molybdenum	0.174	0.0100	0.0006	mg/L	0.10000	0.0662	108	75-125	4	20	
Nickel	0.102	0.0100	0.0003	mg/L	0.10000	0.0058	97	75-125	4	20	
Selenium	0.110	0.0100	0.0014	mg/L	0.10000	ND	110	75-125	3	20	
Silver	0.0925	0.0100	0.0003	mg/L	0.10000	ND	93	75-125	1	20	
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	0.0006	100	75-125	2	20	
Vanadium	0.110	0.0100	0.0014	mg/L	0.10000	ND	110	75-125	4	20	
Zinc	0.0974	0.0100	0.0013	mg/L	0.10000	0.0021	95	75-125	2	20	
Lithium	0.115	0.0500	0.0011	mg/L	0.10000	0.0120	103	75-125	5	20	
<b>Post Spike (7040732-PS1)</b>			<b>Source: AAD0791-01</b>			<b>Prepared &amp; Analyzed: 04/25/17</b>					
Antimony	102			ug/L	100.00	-0.0125	102	80-120			
Arsenic	110			ug/L	100.00	2.85	108	80-120			
Barium	184			ug/L	100.00	86.0	98	80-120			
Beryllium	88.5			ug/L	100.00	0.0644	88	80-120			
Boron	14700			ug/L	1000.0	13300	131	80-120			QM-02
Cadmium	102			ug/L	100.00	0.0270	102	80-120			
Calcium	412000			ug/L	1000.0	422000	NR	80-120			QM-02
Chromium	106			ug/L	100.00	0.0938	106	80-120			
Cobalt	113			ug/L	100.00	11.6	101	80-120			
Copper	93.8			ug/L	100.00	0.300	93	80-120			
Lead	92.7			ug/L	100.00	0.0237	93	80-120			
Molybdenum	170			ug/L	100.00	66.2	104	80-120			
Nickel	106			ug/L	100.00	5.82	100	80-120			
Selenium	106			ug/L	100.00	0.515	106	80-120			
Silver	90.9			ug/L	100.00	0.0030	91	80-120			
Thallium	98.3			ug/L	100.00	0.591	98	80-120			
Vanadium	112			ug/L	100.00	-0.0747	112	80-120			
Zinc	95.6			ug/L	100.00	2.05	94	80-120			
Lithium	108			ug/L	100.00	12.0	96	80-120			



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Attention: Mr. Joju Abraham

April 27, 2017

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## Legend

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### 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

- 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.**





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**LOG-IN CHECKLIST**

**Printed: 4/24/2017 12:00:01PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 04/21/17 13:25

**Work Order:** AAD0786

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 4

**#Containers:** 11

**Minimum Temp(C):** 2.0

**Maximum Temp(C):** 2.0

**Custody Seal(s) Used:**

**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:**



May 16, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAD0786 Plant Bowen  
Pace Project No.: 30216905

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on April 24, 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: AAD0786 Plant Bowen  
Pace Project No.: 30216905

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAD0786 Plant Bowen

Pace Project No.: 30216905

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30216905001	FBL042117	Water	04/21/17 09:45	04/24/17 09:00
30216905002	EQBL042117	Water	04/21/17 09:50	04/24/17 09:00

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### SAMPLE ANALYTE COUNT

Project: AAD0786 Plant Bowen

Pace Project No.: 30216905

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30216905001	FBL042117	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30216905002	EQBL042117	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: AAD0786 Plant Bowen

Pace Project No.: 30216905

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>-0.00896 ± 0.0463 (0.151)</b> C:97% T:NA	pCi/L	05/01/17 08:19	13982-63-3	
Radium-228		EPA 9320	<b>0.242 ± 0.351 (0.754)</b> C:75% T:77%	pCi/L	05/10/17 10:58	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.242 ± 0.397 (0.905)</b>	pCi/L	05/16/17 15:47	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>-0.0807 ± 0.0937 (0.360)</b> C:83% T:NA	pCi/L	05/11/17 08:55	13982-63-3	
Radium-228		EPA 9320	<b>0.391 ± 0.388 (0.797)</b> C:77% T:69%	pCi/L	05/10/17 10:59	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.391 ± 0.482 (1.16)</b>	pCi/L	05/16/17 15:47	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0786 Plant Bowen

Pace Project No.: 30216905

QC Batch: 256301

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30216905001

METHOD BLANK: 1262529

Matrix: Water

Associated Lab Samples: 30216905001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0102 ± 0.0679 (0.185) C:100% T:NA	pCi/L	04/29/17 17:31	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAD0786 Plant Bowen

Pace Project No.: 30216905

QC Batch: 257831

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30216905002

METHOD BLANK: 1269948

Matrix: Water

Associated Lab Samples: 30216905002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.00725 ± 0.136 (0.382) C:84% T:NA	pCi/L	05/11/17 08:55	

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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## QUALIFIERS

Project: AAD0786 Plant Bowen

Pace Project No.: 30216905

### 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 (%)

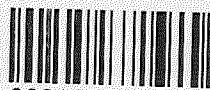
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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WO#: 30216905



30216905

Chain of Custody



Workorder: AAD0786

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 5/16/2017

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	FBL042117	G	4/21/2017 9:45	AAD0786-01	W	2				X	001
2	EQBL042117	G	4/21/2017 9:50	AAD0786-02	W	2				X	002
3											
4											
5											
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			Ashley Row Pace	4-24-17 0900	
2					
3					

Cooler Temperature on Receipt <u>NA</u> °C	Custody Seal Y or <u>N</u>	Received on Ice Y or <u>N</u>	Sample Intact Y or <u>N</u>
--	----------------------------	-------------------------------	-----------------------------

\*\*\*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 Services, LLC - Atlanta GA  
110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
(770) 734-4200 : FAX (770) 734-4201

CLIENT NAME: <i>Southern Company Services</i>					ANALYSIS REQUESTED								CONTAINER TYPE	PRESERVATION
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <i>211 Ralph McGill Blvd SE B10RS Atlanta, GA 30308</i>					CONTAINER TYPE	P	P	P						
REPORT TO: <i>Joie Abraham</i> CC: <i>Maria Padilla</i>					PRESERVATION:	3	7	3						
REQUESTED COMPLETION DATE:					# of									
PROJECT NAME/STATE: <i>Plant Bowen - Ash Pond CCZ</i>					CONTAINERS									
PROJECT #:					↓									
Collection DATE	Collection TIME	MATRIX CODE*	COMP	GRAB	SAMPLE IDENTIFICATION									
<i>4/21/17</i>	<i>0945</i>	<i>W</i>		<i>X</i>	<i>FBL 042117</i>	<i>4</i>	<i>1</i>	<i>1</i>	<i>2</i>					
<i>4/21/17</i>	<i>0950</i>	<i>W</i>		<i>X</i>	<i>EQBL 042117</i>	<i>4</i>	<i>1</i>	<i>1</i>	<i>2</i>					
<i>4/21/17</i>	<i>0930</i>	<i>GW</i>		<i>X</i>	<i>BGWL-14</i>	<i>2</i>	<i>1</i>	<i>1</i>						
<i>4/21/17</i>	<i>1040</i>	<i>GW</i>		<i>X</i>	<i>BGWL-15</i>	<i>1</i>	<i>1</i>							

SAMPLED BY AND TITLE: <i>Robert Mull + Michael Pabian</i>		DATE/TIME: <i>4/21/17 1125</i>	RELINQUISHED BY: <i>M. L. B. Keefe</i>	DATE/TIME: <i>4/21/17 1325</i>	FOR LAB USE ONLY
RECEIVED BY: <i>[Signature]</i>		DATE/TIME: <i>4/21/17 1325</i>	RECEIVED BY: <i>[Signature]</i>	DATE/TIME:	LAB #: <i>AA0786</i>
RECEIVED BY LAB: <i>[Signature]</i>		DATE/TIME: <i>4/21/17 1325</i>	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS		Entered into LIMS: <i>MR</i>
Temperature: <i>22.2C</i>	Seal: <i>Intact</i>	# of Coolers:	Cooler ID:	Tracking #:	

Sample Condition Upon Receipt Pittsburgh

30216905

ATL



Client Name: Pace, GA

Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7789 6548 7398

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 09/17/4/24/17

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.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PHL2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>09/17</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>09/17</u> Date: <u>4-24-17</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



Test: Ra-226  
Analyst: JC2  
Date: 4/26/2017  
Worklist: 35277  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1262529	
MB concentration:	0.010	
M/B Counting Uncertainty:	0.068	
MB MDC:	0.185	
MB Numerical Performance Indicator:	0.29	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCS35277	LCSD35277
Count Date:	4/28/2017	
Spike I.D.:	17-003	
Spike Concentration (pCi/mL):	38.229	
Volume Used (mL):	0.25	
Aliquot Volume (L, g, F):	0.503	
Target Conc. (pCi/L, g, F):	19.004	
Uncertainty (Calculated):	0.894	
Result (pCi/L, g, F):	15.521	
LCSD/LCSD Counting Uncertainty (pCi/L, g, F):	0.736	
Numerical Performance Indicator:	-5.90	
Percent Recovery:	81.67%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30216750003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30216750003DUP	
Sample Result (pCi/L, g, F):	0.141	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.108	
Sample Duplicate Result (pCi/L, g, F):	0.115	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.091	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.355	
Duplicate RPD:	20.00%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*Asst/1/17*



## Quality Control Sample Performance Assessment

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

Test: Ra-226  
Analyst: JC2  
Date: 5/9/2017  
Worklist: 35555  
Matrix: DW

Method Blank Assessment		
MB Sample ID	1269948	
MB concentration:	-0.007	
M/B Counting Uncertainty:	0.136	
MB MDC:	0.382	
MB Numerical Performance Indicator:	-0.10	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCSD35555	LCSD35555
Count Date:	5/11/2017	
Spike I.D.:	11-054	
Spike Concentration (pCi/mL):	5.963	
Volume Used (mL):	2.00	
Aliquot Volume (L, g, F):	0.501	
Target Conc. (pCi/L, g, F):	23.804	
Uncertainty (Calculated):	1.120	
Result (pCi/L, g, F):	20.370	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.304	
Numerical Performance Indicator:	-3.92	
Percent Recovery:	85.57%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30217522001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30217522001DUP	
Sample Result (pCi/L, g, F):	-0.004	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.154	
Sample Duplicate Result (pCi/L, g, F):	-0.027	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.075	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.271	30217522001
Duplicate RPD:	-152.59%	30217522001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

*Costello*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 5/8/2017  
Worklist: 35453  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1267402
MB concentration:	0.702
M/B Counting Uncertainty:	0.356
MB MDC:	0.661
MB Numerical Performance Indicator:	3.87
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCS (Y or N)?	Y
	LCS35453	LCSD35453
Count Date:	5/10/2017	5/10/2017
Spike I.D.:	17-005	17-005
Spike Concentration (pCi/mL):	24.575	24.575
Volume Used (mL):	0.20	0.20
Aliquot Volume (L, g, F):	0.810	0.811
Target Conc. (pCi/L, g, F):	6.068	6.063
Uncertainty (Calculated):	0.437	0.437
Result (pCi/L, g, F):	6.480	8.183
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.741	0.798
Numerical Performance Indicator:	0.94	4.57
Percent Recovery:	106.79%	134.96%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS35453	
Duplicate Sample I.D.:	LCSD35453	
Sample Result (pCi/L, g, F):	6.480	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.741	
Sample Duplicate Result (pCi/L, g, F):	8.183	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.798	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	-3.065	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	23.31%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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, 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: AAD0791**

**April 28, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 28, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-22	AAD0791-01	Ground Water	04/20/17 10:12	04/21/17 14:25
BGWC-25	AAD0791-02	Ground Water	04/20/17 11:00	04/21/17 14:25
Dup-3	AAD0791-03	Ground Water	04/20/17 00:00	04/21/17 14:25
FBL042017	AAD0791-04	Water	04/20/17 12:30	04/21/17 14:25
EQBL042017	AAD0791-05	Water	04/20/17 12:40	04/21/17 14:25



**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

April 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.**

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

April 28, 2017

Attention: Mr. Joju Abraham

Report No.: AAD0791

Project: CCR Event

Client ID: BGWC-22

Lab Number ID: AAD0791-01

Date/Time Sampled: 4/20/2017 10:12:00AM

Date/Time Received: 4/21/2017 2:25:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2330	25	10	mg/L	SM 2540 C		1	04/25/17 16:35	04/25/17 16:35	7040752	JPT
<b>Inorganic Anions</b>											
Chloride	740	25	1.3	mg/L	EPA 300.0		100	04/23/17 18:03	04/25/17 18:40	7040703	RLC
Fluoride	0.34	0.30	0.004	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 15:13	7040703	RLC
Sulfate	990	100	9.2	mg/L	EPA 300.0		100	04/23/17 18:03	04/25/17 18:40	7040703	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Arsenic	0.0028	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Barium	0.0860	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Boron	13.3	2.00	0.302	mg/L	EPA 6020B		50	04/24/17 08:15	04/25/17 00:00	7040732	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Calcium	422	250	5.22	mg/L	EPA 6020B	B-01	500	04/24/17 08:15	04/26/17 13:03	7040732	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Cobalt	0.0116	0.0100	0.0005	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Molybdenum	0.0662	0.0100	0.0006	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Thallium	0.0006	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Lithium	0.0120	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/25/17 23:54	7040732	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:45	7040685	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 28, 2017

Report No.: AAD0791

Project: CCR Event

Client ID: BGWC-25

Lab Number ID: AAD0791-02

Date/Time Sampled: 4/20/2017 11:00:00AM

Date/Time Received: 4/21/2017 2:25:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	324	25	10	mg/L	SM 2540 C		1	04/25/17 16:35	04/25/17 16:35	7040752	JPT
<b>Inorganic Anions</b>											
Chloride	4.1	0.25	0.01	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 15:34	7040703	RLC
Fluoride	0.02	0.30	0.004	mg/L	EPA 300.0	J	1	04/23/17 18:03	04/25/17 15:34	7040703	RLC
Sulfate	26	1.0	0.09	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 15:34	7040703	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Arsenic	0.0024	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Barium	0.0279	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Boron	0.0283	0.0400	0.0060	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Calcium	40.7	25.0	0.522	mg/L	EPA 6020B	B-01	50	04/24/17 08:15	04/26/17 00:12	7040732	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Lead	0.0002	0.0050	0.00007	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Molybdenum	0.0019	0.0100	0.0006	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:06	7040732	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:47	7040685	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 28, 2017

Report No.: AAD0791

Project: CCR Event

Client ID: Dup-3

Lab Number ID: AAD0791-03

Date/Time Sampled: 4/20/2017 12:00:00AM

Date/Time Received: 4/21/2017 2:25:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2400	25	10	mg/L	SM 2540 C		1	04/25/17 16:35	04/25/17 16:35	7040752	JPT
<b>Inorganic Anions</b>											
Chloride	890	25	1.3	mg/L	EPA 300.0		100	04/23/17 18:03	04/25/17 19:00	7040703	RLC
Fluoride	0.28	0.30	0.004	mg/L	EPA 300.0	J	1	04/23/17 18:03	04/25/17 15:55	7040703	RLC
Sulfate	1200	100	9.2	mg/L	EPA 300.0		100	04/23/17 18:03	04/25/17 19:00	7040703	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Arsenic	0.0032	0.0050	0.0004	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Barium	0.0898	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Boron	9.24	0.200	0.0302	mg/L	EPA 6020B		5	04/24/17 08:15	04/26/17 00:52	7040732	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Calcium	425	250	5.22	mg/L	EPA 6020B	B-01	500	04/24/17 08:15	04/27/17 13:49	7040732	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Cobalt	0.0121	0.0100	0.0005	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Molybdenum	0.0698	0.0100	0.0006	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Thallium	0.0006	0.0010	0.00005	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Lithium	0.0126	0.0500	0.0011	mg/L	EPA 6020B	J	1	04/24/17 08:15	04/26/17 00:17	7040732	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:49	7040685	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 28, 2017

Report No.: AAD0791

Project: CCR Event

Client ID: FBL042017

Lab Number ID: AAD0791-04

Date/Time Sampled: 4/20/2017 12:30:00PM

Date/Time Received: 4/21/2017 2:25:00PM

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	04/25/17 16:35	04/25/17 16:35	7040752	JPT
<b>Inorganic Anions</b>											
Chloride	0.10	0.25	0.01	mg/L	EPA 300.0	J	1	04/23/17 18:03	04/25/17 16:15	7040703	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 16:15	7040703	RLC
Sulfate	0.12	1.0	0.09	mg/L	EPA 300.0	J	1	04/23/17 18:03	04/25/17 16:15	7040703	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Calcium	0.0255	0.500	0.0104	mg/L	EPA 6020B	B-01, J	1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:40	7040732	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:52	7040685	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 28, 2017

Report No.: AAD0791

Project: CCR Event

Client ID: EQBL042017

Lab Number ID: AAD0791-05

Date/Time Sampled: 4/20/2017 12:40:00PM

Date/Time Received: 4/21/2017 2:25:00PM

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	04/25/17 16:35	04/25/17 16:35	7040752	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 16:36	7040703	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 16:36	7040703	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	04/23/17 18:03	04/25/17 16:36	7040703	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Calcium	0.0264	0.500	0.0104	mg/L	EPA 6020B	B-01, J	1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	04/24/17 08:15	04/26/17 00:46	7040732	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	04/25/17 09:20	04/25/17 14:54	7040685	MTC



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April 28, 2017

**Report No.: AAD0791**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040752 - SM 2540 C</b>											
<b>Blank (7040752-BLK1)</b>						Prepared & Analyzed: 04/25/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7040752-BS1)</b>						Prepared & Analyzed: 04/25/17					
Total Dissolved Solids	414	25	10	mg/L	400.00		104	84-108			
<b>Duplicate (7040752-DUP1)</b>						Source: AAD0786-03 Prepared & Analyzed: 04/25/17					
Total Dissolved Solids	601	25	10	mg/L		620			3	10	





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April 28, 2017

**Report No.: AAD0791**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040703 - EPA 300.0</b>											
<b>Blank (7040703-BLK1)</b>						Prepared: 04/23/17 Analyzed: 04/25/17					
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 (7040703-BS1)</b>						Prepared: 04/23/17 Analyzed: 04/25/17					
Chloride	9.84	0.25	0.01	mg/L	10.010		98	90-110			
Fluoride	9.92	0.30	0.004	mg/L	10.020		99	90-110			
Sulfate	9.91	1.0	0.09	mg/L	10.020		99	90-110			
<b>Matrix Spike (7040703-MS1)</b>						<b>Source: AAD0786-03</b> Prepared: 04/23/17 Analyzed: 04/25/17					
Chloride	43.2	0.25	0.01	mg/L	10.010	36.9	63	90-110			QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.04	101	90-110			
Sulfate	164	1.0	0.09	mg/L	10.020	171	NR	90-110			QM-02
<b>Matrix Spike Dup (7040703-MSD1)</b>						<b>Source: AAD0786-03</b> Prepared: 04/23/17 Analyzed: 04/25/17					
Chloride	43.2	0.25	0.01	mg/L	10.010	36.9	63	90-110	0.02	15	QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.04	102	90-110	0.6	15	
Sulfate	164	1.0	0.09	mg/L	10.020	171	NR	90-110	0.002	15	QM-02



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April 28, 2017

**Report No.: AAD0791**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040685 - EPA 7470A</b>											
<b>Blank (7040685-BLK1)</b> Prepared & Analyzed: 04/25/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7040685-BS1)</b> Prepared & Analyzed: 04/25/17											
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3		99	80-120			
<b>Matrix Spike (7040685-MS1)</b> Source: AAD0711-01 Prepared & Analyzed: 04/25/17											
Mercury	0.00229	0.00050	0.000041	mg/L	2.5000E-3	0.00013	86	75-125			
<b>Matrix Spike Dup (7040685-MSD1)</b> Source: AAD0711-01 Prepared & Analyzed: 04/25/17											
Mercury	0.00226	0.00050	0.000041	mg/L	2.5000E-3	0.00013	85	75-125	1	20	
<b>Post Spike (7040685-PS1)</b> Source: AAD0711-01 Prepared & Analyzed: 04/25/17											
Mercury	1.59			ug/L	1.6667	0.0874	90	80-120			
<b>Batch 7040732 - EPA 3005A</b>											
<b>Blank (7040732-BLK1)</b> Prepared & Analyzed: 04/25/17											
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	0.0153	0.500	0.0104	mg/L							J
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

April 28, 2017

**Report No.: AAD0791**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040732 - EPA 3005A</b>											
<b>LCS (7040732-BS1)</b>						Prepared & Analyzed: 04/25/17					
Antimony	0.103	0.0030	0.0003	mg/L	0.10000		103	80-120			
Arsenic	0.100	0.0050	0.0004	mg/L	0.10000		100	80-120			
Barium	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			
Beryllium	0.0968	0.0030	0.00007	mg/L	0.10000		97	80-120			
Boron	0.971	0.0400	0.0060	mg/L	1.0000		97	80-120			
Cadmium	0.104	0.0010	0.00006	mg/L	0.10000		104	80-120			
Calcium	0.994	0.500	0.0104	mg/L	1.0000		99	80-120			
Chromium	0.0988	0.0100	0.0003	mg/L	0.10000		99	80-120			
Cobalt	0.0990	0.0100	0.0005	mg/L	0.10000		99	80-120			
Copper	0.100	0.0250	0.0003	mg/L	0.10000		100	80-120			
Lead	0.100	0.0050	0.00007	mg/L	0.10000		100	80-120			
Molybdenum	0.105	0.0100	0.0006	mg/L	0.10000		105	80-120			
Nickel	0.100	0.0100	0.0003	mg/L	0.10000		100	80-120			
Selenium	0.102	0.0100	0.0014	mg/L	0.10000		102	80-120			
Silver	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120			
Thallium	0.103	0.0010	0.00005	mg/L	0.10000		103	80-120			
Vanadium	0.0997	0.0100	0.0014	mg/L	0.10000		100	80-120			
Zinc	0.101	0.0100	0.0013	mg/L	0.10000		101	80-120			
Lithium	0.100	0.0500	0.0011	mg/L	0.10000		100	80-120			
<b>Matrix Spike (7040732-MS1)</b>						Source: AAD0791-01 Prepared & Analyzed: 04/25/17					
Antimony	0.105	0.0030	0.0003	mg/L	0.10000	ND	105	75-125			
Arsenic	0.111	0.0050	0.0004	mg/L	0.10000	0.0028	109	75-125			
Barium	0.190	0.0100	0.0003	mg/L	0.10000	0.0860	104	75-125			
Beryllium	0.0923	0.0030	0.00007	mg/L	0.10000	ND	92	75-125			
Boron	14.7	2.00	0.302	mg/L	1.0000	13.3	138	75-125			QM-02
Cadmium	0.102	0.0010	0.00006	mg/L	0.10000	ND	102	75-125			
Calcium	455	250	5.22	mg/L	1.0000	422	NR	75-125			QM-02
Chromium	0.108	0.0100	0.0003	mg/L	0.10000	ND	108	75-125			
Cobalt	0.114	0.0100	0.0005	mg/L	0.10000	0.0116	103	75-125			
Copper	0.0953	0.0250	0.0003	mg/L	0.10000	0.0003	95	75-125			
Lead	0.0920	0.0050	0.00007	mg/L	0.10000	ND	92	75-125			
Molybdenum	0.168	0.0100	0.0006	mg/L	0.10000	0.0662	102	75-125			
Nickel	0.106	0.0100	0.0003	mg/L	0.10000	0.0058	101	75-125			
Selenium	0.106	0.0100	0.0014	mg/L	0.10000	ND	106	75-125			
Silver	0.0915	0.0100	0.0003	mg/L	0.10000	ND	91	75-125			
Thallium	0.0988	0.0010	0.00005	mg/L	0.10000	0.0006	98	75-125			
Vanadium	0.114	0.0100	0.0014	mg/L	0.10000	ND	114	75-125			
Zinc	0.0992	0.0100	0.0013	mg/L	0.10000	0.0021	97	75-125			
Lithium	0.109	0.0500	0.0011	mg/L	0.10000	0.0120	97	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

April 28, 2017

**Report No.: AAD0791**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7040732 - EPA 3005A</b>											
<b>Matrix Spike Dup (7040732-MSD1)</b>			<b>Source: AAD0791-01</b>			<b>Prepared &amp; Analyzed: 04/25/17</b>					
Antimony	0.103	0.0030	0.0003	mg/L	0.10000	ND	103	75-125	2	20	
Arsenic	0.110	0.0050	0.0004	mg/L	0.10000	0.0028	107	75-125	2	20	
Barium	0.190	0.0100	0.0003	mg/L	0.10000	0.0860	104	75-125	0.2	20	
Beryllium	0.0915	0.0030	0.00007	mg/L	0.10000	ND	91	75-125	1	20	
Boron	15.0	2.00	0.302	mg/L	1.0000	13.3	163	75-125	2	20	QM-02
Cadmium	0.0994	0.0010	0.00006	mg/L	0.10000	ND	99	75-125	3	20	
Calcium	432	250	5.22	mg/L	1.0000	422	NR	75-125	5	20	QM-02
Chromium	0.103	0.0100	0.0003	mg/L	0.10000	ND	103	75-125	4	20	
Cobalt	0.113	0.0100	0.0005	mg/L	0.10000	0.0116	102	75-125	0.8	20	
Copper	0.0949	0.0250	0.0003	mg/L	0.10000	0.0003	95	75-125	0.4	20	
Lead	0.0938	0.0050	0.00007	mg/L	0.10000	ND	94	75-125	2	20	
Molybdenum	0.174	0.0100	0.0006	mg/L	0.10000	0.0662	108	75-125	4	20	
Nickel	0.102	0.0100	0.0003	mg/L	0.10000	0.0058	97	75-125	4	20	
Selenium	0.110	0.0100	0.0014	mg/L	0.10000	ND	110	75-125	3	20	
Silver	0.0925	0.0100	0.0003	mg/L	0.10000	ND	93	75-125	1	20	
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	0.0006	100	75-125	2	20	
Vanadium	0.110	0.0100	0.0014	mg/L	0.10000	ND	110	75-125	4	20	
Zinc	0.0974	0.0100	0.0013	mg/L	0.10000	0.0021	95	75-125	2	20	
Lithium	0.115	0.0500	0.0011	mg/L	0.10000	0.0120	103	75-125	5	20	
<b>Post Spike (7040732-PS1)</b>			<b>Source: AAD0791-01</b>			<b>Prepared &amp; Analyzed: 04/25/17</b>					
Antimony	102			ug/L	100.00	-0.0125	102	80-120			
Arsenic	110			ug/L	100.00	2.85	108	80-120			
Barium	184			ug/L	100.00	86.0	98	80-120			
Beryllium	88.5			ug/L	100.00	0.0644	88	80-120			
Boron	14700			ug/L	1000.0	13300	131	80-120			QM-02
Cadmium	102			ug/L	100.00	0.0270	102	80-120			
Calcium	412000			ug/L	1000.0	422000	NR	80-120			QM-02
Chromium	106			ug/L	100.00	0.0938	106	80-120			
Cobalt	113			ug/L	100.00	11.6	101	80-120			
Copper	93.8			ug/L	100.00	0.300	93	80-120			
Lead	92.7			ug/L	100.00	0.0237	93	80-120			
Molybdenum	170			ug/L	100.00	66.2	104	80-120			
Nickel	106			ug/L	100.00	5.82	100	80-120			
Selenium	106			ug/L	100.00	0.515	106	80-120			
Silver	90.9			ug/L	100.00	0.0030	91	80-120			
Thallium	98.3			ug/L	100.00	0.591	98	80-120			
Vanadium	112			ug/L	100.00	-0.0747	112	80-120			
Zinc	95.6			ug/L	100.00	2.05	94	80-120			
Lithium	108			ug/L	100.00	12.0	96	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 28, 2017

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## Legend

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### 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

- 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



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:						ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:						CONTAINER TYPE:														
REPORT TO:						PRESERVATION:						CONTAINER TYPE		PRESERVATION						
REQUESTED COMPLETION DATE:						# of														
PROJECT NAME/STATE:						C O N T A I N E R S	Methods: AP: 16 & 17 EPA 600.747D C.F. 507 EPA 300 TDS 820.540 C Radon 226 & 228 Sub: 846 93153 9320						CONTAINER TYPE		PRESERVATION					
PROJECT #:													CONTAINER TYPE		PRESERVATION					
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION											REMARKS/ADDITIONAL INFORMATION				
4/20/17	1012	GW		X	B610C22	6	1	1	4											
4/20/17	1100	GW		X	B610C25	4	1	1	2											
4/20/17	-	GW		X	Dip-3	4	1	1	2											
4/20/17	1230	W		X	FB1042017	4	1	1	2											
4/20/17	1240	W		X	EQ1042017	4	1	1	2											
SAMPLED BY AND TITLE:						RELINQUISHED BY:				DATE/TIME:				FOR LAB USE ONLY						
RECEIVED BY: Mike Nguyen						RELINQUISHED BY:				DATE/TIME:				LAB #: HAD0791						
RECEIVED BY LAB: Mike Nguyen						SAMPLE SHIPPED VIA:				CLIENT OTHER FS				Entered into LIMS: [initials]						
Checked: No NA Yes No NA						Custody Seal: Intact Broken Not Present N/A				# of Coolers Cooler ID:				Tracking #:						
Temperature: 21 Min: 20 Max:																				

Page 15 of 16



**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: 4/24/2017 12:06:48PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 04/21/17 14:25

**Work Order:** AAD0791

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 22

**Minimum Temp(C):** 2.0

**Maximum Temp(C):** 2.0

**Custody Seal(s) Used:**

**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:**



**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: AAC0950**

**April 05, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel", written over a horizontal line.

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

April 05, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-30	AAC0950-01	Ground Water	03/27/17 09:56	03/28/17 11:35



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 05, 2017

Report No.: AAC0950

Project: CCR Event

Client ID: BGWC-30

Lab Number ID: AAC0950-01

Date/Time Sampled: 3/27/2017 9:56:00AM

Date/Time Received: 3/28/2017 11:35:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2440	25	10	mg/L	SM 2540 C		1	03/30/17 17:45	03/30/17 17:45	7030933	JPT
<b>Inorganic Anions</b>											
Chloride	790	12	0.65	mg/L	EPA 300.0		50	03/30/17 09:49	04/03/17 14:34	7030924	RLC
Fluoride	0.09	0.30	0.004	mg/L	EPA 300.0	J	1	03/30/17 09:49	03/30/17 14:42	7030924	RLC
Sulfate	410	10	0.92	mg/L	EPA 300.0		10	03/30/17 09:49	03/31/17 13:18	7030924	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	03/29/17 12:55	03/31/17 22:11	7030871	CSW
Arsenic	0.0019	0.0050	0.0004	mg/L	EPA 6020B	J	1	03/29/17 12:55	03/31/17 22:11	7030871	CSW
Barium	0.197	0.100	0.0027	mg/L	EPA 6020B		10	03/29/17 12:55	04/04/17 14:37	7030871	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	03/29/17 12:55	03/31/17 22:11	7030871	CSW
Boron	19.1	2.00	0.302	mg/L	EPA 6020B		50	03/29/17 12:55	04/04/17 14:42	7030871	CSW
Cadmium	0.0003	0.0010	0.00006	mg/L	EPA 6020B	J	1	03/29/17 12:55	03/31/17 22:11	7030871	CSW
Calcium	417	25.0	0.522	mg/L	EPA 6020B		50	03/29/17 12:55	04/04/17 14:42	7030871	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	03/29/17 12:55	03/31/17 22:11	7030871	CSW
Cobalt	0.0010	0.0100	0.0005	mg/L	EPA 6020B	J	1	03/29/17 12:55	03/31/17 22:11	7030871	CSW
Lead	0.00008	0.0050	0.00007	mg/L	EPA 6020B	J	1	03/29/17 12:55	03/31/17 22:11	7030871	CSW
Molybdenum	0.0157	0.0100	0.0006	mg/L	EPA 6020B		1	03/29/17 12:55	03/31/17 22:11	7030871	CSW
Selenium	0.0092	0.0100	0.0014	mg/L	EPA 6020B	J	1	03/29/17 12:55	03/31/17 22:11	7030871	CSW
Thallium	0.0006	0.0010	0.00005	mg/L	EPA 6020B	J	1	03/29/17 12:55	03/31/17 22:11	7030871	CSW
Lithium	0.0192	0.0500	0.0011	mg/L	EPA 6020B	J	1	03/29/17 12:55	03/31/17 22:11	7030871	CSW
Mercury	0.00008	0.00050	0.000041	mg/L	EPA 7470A	J	1	03/29/17 13:10	03/30/17 15:23	7030865	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 05, 2017

**Report No.: AAC0950**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7030933 - SM 2540 C</b>											
<b>Blank (7030933-BLK1)</b>						Prepared & Analyzed: 03/30/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7030933-BS1)</b>						Prepared & Analyzed: 03/30/17					
Total Dissolved Solids	431	25	10	mg/L	400.00		108	84-108			
<b>Duplicate (7030933-DUP1)</b>						Source: AAC0957-01 Prepared & Analyzed: 03/30/17					
Total Dissolved Solids	236	25	10	mg/L		305			26	10	QR-03
<b>Duplicate (7030933-DUP2)</b>						Source: AAC0957-09 Prepared & Analyzed: 03/30/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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Attention: Mr. Joju Abraham

April 05, 2017

**Report No.: AAC0950**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7030924 - EPA 300.0</b>											
<b>Blank (7030924-BLK1)</b>						Prepared & Analyzed: 03/30/17					
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 (7030924-BS1)</b>						Prepared & Analyzed: 03/30/17					
Chloride	10.0	0.25	0.01	mg/L	10.010		100	90-110			
Fluoride	10.4	0.30	0.004	mg/L	10.020		104	90-110			
Sulfate	10.3	1.0	0.09	mg/L	10.020		103	90-110			
<b>Matrix Spike (7030924-MS1)</b>						Source: AAC0950-01 Prepared & Analyzed: 03/30/17					
Chloride	204	0.25	0.01	mg/L	10.010	231	NR	90-110			QM-02
Fluoride	10.6	0.30	0.004	mg/L	10.020	0.09	105	90-110			
Sulfate	257	1.0	0.09	mg/L	10.020	270	NR	90-110			QM-02
<b>Matrix Spike (7030924-MS2)</b>						Source: AAC0957-07 Prepared & Analyzed: 03/30/17					
Chloride	11.6	0.25	0.01	mg/L	10.010	1.53	101	90-110			
Fluoride	10.9	0.30	0.004	mg/L	10.020	0.08	108	90-110			
Sulfate	18.0	1.0	0.09	mg/L	10.020	8.36	97	90-110			
<b>Matrix Spike Dup (7030924-MSD1)</b>						Source: AAC0950-01 Prepared & Analyzed: 03/30/17					
Chloride	203	0.25	0.01	mg/L	10.010	231	NR	90-110	0.3	15	QM-02
Fluoride	10.6	0.30	0.004	mg/L	10.020	0.09	105	90-110	0.3	15	
Sulfate	256	1.0	0.09	mg/L	10.020	270	NR	90-110	0.03	15	QM-02



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Attention: Mr. Joju Abraham

April 05, 2017

**Report No.: AAC0950**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7030865 - EPA 7470A</b>											
<b>Blank (7030865-BLK1)</b> Prepared: 03/29/17 Analyzed: 03/30/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7030865-BS1)</b> Prepared: 03/29/17 Analyzed: 03/30/17											
Mercury	0.00238	0.00050	0.000041	mg/L	2.5000E-3		95	80-120			
<b>Matrix Spike (7030865-MS1)</b> Source: AAC0909-05 Prepared: 03/29/17 Analyzed: 03/30/17											
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125			
<b>Matrix Spike Dup (7030865-MSD1)</b> Source: AAC0909-05 Prepared: 03/29/17 Analyzed: 03/30/17											
Mercury	0.00231	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	1	20	
<b>Post Spike (7030865-PS1)</b> Source: AAC0909-05 Prepared: 03/29/17 Analyzed: 03/30/17											
Mercury	1.72			ug/L	1.6667	-0.00556	103	80-120			
<b>Batch 7030871 - EPA 3005A</b>											
<b>Blank (7030871-BLK1)</b> Prepared: 03/29/17 Analyzed: 03/31/17											
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							



**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

April 05, 2017

**Report No.: AAC0950**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7030871 - EPA 3005A</b>											
<b>LCS (7030871-BS1)</b>						Prepared: 03/29/17 Analyzed: 03/31/17					
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	0.0987	0.0100	0.0003	mg/L	0.10000		99	80-120			
Beryllium	0.103	0.0030	0.00007	mg/L	0.10000		103	80-120			
Boron	1.03	0.0400	0.0060	mg/L	1.0000		103	80-120			
Cadmium	0.109	0.0010	0.00006	mg/L	0.10000		109	80-120			
Calcium	1.02	0.500	0.0104	mg/L	1.0000		102	80-120			
Chromium	0.106	0.0100	0.0003	mg/L	0.10000		106	80-120			
Cobalt	0.0997	0.0100	0.0005	mg/L	0.10000		100	80-120			
Copper	0.102	0.0250	0.0003	mg/L	0.10000		102	80-120			
Lead	0.0982	0.0050	0.00007	mg/L	0.10000		98	80-120			
Molybdenum	0.102	0.0100	0.0006	mg/L	0.10000		102	80-120			
Nickel	0.104	0.0100	0.0003	mg/L	0.10000		104	80-120			
Selenium	0.0994	0.0100	0.0014	mg/L	0.10000		99	80-120			
Silver	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			
Thallium	0.0993	0.0010	0.00005	mg/L	0.10000		99	80-120			
Vanadium	0.105	0.0100	0.0014	mg/L	0.10000		105	80-120			
Zinc	0.104	0.0100	0.0013	mg/L	0.10000		104	80-120			
Lithium	0.103	0.0500	0.0011	mg/L	0.10000		103	80-120			
<b>Matrix Spike (7030871-MS1)</b>						Source: AAC0950-01 Prepared: 03/29/17 Analyzed: 03/31/17					
Antimony	0.106	0.0030	0.0003	mg/L	0.10000	ND	106	75-125			
Arsenic	0.107	0.0050	0.0004	mg/L	0.10000	0.0019	105	75-125			
Barium	0.304	0.100	0.0027	mg/L	0.10000	0.197	107	75-125			
Beryllium	0.101	0.0030	0.00007	mg/L	0.10000	ND	101	75-125			
Boron	20.0	2.00	0.302	mg/L	1.0000	19.1	85	75-125			
Cadmium	0.105	0.0010	0.00006	mg/L	0.10000	0.0003	105	75-125			
Calcium	448	25.0	0.522	mg/L	1.0000	417	NR	75-125			QM-02
Chromium	0.106	0.0100	0.0003	mg/L	0.10000	ND	106	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	0.0010	101	75-125			
Copper	0.0959	0.0250	0.0003	mg/L	0.10000	ND	96	75-125			
Lead	0.0916	0.0050	0.00007	mg/L	0.10000	0.00008	92	75-125			
Molybdenum	0.119	0.0100	0.0006	mg/L	0.10000	0.0157	103	75-125			
Nickel	0.102	0.0100	0.0003	mg/L	0.10000	0.0025	100	75-125			
Selenium	0.114	0.0100	0.0014	mg/L	0.10000	0.0092	105	75-125			
Silver	0.0949	0.0100	0.0003	mg/L	0.10000	ND	95	75-125			
Thallium	0.0966	0.0010	0.00005	mg/L	0.10000	0.0006	96	75-125			
Vanadium	0.108	0.0100	0.0014	mg/L	0.10000	ND	108	75-125			
Zinc	0.100	0.0100	0.0013	mg/L	0.10000	ND	100	75-125			
Lithium	0.123	0.0500	0.0011	mg/L	0.10000	0.0192	104	75-125			



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 05, 2017

**Report No.: AAC0950**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7030871 - EPA 3005A</b>											
<b>Matrix Spike Dup (7030871-MSD1)</b>			<b>Source: AAC0950-01</b>			Prepared: 03/29/17 Analyzed: 03/31/17					
Antimony	0.109	0.0030	0.0003	mg/L	0.10000	ND	109	75-125	3	20	
Arsenic	0.111	0.0050	0.0004	mg/L	0.10000	0.0019	110	75-125	4	20	
Barium	0.296	0.100	0.0027	mg/L	0.10000	0.197	99	75-125	3	20	
Beryllium	0.102	0.0030	0.00007	mg/L	0.10000	ND	102	75-125	0.9	20	
Boron	19.4	2.00	0.302	mg/L	1.0000	19.1	34	75-125	3	20	QM-02
Cadmium	0.104	0.0010	0.00006	mg/L	0.10000	0.0003	104	75-125	1	20	
Calcium	423	25.0	0.522	mg/L	1.0000	417	551	75-125	6	20	QM-02
Chromium	0.107	0.0100	0.0003	mg/L	0.10000	ND	107	75-125	0.9	20	
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000	0.0010	104	75-125	3	20	
Copper	0.0949	0.0250	0.0003	mg/L	0.10000	ND	95	75-125	1	20	
Lead	0.0927	0.0050	0.00007	mg/L	0.10000	0.00008	93	75-125	1	20	
Molybdenum	0.124	0.0100	0.0006	mg/L	0.10000	0.0157	108	75-125	4	20	
Nickel	0.101	0.0100	0.0003	mg/L	0.10000	0.0025	99	75-125	1	20	
Selenium	0.113	0.0100	0.0014	mg/L	0.10000	0.0092	104	75-125	0.8	20	
Silver	0.0976	0.0100	0.0003	mg/L	0.10000	ND	98	75-125	3	20	
Thallium	0.0978	0.0010	0.00005	mg/L	0.10000	0.0006	97	75-125	1	20	
Vanadium	0.114	0.0100	0.0014	mg/L	0.10000	ND	114	75-125	6	20	
Zinc	0.0973	0.0100	0.0013	mg/L	0.10000	ND	97	75-125	3	20	
Lithium	0.122	0.0500	0.0011	mg/L	0.10000	0.0192	103	75-125	1	20	
<b>Post Spike (7030871-PS1)</b>											
<b>Source: AAC0950-01</b>			Prepared: 03/29/17 Analyzed: 03/31/17								
Antimony	106			ug/L	100.00	0.266	106	80-120			
Arsenic	110			ug/L	100.00	1.92	108	80-120			
Barium	302			ug/L	100.00	197	105	80-120			
Beryllium	105			ug/L	100.00	0.0448	105	80-120			
Boron	20300			ug/L	1000.0	19100	117	80-120			
Cadmium	104			ug/L	100.00	0.296	104	80-120			
Calcium	429000			ug/L	1000.0	417000	NR	80-120			QM-02
Chromium	110			ug/L	100.00	-0.0043	110	80-120			
Cobalt	105			ug/L	100.00	0.971	104	80-120			
Copper	96.6			ug/L	100.00	0.200	96	80-120			
Lead	94.0			ug/L	100.00	0.0790	94	80-120			
Molybdenum	123			ug/L	100.00	15.7	107	80-120			
Nickel	102			ug/L	100.00	2.48	100	80-120			
Selenium	113			ug/L	100.00	9.19	104	80-120			
Silver	93.7			ug/L	100.00	0.0283	94	80-120			
Thallium	98.0			ug/L	100.00	0.597	97	80-120			
Vanadium	112			ug/L	100.00	0.715	111	80-120			
Zinc	101			ug/L	100.00	0.867	100	80-120			
Lithium	121			ug/L	100.00	19.2	102	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

April 05, 2017

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## Legend

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### 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

- 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).

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







**PACE ANALYTICAL SERVICES, LLC.**

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
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**LOG-IN CHECKLIST**

**Printed: 3/29/2017 11:55:57AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 03/28/17 11:35

**Work Order:** AAC0950

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 1

**#Containers:** 4

**Minimum Temp(C):** 2.0

**Maximum Temp(C):** 2.0

**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:**

April 20, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAC0950 Plant Bowen  
Pace Project No.: 30214503

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on March 29, 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: AAC0950 Plant Bowen  
Pace Project No.: 30214503

### 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

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: AAC0950 Plant Bowen

Pace Project No.: 30214503

<b>Lab ID</b>	<b>Sample ID</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Date Received</b>
30214503001	BGWC-30	Water	03/27/17 09:56	03/29/17 10:00

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAC0950 Plant Bowen

Pace Project No.: 30214503

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30214503001	BGWC-30	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: AAC0950 Plant Bowen

Pace Project No.: 30214503

**Sample: BGWC-30**      **Lab ID: 30214503001**      Collected: 03/27/17 09:56      Received: 03/29/17 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>1.31 ± 0.366 (0.279)</b> C:93% T:NA	pCi/L	04/07/17 10:18	13982-63-3	
Radium-228	EPA 9320	<b>1.24 ± 0.451 (0.622)</b> C:75% T:85%	pCi/L	04/14/17 11:42	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.55 ± 0.817 (0.901)</b>	pCi/L	04/20/17 12:12	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAC0950 Plant Bowen

Pace Project No.: 30214503

QC Batch: 253968

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30214503001

METHOD BLANK: 1250174

Matrix: Water

Associated Lab Samples: 30214503001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0348 ± 0.0843 (0.204) C:94% T:NA	pCi/L	04/07/17 08:32	

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

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAC0950 Plant Bowen

Pace Project No.: 30214503

QC Batch: 254544

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30214503001

METHOD BLANK: 1253321

Matrix: Water

Associated Lab Samples: 30214503001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.191 ± 0.253 (0.655) C:76% T:78%	pCi/L	04/14/17 11:42	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: AAC0950 Plant Bowen

Pace Project No.: 30214503

### 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, LLC - Atlanta GA  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION			
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:																
Southern Company Services 241 Ruffin McGill Blvd SE 310185 Atlanta, GA 30328					PRESERVATION:	3	7	3													
REPORT TO: <u>John Abner</u> CC: <u>Maria Padilla</u>					CONTAINERS	# of	1	1	2												
REQUESTED COMPLETION DATE: <u>PO #:</u> <u>60610624198</u>																					
PROJECT NAME/STATE: <u>Plant Based Acid Prod COP</u>																					
PROJECT #:																					
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION																
3/27/17	0956	GW		X	240030																
SAMPLED BY AND TITLE: <u>Kevin DeLaRosa</u>					DATE/TIME: <u>3/27/17 @ 1540</u>					RELINQUISHED BY: <u>Kevin DeLaRosa</u>					DATE/TIME: <u>3/28/17 0645</u>					FOR LAB USE ONLY	
RECEIVED BY: <u>Chadli Mardis</u>					DATE/TIME: <u>3/28/2017 6:45</u>					RELINQUISHED BY: <u>Mike Ng</u>					DATE/TIME: <u>3/28/17 1042</u>					LAB #: <u>AAC 0950</u>	
RECEIVED BY LAB: <u>Mike Ng</u>					DATE/TIME: <u>3/28/17 1135</u>					SAMPLE SHIPPED VIA: <u>COURIER</u>					CLIENT OTHER FS					Entered into LIMS: <u>124</u>	
pH checked: <u>Yes</u> No NA					Temperature: <u>27</u> Min: <u>7°C</u> Max:					Custody Seal: <u>Intact</u> Broken Not Present N/A					Cooler ID:					Tracking #:	

Sample Condition Upon Receipt Pittsburgh

RTB



Client Name: Pace GA

Project # 30214503

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5103 2870

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: RTB 3/29/17

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.
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>3/29/17</u> Date/time of preservation <u>RTB</u>
				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>RTB</u> Date: <u>3/29/17</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

Test: Ra-226  
Analyst: JC2  
Date: 4/4/2017  
Worklist: 34921  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1250174
MB Concentration:	0.035
M/B Counting Uncertainty:	0.084
MB MDC:	0.204
MB Numerical Performance Indicator:	0.81
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	Y	N
	LCS34921	LCSD34921
Count Date:	4/7/2017	4/7/2017
Spike I.D.:	17-003	17-003
Spike Concentration (pCi/mL):	38.230	38.230
Volume Used (mL):	0.25	0.25
Aliquot Volume (L, g, F):	0.510	0.511
Target Conc. (pCi/L, g, F):	18.736	18.715
Uncertainty (Calculated):	0.881	0.880
Result (pCi/L, g, F):	15.468	15.332
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.007	1.026
Numerical Performance Indicator:	-4.79	-4.90
Percent Recovery:	82.56%	81.92%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment	
Sample I.D.:	LCS34921
Duplicate Sample I.D.:	LCSD34921
Sample Result (pCi/L, g, F):	15.468
Sample Result Counting Uncertainty (pCi/L, g, F):	1.007
Sample Duplicate Result (pCi/L, g, F):	15.332
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.026
Are sample and/or duplicate results below MDC?	NO
Duplicate Numerical Performance Indicator:	0.186
Duplicate RPD:	0.88%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass

Enter Duplicate sample IDs if other than LCS/LCSD in the space below.

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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

Test: Ra-228  
Analyst: JLW  
Date: 4/11/2017  
Worklist: 34999  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1253321	
MB concentration:	-0.191	
M/B Counting Uncertainty:	0.251	
MB MDC:	0.655	
MB Numerical Performance Indicator:	-1.49	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS34999	LCSD34999
Count Date:	4/14/2017	4/14/2017
Spike I.D.:	17-005	17-005
Spike Concentration (pCi/mL):	24.787	24.787
Volume Used (mL):	0.20	0.20
Aliquot Volume (L, g, F):	0.801	0.802
Target Conc. (pCi/L, g, F):	6.187	6.181
Uncertainty (Calculated):	0.445	0.445
Result (pCi/L, g, F):	6.482	7.063
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.766	0.792
Numerical Performance Indicator:	0.65	1.90
Percent Recovery:	104.78%	114.27%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	LCS34999	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD34999	
Sample Result (pCi/L, g, F):	6.482	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.766	
Sample Duplicate Result (pCi/L, g, F):	7.063	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.792	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	-1.033	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	8.66%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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: AAE0911**

**June 05, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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 05, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-2	AAE0911-01	Ground Water	05/25/17 10:00	05/26/17 14:15
BGWA-28	AAE0911-02	Ground Water	05/25/17 12:30	05/26/17 14:15
BGWA-6	AAE0911-03	Ground Water	05/25/17 12:32	05/26/17 14:15
BGWA-27	AAE0911-04	Ground Water	05/25/17 13:52	05/26/17 14:15
BGWA-29	AAE0911-05	Ground Water	05/25/17 14:36	05/26/17 14:15
FBL 052517	AAE0911-06	Water	05/25/17 14:56	05/26/17 14:15
EQBL 052517	AAE0911-07	Water	05/25/17 15:04	05/26/17 14:15
Dup-1	AAE0911-08	Ground Water	05/25/17 00:00	05/26/17 14:15



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
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Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 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

June 05, 2017

Report No.: AAE0911

Project: CCR Event

Client ID: BGWA-2

Lab Number ID: AAE0911-01

Date/Time Sampled: 5/25/2017 10:00:00AM

Date/Time Received: 5/26/2017 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	173	25	10	mg/L	SM 2540 C		1	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	2.4	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 02:04	7060036	RLC
Fluoride	0.08	0.30	0.004	mg/L	EPA 300.0	J	1	06/01/17 15:00	06/02/17 02:04	7060036	RLC
Sulfate	5.7	1.0	0.09	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 02:04	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Arsenic	0.0015	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Barium	0.193	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Boron	0.0100	0.0400	0.0060	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Calcium	33.8	25.0	0.522	mg/L	EPA 6020B		50	05/30/17 11:10	06/02/17 16:51	7050903	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Molybdenum	0.0020	0.0100	0.0006	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Thallium	0.0001	0.0010	0.00005	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:46	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:04	7050922	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

June 05, 2017

Attention: Mr. Joju Abraham

Report No.: AAE0911

Project: CCR Event

Client ID: BGWA-28

Lab Number ID: AAE0911-02

Date/Time Sampled: 5/25/2017 12:30:00PM

Date/Time Received: 5/26/2017 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	245	25	10	mg/L	SM 2540 C		1	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	28	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 03:06	7060036	RLC
Fluoride	0.02	0.30	0.004	mg/L	EPA 300.0	J	1	06/01/17 15:00	06/02/17 03:06	7060036	RLC
Sulfate	19	1.0	0.09	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 03:06	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Arsenic	0.0012	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Barium	0.158	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Boron	0.122	0.0400	0.0060	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Calcium	53.8	25.0	0.522	mg/L	EPA 6020B		50	05/30/17 11:10	06/02/17 17:03	7050903	CSW
Chromium	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Selenium	0.0017	0.0100	0.0014	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 16:57	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:07	7050922	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0911

Project: CCR Event

Client ID: BGWA-6

Lab Number ID: AAE0911-03

Date/Time Sampled: 5/25/2017 12:32:00PM

Date/Time Received: 5/26/2017 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	283	25	10	mg/L	SM 2540 C		1	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	11	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 03:27	7060036	RLC
Fluoride	0.02	0.30	0.004	mg/L	EPA 300.0	J	1	06/01/17 15:00	06/02/17 03:27	7060036	RLC
Sulfate	22	1.0	0.09	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 03:27	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Arsenic	0.0013	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Barium	0.0122	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Boron	0.0179	0.0400	0.0060	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Calcium	59.8	25.0	0.522	mg/L	EPA 6020B		50	05/30/17 11:10	06/02/17 18:23	7050903	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Thallium	0.00006	0.0010	0.00005	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:18	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:09	7050922	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

**Report No.:** AAE0911

**Project:** CCR Event

**Client ID:** BGWA-27

**Lab Number ID:** AAE0911-04

**Date/Time Sampled:** 5/25/2017 1:52:00PM

**Date/Time Received:** 5/26/2017 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	230	25	10	mg/L	SM 2540 C		1	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	18	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 05:10	7060036	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 05:10	7060036	RLC
Sulfate	12	1.0	0.09	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 05:10	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Arsenic	0.0009	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Barium	0.0447	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Boron	0.0255	0.0400	0.0060	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Calcium	47.9	25.0	0.522	mg/L	EPA 6020B		50	05/30/17 11:10	06/02/17 18:35	7050903	CSW
Chromium	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:29	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:11	7050922	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

June 05, 2017

Report No.: AAE0911

Project: CCR Event

Client ID: BGWA-29

Lab Number ID: AAE0911-05

Date/Time Sampled: 5/25/2017 2:36:00PM

Date/Time Received: 5/26/2017 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	109	25	10	mg/L	SM 2540 C		1	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	1.5	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 05:31	7060036	RLC
Fluoride	0.005	0.30	0.004	mg/L	EPA 300.0	J	1	06/01/17 15:00	06/02/17 05:31	7060036	RLC
Sulfate	4.2	1.0	0.09	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 05:31	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Arsenic	0.0008	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Barium	0.0235	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Calcium	22.8	25.0	0.522	mg/L	EPA 6020B	J	50	05/30/17 11:10	06/02/17 18:46	7050903	CSW
Chromium	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:40	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:14	7050922	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0911

Project: CCR Event

Client ID: FBL 052517

Lab Number ID: AAE0911-06

Date/Time Sampled: 5/25/2017 2:56:00PM

Date/Time Received: 5/26/2017 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	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 05:51	7060036	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 05:51	7060036	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 05:51	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Arsenic	0.0005	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Calcium	0.0171	0.500	0.0104	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:52	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:16	7050922	MTC





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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0911

Project: CCR Event

Client ID: EQBL 052517

Lab Number ID: AAE0911-07

Date/Time Sampled: 5/25/2017 3:04:00PM

Date/Time Received: 5/26/2017 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	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 06:12	7060036	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 06:12	7060036	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 06:12	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Calcium	0.0230	0.500	0.0104	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 18:57	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:18	7050922	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0911

Project: CCR Event

Client ID: Dup-1

Lab Number ID: AAE0911-08

Date/Time Sampled: 5/25/2017 12:00:00AM

Date/Time Received: 5/26/2017 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	175	25	10	mg/L	SM 2540 C		1	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	2.8	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 06:33	7060036	RLC
Fluoride	0.11	0.30	0.004	mg/L	EPA 300.0	J	1	06/01/17 15:00	06/02/17 06:33	7060036	RLC
Sulfate	5.8	1.0	0.09	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 06:33	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Arsenic	0.0016	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Barium	0.196	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Boron	0.0078	0.0400	0.0060	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Calcium	34.6	25.0	0.522	mg/L	EPA 6020B		50	05/30/17 11:10	06/02/17 19:09	7050903	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Molybdenum	0.0021	0.0100	0.0006	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Thallium	0.0001	0.0010	0.00005	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:03	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:21	7050922	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

June 05, 2017

**Report No.: AAE0911**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050957 - SM 2540 C</b>											
<b>Blank (7050957-BLK1)</b>						Prepared & Analyzed: 05/31/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7050957-BS1)</b>						Prepared & Analyzed: 05/31/17					
Total Dissolved Solids	381	25	10	mg/L	400.00		95	84-108			
<b>Duplicate (7050957-DUP1)</b>						Source: AAE0911-07 Prepared & Analyzed: 05/31/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7050957-DUP2)</b>						Source: AAE0912-01 Prepared & Analyzed: 05/31/17					
Total Dissolved Solids	190	25	10	mg/L		223			16	10	QR-03



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

June 05, 2017

**Report No.: AAE0911**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060036 - EPA 300.0</b>											
<b>Blank (7060036-BLK1)</b>						Prepared & Analyzed: 06/01/17					
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 (7060036-BS1)</b>						Prepared & Analyzed: 06/01/17					
Chloride	10.4	0.25	0.01	mg/L	10.020		104	90-110			
Fluoride	10.3	0.30	0.004	mg/L	10.020		103	90-110			
Sulfate	10.5	1.0	0.09	mg/L	10.050		105	90-110			
<b>Matrix Spike (7060036-MS1)</b>						Source: AAE0911-01 Prepared: 06/01/17 Analyzed: 06/02/17					
Chloride	12.4	0.25	0.01	mg/L	10.020	2.44	100	90-110			
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.08	103	90-110			
Sulfate	17.0	1.0	0.09	mg/L	10.050	5.74	112	90-110			QM-05
<b>Matrix Spike (7060036-MS2)</b>						Source: AAE0918-03 Prepared: 06/01/17 Analyzed: 06/02/17					
Chloride	20.1	0.25	0.01	mg/L	10.020	9.91	101	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.03	108	90-110			
Sulfate	85.7	1.0	0.09	mg/L	10.050	84.2	15	90-110			QM-02
<b>Matrix Spike Dup (7060036-MSD1)</b>						Source: AAE0911-01 Prepared: 06/01/17 Analyzed: 06/02/17					
Chloride	12.2	0.25	0.01	mg/L	10.020	2.44	98	90-110	2	15	
Fluoride	10.5	0.30	0.004	mg/L	10.020	0.08	104	90-110	0.3	15	
Sulfate	15.8	1.0	0.09	mg/L	10.050	5.74	100	90-110	8	15	



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Attention: Mr. Joju Abraham

June 05, 2017

**Report No.: AAE0911**

**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 7050903 - EPA 3005A**

**Blank (7050903-BLK1)**

Prepared: 05/30/17 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							

**LCS (7050903-BS1)**

Prepared: 05/30/17 Analyzed: 06/02/17

Antimony	0.110	0.0030	0.0003	mg/L	0.10000		110	80-120			
Arsenic	0.104	0.0050	0.0004	mg/L	0.10000		104	80-120			
Barium	0.106	0.0100	0.0003	mg/L	0.10000		106	80-120			
Beryllium	0.103	0.0030	0.00007	mg/L	0.10000		103	80-120			
Boron	1.07	0.0400	0.0060	mg/L	1.0000		107	80-120			
Cadmium	0.104	0.0010	0.00006	mg/L	0.10000		104	80-120			
Calcium	1.08	0.500	0.0104	mg/L	1.0000		108	80-120			
Chromium	0.104	0.0100	0.0003	mg/L	0.10000		104	80-120			
Cobalt	0.106	0.0100	0.0005	mg/L	0.10000		106	80-120			
Copper	0.103	0.0250	0.0003	mg/L	0.10000		103	80-120			
Lead	0.103	0.0050	0.00007	mg/L	0.10000		103	80-120			
Molybdenum	0.105	0.0100	0.0006	mg/L	0.10000		105	80-120			
Nickel	0.106	0.0100	0.0003	mg/L	0.10000		106	80-120			
Selenium	0.105	0.0100	0.0014	mg/L	0.10000		105	80-120			
Silver	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120			
Thallium	0.104	0.0010	0.00005	mg/L	0.10000		104	80-120			
Vanadium	0.106	0.0100	0.0014	mg/L	0.10000		106	80-120			
Zinc	0.106	0.0100	0.0013	mg/L	0.10000		106	80-120			
Lithium	0.106	0.0500	0.0011	mg/L	0.10000		106	80-120			



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

**Report No.: AAE0911**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050903 - EPA 3005A</b>											
<b>Matrix Spike (7050903-MS1)</b>			<b>Source: AAE0911-01</b>				Prepared: 05/30/17 Analyzed: 06/02/17				
Antimony	0.108	0.0030	0.0003	mg/L	0.10000	ND	108	75-125			
Arsenic	0.105	0.0050	0.0004	mg/L	0.10000	0.0015	103	75-125			
Barium	0.456	0.0100	0.0003	mg/L	0.10000	0.193	263	75-125			QM-02
Beryllium	0.0993	0.0030	0.00007	mg/L	0.10000	ND	99	75-125			
Boron	1.01	0.0400	0.0060	mg/L	1.0000	0.0100	100	75-125			
Cadmium	0.102	0.0010	0.00006	mg/L	0.10000	ND	102	75-125			
Calcium	34.6	25.0	0.522	mg/L	1.0000	33.8	73	75-125			QM-02
Chromium	0.107	0.0100	0.0003	mg/L	0.10000	ND	107	75-125			
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125			
Copper	0.103	0.0250	0.0003	mg/L	0.10000	ND	103	75-125			
Lead	0.101	0.0050	0.00007	mg/L	0.10000	0.0001	101	75-125			
Molybdenum	0.109	0.0100	0.0006	mg/L	0.10000	0.0020	107	75-125			
Nickel	0.105	0.0100	0.0003	mg/L	0.10000	ND	105	75-125			
Selenium	0.103	0.0100	0.0014	mg/L	0.10000	ND	103	75-125			
Silver	0.101	0.0100	0.0003	mg/L	0.10000	ND	101	75-125			
Thallium	0.103	0.0010	0.00005	mg/L	0.10000	0.0001	103	75-125			
Vanadium	0.110	0.0100	0.0014	mg/L	0.10000	ND	110	75-125			
Zinc	0.105	0.0100	0.0013	mg/L	0.10000	0.0015	104	75-125			
Lithium	0.104	0.0500	0.0011	mg/L	0.10000	ND	104	75-125			
<b>Matrix Spike Dup (7050903-MSD1)</b>			<b>Source: AAE0911-01</b>				Prepared: 05/30/17 Analyzed: 06/02/17				
Antimony	0.108	0.0030	0.0003	mg/L	0.10000	ND	108	75-125	0.3	20	
Arsenic	0.105	0.0050	0.0004	mg/L	0.10000	0.0015	103	75-125	0.1	20	
Barium	0.461	0.0100	0.0003	mg/L	0.10000	0.193	268	75-125	1	20	QM-02
Beryllium	0.103	0.0030	0.00007	mg/L	0.10000	ND	103	75-125	4	20	
Boron	1.02	0.0400	0.0060	mg/L	1.0000	0.0100	101	75-125	1	20	
Cadmium	0.105	0.0010	0.00006	mg/L	0.10000	ND	105	75-125	2	20	
Calcium	35.3	25.0	0.522	mg/L	1.0000	33.8	145	75-125	2	20	QM-02
Chromium	0.102	0.0100	0.0003	mg/L	0.10000	ND	102	75-125	4	20	
Cobalt	0.0996	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	4	20	
Copper	0.100	0.0250	0.0003	mg/L	0.10000	ND	100	75-125	3	20	
Lead	0.100	0.0050	0.00007	mg/L	0.10000	0.0001	100	75-125	1	20	
Molybdenum	0.105	0.0100	0.0006	mg/L	0.10000	0.0020	103	75-125	3	20	
Nickel	0.100	0.0100	0.0003	mg/L	0.10000	ND	100	75-125	4	20	
Selenium	0.105	0.0100	0.0014	mg/L	0.10000	ND	105	75-125	1	20	
Silver	0.101	0.0100	0.0003	mg/L	0.10000	ND	101	75-125	0.1	20	
Thallium	0.102	0.0010	0.00005	mg/L	0.10000	0.0001	102	75-125	0.9	20	
Vanadium	0.106	0.0100	0.0014	mg/L	0.10000	ND	106	75-125	3	20	
Zinc	0.102	0.0100	0.0013	mg/L	0.10000	0.0015	101	75-125	3	20	
Lithium	0.104	0.0500	0.0011	mg/L	0.10000	ND	104	75-125	0.06	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 05, 2017

**Report No.: AAE0911**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050903 - EPA 3005A</b>											
<b>Post Spike (7050903-PS1)</b>			<b>Source: AAE0911-01</b>			<b>Prepared: 05/30/17 Analyzed: 06/02/17</b>					
Antimony	106			ug/L	100.00	0.0698	106	80-120			
Arsenic	105			ug/L	100.00	1.49	103	80-120			
Barium	463			ug/L	100.00	193	270	80-120			QM-02
Beryllium	103			ug/L	100.00	0.0042	103	80-120			
Boron	1040			ug/L	1000.0	9.96	103	80-120			
Cadmium	100			ug/L	100.00	-0.0083	100	80-120			
Calcium	35400			ug/L	1000.0	33800	160	80-120			QM-02
Chromium	105			ug/L	100.00	0.145	105	80-120			
Cobalt	104			ug/L	100.00	0.156	104	80-120			
Copper	98.4			ug/L	100.00	-0.110	98	80-120			
Lead	99.2			ug/L	100.00	0.0975	99	80-120			
Molybdenum	106			ug/L	100.00	2.05	104	80-120			
Nickel	101			ug/L	100.00	0.229	101	80-120			
Selenium	104			ug/L	100.00	0.434	103	80-120			
Silver	102			ug/L	100.00	-0.0023	102	80-120			
Thallium	102			ug/L	100.00	0.0965	102	80-120			
Vanadium	107			ug/L	100.00	0.898	106	80-120			
Zinc	103			ug/L	100.00	1.49	101	80-120			
Lithium	101			ug/L	100.00	0.192	101	80-120			

**Batch 7050922 - EPA 7470A**

<b>Blank (7050922-BLK1)</b>					<b>Prepared &amp; Analyzed: 06/01/17</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7050922-BS1)</b>					<b>Prepared &amp; Analyzed: 06/01/17</b>						
Mercury	0.00239	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

June 05, 2017

**Report No.: AAE0911**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050922 - EPA 7470A</b>											
<b>Duplicate (7050922-DUP2)</b>			<b>Source: AAE0918-01</b>			<b>Prepared &amp; Analyzed: 06/01/17</b>					
Mercury	ND	0.00050	0.000041	mg/L		ND				20	
<b>Matrix Spike (7050922-MS1)</b>			<b>Source: AAE0911-02</b>			<b>Prepared &amp; Analyzed: 06/01/17</b>					
Mercury	0.00240	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125			
<b>Matrix Spike Dup (7050922-MSD1)</b>			<b>Source: AAE0911-02</b>			<b>Prepared &amp; Analyzed: 06/01/17</b>					
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	3	20	
<b>Post Spike (7050922-PS1)</b>			<b>Source: AAE0911-02</b>			<b>Prepared &amp; Analyzed: 06/01/17</b>					
Mercury	1.78			ug/L	1.6667	-0.00486	107	80-120			





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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

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## Legend

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### 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

- 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.**

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: <i>Southern Company Services</i>					ANALYSIS REQUESTED					LAB ID NUMBER	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <i>241 Ralph McGill Blvd SE Bldg 85 Atlanta, GA 30308</i>					CONTAINER TYPE:	P	P	P					P - PLASTIC	1 - HCl, ≤6°C
REPORT TO: <i>John Abraham</i> CC: <i>Marisa Padilla</i>					PRESERVATION:	3	7	3				A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REQUESTED COMPLETION DATE:					# of							G - CLEAR GLASS	3 - HNO <sub>3</sub>	
PROJECT NAME/STATE: <i>Plant Bowen Ash Pond CLR</i>					CONTAINERS	↓	Metals App. III & IV EPA 6070 & EPA 7470 Cl, F, SO <sub>4</sub> EPA 300 TDS 50725406 Radium 226 & 228 SW-846 0315 & 9320					V - VOA VIAL	4 - NaOH, ≤6°C	
PROJECT #:														
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION							O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
5/25/17	1000	GW	X	X	B6WA-2	6	1	1	4				7 - ≤6°C not frozen	
5/25/17	1230	GW	X	X	B6WA-28	4	1	1	2					
5/25/17	1232	GW	X	X	B6WA-6	4	1	1	2					
5/25/17	1352	GW	X	X	B6WA-27	4	1	1	2					
5/25/17	1430	GW	X	X	B6WA-29	4	1	1	2					
5/25/17	1456	W	X	X	FBL 052517	4	1	1	2					
5/25/17	1504	W	X	X	EQBL 052517	4	1	1	2					
5/25/17		GW	X	X	Dwp-1	4	1	1	2					

SAMPLED BY AND TITLE: <i>Robert Mull / Kevin Stephenson</i>	DATE/TIME: <i>5/25/17 1520</i>	RELINQUISHED BY: <i>Robert Mull</i>	DATE/TIME: <i>5/26/17 0650</i>	FOR LAB USE ONLY	
RECEIVED BY: <i>Crady Hardin</i>	DATE/TIME: <i>5/26/2017 @ 6:50</i>	RELINQUISHED BY: <i>Mike Nguyen</i>	DATE/TIME: <i>5/26/17 12:11</i>	LAB #:	<i>AAE0911</i>
RECEIVED BY LAB: <i>Madhman</i>	DATE/TIME: <i>05/26/17 1415</i>	SAMPLE SHIPPED VIA: UPS FED-EX USPS <b>COURIER</b> CLIENT OTHER FS	Entered into LIMS:	Tracking #:	<i>MR</i>
Checked: <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> NA	Temperature: <i>47.1</i> Min: <i>41</i> Max:	Custody Seal: Intact Broken Not Present <input checked="" type="checkbox"/> N/A	No. Coolers:	Cooler ID:	



**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: 5/30/2017 10:00:33AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 05/26/17 14:15

**Work Order:** AAE0911

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 8

**#Containers:** 34

**Minimum Temp(C):** 4.1

**Maximum Temp(C):** 4.1

**Custody Seal(s) Used:** 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 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:**



**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: AAE0918**

**June 05, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

June 05, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-8	AAE0918-01	Ground Water	05/26/17 11:54	05/26/17 15:20
BGWC-9	AAE0918-02	Ground Water	05/26/17 10:52	05/26/17 15:20
BGWC-11	AAE0918-03	Ground Water	05/26/17 12:15	05/26/17 15:20
BGWA-26	AAE0918-04	Ground Water	05/26/17 09:46	05/26/17 15:20



**PACE ANALYTICAL SERVICES, LLC.**

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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 05, 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 05, 2017

Report No.: AAE0918

Project: CCR Event

Client ID: BGWC-8

Lab Number ID: AAE0918-01

Date/Time Sampled: 5/26/2017 11:54:00AM

Date/Time Received: 5/26/2017 3:20:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	179	25	10	mg/L	SM 2540 C		1	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	1.6	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 07:14	7060036	RLC
Fluoride	0.02	0.30	0.004	mg/L	EPA 300.0	J	1	06/01/17 15:00	06/02/17 07:14	7060036	RLC
Sulfate	34	1.0	0.09	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 07:14	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Arsenic	0.0008	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Barium	0.0328	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Boron	0.0817	0.0400	0.0060	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Calcium	41.7	25.0	0.522	mg/L	EPA 6020B		50	05/30/17 11:10	06/02/17 19:43	7050903	CSW
Chromium	0.0008	0.0100	0.0003	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Lead	0.0003	0.0050	0.00007	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Molybdenum	0.0024	0.0100	0.0006	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:37	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:30	7050922	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0918

Project: CCR Event

Client ID: BGWC-9

Lab Number ID: AAE0918-02

Date/Time Sampled: 5/26/2017 10:52:00AM

Date/Time Received: 5/26/2017 3:20:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	423	25	10	mg/L	SM 2540 C		1	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	35	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 07:35	7060036	RLC
Fluoride	0.13	0.30	0.004	mg/L	EPA 300.0	J	1	06/01/17 15:00	06/02/17 07:35	7060036	RLC
Sulfate	110	10	0.92	mg/L	EPA 300.0		10	06/01/17 15:00	06/02/17 16:45	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Arsenic	0.0035	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Barium	0.0341	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Boron	0.711	0.0400	0.0060	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Calcium	70.4	25.0	0.522	mg/L	EPA 6020B		50	05/30/17 11:10	06/02/17 19:55	7050903	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Molybdenum	0.0029	0.0100	0.0006	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Selenium	0.0014	0.0100	0.0014	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Lithium	0.0013	0.0500	0.0011	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 19:49	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:33	7050922	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 05, 2017

Report No.: AAE0918

Project: CCR Event

Client ID: BGWC-11

Lab Number ID: AAE0918-03

Date/Time Sampled: 5/26/2017 12:15:00PM

Date/Time Received: 5/26/2017 3:20:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	291	25	10	mg/L	SM 2540 C		1	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	9.9	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 07:55	7060036	RLC
Fluoride	0.03	0.30	0.004	mg/L	EPA 300.0	J	1	06/01/17 15:00	06/02/17 07:55	7060036	RLC
Sulfate	87	10	0.92	mg/L	EPA 300.0		10	06/01/17 15:00	06/02/17 17:06	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Arsenic	0.0034	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Barium	0.0233	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Boron	0.228	0.0400	0.0060	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Calcium	47.3	25.0	0.522	mg/L	EPA 6020B		50	05/30/17 11:10	06/02/17 20:06	7050903	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Molybdenum	0.0033	0.0100	0.0006	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:00	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:35	7050922	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 05, 2017

Report No.: AAE0918

Project: CCR Event

Client ID: BGWA-26

Lab Number ID: AAE0918-04

Date/Time Sampled: 5/26/2017 9:46:00AM

Date/Time Received: 5/26/2017 3:20:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	195	25	10	mg/L	SM 2540 C		1	05/31/17 17:50	05/31/17 17:50	7050957	JPT
<b>Inorganic Anions</b>											
Chloride	5.4	0.25	0.01	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 10:02	7060036	RLC
Fluoride	0.09	0.30	0.004	mg/L	EPA 300.0	J	1	06/01/17 15:00	06/02/17 10:02	7060036	RLC
Sulfate	24	1.0	0.09	mg/L	EPA 300.0		1	06/01/17 15:00	06/02/17 10:02	7060036	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Arsenic	0.0018	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Barium	0.0500	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Boron	0.0098	0.0400	0.0060	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Calcium	34.5	25.0	0.522	mg/L	EPA 6020B		50	05/30/17 11:10	06/02/17 20:17	7050903	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Molybdenum	0.0039	0.0100	0.0006	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Lithium	0.0024	0.0500	0.0011	mg/L	EPA 6020B	J	1	05/30/17 11:10	06/02/17 20:12	7050903	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 09:30	06/01/17 17:37	7050922	MTC



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June 05, 2017

**Report No.: AAE0918**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050957 - SM 2540 C</b>											
<b>Blank (7050957-BLK1)</b>						Prepared & Analyzed: 05/31/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7050957-BS1)</b>						Prepared & Analyzed: 05/31/17					
Total Dissolved Solids	381	25	10	mg/L	400.00		95	84-108			
<b>Duplicate (7050957-DUP1)</b>						Source: AAE0911-07 Prepared & Analyzed: 05/31/17					
Total Dissolved Solids	ND	25	10	mg/L		ND			16	10	
<b>Duplicate (7050957-DUP2)</b>						Source: AAE0912-01 Prepared & Analyzed: 05/31/17					
Total Dissolved Solids	190	25	10	mg/L		223			16	10	QR-03



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**Report No.: AAE0918**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060036 - EPA 300.0</b>											
<b>Blank (7060036-BLK1)</b>						Prepared & Analyzed: 06/01/17					
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 (7060036-BS1)</b>						Prepared & Analyzed: 06/01/17					
Chloride	10.4	0.25	0.01	mg/L	10.020		104	90-110			
Fluoride	10.3	0.30	0.004	mg/L	10.020		103	90-110			
Sulfate	10.5	1.0	0.09	mg/L	10.050		105	90-110			
<b>Matrix Spike (7060036-MS1)</b>						Source: AAE0911-01 Prepared: 06/01/17 Analyzed: 06/02/17					
Chloride	12.4	0.25	0.01	mg/L	10.020	2.44	100	90-110			
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.08	103	90-110			
Sulfate	17.0	1.0	0.09	mg/L	10.050	5.74	112	90-110			QM-05
<b>Matrix Spike (7060036-MS2)</b>						Source: AAE0918-03 Prepared: 06/01/17 Analyzed: 06/02/17					
Chloride	20.1	0.25	0.01	mg/L	10.020	9.91	101	90-110			
Fluoride	10.8	0.30	0.004	mg/L	10.020	0.03	108	90-110			
Sulfate	85.7	1.0	0.09	mg/L	10.050	84.2	15	90-110			QM-02
<b>Matrix Spike Dup (7060036-MSD1)</b>						Source: AAE0911-01 Prepared: 06/01/17 Analyzed: 06/02/17					
Chloride	12.2	0.25	0.01	mg/L	10.020	2.44	98	90-110	2	15	
Fluoride	10.5	0.30	0.004	mg/L	10.020	0.08	104	90-110	0.3	15	
Sulfate	15.8	1.0	0.09	mg/L	10.050	5.74	100	90-110	8	15	



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**Report No.: AAE0918**

**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 7050903 - EPA 3005A**

**Blank (7050903-BLK1)**

Prepared: 05/30/17 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							

**LCS (7050903-BS1)**

Prepared: 05/30/17 Analyzed: 06/02/17

Antimony	0.110	0.0030	0.0003	mg/L	0.10000		110	80-120			
Arsenic	0.104	0.0050	0.0004	mg/L	0.10000		104	80-120			
Barium	0.106	0.0100	0.0003	mg/L	0.10000		106	80-120			
Beryllium	0.103	0.0030	0.00007	mg/L	0.10000		103	80-120			
Boron	1.07	0.0400	0.0060	mg/L	1.0000		107	80-120			
Cadmium	0.104	0.0010	0.00006	mg/L	0.10000		104	80-120			
Calcium	1.08	0.500	0.0104	mg/L	1.0000		108	80-120			
Chromium	0.104	0.0100	0.0003	mg/L	0.10000		104	80-120			
Cobalt	0.106	0.0100	0.0005	mg/L	0.10000		106	80-120			
Copper	0.103	0.0250	0.0003	mg/L	0.10000		103	80-120			
Lead	0.103	0.0050	0.00007	mg/L	0.10000		103	80-120			
Molybdenum	0.105	0.0100	0.0006	mg/L	0.10000		105	80-120			
Nickel	0.106	0.0100	0.0003	mg/L	0.10000		106	80-120			
Selenium	0.105	0.0100	0.0014	mg/L	0.10000		105	80-120			
Silver	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120			
Thallium	0.104	0.0010	0.00005	mg/L	0.10000		104	80-120			
Vanadium	0.106	0.0100	0.0014	mg/L	0.10000		106	80-120			
Zinc	0.106	0.0100	0.0013	mg/L	0.10000		106	80-120			
Lithium	0.106	0.0500	0.0011	mg/L	0.10000		106	80-120			



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June 05, 2017

**Report No.: AAE0918**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050903 - EPA 3005A</b>											
<b>Matrix Spike (7050903-MS1)</b>			<b>Source: AAE0911-01</b>				Prepared: 05/30/17 Analyzed: 06/02/17				
Antimony	0.108	0.0030	0.0003	mg/L	0.10000	ND	108	75-125			
Arsenic	0.105	0.0050	0.0004	mg/L	0.10000	0.0015	103	75-125			
Barium	0.456	0.0100	0.0003	mg/L	0.10000	0.193	263	75-125			QM-02
Beryllium	0.0993	0.0030	0.00007	mg/L	0.10000	ND	99	75-125			
Boron	1.01	0.0400	0.0060	mg/L	1.0000	0.0100	100	75-125			
Cadmium	0.102	0.0010	0.00006	mg/L	0.10000	ND	102	75-125			
Calcium	34.6	25.0	0.522	mg/L	1.0000	33.8	73	75-125			QM-02
Chromium	0.107	0.0100	0.0003	mg/L	0.10000	ND	107	75-125			
Cobalt	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125			
Copper	0.103	0.0250	0.0003	mg/L	0.10000	ND	103	75-125			
Lead	0.101	0.0050	0.00007	mg/L	0.10000	0.0001	101	75-125			
Molybdenum	0.109	0.0100	0.0006	mg/L	0.10000	0.0020	107	75-125			
Nickel	0.105	0.0100	0.0003	mg/L	0.10000	ND	105	75-125			
Selenium	0.103	0.0100	0.0014	mg/L	0.10000	ND	103	75-125			
Silver	0.101	0.0100	0.0003	mg/L	0.10000	ND	101	75-125			
Thallium	0.103	0.0010	0.00005	mg/L	0.10000	0.0001	103	75-125			
Vanadium	0.110	0.0100	0.0014	mg/L	0.10000	ND	110	75-125			
Zinc	0.105	0.0100	0.0013	mg/L	0.10000	0.0015	104	75-125			
Lithium	0.104	0.0500	0.0011	mg/L	0.10000	ND	104	75-125			
<b>Matrix Spike Dup (7050903-MSD1)</b>			<b>Source: AAE0911-01</b>				Prepared: 05/30/17 Analyzed: 06/02/17				
Antimony	0.108	0.0030	0.0003	mg/L	0.10000	ND	108	75-125	0.3	20	
Arsenic	0.105	0.0050	0.0004	mg/L	0.10000	0.0015	103	75-125	0.1	20	
Barium	0.461	0.0100	0.0003	mg/L	0.10000	0.193	268	75-125	1	20	QM-02
Beryllium	0.103	0.0030	0.00007	mg/L	0.10000	ND	103	75-125	4	20	
Boron	1.02	0.0400	0.0060	mg/L	1.0000	0.0100	101	75-125	1	20	
Cadmium	0.105	0.0010	0.00006	mg/L	0.10000	ND	105	75-125	2	20	
Calcium	35.3	25.0	0.522	mg/L	1.0000	33.8	145	75-125	2	20	QM-02
Chromium	0.102	0.0100	0.0003	mg/L	0.10000	ND	102	75-125	4	20	
Cobalt	0.0996	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	4	20	
Copper	0.100	0.0250	0.0003	mg/L	0.10000	ND	100	75-125	3	20	
Lead	0.100	0.0050	0.00007	mg/L	0.10000	0.0001	100	75-125	1	20	
Molybdenum	0.105	0.0100	0.0006	mg/L	0.10000	0.0020	103	75-125	3	20	
Nickel	0.100	0.0100	0.0003	mg/L	0.10000	ND	100	75-125	4	20	
Selenium	0.105	0.0100	0.0014	mg/L	0.10000	ND	105	75-125	1	20	
Silver	0.101	0.0100	0.0003	mg/L	0.10000	ND	101	75-125	0.1	20	
Thallium	0.102	0.0010	0.00005	mg/L	0.10000	0.0001	102	75-125	0.9	20	
Vanadium	0.106	0.0100	0.0014	mg/L	0.10000	ND	106	75-125	3	20	
Zinc	0.102	0.0100	0.0013	mg/L	0.10000	0.0015	101	75-125	3	20	
Lithium	0.104	0.0500	0.0011	mg/L	0.10000	ND	104	75-125	0.06	20	



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**Report No.: AAE0918**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050903 - EPA 3005A</b>											
<b>Post Spike (7050903-PS1)</b>			<b>Source: AAE0911-01</b>			<b>Prepared: 05/30/17 Analyzed: 06/02/17</b>					
Antimony	106			ug/L	100.00	0.0698	106	80-120			
Arsenic	105			ug/L	100.00	1.49	103	80-120			
Barium	463			ug/L	100.00	193	270	80-120			QM-02
Beryllium	103			ug/L	100.00	0.0042	103	80-120			
Boron	1040			ug/L	1000.0	9.96	103	80-120			
Cadmium	100			ug/L	100.00	-0.0083	100	80-120			
Calcium	35400			ug/L	1000.0	33800	160	80-120			QM-02
Chromium	105			ug/L	100.00	0.145	105	80-120			
Cobalt	104			ug/L	100.00	0.156	104	80-120			
Copper	98.4			ug/L	100.00	-0.110	98	80-120			
Lead	99.2			ug/L	100.00	0.0975	99	80-120			
Molybdenum	106			ug/L	100.00	2.05	104	80-120			
Nickel	101			ug/L	100.00	0.229	101	80-120			
Selenium	104			ug/L	100.00	0.434	103	80-120			
Silver	102			ug/L	100.00	-0.0023	102	80-120			
Thallium	102			ug/L	100.00	0.0965	102	80-120			
Vanadium	107			ug/L	100.00	0.898	106	80-120			
Zinc	103			ug/L	100.00	1.49	101	80-120			
Lithium	101			ug/L	100.00	0.192	101	80-120			

**Batch 7050922 - EPA 7470A**

<b>Blank (7050922-BLK1)</b>					<b>Prepared &amp; Analyzed: 06/01/17</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7050922-BS1)</b>					<b>Prepared &amp; Analyzed: 06/01/17</b>						
Mercury	0.00239	0.00050	0.000041	mg/L	2.5000E-3	96	80-120				



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June 05, 2017

**Report No.: AAE0918**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050922 - EPA 7470A</b>											
<b>Duplicate (7050922-DUP2)</b>			<b>Source: AAE0918-01</b>			<b>Prepared &amp; Analyzed: 06/01/17</b>					
Mercury	ND	0.00050	0.000041	mg/L		ND				20	
<b>Matrix Spike (7050922-MS1)</b>			<b>Source: AAE0911-02</b>			<b>Prepared &amp; Analyzed: 06/01/17</b>					
Mercury	0.00240	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125			
<b>Matrix Spike Dup (7050922-MSD1)</b>			<b>Source: AAE0911-02</b>			<b>Prepared &amp; Analyzed: 06/01/17</b>					
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	3	20	
<b>Post Spike (7050922-PS1)</b>			<b>Source: AAE0911-02</b>			<b>Prepared &amp; Analyzed: 06/01/17</b>					
Mercury	1.78			ug/L	1.6667	-0.00486	107	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 05, 2017

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## Legend

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### 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

- 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.**

**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: <i>Southern Company Services</i>				ANALYSIS REQUESTED										LAB ID NUMBER	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <i>241 Ralph McGill Blvd NE 81085 Atlanta, GA 30308</i>				CONTAINER TYPE: <i>3</i>	<i>7</i>	<i>3</i>												P - PLASTIC	1 - HCl, ≤6°C
REPORT TO: <i>Joy Abraham</i>				CONTAINERS ↓ <i>Method 893.100 &amp; 893.101 EPA 8260.1-1470 JVF 501 EPA 8260 TDS 826.010 Radon 226 &amp; 228 SW-BWG 9815.9820</i>											A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C			
REQUESTED COMPLETION DATE:															CC: <i>Maria Padilla</i>		G - CLEAR GLASS		3 - HNO <sub>3</sub>
PROJECT NAME/STATE: <i>Plant Brown Ash Pond CCR</i>				PO #: <i>GPC10684198</i>		V - VOA VIAL		4 - NaOH, ≤6°C											
PROJECT #:						S - STERILE		5 - NaOH/ZnAc, ≤6°C											
						O - OTHER		6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C											
								7 - ≤6°C not frozen											
								*MATRIX CODES:											
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION									DW - DRINKING WATER	S - SOIL				
														WW - WASTEWATER	SL - SLUDGE				
														GW - GROUNDWATER	SD - SOLID				
														SW - SURFACE WATER	A - AIR				
														ST - STORM WATER	L - LIQUID				
														W - WATER	P - PRODUCT				
														REMARKS/ADDITIONAL INFORMATION					
SAMPLED BY AND TITLE: <i>Robert M. Hill</i>				DATE/TIME: <i>5/26/17 @ 1308</i>				RELINQUISHED BY: <i>Robert M. Hill</i>				DATE/TIME: <i>5/26/17 1520</i>				FOR LAB USE ONLY			
RECEIVED BY: <i>Joy Abraham</i>				DATE/TIME: <i>05/26/17 1520</i>				SAMPLE SHIPPED VIA: UPS <input type="checkbox"/> FED-EX <input type="checkbox"/> USPS <input type="checkbox"/> COURIER <input type="checkbox"/> CLIENT <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> FS <input type="checkbox"/>				LAB #: <i>AAE0918</i>				Entered into LIMS: <i>AK</i>			
RECEIVED BY LAB: <i>Joy Abraham</i>				DATE/TIME: <i>05/26/17 1520</i>				Custody Seal: Intact <input type="checkbox"/> Broken <input type="checkbox"/> Not Present <input checked="" type="checkbox"/> N/A				Tracking #:							
Temperature: Min: <i>1°C</i> Max: <i>1°C</i>				# of Coolers: <i>0</i>				Cooler ID:											

Page 15 of 16



**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: 5/30/2017 10:13:08AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 05/26/17 15:20

**Work Order:** AAE0918

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 18

**Minimum Temp(C):** 1.0

**Maximum Temp(C):** 1.0

**Custody Seal(s) Used:** 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 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:**



**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: AAE0946**

**June 07, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

June 07, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
FBL 053017	AAE0946-01	Water	05/30/17 14:20	05/31/17 08:00
EQBL 053017	AAE0946-02	Water	05/30/17 14:30	05/31/17 08:00
BGWC-16	AAE0946-03	Ground Water	05/30/17 14:30	05/31/17 08:00
Dup-2	AAE0946-04	Ground Water	05/30/17 00:00	05/31/17 08:00
BGWC-17	AAE0946-05	Ground Water	05/30/17 15:50	05/31/17 08:00



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 07, 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

June 07, 2017

Report No.: AAE0946

Project: CCR Event

Client ID: FBL 053017

Lab Number ID: AAE0946-01

Date/Time Sampled: 5/30/2017 2:20:00PM

Date/Time Received: 5/31/2017 8:00:00AM

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	06/02/17 12:45	06/02/17 12:45	7060059	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 17:28	7060071	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 17:28	7060071	SLH
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 17:28	7060071	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Boron	0.0069	0.0400	0.0060	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Calcium	ND	0.500	0.0104	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:07	7060004	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 11:50	06/01/17 19:27	7050961	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 07, 2017

Report No.: AAE0946

Project: CCR Event

Client ID: EQBL 053017

Lab Number ID: AAE0946-02

Date/Time Sampled: 5/30/2017 2:30:00PM

Date/Time Received: 5/31/2017 8:00:00AM

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	06/02/17 12:45	06/02/17 12:45	7060059	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.01	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 17:49	7060071	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 17:49	7060071	SLH
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 17:49	7060071	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Calcium	0.0108	0.500	0.0104	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:13	7060004	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 11:50	06/01/17 19:29	7050961	MTC





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 07, 2017

Report No.: AAE0946

Project: CCR Event

Client ID: BGWC-16

Lab Number ID: AAE0946-03

Date/Time Sampled: 5/30/2017 2:30:00PM

Date/Time Received: 5/31/2017 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	601	25	10	mg/L	SM 2540 C		1	06/02/17 12:45	06/02/17 12:45	7060059	JPT
<b>Inorganic Anions</b>											
Chloride	38	0.25	0.01	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 18:10	7060071	SLH
Fluoride	0.51	0.30	0.004	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 18:10	7060071	SLH
Sulfate	260	20	1.8	mg/L	EPA 300.0		20	06/02/17 10:00	06/06/17 23:07	7060071	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Arsenic	0.0008	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Barium	0.0316	0.0100	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Boron	1.52	0.0400	0.0060	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Cadmium	0.0011	0.0010	0.00006	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Calcium	111	25.0	0.522	mg/L	EPA 6020B		50	06/01/17 09:45	06/06/17 12:55	7060004	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Cobalt	0.0045	0.0100	0.0005	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Thallium	0.0002	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:30	7060004	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 11:50	06/01/17 19:32	7050961	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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

June 07, 2017

Report No.: AAE0946

Project: CCR Event

Client ID: Dup-2

Lab Number ID: AAE0946-04

Date/Time Sampled: 5/30/2017 12:00:00AM

Date/Time Received: 5/31/2017 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	586	25	10	mg/L	SM 2540 C		1	06/02/17 12:45	06/02/17 12:45	7060059	JPT
<b>Inorganic Anions</b>											
Chloride	38	0.25	0.01	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 18:31	7060071	SLH
Fluoride	0.52	0.30	0.004	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 18:31	7060071	SLH
Sulfate	250	20	1.8	mg/L	EPA 300.0		20	06/02/17 10:00	06/06/17 23:28	7060071	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Arsenic	0.0007	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Barium	0.0308	0.0100	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Boron	1.50	0.0400	0.0060	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Cadmium	0.0012	0.0010	0.00006	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Calcium	117	25.0	0.522	mg/L	EPA 6020B		50	06/01/17 09:45	06/06/17 13:01	7060004	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Cobalt	0.0047	0.0100	0.0005	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Thallium	0.0002	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:41	7060004	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/01/17 11:50	06/01/17 19:34	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 07, 2017

Report No.: AAE0946

Project: CCR Event

Client ID: BGWC-17

Lab Number ID: AAE0946-05

Date/Time Sampled: 5/30/2017 3:50:00PM

Date/Time Received: 5/31/2017 8:00:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	391	25	10	mg/L	SM 2540 C		1	06/02/17 12:45	06/02/17 12:45	7060059	JPT
<b>Inorganic Anions</b>											
Chloride	41	0.25	0.01	mg/L	EPA 300.0		1	06/02/17 10:00	06/02/17 18:53	7060071	SLH
Fluoride	0.15	0.30	0.004	mg/L	EPA 300.0	J	1	06/02/17 10:00	06/02/17 18:53	7060071	SLH
Sulfate	110	10	0.92	mg/L	EPA 300.0		10	06/02/17 10:00	06/06/17 23:49	7060071	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Arsenic	0.0006	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Barium	0.0179	0.0100	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Boron	1.70	0.0400	0.0060	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Cadmium	0.0002	0.0010	0.00006	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Calcium	72.6	25.0	0.522	mg/L	EPA 6020B		50	06/01/17 09:45	06/06/17 13:07	7060004	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Thallium	0.00009	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/01/17 09:45	06/01/17 23:53	7060004	KLH
Mercury	0.00023	0.00050	0.000041	mg/L	EPA 7470A	J	1	06/01/17 11:50	06/01/17 19:36	7050961	MTC



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June 07, 2017

**Report No.: AAE0946**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060059 - SM 2540 C</b>											
<b>Blank (7060059-BLK1)</b>						Prepared & Analyzed: 06/02/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7060059-BS1)</b>						Prepared & Analyzed: 06/02/17					
Total Dissolved Solids	389	25	10	mg/L	400.00		97	84-108			
<b>Duplicate (7060059-DUP1)</b>						Source: AAE0946-02 Prepared & Analyzed: 06/02/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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June 07, 2017

**Report No.: AAE0946**

**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



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**Report No.: AAE0946**

**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 7060004 - EPA 3005A</b>											
<b>Blank (7060004-BLK1)</b>						Prepared & Analyzed: 06/01/17					
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	0.0017	0.0100	0.0013	mg/L							
Lithium	ND	0.0500	0.0011	mg/L							

J



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**Report No.: AAE0946**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060004 - EPA 3005A</b>											
<b>LCS (7060004-BS1)</b>						Prepared & Analyzed: 06/01/17					
Antimony	0.105	0.0030	0.0003	mg/L	0.10000		105	80-120			
Arsenic	0.101	0.0050	0.0004	mg/L	0.10000		101	80-120			
Barium	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			
Beryllium	0.105	0.0030	0.00007	mg/L	0.10000		105	80-120			
Boron	1.06	0.0400	0.0060	mg/L	1.0000		106	80-120			
Cadmium	0.106	0.0010	0.00006	mg/L	0.10000		106	80-120			
Calcium	1.01	0.500	0.0104	mg/L	1.0000		101	80-120			
Chromium	0.101	0.0100	0.0003	mg/L	0.10000		101	80-120			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000		102	80-120			
Copper	0.101	0.0250	0.0003	mg/L	0.10000		101	80-120			
Lead	0.0986	0.0050	0.00007	mg/L	0.10000		99	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	0.105	0.0100	0.0014	mg/L	0.10000		105	80-120			
Silver	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120			
Thallium	0.100	0.0010	0.00005	mg/L	0.10000		100	80-120			
Vanadium	0.101	0.0100	0.0014	mg/L	0.10000		101	80-120			
Zinc	0.103	0.0100	0.0013	mg/L	0.10000		103	80-120			
Lithium	0.106	0.0500	0.0011	mg/L	0.10000		106	80-120			
<b>Matrix Spike (7060004-MS1)</b>											
				<b>Source: AAE0946-04</b>		Prepared & Analyzed: 06/01/17					
Antimony	0.107	0.0030	0.0003	mg/L	0.10000	ND	107	75-125			
Arsenic	0.108	0.0050	0.0004	mg/L	0.10000	0.0007	107	75-125			
Barium	0.132	0.0100	0.0003	mg/L	0.10000	0.0308	101	75-125			
Beryllium	0.101	0.0030	0.00007	mg/L	0.10000	ND	101	75-125			
Boron	2.46	0.0400	0.0060	mg/L	1.0000	1.50	96	75-125			
Cadmium	0.107	0.0010	0.00006	mg/L	0.10000	0.0012	106	75-125			
Calcium	112	25.0	0.522	mg/L	1.0000	117	NR	75-125			QM-02
Chromium	0.102	0.0100	0.0003	mg/L	0.10000	ND	102	75-125			
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000	0.0047	100	75-125			
Copper	0.0960	0.0250	0.0003	mg/L	0.10000	ND	96	75-125			
Lead	0.0977	0.0050	0.00007	mg/L	0.10000	0.0001	98	75-125			
Molybdenum	0.110	0.0100	0.0006	mg/L	0.10000	ND	110	75-125			
Nickel	0.101	0.0100	0.0003	mg/L	0.10000	0.0030	98	75-125			
Selenium	0.106	0.0100	0.0014	mg/L	0.10000	ND	106	75-125			
Silver	0.0986	0.0100	0.0003	mg/L	0.10000	ND	99	75-125			
Thallium	0.0997	0.0010	0.00005	mg/L	0.10000	0.0002	99	75-125			
Vanadium	0.105	0.0100	0.0014	mg/L	0.10000	ND	105	75-125			
Zinc	0.130	0.0100	0.0013	mg/L	0.10000	0.0306	99	75-125			
Lithium	0.102	0.0500	0.0011	mg/L	0.10000	ND	102	75-125			



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June 07, 2017

**Report No.: AAE0946**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060004 - EPA 3005A</b>											
<b>Matrix Spike Dup (7060004-MSD1)</b>			<b>Source: AAE0946-04</b>			<b>Prepared &amp; Analyzed: 06/01/17</b>					
Antimony	0.105	0.0030	0.0003	mg/L	0.10000	ND	105	75-125	2	20	
Arsenic	0.107	0.0050	0.0004	mg/L	0.10000	0.0007	106	75-125	1	20	
Barium	0.128	0.0100	0.0003	mg/L	0.10000	0.0308	97	75-125	3	20	
Beryllium	0.0994	0.0030	0.00007	mg/L	0.10000	ND	99	75-125	1	20	
Boron	2.44	0.0400	0.0060	mg/L	1.0000	1.50	94	75-125	0.8	20	
Cadmium	0.106	0.0010	0.00006	mg/L	0.10000	0.0012	105	75-125	0.5	20	
Calcium	109	25.0	0.522	mg/L	1.0000	117	NR	75-125	3	20	QM-02
Chromium	0.102	0.0100	0.0003	mg/L	0.10000	ND	102	75-125	0.3	20	
Cobalt	0.105	0.0100	0.0005	mg/L	0.10000	0.0047	101	75-125	0.5	20	
Copper	0.0967	0.0250	0.0003	mg/L	0.10000	ND	97	75-125	0.6	20	
Lead	0.0944	0.0050	0.00007	mg/L	0.10000	0.0001	94	75-125	3	20	
Molybdenum	0.108	0.0100	0.0006	mg/L	0.10000	ND	108	75-125	2	20	
Nickel	0.102	0.0100	0.0003	mg/L	0.10000	0.0030	99	75-125	1	20	
Selenium	0.107	0.0100	0.0014	mg/L	0.10000	ND	107	75-125	0.9	20	
Silver	0.0988	0.0100	0.0003	mg/L	0.10000	ND	99	75-125	0.2	20	
Thallium	0.0983	0.0010	0.00005	mg/L	0.10000	0.0002	98	75-125	1	20	
Vanadium	0.106	0.0100	0.0014	mg/L	0.10000	ND	106	75-125	1	20	
Zinc	0.128	0.0100	0.0013	mg/L	0.10000	0.0306	98	75-125	0.9	20	
Lithium	0.103	0.0500	0.0011	mg/L	0.10000	ND	103	75-125	1	20	
<b>Post Spike (7060004-PS1)</b>			<b>Source: AAE0946-04</b>			<b>Prepared &amp; Analyzed: 06/01/17</b>					
Antimony	102			ug/L	100.00	0.0722	102	80-120			
Arsenic	109			ug/L	100.00	0.745	109	80-120			
Barium	131			ug/L	100.00	30.8	100	80-120			
Beryllium	98.3			ug/L	100.00	0.0484	98	80-120			
Boron	2470			ug/L	1000.0	1500	97	80-120			
Cadmium	105			ug/L	100.00	1.16	104	80-120			
Calcium	113000			ug/L	1000.0	117000	NR	80-120			QM-02
Chromium	104			ug/L	100.00	0.171	104	80-120			
Cobalt	106			ug/L	100.00	4.67	101	80-120			
Copper	97.4			ug/L	100.00	0.159	97	80-120			
Lead	95.2			ug/L	100.00	0.121	95	80-120			
Molybdenum	107			ug/L	100.00	0.110	107	80-120			
Nickel	102			ug/L	100.00	2.98	99	80-120			
Selenium	110			ug/L	100.00	0.789	109	80-120			
Silver	96.9			ug/L	100.00	-0.0069	97	80-120			
Thallium	98.4			ug/L	100.00	0.217	98	80-120			
Vanadium	104			ug/L	100.00	-0.144	104	80-120			
Zinc	128			ug/L	100.00	30.6	98	80-120			
Lithium	99.4			ug/L	100.00	0.443	99	80-120			





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Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 07, 2017

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## Legend

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### 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

**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

CLIENT NAME:		ANALYSIS REQUESTED										LAB ID NUMBER	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:	P	P	P								P	A	G	V	S
REPORT TO:	CC:	PRESERVATION:	# of														
Southern Company Services 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308																	
241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308	Maria Padilla																
CC: Maria Padilla	PO #: GPC 10684198																
Requested Completion Date:	Project Name/State: Plant Bowen-Ash Pond CCR																
Project #:																	
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of											
5/30/17	1420	W	X		FBL053017	4											
5/30/17	1430	W	X		EQBL053017	4											
5/30/17	1430	GW	X		B6WL-16	6											
5/30/17	—	GW	X		Dup-2	4											
5/30/17	1550	GW	X		B6WL-17	4											
SAMPLED BY AND TITLE:	DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	LAB #:													
Robert Mull/Michael Petros	5/30/17 1630	Robert S. Mull	5/31/17 0800	AAE0946													
RECEIVED BY:	DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	Entered into LIMS:													
Michael Padilla	05/31/17 0800			MR													
REFERRED BY LAB:	DATE/TIME:	SAMPLE SHIPPED VIA:	CLIENT:	OTHER:	FS:												
Checked: [ ] No [ ] NA	Temperature: 3.2 Min 3.2 Max	UPS FED-EX USPS COURIER	CLIENT	OTHER	FS												
Custody Seal: Intact Broken Not Present	# of Coolers	Cooler ID:															

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Environmental Monitoring & Laboratory Analysis  
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**LOG-IN CHECKLIST**

**Printed: 6/1/2017 8:46:08AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 05/31/17 08:00

**Work Order:** AAE0946

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 22

**Minimum Temp(C):** 3.2

**Maximum Temp(C):** 3.2

**Custody Seal(s) Used:** 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 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:**



**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: AAF0060**

**June 09, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

Project Manager

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All test results relate only to the samples analyzed.



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 09, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-18	AAF0060-01	Ground Water	06/01/17 09:25	06/02/17 07:57
BGWC-19	AAF0060-02	Ground Water	06/01/17 10:35	06/02/17 07:57
BGWC-20	AAF0060-03	Ground Water	06/01/17 11:50	06/02/17 07:57
BGWC-25	AAF0060-04	Ground Water	06/01/17 14:10	06/02/17 07:57
BGWC-21	AAF0060-05	Ground Water	06/01/17 15:40	06/02/17 07:57



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

June 09, 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.



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 09, 2017

Report No.: AAF0060

Project: CCR Event

Client ID: BGWC-18

Lab Number ID: AAF0060-01

Date/Time Sampled: 6/1/2017 9:25:00AM

Date/Time Received: 6/2/2017 7:57:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	215	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	8.0	0.25	0.01	mg/L	EPA 300.0		1	06/02/17 10:00	06/03/17 00:30	7060071	SLH
Fluoride	0.09	0.30	0.004	mg/L	EPA 300.0	J	1	06/02/17 10:00	06/03/17 00:30	7060071	SLH
Sulfate	73	5.0	0.46	mg/L	EPA 300.0		5	06/02/17 10:00	06/07/17 03:36	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 23:43	7060050	CSW
Arsenic	0.0005	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:43	7060050	CSW
Barium	0.0331	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:43	7060050	CSW
Beryllium	0.00009	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:43	7060050	CSW
Boron	0.663	0.200	0.0302	mg/L	EPA 6020B		5	06/02/17 10:30	06/08/17 15:07	7060050	CSW
Cadmium	0.0003	0.0010	0.00006	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:43	7060050	CSW
Calcium	44.8	25.0	0.522	mg/L	EPA 6020B		50	06/02/17 10:30	06/02/17 23:49	7060050	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:43	7060050	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:43	7060050	CSW
Lead	0.00009	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:43	7060050	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:43	7060050	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:43	7060050	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:43	7060050	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:43	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 16:59	7060092	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 09, 2017

**Report No.:** AAF0060

**Project:** CCR Event

**Client ID:** BGWC-19

**Lab Number ID:** AAF0060-02

**Date/Time Sampled:** 6/1/2017 10:35:00AM

**Date/Time Received:** 6/2/2017 7:57:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	266	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	13	0.25	0.01	mg/L	EPA 300.0		1	06/02/17 10:00	06/03/17 02:16	7060071	SLH
Fluoride	0.05	0.30	0.004	mg/L	EPA 300.0	J	1	06/02/17 10:00	06/03/17 02:16	7060071	SLH
Sulfate	70	5.0	0.46	mg/L	EPA 300.0		5	06/02/17 10:00	06/07/17 03:57	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 23:55	7060050	CSW
Arsenic	0.0008	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:55	7060050	CSW
Barium	0.0341	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:55	7060050	CSW
Beryllium	0.00007	0.0030	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:55	7060050	CSW
Boron	0.383	0.200	0.0302	mg/L	EPA 6020B		5	06/02/17 10:30	06/08/17 15:12	7060050	CSW
Cadmium	0.0001	0.0010	0.00006	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:55	7060050	CSW
Calcium	50.8	25.0	0.522	mg/L	EPA 6020B		50	06/02/17 10:30	06/03/17 00:00	7060050	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:55	7060050	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:55	7060050	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:55	7060050	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:55	7060050	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:55	7060050	CSW
Thallium	0.00008	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/02/17 23:55	7060050	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/02/17 10:30	06/02/17 23:55	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 17:01	7060092	MTC





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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 09, 2017

Report No.: AAF0060

Project: CCR Event

Client ID: BGWC-20

Lab Number ID: AAF0060-03

Date/Time Sampled: 6/1/2017 11:50:00AM

Date/Time Received: 6/2/2017 7:57:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1130	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	130	5.0	0.26	mg/L	EPA 300.0		20	06/02/17 10:00	06/07/17 04:17	7060071	RLC
Fluoride	0.65	0.30	0.004	mg/L	EPA 300.0		1	06/02/17 10:00	06/03/17 02:38	7060071	SLH
Sulfate	550	20	1.8	mg/L	EPA 300.0		20	06/02/17 10:00	06/07/17 04:17	7060071	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Arsenic	0.0017	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Barium	0.0361	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Boron	3.57	2.00	0.302	mg/L	EPA 6020B		50	06/02/17 10:30	06/08/17 15:18	7060050	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Calcium	286	25.0	0.522	mg/L	EPA 6020B		50	06/02/17 10:30	06/03/17 00:12	7060050	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Molybdenum	0.0125	0.0100	0.0006	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Lithium	0.0230	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/03/17 00:06	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 17:04	7060092	MTC



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Attention: Mr. Joju Abraham

June 09, 2017

Report No.: AAF0060

Project: CCR Event

Client ID: BGWC-25

Lab Number ID: AAF0060-04

Date/Time Sampled: 6/1/2017 2:10:00PM

Date/Time Received: 6/2/2017 7:57:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	177	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	4.4	0.25	0.01	mg/L	EPA 300.0		1	06/02/17 10:00	06/03/17 02:59	7060071	SLH
Fluoride	0.04	0.30	0.004	mg/L	EPA 300.0	J	1	06/02/17 10:00	06/03/17 02:59	7060071	SLH
Sulfate	29	1.0	0.09	mg/L	EPA 300.0		1	06/02/17 10:00	06/03/17 02:59	7060071	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Arsenic	0.0025	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Barium	0.0313	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Boron	0.0467	0.0400	0.0060	mg/L	EPA 6020B		1	06/02/17 10:30	06/08/17 15:24	7060050	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Calcium	44.2	25.0	0.522	mg/L	EPA 6020B		50	06/02/17 10:30	06/03/17 00:23	7060050	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Lead	0.00007	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Molybdenum	0.0026	0.0100	0.0006	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:17	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 17:06	7060092	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 09, 2017

Report No.: AAF0060

Project: CCR Event

Client ID: BGWC-21

Lab Number ID: AAF0060-05

Date/Time Sampled: 6/1/2017 3:40:00PM

Date/Time Received: 6/2/2017 7:57:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	185	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	4.9	0.25	0.01	mg/L	EPA 300.0		1	06/02/17 10:00	06/03/17 03:21	7060071	SLH
Fluoride	0.03	0.30	0.004	mg/L	EPA 300.0	J	1	06/02/17 10:00	06/03/17 03:21	7060071	SLH
Sulfate	55	2.0	0.18	mg/L	EPA 300.0		2	06/02/17 10:00	06/07/17 04:38	7060071	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Arsenic	0.0011	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Barium	0.0468	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Boron	0.0499	0.0400	0.0060	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Calcium	42.3	25.0	0.522	mg/L	EPA 6020B		50	06/02/17 10:30	06/03/17 00:46	7060050	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Molybdenum	0.0012	0.0100	0.0006	mg/L	EPA 6020B	J	1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/02/17 10:30	06/03/17 00:40	7060050	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 17:08	7060092	MTC



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June 09, 2017

**Report No.: AAF0060**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060176 - SM 2540 C</b>											
<b>Blank (7060176-BLK1)</b>						Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7060176-BS1)</b>						Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	383	25	10	mg/L	400.00		96	84-108			
<b>Duplicate (7060176-DUP1)</b>						Source: AAF0065-02 Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	2980	25	10	mg/L		2970			0.6	10	
<b>Duplicate (7060176-DUP2)</b>						Source: AAF0136-03 Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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June 09, 2017

**Report No.: AAF0060**

**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 09, 2017

**Report No.: AAF0060**

**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>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							
<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			



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 09, 2017

**Report No.: AAF0060**

**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>Matrix Spike (7060050-MS1)</b>			<b>Source: AAF0003-01</b>				<b>Prepared &amp; Analyzed: 06/02/17</b>				
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			
<b>Matrix Spike Dup (7060050-MSD1)</b>			<b>Source: AAF0003-01</b>				<b>Prepared &amp; Analyzed: 06/02/17</b>				
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	QM-02
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	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 09, 2017

**Report No.: AAF0060**

**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>Post Spike (7060050-PS1)</b>			<b>Source: AAF0003-01</b>			<b>Prepared &amp; Analyzed: 06/02/17</b>					
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			

**Batch 7060092 - EPA 7470A**

<b>Blank (7060092-BLK1)</b>				<b>Prepared &amp; Analyzed: 06/05/17</b>							
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7060092-BS1)</b>				<b>Prepared &amp; Analyzed: 06/05/17</b>							
Mercury	0.00229	0.00050	0.000041	mg/L	2.5000E-3		92	80-120			





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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 09, 2017

**Report No.: AAF0060**

**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>Matrix Spike (7060092-MS1)</b>			<b>Source: AAF0060-01</b>			<b>Prepared &amp; Analyzed: 06/05/17</b>					
Mercury	0.00228	0.00050	0.000041	mg/L	2.5000E-3	ND	91	75-125			
<b>Matrix Spike Dup (7060092-MSD1)</b>			<b>Source: AAF0060-01</b>			<b>Prepared &amp; Analyzed: 06/05/17</b>					
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	2	20	
<b>Post Spike (7060092-PS1)</b>			<b>Source: AAF0060-01</b>			<b>Prepared &amp; Analyzed: 06/05/17</b>					
Mercury	1.68			ug/L	1.6667	0.00925	100	80-120			



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 09, 2017

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## Legend

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### 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

**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:		ANALYSIS REQUESTED										CONTAINER TYPE		PRESERVATION							
SOUTHERN COMPANY SERVICES		CONTAINER TYPE:	23	2	3	MP															
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		PRESERVATION:	P	P	PA	06/01/17															
241 RALPH MCGILL BLVD SE B10185 ATLANTA, GA 30308		# of																			
REPORT TO:	JOJU ABRAHAM	CC:	MARIA PADILLA																		
REQUESTED COMPLETION DATE:		PO#:	GPC10684198																		
PROJECT NAME/STATE:		CONTAINERS																			
PLANT BOWEN ASH POND CCR		METALS APP. III BY IV EPA 6020 & 7470 CI, F, SO4 EPA 300 TDS SM 2540C RADIUM 226 & 228 SW - 846, -935, -9320																			
PROJECT #:																					
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of															
06/01/17	0925	GW		X	BGWC-18	4	1	1	2												
06/01/17	1035	GW		X	BGWC-19	4	1	1	2												
06/01/17	1150	GW		X	BGWC-20	4	1	1	2												
06/01/17	1410	GW		X	BGWC-29	4	1	1	2												
06/01/17	1540	GW		X	BGWC-21	4	1	1	2												
SAMPLED BY AND TITLE: ROBERT MILLER MICHAEL PATINEN		DATE/TIME:	06/01/17 1620	RELINQUISHED BY:	[Signature]	DATE/TIME:	06/17 0757	FOR LAB USE ONLY													
RECEIVED BY:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		LAB #: AAF0060													
RECEIVED BY LAB: [Signature]		DATE/TIME:	06/02/17 0757	SAMPLE SHIPPED VIA:	UPS	DATE/TIME:		Entered into LIMS: [Signature]													
Temp: 3.0 Min 3.0 Max		Custody Seal:	Intact	# of Coolers:	0	DATE/TIME:		Tracking #:													

Page 16 of 17



**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: 6/2/2017 4:00:00PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 06/02/17 07:57

**Work Order:** AAF0060

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 20

**Minimum Temp(C):** 3.0

**Maximum Temp(C):** 3.0

**Custody Seal(s) Used:** 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	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:**



**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: AAF0126**

**June 13, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

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>
BGWC-7	AAF0126-01	Ground Water	06/02/17 11:10	06/02/17 16:50
BGWC-10	AAF0126-02	Ground Water	06/02/17 12:45	06/02/17 16:50
BGWC-12	AAF0126-03	Ground Water	06/02/17 12:47	06/02/17 16:50
Dup-3	AAF0126-04	Ground Water	06/02/17 00:00	06/02/17 16:50
EQBL060217	AAF0126-05	Water	06/02/17 14:00	06/02/17 16:50
FBL060217	AAF0126-06	Water	06/02/17 14:10	06/02/17 16:50



**PACE ANALYTICAL SERVICES, LLC.**

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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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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

Report No.: AAF0126

Project: CCR Event

Client ID: BGWC-7

Lab Number ID: AAF0126-01

Date/Time Sampled: 6/2/2017 11:10:00AM

Date/Time Received: 6/2/2017 4:50:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	910	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	11	0.25	0.01	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 14:34	7060161	SLH
Fluoride	0.07	0.30	0.004	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 14:34	7060161	SLH
Sulfate	470	20	1.8	mg/L	EPA 300.0		20	06/06/17 18:53	06/08/17 13:09	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 22:55	7060152	CSW
Arsenic	0.0031	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Barium	0.0407	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Boron	2.22	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Calcium	156	25.0	0.522	mg/L	EPA 6020B		50	06/06/17 09:30	06/07/17 23:01	7060152	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Cobalt	0.0006	0.0100	0.0005	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Molybdenum	0.0129	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Lithium	0.0102	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 22:55	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 18:03	7060093	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.: AAF0126

Project: CCR Event

Client ID: BGWC-10

Lab Number ID: AAF0126-02

Date/Time Sampled: 6/2/2017 12:45:00PM

Date/Time Received: 6/2/2017 4:50:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	313	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	20	0.25	0.01	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 15:36	7060161	SLH
Fluoride	0.03	0.30	0.004	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 15:36	7060161	SLH
Sulfate	110	5.0	0.46	mg/L	EPA 300.0		5	06/06/17 18:53	06/08/17 14:32	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 23:18	7060152	CSW
Arsenic	0.0080	0.0050	0.0004	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:18	7060152	CSW
Barium	0.0555	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:18	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:18	7060152	CSW
Boron	0.513	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:18	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:18	7060152	CSW
Calcium	55.8	25.0	0.522	mg/L	EPA 6020B		50	06/06/17 09:30	06/08/17 23:23	7060152	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:18	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:18	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:23	7060152	CSW
Molybdenum	0.0035	0.0100	0.0006	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 23:18	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:18	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:23	7060152	CSW
Lithium	0.0011	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 23:18	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 18:06	7060093	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

**Report No.:** AAF0126

**Project:** CCR Event

**Client ID:** BGWC-12

**Lab Number ID:** AAF0126-03

**Date/Time Sampled:** 6/2/2017 12:47:00PM

**Date/Time Received:** 6/2/2017 4:50:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	602	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	37	0.25	0.01	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 17:19	7060161	SLH
Fluoride	0.04	0.30	0.004	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 17:19	7060161	SLH
Sulfate	250	10	0.92	mg/L	EPA 300.0		10	06/06/17 18:53	06/08/17 14:53	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 23:29	7060152	CSW
Arsenic	0.0015	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 23:29	7060152	CSW
Barium	0.0354	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:29	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:29	7060152	CSW
Boron	1.02	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:29	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:29	7060152	CSW
Calcium	108	25.0	0.522	mg/L	EPA 6020B		50	06/06/17 09:30	06/07/17 23:35	7060152	CSW
Chromium	0.0003	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 23:29	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:29	7060152	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/12/17 21:29	7060152	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:29	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:29	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:29	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:29	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 18:08	7060093	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

Report No.: AAF0126

Project: CCR Event

Client ID: Dup-3

Lab Number ID: AAF0126-04

Date/Time Sampled: 6/2/2017 12:00:00AM

Date/Time Received: 6/2/2017 4:50:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	689	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	37	0.25	0.01	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 17:40	7060161	SLH
Fluoride	0.03	0.30	0.004	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 17:40	7060161	SLH
Sulfate	250	10	0.92	mg/L	EPA 300.0		10	06/06/17 18:53	06/08/17 15:13	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 23:41	7060152	CSW
Arsenic	0.0017	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 23:41	7060152	CSW
Barium	0.0356	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:41	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:41	7060152	CSW
Boron	1.08	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:41	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:41	7060152	CSW
Calcium	109	25.0	0.522	mg/L	EPA 6020B		50	06/06/17 09:30	06/07/17 23:46	7060152	CSW
Chromium	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 23:41	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:41	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:35	7060152	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:41	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:41	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:35	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:41	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 18:10	7060093	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

Report No.: AAF0126

Project: CCR Event

Client ID: EQBL060217

Lab Number ID: AAF0126-05

Date/Time Sampled: 6/2/2017 2:00:00PM

Date/Time Received: 6/2/2017 4:50:00PM

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	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 18:01	7060161	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 18:01	7060161	SLH
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 18:01	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 23:52	7060152	CSW
Arsenic	ND	0.0050	0.0004	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:52	7060152	CSW
Barium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:52	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:52	7060152	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:52	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:52	7060152	CSW
Calcium	ND	0.500	0.0104	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:52	7060152	CSW
Chromium	0.0010	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 23:52	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:52	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:40	7060152	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:52	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:52	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:40	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:52	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 18:13	7060093	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

Report No.: AAF0126

Project: CCR Event

Client ID: FBL060217

Lab Number ID: AAF0126-06

Date/Time Sampled: 6/2/2017 2:10:00PM

Date/Time Received: 6/2/2017 4:50:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	30	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	0.04	0.25	0.01	mg/L	EPA 300.0	J	1	06/06/17 18:53	06/07/17 18:21	7060161	SLH
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 18:21	7060161	SLH
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	06/06/17 18:53	06/07/17 18:21	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 23:58	7060152	CSW
Arsenic	0.0005	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 23:58	7060152	CSW
Barium	0.0026	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/06/17 09:30	06/07/17 23:58	7060152	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:58	7060152	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:58	7060152	CSW
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:58	7060152	CSW
Calcium	ND	0.500	0.0104	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:58	7060152	CSW
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:58	7060152	CSW
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:58	7060152	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:46	7060152	CSW
Molybdenum	ND	0.0100	0.0006	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:58	7060152	CSW
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:58	7060152	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/06/17 09:30	06/12/17 21:46	7060152	CSW
Lithium	ND	0.0500	0.0011	mg/L	EPA 6020B		1	06/06/17 09:30	06/07/17 23:58	7060152	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/05/17 11:20	06/05/17 18:15	7060093	MTC



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Attention: Mr. Joju Abraham

June 13, 2017

**Report No.: AAF0126**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060176 - SM 2540 C</b>											
<b>Blank (7060176-BLK1)</b>						Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7060176-BS1)</b>						Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	383	25	10	mg/L	400.00		96	84-108			
<b>Duplicate (7060176-DUP1)</b>						Source: AAF0065-02 Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	2980	25	10	mg/L		2970			0.6	10	
<b>Duplicate (7060176-DUP2)</b>						Source: AAF0136-03 Prepared & Analyzed: 06/07/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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Attention: Mr. Joju Abraham

June 13, 2017

**Report No.: AAF0126**

**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>						Prepared: 06/06/17 Analyzed: 06/07/17					
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 (7060161-BS1)</b>						Prepared: 06/06/17 Analyzed: 06/07/17					
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>						Source: AAF0126-01 Prepared: 06/06/17 Analyzed: 06/07/17					
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>						Source: AAF0132-05 Prepared: 06/06/17 Analyzed: 06/07/17					
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>						Source: AAF0126-01 Prepared: 06/06/17 Analyzed: 06/07/17					
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



**PACE ANALYTICAL SERVICES, LLC.**

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 2480 Maner Road  
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Attention: Mr. Joju Abraham

June 13, 2017

**Report No.: AAF0126**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060093 - EPA 7470A</b>											
<b>Blank (7060093-BLK1)</b> Prepared & Analyzed: 06/05/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7060093-BS1)</b> Prepared & Analyzed: 06/05/17											
Mercury	0.00245	0.00050	0.000041	mg/L	2.5000E-3		98	80-120			
<b>Matrix Spike (7060093-MS1)</b> Source: AAF0126-01 Prepared & Analyzed: 06/05/17											
Mercury	0.00238	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125			
<b>Matrix Spike Dup (7060093-MSD1)</b> 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	
<b>Post Spike (7060093-PS1)</b> Source: AAF0126-01 Prepared & Analyzed: 06/05/17											
Mercury	1.76			ug/L	1.6667	0.0154	104	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							J
Lithium	ND	0.0500	0.0011	mg/L							





**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.: AAF0126**

**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>						Prepared: 06/06/17 Analyzed: 06/07/17					
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>						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			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			



**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

June 13, 2017

**Report No.: AAF0126**

**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>Matrix Spike Dup (7060152-MSD1)</b>			<b>Source: AAF0065-01</b>			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	QM-02
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	

<b>Post Spike (7060152-PS1)</b>			<b>Source: AAF0065-01</b>			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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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 13, 2017

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## Legend

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### 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

- 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:				ANALYSIS REQUESTED										LAB NUMBER	CONTAINER TYPE		PRESERVATION	
Southern Company Services				CONTAINER TYPE:	1	2	3										P - PLASTIC	1 - HCl, ≤6°C
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308				PRESERVATION:	3	7	3										A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C
REPORT TO: Joia Abraham				# of												G - CLEAR GLASS	3 - HNO <sub>3</sub>	
REQUESTED COMPLETION DATE:				CONTAINERS											V - VOA VIAL	4 - NaOH, ≤6°C		
PROJECT NAME/STATE: Plant Bowen - Ashford CLR															S - STERILE	5 - NaOH/ZnAc, ≤6°C		
PROJECT #:															O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P G R A B	SAMPLE IDENTIFICATION												*MATRIX CODES:		
																DW - DRINKING WATER	S - SOIL	
6/2/17	1110	GW	X	BGWC-7	4	1	1	2								WW - WASTEWATER	SL - SLUDGE	
6/2/17	1245	GW	X	BGWC-10	4	1	1	2								GW - GROUNDWATER	SD - SOLID	
6/2/17	1247	GW	X	BGWC-12	6	1	1	4								SW - SURFACE WATER	A - AIR	
6/2/17	—	GW	X	Dup-3	4	1	1	2								ST - STORM WATER	L - LIQUID	
6/2/17	1400	W	X	EQBLO60Z17	4	1	1	2								W - WATER	P - PRODUCT	
6/2/17	1410	W	X	FBLD60Z17	4	1	1	2								REMARKS/ADDITIONAL INFORMATION		
SAMPLED BY AND TITLE: Robert Mull / Michael Pattn...				DATE/TIME: 6/2/17 1445	RELINQUISHED BY: [Signature]				DATE/TIME: 06/02/17 1650	FOR LAB USE ONLY								
RECEIVED BY: [Signature]				DATE/TIME: 06/02/17 1650	RECEIVED BY: [Signature]				DATE/TIME: 06/02/17 1650	LAB #: AAF0126								
RECEIVED BY LAB: [Signature]				DATE/TIME: 06/02/17 1650	SAMPLE SHIPPED VIA: UPS				Entered into LIMS: [Signature]									
Checked: [Signature]				Temperature: 12 Min 12 Max	Custody Seal: Intact				Tracking #: [Signature]									

Page 16 of 17



**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 9:16:43AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 06/02/17 16:50

**Work Order:** AAF0126

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 6

**#Containers:** 26

**Minimum Temp(C):** 1.2

**Maximum Temp(C):** 1.2

**Custody Seal(s) Used:** 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 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:**



**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: AAF0227**

**June 15, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

June 15, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-30	AAF0227-01	Ground Water	06/05/17 10:35	06/06/17 15:45
BGWC-22	AAF0227-02	Ground Water	06/05/17 12:40	06/06/17 15:45
BGWC-24	AAF0227-03	Ground Water	06/05/17 12:40	06/06/17 15:45
BGWC-23	AAF0227-04	Ground Water	06/05/17 14:22	06/06/17 15:45



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 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

June 15, 2017

Report No.: AAF0227

Project: CCR Event

Client ID: BGWC-30

Lab Number ID: AAF0227-01

Date/Time Sampled: 6/5/2017 10:35:00AM

Date/Time Received: 6/6/2017 3:45:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2780	25	10	mg/L	SM 2540 C		1	06/09/17 18:30	06/09/17 18:30	7060274	JPT
<b>Inorganic Anions</b>											
Chloride	870	5.0	0.26	mg/L	EPA 300.0		20	06/08/17 10:45	06/09/17 13:48	7060254	RLC
Fluoride	0.32	0.30	0.004	mg/L	EPA 300.0		1	06/08/17 10:45	06/08/17 19:02	7060254	RLC
Sulfate	440	20	1.8	mg/L	EPA 300.0		20	06/08/17 10:45	06/09/17 13:48	7060254	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Arsenic	0.0039	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Barium	0.201	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Boron	18.6	2.00	0.302	mg/L	EPA 6020B		50	06/08/17 09:20	06/13/17 11:36	7060221	KLH
Cadmium	0.0003	0.0010	0.00006	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Calcium	413	25.0	0.522	mg/L	EPA 6020B	B-01	50	06/08/17 09:20	06/09/17 20:45	7060221	KLH
Chromium	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Cobalt	0.0008	0.0100	0.0005	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Molybdenum	0.0191	0.0100	0.0006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Selenium	0.0118	0.0100	0.0014	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Thallium	0.0007	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Lithium	0.0177	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Mercury	0.00006	0.00050	0.000041	mg/L	EPA 7470A	J	1	06/09/17 08:50	06/09/17 13:07	7060158	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 15, 2017

Report No.: AAF0227

Project: CCR Event

Client ID: BGWC-22

Lab Number ID: AAF0227-02

Date/Time Sampled: 6/5/2017 12:40:00PM

Date/Time Received: 6/6/2017 3:45:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2530	25	10	mg/L	SM 2540 C		1	06/09/17 18:30	06/09/17 18:30	7060274	JPT
<b>Inorganic Anions</b>											
Chloride	530	12	0.65	mg/L	EPA 300.0		50	06/08/17 10:45	06/09/17 14:08	7060254	RLC
Fluoride	0.29	0.30	0.004	mg/L	EPA 300.0	J	1	06/08/17 10:45	06/08/17 21:06	7060254	RLC
Sulfate	700	50	4.6	mg/L	EPA 300.0		50	06/08/17 10:45	06/09/17 14:08	7060254	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Arsenic	0.0035	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Barium	0.0875	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Boron	9.19	2.00	0.302	mg/L	EPA 6020B		50	06/08/17 09:20	06/13/17 11:42	7060221	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Calcium	398	25.0	0.522	mg/L	EPA 6020B	B-01	50	06/08/17 09:20	06/09/17 20:56	7060221	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Cobalt	0.0112	0.0100	0.0005	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Molybdenum	0.0710	0.0100	0.0006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Selenium	0.0018	0.0100	0.0014	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Thallium	0.0006	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Lithium	0.0114	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/09/17 08:50	06/09/17 13:14	7060158	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 2017

Report No.: AAF0227

Project: CCR Event

Client ID: BGWC-24

Lab Number ID: AAF0227-03

Date/Time Sampled: 6/5/2017 12:40:00PM

Date/Time Received: 6/6/2017 3:45:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	5660	25	10	mg/L	SM 2540 C		1	06/09/17 18:30	06/09/17 18:30	7060274	JPT
<b>Inorganic Anions</b>											
Chloride	1900	50	2.6	mg/L	EPA 300.0		200	06/08/17 10:45	06/10/17 00:07	7060254	RLC
Fluoride	0.05	0.30	0.004	mg/L	EPA 300.0	J	1	06/08/17 10:45	06/08/17 21:27	7060254	RLC
Sulfate	700	20	1.8	mg/L	EPA 300.0		20	06/08/17 10:45	06/09/17 14:29	7060254	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Arsenic	0.0072	0.0050	0.0004	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Barium	0.135	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Boron	29.0	2.00	0.302	mg/L	EPA 6020B		50	06/08/17 09:20	06/13/17 12:06	7060221	KLH
Cadmium	0.0035	0.0010	0.00006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Calcium	1080	250	26.1	mg/L	EPA 6020B	B-01	2500	06/08/17 09:20	06/13/17 12:00	7060221	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Cobalt	0.0034	0.0100	0.0005	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Lead	0.00007	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Molybdenum	0.0015	0.0100	0.0006	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Selenium	0.0033	0.0100	0.0014	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Thallium	0.0004	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Lithium	0.0068	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Mercury	0.00013	0.00050	0.000041	mg/L	EPA 7470A	J	1	06/09/17 08:50	06/09/17 13:16	7060158	MTC



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Attention: Mr. Joju Abraham

June 15, 2017

Report No.: AAF0227

Project: CCR Event

Client ID: BGWC-23

Lab Number ID: AAF0227-04

Date/Time Sampled: 6/5/2017 2:22:00PM

Date/Time Received: 6/6/2017 3:45:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2050	25	10	mg/L	SM 2540 C		1	06/09/17 18:30	06/09/17 18:30	7060274	JPT
<b>Inorganic Anions</b>											
Chloride	450	5.0	0.26	mg/L	EPA 300.0		20	06/08/17 10:45	06/12/17 21:56	7060254	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/08/17 10:45	06/08/17 21:48	7060254	RLC
Sulfate	480	20	1.8	mg/L	EPA 300.0		20	06/08/17 10:45	06/12/17 21:56	7060254	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Arsenic	0.0043	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Barium	0.0840	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Boron	6.39	2.00	0.302	mg/L	EPA 6020B		50	06/08/17 09:20	06/13/17 12:11	7060221	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Calcium	310	25.0	0.522	mg/L	EPA 6020B	B-01	50	06/08/17 09:20	06/09/17 21:19	7060221	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Molybdenum	0.0115	0.0100	0.0006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Lithium	0.0108	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/09/17 08:50	06/09/17 13:18	7060158	MTC



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Attention: Mr. Joju Abraham

June 15, 2017

**Report No.: AAF0227**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060274 - SM 2540 C</b>											
<b>Blank (7060274-BLK1)</b>						Prepared & Analyzed: 06/09/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7060274-BS1)</b>						Prepared & Analyzed: 06/09/17					
Total Dissolved Solids	423	25	10	mg/L	400.00		106	84-108			
<b>Duplicate (7060274-DUP1)</b>						Source: AAF0227-04 Prepared & Analyzed: 06/09/17					
Total Dissolved Solids	1940	25	10	mg/L		2050			5	10	



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June 15, 2017

**Report No.: AAF0227**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060254 - EPA 300.0</b>											
<b>Blank (7060254-BLK1)</b>						Prepared & Analyzed: 06/08/17					
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 (7060254-BS1)</b>						Prepared & Analyzed: 06/08/17					
Chloride	9.82	0.25	0.01	mg/L	10.020		98	90-110			
Fluoride	9.93	0.30	0.004	mg/L	10.020		99	90-110			
Sulfate	9.94	1.0	0.09	mg/L	10.050		99	90-110			
<b>Matrix Spike (7060254-MS1)</b>						Source: AAF0227-01 Prepared & Analyzed: 06/08/17					
Chloride	205	0.25	0.01	mg/L	10.020	236	NR	90-110			QM-02
Fluoride	10.1	0.30	0.004	mg/L	10.020	0.32	98	90-110			
Sulfate	247	1.0	0.09	mg/L	10.050	259	NR	90-110			QM-02
<b>Matrix Spike Dup (7060254-MSD1)</b>						Source: AAF0227-01 Prepared & Analyzed: 06/08/17					
Chloride	204	0.25	0.01	mg/L	10.020	236	NR	90-110	0.2	15	QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.32	98	90-110	0.02	15	
Sulfate	246	1.0	0.09	mg/L	10.050	259	NR	90-110	0.02	15	QM-02



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June 15, 2017

**Report No.: AAF0227**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060158 - EPA 7470A</b>											
<b>Blank (7060158-BLK1)</b> Prepared & Analyzed: 06/09/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7060158-BS1)</b> Prepared & Analyzed: 06/09/17											
Mercury	0.00229	0.00050	0.000041	mg/L	2.5000E-3		92	80-120			
<b>Matrix Spike (7060158-MS1)</b> Source: AAF0227-02 Prepared & Analyzed: 06/09/17											
Mercury	0.00236	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125			
<b>Matrix Spike Dup (7060158-MSD1)</b> Source: AAF0227-02 Prepared & Analyzed: 06/09/17											
Mercury	0.00242	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125	2	20	
<b>Post Spike (7060158-PS1)</b> Source: AAF0227-02 Prepared & Analyzed: 06/09/17											
Mercury	1.71			ug/L	1.6667	0.00050	102	80-120			
<b>Batch 7060221 - EPA 3005A</b>											
<b>Blank (7060221-BLK1)</b> Prepared: 06/08/17 Analyzed: 06/09/17											
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	0.0179	0.500	0.0104	mg/L							J
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 15, 2017

**Report No.: AAF0227**

**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 7060221 - EPA 3005A**

**LCS (7060221-BS1)**

Prepared: 06/08/17 Analyzed: 06/09/17

Antimony	0.106	0.0030	0.0003	mg/L	0.10000		106	80-120			
Arsenic	0.104	0.0050	0.0004	mg/L	0.10000		104	80-120			
Barium	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			
Beryllium	0.107	0.0030	0.00007	mg/L	0.10000		107	80-120			
Boron	1.08	0.0400	0.0060	mg/L	1.0000		108	80-120			
Cadmium	0.102	0.0010	0.00006	mg/L	0.10000		102	80-120			
Calcium	0.993	0.500	0.0104	mg/L	1.0000		99	80-120			
Chromium	0.101	0.0100	0.0003	mg/L	0.10000		101	80-120			
Cobalt	0.0939	0.0100	0.0005	mg/L	0.10000		94	80-120			
Copper	0.102	0.0250	0.0003	mg/L	0.10000		102	80-120			
Lead	0.0990	0.0050	0.00007	mg/L	0.10000		99	80-120			
Molybdenum	0.0988	0.0100	0.0006	mg/L	0.10000		99	80-120			
Nickel	0.0985	0.0100	0.0003	mg/L	0.10000		99	80-120			
Selenium	0.0995	0.0100	0.0014	mg/L	0.10000		100	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	0.0953	0.0100	0.0014	mg/L	0.10000		95	80-120			
Zinc	0.105	0.0100	0.0013	mg/L	0.10000		105	80-120			
Lithium	0.109	0.0500	0.0011	mg/L	0.10000		109	80-120			

**Matrix Spike (7060221-MS1)**

Source: AAF0227-01

Prepared: 06/08/17 Analyzed: 06/09/17

Antimony	0.107	0.0030	0.0003	mg/L	0.10000	ND	107	75-125			
Arsenic	0.109	0.0050	0.0004	mg/L	0.10000	0.0039	105	75-125			
Barium	0.296	0.0100	0.0003	mg/L	0.10000	0.201	96	75-125			
Beryllium	0.0956	0.0030	0.00007	mg/L	0.10000	ND	96	75-125			
Boron	19.5	2.00	0.302	mg/L	1.0000	18.6	94	75-125			
Cadmium	0.102	0.0010	0.00006	mg/L	0.10000	0.0003	101	75-125			
Calcium	406	25.0	0.522	mg/L	1.0000	413	NR	75-125			QM-02
Chromium	0.102	0.0100	0.0003	mg/L	0.10000	0.0004	102	75-125			
Cobalt	0.100	0.0100	0.0005	mg/L	0.10000	0.0008	99	75-125			
Copper	0.0942	0.0250	0.0003	mg/L	0.10000	ND	94	75-125			
Lead	0.0921	0.0050	0.00007	mg/L	0.10000	ND	92	75-125			
Molybdenum	0.128	0.0100	0.0006	mg/L	0.10000	0.0191	109	75-125			
Nickel	0.103	0.0100	0.0003	mg/L	0.10000	0.0026	100	75-125			
Selenium	0.115	0.0100	0.0014	mg/L	0.10000	0.0118	103	75-125			
Silver	0.0946	0.0100	0.0003	mg/L	0.10000	ND	95	75-125			
Thallium	0.100	0.0010	0.00005	mg/L	0.10000	0.0007	100	75-125			
Vanadium	0.102	0.0100	0.0014	mg/L	0.10000	ND	102	75-125			
Zinc	0.0989	0.0100	0.0013	mg/L	0.10000	0.0014	98	75-125			
Lithium	0.117	0.0500	0.0011	mg/L	0.10000	0.0177	99	75-125			





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Attention: Mr. Joju Abraham

June 15, 2017

**Report No.: AAF0227**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060221 - EPA 3005A</b>											
<b>Matrix Spike Dup (7060221-MSD1)</b>			<b>Source: AAF0227-01</b>			<b>Prepared: 06/08/17 Analyzed: 06/09/17</b>					
Antimony	0.109	0.0030	0.0003	mg/L	0.10000	ND	109	75-125	1	20	
Arsenic	0.107	0.0050	0.0004	mg/L	0.10000	0.0039	103	75-125	2	20	
Barium	0.306	0.0100	0.0003	mg/L	0.10000	0.201	105	75-125	3	20	
Beryllium	0.0977	0.0030	0.00007	mg/L	0.10000	ND	98	75-125	2	20	
Boron	19.6	2.00	0.302	mg/L	1.0000	18.6	110	75-125	0.8	20	
Cadmium	0.0989	0.0010	0.00006	mg/L	0.10000	0.0003	99	75-125	3	20	
Calcium	423	25.0	0.522	mg/L	1.0000	413	NR	75-125	4	20	QM-02
Chromium	0.101	0.0100	0.0003	mg/L	0.10000	0.0004	101	75-125	0.6	20	
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000	0.0008	101	75-125	1	20	
Copper	0.0915	0.0250	0.0003	mg/L	0.10000	ND	92	75-125	3	20	
Lead	0.0929	0.0050	0.00007	mg/L	0.10000	ND	93	75-125	0.9	20	
Molybdenum	0.122	0.0100	0.0006	mg/L	0.10000	0.0191	103	75-125	5	20	
Nickel	0.101	0.0100	0.0003	mg/L	0.10000	0.0026	99	75-125	1	20	
Selenium	0.116	0.0100	0.0014	mg/L	0.10000	0.0118	104	75-125	1	20	
Silver	0.0931	0.0100	0.0003	mg/L	0.10000	ND	93	75-125	2	20	
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	0.0007	100	75-125	0.3	20	
Vanadium	0.111	0.0100	0.0014	mg/L	0.10000	ND	111	75-125	8	20	
Zinc	0.0943	0.0100	0.0013	mg/L	0.10000	0.0014	93	75-125	5	20	
Lithium	0.121	0.0500	0.0011	mg/L	0.10000	0.0177	103	75-125	3	20	
<b>Post Spike (7060221-PS1)</b>											
<b>Source: AAF0227-01</b>			<b>Prepared: 06/08/17 Analyzed: 06/09/17</b>								
Antimony	107			ug/L	100.00	0.290	106	80-120			
Arsenic	105			ug/L	100.00	3.87	101	80-120			
Barium	298			ug/L	100.00	201	98	80-120			
Beryllium	97.6			ug/L	100.00	0.0183	98	80-120			
Boron	19300			ug/L	1000.0	18600	76	80-120			QM-02
Cadmium	98.2			ug/L	100.00	0.341	98	80-120			
Calcium	441000			ug/L	1000.0	413000	NR	80-120			QM-02
Chromium	96.4			ug/L	100.00	0.434	96	80-120			
Cobalt	93.8			ug/L	100.00	0.764	93	80-120			
Copper	85.7			ug/L	100.00	0.168	86	80-120			
Lead	91.8			ug/L	100.00	0.0222	92	80-120			
Molybdenum	123			ug/L	100.00	19.1	104	80-120			
Nickel	93.2			ug/L	100.00	2.58	91	80-120			
Selenium	111			ug/L	100.00	11.8	99	80-120			
Silver	92.4			ug/L	100.00	0.0207	92	80-120			
Thallium	98.6			ug/L	100.00	0.749	98	80-120			
Vanadium	98.6			ug/L	100.00	0.267	98	80-120			
Zinc	94.1			ug/L	100.00	1.36	93	80-120			
Lithium	118			ug/L	100.00	17.7	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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 2017

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## Legend

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### 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

- 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**



**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: <u>Southern Company Services</u>					<b>ANALYSIS REQUESTED</b>										<b>L A B  I D  N U M B E R  ↓</b>	<b>CONTAINER TYPE</b>		<b>PRESERVATION</b>					
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE Bldg 85</u> <u>Atlanta, GA 30308</u>					CONTAINER TYPE: <u>1 2 3</u>															P - PLASTIC	1 - HCl, ≤6°C		
REPORT TO: <u>Joia Abraham</u> CC: <u>Maria Padilla</u>					PRESERVATION: <u>3 7 3</u>															A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
REQUESTED COMPLETION DATE: _____					# of															G - CLEAR GLASS	3 - HNO <sub>3</sub>		
PROJECT NAME/STATE: <u>Plant Bowen-Ash Pond CCR</u>					<b>C O N T A I N E R S  ↓</b>																V - VOA VIAL	4 - NaOH, ≤6°C	
PROJECT #:																					S - STERILE	5 - NaOH/ZnAc, ≤6°C	
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B		SAMPLE IDENTIFICATION															O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
																						7 - ≤6°C not frozen	
																						<b>*MATRIX CODES:</b>	
																						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		
												<b>REMARKS/ADDITIONAL INFORMATION</b>											
SAMPLED BY AND TITLE: <u>Robert Mull/Michael Patinkin</u>					DATE/TIME: <u>6/5/17 1545</u>	RELINQUISHED BY: <u>Robert Mull</u>	DATE/TIME: <u>6/5/17 1815</u>						<b>FOR LAB USE ONLY</b>										
RECEIVED BY: <u>Cindy Martin</u>					DATE/TIME: <u>6/5/17 1815</u>	RELINQUISHED BY: <u>Mike Nguyen</u>	DATE/TIME: <u>6/6/17 1424</u>						LAB #: <u>ATF 0227</u>										
RECEIVED BY LAB: <u>Robert Harris</u>					DATE/TIME: <u>6/6/17 1545</u>	SAMPLE SHIPPED VIA: <u>COURIER</u>		CLIENT	OTHER	FS						Entered into LIMS: <u>GAH</u>							
Checked: <u>Yes</u> No NA					Temperature: <u>4.5°C</u>	Custody Seal: <u>Intact</u>		# of Coolers	Cooler ID:						Tracking #:								
					Min: <u>4.5°C</u> Max:	Intact Broken Not Present N/A																	

Page 14 of 15



**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: 6/7/2017 10:03:14AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 06/06/17 15:45

**Work Order:** AAF0227

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 4

**#Containers:** 16

**Minimum Temp(C):** 4.5

**Maximum Temp(C):** 4.5

**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:**



**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: AAF0279**

**June 16, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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 16, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-14	AAF0279-01	Ground Water	06/06/17 09:22	06/08/17 07:45
BGWC-15	AAF0279-02	Ground Water	06/06/17 10:50	06/08/17 07:45



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

June 16, 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

June 16, 2017

Report No.: AAF0279

Project: CCR Event

Client ID: BGWC-14

Lab Number ID: AAF0279-01

Date/Time Sampled: 6/6/2017 9:22:00AM

Date/Time Received: 6/8/2017 7:45:00AM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	656	25	10	mg/L	SM 2540 C		1	06/12/17 18:05	06/12/17 18:05	7060328	JPT
<b>Inorganic Anions</b>											
Chloride	35	0.25	0.01	mg/L	EPA 300.0		1	06/08/17 10:45	06/08/17 22:29	7060254	RLC
Fluoride	0.36	0.30	0.004	mg/L	EPA 300.0		1	06/08/17 10:45	06/08/17 22:29	7060254	RLC
Sulfate	230	10	0.92	mg/L	EPA 300.0		10	06/08/17 10:45	06/09/17 14:50	7060254	RLC
<b>Metals, Total</b>											
Antimony	0.0023	0.0030	0.0006	mg/L	EPA 6020B	B-01, J	1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Arsenic	0.0010	0.0050	0.0005	mg/L	EPA 6020B	J	1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Barium	0.0789	0.0100	0.0004	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Boron	0.906	0.0400	0.0060	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Calcium	108	25.0	2.02	mg/L	EPA 6020B		50	06/12/17 09:00	06/13/17 21:22	7060294	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Molybdenum	0.0079	0.0100	0.0010	mg/L	EPA 6020B	J	1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:16	7060294	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/09/17 08:50	06/09/17 13:42	7060240	MTC





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 16, 2017

**Report No.:** AAF0279

**Project:** CCR Event

**Client ID:** BGWC-15

**Lab Number ID:** AAF0279-02

**Date/Time Sampled:** 6/6/2017 10:50:00AM

**Date/Time Received:** 6/8/2017 7:45:00AM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	961	25	10	mg/L	SM 2540 C		1	06/12/17 18:05	06/12/17 18:05	7060328	JPT
<b>Inorganic Anions</b>											
Chloride	10	0.25	0.01	mg/L	EPA 300.0		1	06/08/17 10:45	06/08/17 22:50	7060254	RLC
Fluoride	0.04	0.30	0.004	mg/L	EPA 300.0	J	1	06/08/17 10:45	06/08/17 22:50	7060254	RLC
Sulfate	420	20	1.8	mg/L	EPA 300.0		20	06/08/17 10:45	06/09/17 15:10	7060254	RLC
<b>Metals, Total</b>											
Antimony	0.0013	0.0030	0.0006	mg/L	EPA 6020B	B-01, J	1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Arsenic	0.0011	0.0050	0.0005	mg/L	EPA 6020B	J	1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Barium	0.0813	0.0100	0.0004	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Boron	0.0794	0.0400	0.0060	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Calcium	140	25.0	2.02	mg/L	EPA 6020B		50	06/12/17 09:00	06/13/17 21:45	7060294	CSW
Chromium	0.0005	0.0100	0.0005	mg/L	EPA 6020B	J	1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Cobalt	0.0015	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Molybdenum	0.0215	0.0100	0.0010	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Thallium	0.0001	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	06/12/17 09:00	06/13/17 21:39	7060294	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/09/17 08:50	06/09/17 13:44	7060240	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 16, 2017

**Report No.: AAF0279**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060328 - SM 2540 C</b>											
<b>Blank (7060328-BLK1)</b>						Prepared & Analyzed: 06/12/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7060328-BS1)</b>						Prepared & Analyzed: 06/12/17					
Total Dissolved Solids	367	25	10	mg/L	400.00		92	84-108			
<b>Duplicate (7060328-DUP1)</b>						Source: AAF0280-07 Prepared & Analyzed: 06/12/17					
Total Dissolved Solids	24	25	10	mg/L		18			29	10	QR-03, J
<b>Duplicate (7060328-DUP2)</b>						Source: AAF0280-08 Prepared & Analyzed: 06/12/17					
Total Dissolved Solids	107	25	10	mg/L		96			11	10	QR-03



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Attention: Mr. Joju Abraham

June 16, 2017

**Report No.: AAF0279**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060254 - EPA 300.0</b>											
<b>Blank (7060254-BLK1)</b>						Prepared & Analyzed: 06/08/17					
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 (7060254-BS1)</b>						Prepared & Analyzed: 06/08/17					
Chloride	9.82	0.25	0.01	mg/L	10.020		98	90-110			
Fluoride	9.93	0.30	0.004	mg/L	10.020		99	90-110			
Sulfate	9.94	1.0	0.09	mg/L	10.050		99	90-110			
<b>Matrix Spike (7060254-MS1)</b>						Source: AAF0227-01 Prepared & Analyzed: 06/08/17					
Chloride	205	0.25	0.01	mg/L	10.020	236	NR	90-110			QM-02
Fluoride	10.1	0.30	0.004	mg/L	10.020	0.32	98	90-110			
Sulfate	247	1.0	0.09	mg/L	10.050	259	NR	90-110			QM-02
<b>Matrix Spike Dup (7060254-MSD1)</b>						Source: AAF0227-01 Prepared & Analyzed: 06/08/17					
Chloride	204	0.25	0.01	mg/L	10.020	236	NR	90-110	0.2	15	QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.32	98	90-110	0.02	15	
Sulfate	246	1.0	0.09	mg/L	10.050	259	NR	90-110	0.02	15	QM-02



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Attention: Mr. Joju Abraham

June 16, 2017

**Report No.: AAF0279**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060240 - EPA 7470A</b>											
<b>Blank (7060240-BLK1)</b> Prepared & Analyzed: 06/09/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7060240-BS1)</b> Prepared & Analyzed: 06/09/17											
Mercury	0.00231	0.00050	0.000041	mg/L	2.5000E-3		93	80-120			
<b>Matrix Spike (7060240-MS1)</b> Source: AAF0279-01 Prepared & Analyzed: 06/09/17											
Mercury	0.00231	0.00050	0.000041	mg/L	2.5000E-3	ND	92	75-125			
<b>Matrix Spike Dup (7060240-MSD1)</b> Source: AAF0279-01 Prepared & Analyzed: 06/09/17											
Mercury	0.00237	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125	3	20	
<b>Post Spike (7060240-PS1)</b> Source: AAF0279-01 Prepared & Analyzed: 06/09/17											
Mercury	1.71			ug/L	1.6667	0.00180	103	80-120			
<b>Batch 7060294 - EPA 3005A</b>											
<b>Blank (7060294-BLK1)</b> Prepared: 06/12/17 Analyzed: 06/13/17											
Antimony	0.0009	0.0030	0.0006	mg/L							J
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							



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 16, 2017

**Report No.: AAF0279**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060294 - EPA 3005A</b>											
<b>LCS (7060294-BS1)</b>						Prepared: 06/12/17 Analyzed: 06/13/17					
Antimony	0.117	0.0030	0.0006	mg/L	0.10000		117	80-120			
Arsenic	0.102	0.0050	0.0005	mg/L	0.10000		102	80-120			
Barium	0.106	0.0100	0.0004	mg/L	0.10000		106	80-120			
Beryllium	0.108	0.0030	0.00009	mg/L	0.10000		108	80-120			
Boron	1.13	0.0400	0.0060	mg/L	1.0000		113	80-120			
Cadmium	0.105	0.0010	0.0001	mg/L	0.10000		105	80-120			
Calcium	1.05	0.500	0.0404	mg/L	1.0000		105	80-120			
Chromium	0.108	0.0100	0.0005	mg/L	0.10000		108	80-120			
Cobalt	0.105	0.0100	0.0003	mg/L	0.10000		105	80-120			
Copper	0.110	0.0250	0.0003	mg/L	0.10000		110	80-120			
Lead	0.103	0.0050	0.00007	mg/L	0.10000		103	80-120			
Molybdenum	0.108	0.0100	0.0010	mg/L	0.10000		108	80-120			
Nickel	0.111	0.0100	0.0005	mg/L	0.10000		111	80-120			
Selenium	0.103	0.0100	0.0018	mg/L	0.10000		103	80-120			
Silver	0.108	0.0100	0.0002	mg/L	0.10000		108	80-120			
Thallium	0.106	0.0010	0.00005	mg/L	0.10000		106	80-120			
Vanadium	0.109	0.0100	0.0012	mg/L	0.10000		109	80-120			
Zinc	0.109	0.0100	0.0012	mg/L	0.10000		109	80-120			
Lithium	0.111	0.0500	0.0015	mg/L	0.10000		111	80-120			

<b>Matrix Spike (7060294-MS1)</b>				<b>Source: AAF0279-02</b>			Prepared: 06/12/17 Analyzed: 06/13/17				
Antimony	0.118	0.0030	0.0006	mg/L	0.10000	0.0013	117	75-125			
Arsenic	0.108	0.0050	0.0005	mg/L	0.10000	0.0011	107	75-125			
Barium	0.185	0.0100	0.0004	mg/L	0.10000	0.0813	104	75-125			
Beryllium	0.0986	0.0030	0.00009	mg/L	0.10000	ND	99	75-125			
Boron	1.10	0.0400	0.0060	mg/L	1.0000	0.0794	102	75-125			
Cadmium	0.103	0.0010	0.0001	mg/L	0.10000	ND	103	75-125			
Calcium	142	25.0	2.02	mg/L	1.0000	140	175	75-125			QM-02
Chromium	0.106	0.0100	0.0005	mg/L	0.10000	0.0005	105	75-125			
Cobalt	0.103	0.0100	0.0003	mg/L	0.10000	0.0015	102	75-125			
Copper	0.0988	0.0250	0.0003	mg/L	0.10000	0.0009	98	75-125			
Lead	0.101	0.0050	0.00007	mg/L	0.10000	ND	101	75-125			
Molybdenum	0.136	0.0100	0.0010	mg/L	0.10000	0.0215	115	75-125			
Nickel	0.103	0.0100	0.0005	mg/L	0.10000	0.0017	101	75-125			
Selenium	0.105	0.0100	0.0018	mg/L	0.10000	ND	105	75-125			
Silver	0.0980	0.0100	0.0002	mg/L	0.10000	ND	98	75-125			
Thallium	0.104	0.0010	0.00005	mg/L	0.10000	0.0001	104	75-125			
Vanadium	0.108	0.0100	0.0012	mg/L	0.10000	ND	108	75-125			
Zinc	0.109	0.0100	0.0012	mg/L	0.10000	0.0055	103	75-125			
Lithium	0.101	0.0500	0.0015	mg/L	0.10000	ND	101	75-125			



**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 16, 2017

**Report No.: AAF0279**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060294 - EPA 3005A</b>											
<b>Matrix Spike Dup (7060294-MSD1)</b>			<b>Source: AAF0279-02</b>			<b>Prepared: 06/12/17 Analyzed: 06/13/17</b>					
Antimony	0.115	0.0030	0.0006	mg/L	0.10000	0.0013	114	75-125	3	20	
Arsenic	0.108	0.0050	0.0005	mg/L	0.10000	0.0011	107	75-125	0.2	20	
Barium	0.185	0.0100	0.0004	mg/L	0.10000	0.0813	104	75-125	0.2	20	
Beryllium	0.0971	0.0030	0.00009	mg/L	0.10000	ND	97	75-125	2	20	
Boron	1.09	0.0400	0.0060	mg/L	1.0000	0.0794	101	75-125	0.4	20	
Cadmium	0.101	0.0010	0.0001	mg/L	0.10000	ND	101	75-125	2	20	
Calcium	141	25.0	2.02	mg/L	1.0000	140	48	75-125	0.9	20	QM-02
Chromium	0.103	0.0100	0.0005	mg/L	0.10000	0.0005	103	75-125	3	20	
Cobalt	0.100	0.0100	0.0003	mg/L	0.10000	0.0015	99	75-125	3	20	
Copper	0.0977	0.0250	0.0003	mg/L	0.10000	0.0009	97	75-125	1	20	
Lead	0.101	0.0050	0.00007	mg/L	0.10000	ND	101	75-125	0.2	20	
Molybdenum	0.130	0.0100	0.0010	mg/L	0.10000	0.0215	108	75-125	5	20	
Nickel	0.101	0.0100	0.0005	mg/L	0.10000	0.0017	99	75-125	2	20	
Selenium	0.106	0.0100	0.0018	mg/L	0.10000	ND	106	75-125	0.5	20	
Silver	0.0982	0.0100	0.0002	mg/L	0.10000	ND	98	75-125	0.3	20	
Thallium	0.103	0.0010	0.00005	mg/L	0.10000	0.0001	103	75-125	0.9	20	
Vanadium	0.109	0.0100	0.0012	mg/L	0.10000	ND	109	75-125	0.9	20	
Zinc	0.105	0.0100	0.0012	mg/L	0.10000	0.0055	99	75-125	4	20	
Lithium	0.102	0.0500	0.0015	mg/L	0.10000	ND	102	75-125	0.2	20	
<b>Post Spike (7060294-PS1)</b>											
<b>Source: AAF0279-02</b>			<b>Prepared: 06/12/17 Analyzed: 06/13/17</b>								
Antimony	109			ug/L	100.00	1.33	108	80-120			
Arsenic	110			ug/L	100.00	1.10	109	80-120			
Barium	186			ug/L	100.00	81.3	105	80-120			
Beryllium	104			ug/L	100.00	-0.0165	104	80-120			
Boron	1190			ug/L	1000.0	79.4	111	80-120			
Cadmium	103			ug/L	100.00	0.0386	103	80-120			
Calcium	144000			ug/L	1000.0	140000	321	80-120			QM-02
Chromium	106			ug/L	100.00	0.542	106	80-120			
Cobalt	104			ug/L	100.00	1.53	102	80-120			
Copper	101			ug/L	100.00	0.929	100	80-120			
Lead	104			ug/L	100.00	0.0509	104	80-120			
Molybdenum	137			ug/L	100.00	21.5	115	80-120			
Nickel	103			ug/L	100.00	1.74	101	80-120			
Selenium	106			ug/L	100.00	0.817	105	80-120			
Silver	99.5			ug/L	100.00	-0.0061	99	80-120			
Thallium	107			ug/L	100.00	0.122	107	80-120			
Vanadium	112			ug/L	100.00	1.16	111	80-120			
Zinc	107			ug/L	100.00	5.47	102	80-120			
Lithium	110			ug/L	100.00	0.230	110	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 16, 2017

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## Legend

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### 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

- 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.**

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: <i>Southern Company Services</i>		ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <i>241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308</i>		CONTAINER TYPE: <i>H</i>	<i>P</i>	<i>P</i>	<i>P</i>									P - PLASTIC	1 - HCl, ≤6°C	
REPORT TO: <i>Joia Abraham</i>		PRESERVATION:		<i>3</i>	<i>7</i>	<i>3</i>								A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C	
REQUESTED COMPLETION DATE: <i>GPL10684198</i>		# of												G - CLEAR GLASS	3 - HNO <sub>3</sub>	
PROJECT NAME/STATE: <i>Plant Bowen-Ash Pond CCR</i>		C O N T A I N E R S												V - VOA VIAL	4 - NaOH, ≤6°C	
PROJECT #:															S - STERILE	5 - NaOH/ZnAc, ≤6°C
Collection DATE	Collection TIME		MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION									O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C
																7 - ≤6°C not frozen
<i>6/6/17</i>	<i>0922</i>		<i>GW</i>		<i>X</i>	<i>BGWL-14</i>	<i>4</i>								*MATRIX CODES:	
<i>6/6/17</i>	<i>1050</i>		<i>GW</i>		<i>X</i>	<i>BGWL-15</i>	<i>2</i>								DW - DRINKING WATER	S - SOIL
														WW - WASTEWATER	SL - SLUDGE	
														GW - GROUNDWATER	SD - SOLID	
														SW - SURFACE WATER	A - AIR	
														ST - STORM WATER	L - LIQUID	
													W - WATER	P - PRODUCT		
REMARKS/ADDITIONAL INFORMATION																
SAMPLED BY AND TITLE: <i>Robert Mull/Levin Stelzer</i>		DATE/TIME: <i>6/6/17 1610</i>		RELINQUISHED BY: <i>KLS/11</i>				DATE/TIME: <i>6/10/17 0745</i>				FOR LAB USE ONLY				
RECEIVED BY:		DATE/TIME:		RELINQUISHED BY:				DATE/TIME:				LAB #: <i>AAF0279</i>				
RECEIVED BY LAB: <i>Adelman</i>		DATE/TIME: <i>6/10/17 0745</i>		SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER <input checked="" type="radio"/> OTHER FS				Entered into LIMS:				Tracking #:				
Checked: <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> NA		log: <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> NA		Temperature: <i>4°C</i> Min: <i>4°C</i> Max:				Custody Seal: Intact Broken Not Present <input checked="" type="radio"/> N/A				# of Coolers: <input checked="" type="radio"/> Cooler ID:				





**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: 6/9/2017 12:01:10PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 06/08/17 07:45

**Work Order:** AAF0279

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 2

**#Containers:** 6

**Minimum Temp(C):** 4.0

**Maximum Temp(C):** 4.0

**Custody Seal(s) Used:** 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 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:**



**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: AAF0650**

**June 23, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel" over a horizontal line.

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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Environmental Monitoring & Laboratory Analysis  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 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>
BGWC-14	AAF0650-01	Ground Water	06/15/17 09:28	06/16/17 16:20



**PACE ANALYTICAL SERVICES, LLC.**

---

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Georgia Power  
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Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 23, 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

June 23, 2017

**Report No.:** AAF0650

**Project:** CCR Event

**Client ID:** BGWC-14

**Lab Number ID:** AAF0650-01

**Date/Time Sampled:** 6/15/2017 9:28:00AM

**Date/Time Received:** 6/16/2017 4:20:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>Metals, Total</b>											
Antimony	0.0015	0.0030	0.0006	mg/L	EPA 6020B	B-01, J	1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Arsenic	0.0024	0.0050	0.0005	mg/L	EPA 6020B	J	1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Barium	0.0822	0.0100	0.0004	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Boron	0.819	0.0400	0.0060	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Calcium	108	25.0	2.02	mg/L	EPA 6020B		50	06/21/17 07:30	06/21/17 23:21	7060607	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Cobalt	0.0003	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Lead	0.00009	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Molybdenum	0.0052	0.0100	0.0010	mg/L	EPA 6020B	J	1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Mercury	0.000062	0.00050	0.000041	mg/L	EPA 7470A	B-01, J	1	06/21/17 09:20	06/21/17 16:08	7060604	DDN



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 23, 2017

**Report No.: AAF0650**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060604 - EPA 7470A</b>											
<b>Blank (7060604-BLK1)</b>						Prepared & Analyzed: 06/21/17					
Mercury	0.00007	0.00050	0.000041	mg/L							J
<b>LCS (7060604-BS1)</b>						Prepared & Analyzed: 06/21/17					
Mercury	0.00262	0.00050	0.000041	mg/L	2.5000E-3		105	80-120			
<b>Matrix Spike (7060604-MS1)</b>						Source: AAF0737-02 Prepared & Analyzed: 06/21/17					
Mercury	0.00253	0.00050	0.000041	mg/L	2.5000E-3	0.00008	98	75-125			
<b>Matrix Spike Dup (7060604-MSD1)</b>						Source: AAF0737-02 Prepared & Analyzed: 06/21/17					
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3	0.00008	96	75-125	2	20	
<b>Post Spike (7060604-PS1)</b>						Source: AAF0737-02 Prepared & Analyzed: 06/21/17					
Mercury	1.84			ug/L	1.6667	0.0501	108	80-120			
<b>Batch 7060607 - EPA 3005A</b>											
<b>Blank (7060607-BLK1)</b>						Prepared & Analyzed: 06/21/17					
Antimony	0.0009	0.0030	0.0006	mg/L							J
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	0.0005	0.0250	0.0003	mg/L							J
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							



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 23, 2017

**Report No.: AAF0650**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060607 - EPA 3005A</b>											
<b>LCS (7060607-BS1)</b>						Prepared & Analyzed: 06/21/17					
Antimony	0.108	0.0030	0.0006	mg/L	0.10000		108	80-120			
Arsenic	0.0939	0.0050	0.0005	mg/L	0.10000		94	80-120			
Barium	0.0996	0.0100	0.0004	mg/L	0.10000		100	80-120			
Beryllium	0.0996	0.0030	0.00009	mg/L	0.10000		100	80-120			
Boron	1.03	0.0400	0.0060	mg/L	1.0000		103	80-120			
Cadmium	0.102	0.0010	0.0001	mg/L	0.10000		102	80-120			
Calcium	1.03	0.500	0.0404	mg/L	1.0000		103	80-120			
Chromium	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120			
Cobalt	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120			
Copper	0.104	0.0250	0.0003	mg/L	0.10000		104	80-120			
Lead	0.0928	0.0050	0.00007	mg/L	0.10000		93	80-120			
Molybdenum	0.103	0.0100	0.0010	mg/L	0.10000		103	80-120			
Nickel	0.104	0.0100	0.0005	mg/L	0.10000		104	80-120			
Selenium	0.0968	0.0100	0.0018	mg/L	0.10000		97	80-120			
Silver	0.100	0.0100	0.0002	mg/L	0.10000		100	80-120			
Thallium	0.0946	0.0010	0.00005	mg/L	0.10000		95	80-120			
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000		105	80-120			
Zinc	0.106	0.0100	0.0012	mg/L	0.10000		106	80-120			
Lithium	0.106	0.0500	0.0015	mg/L	0.10000		106	80-120			
<b>Matrix Spike (7060607-MS1)</b>						Source: AAF0737-01 Prepared & Analyzed: 06/21/17					
Antimony	0.111	0.0030	0.0006	mg/L	0.10000	0.0009	111	75-125			
Arsenic	0.0997	0.0050	0.0005	mg/L	0.10000	0.0007	99	75-125			
Barium	0.139	0.0100	0.0004	mg/L	0.10000	0.0457	93	75-125			
Beryllium	0.0952	0.0030	0.00009	mg/L	0.10000	0.00009	95	75-125			
Boron	0.992	0.0400	0.0060	mg/L	1.0000	0.0269	96	75-125			
Cadmium	0.0998	0.0010	0.0001	mg/L	0.10000	ND	100	75-125			
Calcium	62.5	25.0	2.02	mg/L	1.0000	62.3	15	75-125			QM-02
Chromium	0.110	0.0100	0.0005	mg/L	0.10000	0.0072	102	75-125			
Cobalt	0.0985	0.0100	0.0003	mg/L	0.10000	ND	99	75-125			
Copper	0.0995	0.0250	0.0003	mg/L	0.10000	0.0004	99	75-125			
Lead	0.0925	0.0050	0.00007	mg/L	0.10000	0.0002	92	75-125			
Molybdenum	0.108	0.0100	0.0010	mg/L	0.10000	ND	108	75-125			
Nickel	0.100	0.0100	0.0005	mg/L	0.10000	ND	100	75-125			
Selenium	0.107	0.0100	0.0018	mg/L	0.10000	0.0070	100	75-125			
Silver	0.101	0.0100	0.0002	mg/L	0.10000	ND	101	75-125			
Thallium	0.0945	0.0010	0.00005	mg/L	0.10000	ND	95	75-125			
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000	ND	105	75-125			
Zinc	0.107	0.0100	0.0012	mg/L	0.10000	0.0042	103	75-125			
Lithium	0.0993	0.0500	0.0015	mg/L	0.10000	ND	99	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

June 23, 2017

**Report No.: AAF0650**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060607 - EPA 3005A</b>											
<b>Matrix Spike Dup (7060607-MSD1)</b>			<b>Source: AAF0737-01</b>			<b>Prepared &amp; Analyzed: 06/21/17</b>					
Antimony	0.113	0.0030	0.0006	mg/L	0.10000	0.0009	113	75-125	2	20	
Arsenic	0.100	0.0050	0.0005	mg/L	0.10000	0.0007	99	75-125	0.4	20	
Barium	0.140	0.0100	0.0004	mg/L	0.10000	0.0457	95	75-125	1	20	
Beryllium	0.0950	0.0030	0.00009	mg/L	0.10000	0.00009	95	75-125	0.1	20	
Boron	0.982	0.0400	0.0060	mg/L	1.0000	0.0269	95	75-125	1	20	
Cadmium	0.103	0.0010	0.0001	mg/L	0.10000	ND	103	75-125	3	20	
Calcium	61.0	25.0	2.02	mg/L	1.0000	62.3	NR	75-125	2	20	QM-02
Chromium	0.108	0.0100	0.0005	mg/L	0.10000	0.0072	101	75-125	1	20	
Cobalt	0.0963	0.0100	0.0003	mg/L	0.10000	ND	96	75-125	2	20	
Copper	0.0948	0.0250	0.0003	mg/L	0.10000	0.0004	94	75-125	5	20	
Lead	0.0902	0.0050	0.00007	mg/L	0.10000	0.0002	90	75-125	2	20	
Molybdenum	0.107	0.0100	0.0010	mg/L	0.10000	ND	107	75-125	0.4	20	
Nickel	0.0950	0.0100	0.0005	mg/L	0.10000	ND	95	75-125	6	20	
Selenium	0.107	0.0100	0.0018	mg/L	0.10000	0.0070	100	75-125	0.4	20	
Silver	0.0995	0.0100	0.0002	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.0921	0.0010	0.00005	mg/L	0.10000	ND	92	75-125	3	20	
Vanadium	0.104	0.0100	0.0012	mg/L	0.10000	ND	104	75-125	1	20	
Zinc	0.103	0.0100	0.0012	mg/L	0.10000	0.0042	98	75-125	5	20	
Lithium	0.102	0.0500	0.0015	mg/L	0.10000	ND	102	75-125	3	20	
<b>Post Spike (7060607-PS1)</b>			<b>Source: AAF0737-01</b>			<b>Prepared &amp; Analyzed: 06/21/17</b>					
Antimony	105			ug/L	100.00	0.873	104	80-120			
Arsenic	104			ug/L	100.00	0.666	103	80-120			
Barium	137			ug/L	100.00	45.7	91	80-120			
Beryllium	97.0			ug/L	100.00	0.0933	97	80-120			
Boron	1040			ug/L	1000.0	26.9	101	80-120			
Cadmium	104			ug/L	100.00	0.0534	104	80-120			
Calcium	63500			ug/L	1000.0	62300	122	80-120			QM-02
Chromium	112			ug/L	100.00	7.15	105	80-120			
Cobalt	101			ug/L	100.00	0.185	100	80-120			
Copper	101			ug/L	100.00	0.367	100	80-120			
Lead	92.7			ug/L	100.00	0.156	93	80-120			
Molybdenum	107			ug/L	100.00	0.425	106	80-120			
Nickel	101			ug/L	100.00	0.434	100	80-120			
Selenium	108			ug/L	100.00	7.04	101	80-120			
Silver	99.3			ug/L	100.00	-0.0011	99	80-120			
Thallium	95.7			ug/L	100.00	0.0227	96	80-120			
Vanadium	106			ug/L	100.00	1.06	105	80-120			
Zinc	109			ug/L	100.00	4.20	105	80-120			
Lithium	101			ug/L	100.00	0.248	101	80-120			





**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 23, 2017

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## Legend

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### 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

- 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

June 23, 2017

## Report Notes

No unpreserved sample volume was provided; therefore, TDS and Ion Chromatograph parameters could not be analyzed. There were only 2 containers present in the cooler for Radium analysis. Consequently, the Lab split 1 container and analyzed metals 6020 and 7470. MMR

**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:		ANALYSIS REQUESTED										LAB ID NUMBER	CONTAINER TYPE		PRESERVATION				
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:	P	A	G	V	S	O						P	A	G	V	S	O
Sustainable Company Services		PRESERVATION:		3	4	3													
241 Ralph McGill Blvd NE 80185 Atlanta, GA 30308		# of																	
REPORT TO:	CC:	CONTAINERS	↓	1	1	2	1	1	2	1	1	2	*MATRIX CODES:						
Requested Completion Date:	PO #:												DW - DRINKING WATER		S - SOIL		WW - WASTEWATER		SL - SLUDGE
PROJECT NAME/STATE:		PROJECT #:		W - WATER		P - PRODUCT		REMARKS/ADDITIONAL INFORMATION											
Plant River Area Pond C&P				only 2 containers present for Rads. MR 06/16/17															
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION														
6/16/17	0528	GW		X	BGDC-14														
SAMPLED BY AND TITLE:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		FOR LAB USE ONLY											
RECEIVED BY:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		LAB #: AAF0650											
RECEIVED BY LAB:		DATE/TIME:		SAMPLE SHIPPED VIA:		DATE/TIME:		Entered into LIMS: MR											
Checked: <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> NA		Ice: <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> NA		Temperature: 1.5 Min: 1.5 Max:		Custody Seal: <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Broken <input type="checkbox"/> Not Present N/A		# of Coolers		Cooler ID:									
Received: Mike Nguyen		6/16/17 1213																	

Page 10 of 11



**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: 6/19/2017 12:16:12PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 06/16/17 16:20

**Work Order:** AAF0650

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 1

**#Containers:** 3

**Minimum Temp(C):** 1.5

**Maximum Temp(C):** 1.5

**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	NO
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:**

No unpreserved sample volume was provided; therefore, TDS and Ion Chromatograph parameters could not be analyzed. There were only 2 containers present in the cooler for Radium analysis. Consequently, the Lab split 1 container and analyzed metals 6020 and 7470. MMR

June 19, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAE0911 Plant Bowen  
Pace Project No.: 30220160

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on May 30, 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: AAE0911 Plant Bowen  
Pace Project No.: 30220160

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAE0911 Plant Bowen

Pace Project No.: 30220160

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30220160001	BGWA-2	Water	05/25/17 10:00	05/30/17 09:45
30220160002	BGWA-28	Water	05/25/17 12:30	05/30/17 09:45
30220160003	BGWA-6	Water	05/25/17 12:32	05/30/17 09:45
30220160004	BGWA-27	Water	05/25/17 13:52	05/30/17 09:45
30220160005	BGWA-29	Water	05/25/17 14:36	05/30/17 09:45
30220160006	FBL 052517	Water	05/25/17 14:56	05/30/17 09:45
30220160007	EQBL 052517	Water	05/25/17 15:04	05/30/17 09:45
30220160008	DUP-1	Water	05/25/17 00:00	05/30/17 09:45

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAE0911 Plant Bowen

Pace Project No.: 30220160

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30220160001	BGWA-2	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220160002	BGWA-28	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220160003	BGWA-6	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220160004	BGWA-27	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220160005	BGWA-29	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220160006	FBL 052517	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220160007	EQBL 052517	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220160008	DUP-1	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: AAE0911 Plant Bowen

Pace Project No.: 30220160

Sample: BGWA-2		Lab ID: 30220160001	Collected: 05/25/17 10:00	Received: 05/30/17 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.938 ± 0.396 (0.497)</b> C:84% T:NA	pCi/L	06/08/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>0.604 ± 0.330 (0.577)</b> C:79% T:90%	pCi/L	06/13/17 15:18	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.54 ± 0.726 (1.07)</b>	pCi/L	06/14/17 15:08	7440-14-4	

Sample: BGWA-28		Lab ID: 30220160002	Collected: 05/25/17 12:30	Received: 05/30/17 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.422 ± 0.267 (0.414)</b> C:87% T:NA	pCi/L	06/08/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>0.213 ± 0.304 (0.651)</b> C:74% T:94%	pCi/L	06/13/17 15:18	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.635 ± 0.571 (1.07)</b>	pCi/L	06/14/17 15:08	7440-14-4	

Sample: BGWA-6		Lab ID: 30220160003	Collected: 05/25/17 12:32	Received: 05/30/17 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.114 ± 0.188 (0.419)</b> C:80% T:NA	pCi/L	06/08/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>0.00900 ± 0.319 (0.741)</b> C:75% T:93%	pCi/L	06/13/17 15:21	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.123 ± 0.507 (1.16)</b>	pCi/L	06/14/17 15:08	7440-14-4	

Sample: BGWA-27		Lab ID: 30220160004	Collected: 05/25/17 13:52	Received: 05/30/17 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.176 ± 0.219 (0.457)</b> C:83% T:NA	pCi/L	06/08/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>0.174 ± 0.365 (0.806)</b> C:72% T:92%	pCi/L	06/13/17 15:21	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.350 ± 0.584 (1.26)</b>	pCi/L	06/14/17 15:08	7440-14-4	

Sample: BGWA-29		Lab ID: 30220160005	Collected: 05/25/17 14:36	Received: 05/30/17 09:45	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.186 ± 0.208 (0.421)</b> C:88% T:NA	pCi/L	06/08/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>0.383 ± 0.371 (0.762)</b> C:77% T:92%	pCi/L	06/13/17 15:21	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAE0911 Plant Bowen  
Pace Project No.: 30220160

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWA-29</b> <b>Lab ID: 30220160005</b> Collected: 05/25/17 14:36      Received: 05/30/17 09:45      Matrix: Water PWS:      Site ID:      Sample Type:						
Total Radium	Total Radium Calculation	<b>0.569 ± 0.579 (1.18)</b>	pCi/L	06/14/17 15:08	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: FBL 052517</b> <b>Lab ID: 30220160006</b> Collected: 05/25/17 14:56      Received: 05/30/17 09:45      Matrix: Water PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.139 ± 0.228 (0.510)</b> C:67% T:NA	pCi/L	06/08/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>0.237 ± 0.350 (0.755)</b> C:74% T:89%	pCi/L	06/13/17 15:21	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.376 ± 0.578 (1.27)</b>	pCi/L	06/14/17 15:08	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: EQBL 052517</b> <b>Lab ID: 30220160007</b> Collected: 05/25/17 15:04      Received: 05/30/17 09:45      Matrix: Water PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>-0.0937 ± 0.137 (0.443)</b> C:93% T:NA	pCi/L	06/08/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>0.158 ± 0.443 (0.986)</b> C:78% T:83%	pCi/L	06/13/17 15:21	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.158 ± 0.580 (1.43)</b>	pCi/L	06/14/17 15:08	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: DUP-1</b> <b>Lab ID: 30220160008</b> Collected: 05/25/17 00:00      Received: 05/30/17 09:45      Matrix: Water PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.566 ± 0.274 (0.345)</b> C:93% T:NA	pCi/L	06/08/17 08:20	13982-63-3	
Radium-228	EPA 9320	<b>0.470 ± 0.362 (0.711)</b> C:74% T:97%	pCi/L	06/13/17 15:21	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.04 ± 0.636 (1.06)</b>	pCi/L	06/14/17 15:08	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAE0911 Plant Bowen

Pace Project No.: 30220160

---

QC Batch:	260845	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30220160001, 30220160002, 30220160003, 30220160004, 30220160005, 30220160006, 30220160007, 30220160008		

---

METHOD BLANK:	1284544	Matrix:	Water
Associated Lab Samples:	30220160001, 30220160002, 30220160003, 30220160004, 30220160005, 30220160006, 30220160007, 30220160008		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.109 ± 0.154 (0.323) C:89% T:NA	pCi/L	06/08/17 08:28	

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: AAE0911 Plant Bowen

Pace Project No.: 30220160

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QC Batch:	260864	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30220160001, 30220160002, 30220160003, 30220160004, 30220160005, 30220160006, 30220160007, 30220160008		

---

METHOD BLANK:	1284598	Matrix:	Water
Associated Lab Samples:	30220160001, 30220160002, 30220160003, 30220160004, 30220160005, 30220160006, 30220160007, 30220160008		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.565 ± 0.330 (0.586) C:77% T:82%	pCi/L	06/13/17 11:12	

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: AAE0911 Plant Bowen  
Pace Project No.: 30220160

### 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.

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CHAIN OF CUSTODY RECORD



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

30220160

PAGE: 1 OF 1

CLIENT NAME: <i>Southern Company Services</i>				ANALYSIS REQUESTED										CONTAINER TYPE	PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <i>241 Ralph McGill Blvd SE Bldg 85 Atlanta GA 30308</i>				CONTAINER TYPE:	P	P	P										
REPORT TO: <i>Joan Abraham</i>				PRESERVATION:												LAB ID NUMBER	
REQUESTED COMPLETION DATE:				# of CONTAINERS													
PROJECT NAME/STATE: <i>Plant Bowen Ash Pond CCR</i>				CC: <i>Maria Padilla</i>				PO#: <i>GPL 10684198</i>								MATRIX CODES:	
PROJECT #:																	
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION												
5/25/17	1000	GW	X		B6WA-2	6	1	1	4								1
5/25/17	1230	GW	X		B6WA-28	4	1	1	2								2
5/25/17	1232	GW	X		B6WA-6	4	1	1	2								3
5/25/17	1352	GW	X		B6WA-27	4	1	1	2								4
5/25/17	1430	GW	X		B6WA-29	4	1	1	2								5
5/25/17	1456	W	X		FBL 052517	4	1	1	2								6
5/25/17	1504	W	X		EQBL 052517	4	1	1	2								7
5/25/17		GW	X		Dwp-1	4	1	1	2								8

SAMPLED BY AND TITLE: <i>Robert Hill / Kim Stephenson</i>	DATE/TIME: <i>5/25/17 1520</i>	RELINQUISHED BY: <i>Robert Hill</i>	DATE/TIME: <i>5/26/17 0650</i>	FOR LAB USE ONLY	
RECEIVED BY: <i>Lady Hardie</i>	DATE/TIME: <i>3/26/2017 26:50</i>	RELINQUISHED BY: <i>Mike Narven</i>	DATE/TIME: <i>5/26/17 1229</i>	LAB #:	<i>AAE0911</i>
RECEIVED BY LAB: <i>Joan Abraham</i>	DATE/TIME: <i>05/26/17 1415</i>	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS		Entered into LIMS:	<i>MR</i>
Temperature: <i>41.1</i> Merc <i>41</i> Max	Custody Seal: Intact Broken Not Present <i>N/A</i>	Net Coolers	Cooler ID:	Tracking #:	



Sample Condition Upon Receipt Pittsburgh



Client Name: Pau Georgia

Project # 30220160

ANL

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5104 6400

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 5/30/17

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: -Includes date/time/ID Matrix: <u>W+</u>		/		5. <u>see comments for sample times</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.
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>PHCZ</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>KH</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>KH</u> Date: <u>5/30/17</u>

Client Notification/ Resolution:

Person Contacted: B Madril Date/Time: 5/3/17 Contacted By: jac

Comments/ Resolution: 001 = 10:00

003 = 12:32

Confirmed collection times as indicated on sheet PA and for times.

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

Test: Ra-228  
Analyst: JLW  
Date: 6/9/2017  
Worklist: 36017  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID		1284598
MB concentration:		0.565
M/B Counting Uncertainty:		0.314
MB MDC:		0.586
MB Numerical Performance Indicator:		3.53
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	Y
	LCS36017		LCSD36017
Count Date:	6/13/2017		6/13/2017
Spike I.D.:	17-005		17-005
Spike Concentration (pCi/mL):	24.301		24.301
Volume Used (mL):	0.20		0.20
Aliquot Volume (L, g, F):	0.819		0.806
Target Conc. (pCi/L, g, F):	5.931		6.034
Uncertainty (Calculated):	0.427		0.434
Result (pCi/L, g, F):	6.448		5.230
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.643		0.734
Numerical Performance Indicator:	1.31		-1.85
Percent Recovery:	108.73%		86.68%
Status vs Numerical Indicator:	N/A		N/A
Status vs Recovery:	Pass		Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCS36017	
Duplicate Sample I.D.:	LCSD36017	
Sample Result (pCi/L, g, F):	6.448	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.643	
Sample Duplicate Result (pCi/L, g, F):	5.230	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.734	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	2.449	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	22.57%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*Amce/19/17*

## Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: JC2  
Date: 6/7/2017  
Worklist: 36007  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1284544	
MB concentration:	0.109	
M/B Counting Uncertainty:	0.153	
MB MDC:	0.323	
MB Numerical Performance Indicator:	1.40	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS/D (Y or N)?	N
	LCS36007	LCS/D36007
Count Date:	6/8/2017	
Spike I.D.:	13-033	
Spike Concentration (pCi/mL):	19.848	
Volume Used (mL):	0.40	
Aliquot Volume (L, g, F):	0.501	
Target Conc. (pCi/L, g, F):	15.835	
Uncertainty (Calculated):	0.745	
Result (pCi/L, g, F):	13.485	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.100	
Numerical Performance Indicator:	-3.47	
Percent Recovery:	85.16%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30219997007	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30219997007DUP	
Sample Result (pCi/L, g, F):	0.243	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.181	
Sample Duplicate Result (pCi/L, g, F):	-0.039	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.145	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	2.376	30219997007
Duplicate RPD:	276.22%	30219997007DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Omep/17*

June 21, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAE0918 Plant Bowen  
Pace Project No.: 30220161

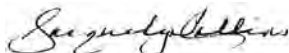
Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on May 30, 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.

This report replaces the June 19, 2017 report. Report reissued June 21, 2017 to reflect correction of collection times.

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: AAE0918 Plant Bowen  
Pace Project No.: 30220161

### 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

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## SAMPLE SUMMARY

Project: AAE0918 Plant Bowen

Pace Project No.: 30220161

<b>Lab ID</b>	<b>Sample ID</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Date Received</b>
30220161001	BGWC-8	Water	05/26/17 11:54	05/30/17 09:45
30220161002	BGWC-9	Water	05/26/17 10:52	05/30/17 09:45
30220161003	BGWC-11	Water	05/26/17 12:15	05/30/17 09:45
30220161004	BGWA-26	Water	05/26/17 09:46	05/30/17 09:45
30220161005	BGWC-14	Water	05/26/17 09:16	05/30/17 09:45

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### SAMPLE ANALYTE COUNT

Project: AAE0918 Plant Bowen

Pace Project No.: 30220161

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30220161001	BGWC-8	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220161002	BGWC-9	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220161003	BGWC-11	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220161004	BGWA-26	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220161005	BGWC-14	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: AAE0918 Plant Bowen

Pace Project No.: 30220161

Sample: <b>BGWC-8</b>		Lab ID: <b>30220161001</b>	Collected: 05/26/17 11:54	Received: 05/30/17 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.283 ± 0.245 (0.464)</b>		pCi/L	06/08/17 08:20	13982-63-3	
		<b>C:92% T:NA</b>					
Radium-228	EPA 9320	<b>0.0660 ± 0.355 (0.810)</b>		pCi/L	06/13/17 15:21	15262-20-1	
		<b>C:73% T:90%</b>					
Total Radium	Total Radium Calculation	<b>0.349 ± 0.600 (1.27)</b>		pCi/L	06/14/17 15:08	7440-14-4	

Sample: <b>BGWC-9</b>		Lab ID: <b>30220161002</b>	Collected: 05/26/17 10:52	Received: 05/30/17 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0882 ± 0.148 (0.328)</b>		pCi/L	06/08/17 10:00	13982-63-3	
		<b>C:87% T:NA</b>					
Radium-228	EPA 9320	<b>0.157 ± 0.288 (0.631)</b>		pCi/L	06/14/17 11:31	15262-20-1	
		<b>C:94% T:79%</b>					
Total Radium	Total Radium Calculation	<b>0.245 ± 0.436 (0.959)</b>		pCi/L	06/16/17 13:43	7440-14-4	

Sample: <b>BGWC-11</b>		Lab ID: <b>30220161003</b>	Collected: 05/26/17 12:15	Received: 05/30/17 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.290 ± 0.233 (0.413)</b>		pCi/L	06/08/17 10:00	13982-63-3	
		<b>C:85% T:NA</b>					
Radium-228	EPA 9320	<b>0.707 ± 0.453 (0.861)</b>		pCi/L	06/14/17 11:31	15262-20-1	
		<b>C:79% T:72%</b>					
Total Radium	Total Radium Calculation	<b>0.997 ± 0.686 (1.27)</b>		pCi/L	06/16/17 13:43	7440-14-4	

Sample: <b>BGWA-26</b>		Lab ID: <b>30220161004</b>	Collected: 05/26/17 09:46	Received: 05/30/17 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.182 ± 0.179 (0.321)</b>		pCi/L	06/08/17 10:00	13982-63-3	
		<b>C:82% T:NA</b>					
Radium-228	EPA 9320	<b>0.864 ± 0.524 (1.01)</b>		pCi/L	06/14/17 15:19	15262-20-1	
		<b>C:77% T:87%</b>					
Total Radium	Total Radium Calculation	<b>1.05 ± 0.703 (1.33)</b>		pCi/L	06/16/17 13:43	7440-14-4	

Sample: <b>BGWC-14</b>		Lab ID: <b>30220161005</b>	Collected: 05/26/17 09:16	Received: 05/30/17 09:45	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>4.88 ± 1.02 (0.391)</b>		pCi/L	06/08/17 10:00	13982-63-3	
		<b>C:78% T:NA</b>					
Radium-228	EPA 9320	<b>2.26 ± 0.659 (0.841)</b>		pCi/L	06/14/17 15:19	15262-20-1	
		<b>C:77% T:88%</b>					

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAE0918 Plant Bowen

Pace Project No.: 30220161

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**Sample: BGWC-14**      **Lab ID: 30220161005**      Collected: 05/26/17 09:16      Received: 05/30/17 09:45      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>7.14 ± 1.68 (1.23)</b>	pCi/L	06/16/17 13:43	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAE0918 Plant Bowen

Pace Project No.: 30220161

QC Batch: 260845

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30220161001

METHOD BLANK: 1284544

Matrix: Water

Associated Lab Samples: 30220161001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.109 ± 0.154 (0.323) C:89% T:NA	pCi/L	06/08/17 08:28	

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: AAE0918 Plant Bowen

Pace Project No.: 30220161

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QC Batch:	260865	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30220161002, 30220161003, 30220161004, 30220161005		

---

METHOD BLANK:	1284599	Matrix:	Water
Associated Lab Samples:	30220161002, 30220161003, 30220161004, 30220161005		

---

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAE0918 Plant Bowen

Pace Project No.: 30220161

QC Batch: 260864

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30220161001

METHOD BLANK: 1284598

Matrix: Water

Associated Lab Samples: 30220161001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.565 ± 0.330 (0.586) C:77% T:82%	pCi/L	06/13/17 11:12	

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: AAE0918 Plant Bowen

Pace Project No.: 30220161

### 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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30220161

Chain of Custody



Workorder: AAE0918

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 6/21/2017

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	Radium 226, 228, Total																		

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-8	G	5/26/2017 11:54	AAE0918-01	GW	2				X	001
2	BGWC-9	G	5/26/2017 10:52	AAE0918-02	GW	2				X	002
3	BGWC-11	G	5/26/2017 12:15	AAE0918-03	GW	2				X	003
4	BGWA-26	G	5/26/2017 9:46	AAE0918-04	GW	2				X	004
5	BGWC-14	G	5/26/2017 9:16	AAE0918-05	GW	2				X	005
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1					
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.

Page 13 of 19



CHAIN OF CUSTODY RECORD



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

CLIENT NAME:					ANALYSIS REQUESTED					CONTAINER TYPE	PRESERVATION			
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:									
REPORT TO:					PRESERVATION:									
REQUESTED COMPLETION DATE:					# of									
Southern Company Services 241 Ralph McGill Blvd NE 81085 Atlanta, GA 30308 REPORT TO: J. Abraham REQUESTED COMPLETION DATE: N/A PROJECT NAME/STATE: Plant Remediation Acid Pond CER PROJECT #:					CONTAINERS ↓					CONTAINER TYPE P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER PRESERVATION 1 - HCl, ≤6°C 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C 3 - HNO <sub>3</sub> 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen *MATRIX CODES: DW - DRINKING WATER S - SOIL WW - WASTEWATER SL - SLUDGE GW - GROUNDWATER SD - SOLID SW - SURFACE WATER A - AIR ST - STORM WATER L - LIQUID W - WATER P - PRODUCT				
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION							LAB NUMBER	REMARKS/ADDITIONAL INFORMATION	
5/26/17	1154	GW		X	RGWC-8	4	1	1	2			1		
5/26/17	1052	GW		X	RGWC-9	4	1	1	2			2		
5/26/17	1215	GW		X	RGWC-11	4	1	1	2			3		
5/26/17	0946	GW		X	RGWC-26	4	1	1	2			4		
5/26/17	0916	GW		X	RGWC-14	2			2				Radon Only	
SAMPLED BY AND TITLE: Robert Mull RECEIVED BY: M. R. ... RECEIVED BY LAB: M. R. ... DATE/TIME: 5/26/17 @ 1308 DATE/TIME: 05/26/17 1520 RELINQUISHED BY: Karl B. ... DATE/TIME: 5/26/17 1520 SAMPLE SHIPPED VIA: UPS CUSTODY SEAL: Intact TEMPERATURE: 12.2 Min, 11.0 Max # of Coolers: N/A					FOR LAB USE ONLY LAB #: AA E0918 Entered into LIMS: AR Tracking #:									

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace Georgia

Project # 30220161

AM

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5104 6400

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 NA °C Correction Factor: NA °C Final Temp: NA °C

Temp should be above freezing to 6°C

Date and initials of person examining contents: KH 5/30/17

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: -Includes date/time/ID Matrix: <u>W+</u>		/		5. <u>see comments for sample times</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.
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>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>KH</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>KH</u> Date: <u>5/30/17</u>

Client Notification/ Resolution:

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

Comments/ Resolution: 001 = 11:54  
002 = 10:52  
003 = 12:15  
004 = 09:46  
005 = 09:16

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

Test: Ra-228  
Analyst: JLW  
Date: 6/9/2017  
Worklist: 36018  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1284599	
MB concentration:	0.187	
M/B Counting Uncertainty:	0.333	
MB MDC:	0.733	
MB Numerical Performance Indicator:	1.10	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS/D (Y or N)?	N
	LCS36018	LCS36018
Count Date:	6/14/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	24.293	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.805	
Target Conc. (pCi/L, g, F):	6.036	
Uncertainty (Calculated):	0.435	
Result (pCi/L, g, F):	5.976	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.656	
Numerical Performance Indicator:	-0.15	
Percent Recovery:	99.02%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30220163002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30220163002DUP	
Sample Result (pCi/L, g, F):	0.835	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.389	
Sample Duplicate Result (pCi/L, g, F):	1.347	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.390	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.822	30220163002
Duplicate RPD:	46.94%	30220163002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Final  
6/19/17*



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 6/7/2017  
Worklist: 36008  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

### Method Blank Assessment

MB Sample ID: 1284545  
MB concentration: 0.052  
M/B Counting Uncertainty: 0.131  
MB MDC: 0.318  
MB Numerical Performance Indicator: 0.77  
MB Status vs Numerical Indicator: N/A  
MB Status vs. MDC: Pass

### Laboratory Control Sample Assessment

	LCS (Y or N)?	N
	LCS36008	LCSD36008
Count Date:	6/8/2017	
Spike I.D.:	13-033	
Spike Concentration (pCi/mL):	19.848	
Volume Used (mL):	0.40	
Aliquot Volume (L, g, F):	0.501	
Target Conc. (pCi/L, g, F):	15.852	
Uncertainty (Calculated):	0.746	
Result (pCi/L, g, F):	12.493	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.060	
Numerical Performance Indicator:	-5.08	
Percent Recovery:	78.81%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

### Sample Matrix Spike Control Assessment

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):  
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:

### Duplicate Sample Assessment

Sample I.D.:	30220161002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30220161002DUP	
Sample Result (pCi/L, g, F):	0.088	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.147	
Sample Duplicate Result (pCi/L, g, F):	0.331	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.214	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.838	30220161002
Duplicate RPD:	115.95%	30220161002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

*LMDC*

### Matrix Spike/Matrix Spike Duplicate Sample Assessment

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:  
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:

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

*Omehlitz*



## Quality Control Sample Performance Assessment

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

Test: Ra-228  
Analyst: JLW  
Date: 6/9/2017  
Worklist: 36017  
Matrix: DW

Method Blank Assessment		
MB Sample ID	1284598	
MB concentration:	0.565	
M/B Counting Uncertainty:	0.314	
MB MDC:	0.586	
MB Numerical Performance Indicator:	3.53	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS36017	LCSD36017
Count Date:	6/13/2017	6/13/2017
Spike I.D.:	17-005	17-005
Spike Concentration (pCi/mL):	24.301	24.301
Volume Used (mL):	0.20	0.20
Aliquot Volume (L, g, F):	0.819	0.806
Target Conc. (pCi/L, g, F):	5.931	6.034
Uncertainty (Calculated):	0.427	0.434
Result (pCi/L, g, F):	6.448	5.230
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.643	0.734
Numerical Performance Indicator:	1.31	-1.85
Percent Recovery:	108.73%	86.68%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	LCS36017	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD36017	
Sample Result (pCi/L, g, F):	6.448	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.643	
Sample Duplicate Result (pCi/L, g, F):	5.230	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.734	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	2.449	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	22.57%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*Amce/19/17*

## Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: JC2  
Date: 6/7/2017  
Worklist: 36007  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1284544	
MB concentration:	0.109	
M/B Counting Uncertainty:	0.153	
MB MDC:	0.323	
MB Numerical Performance Indicator:	1.40	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS36007	LCSD36007
Count Date:	6/8/2017		
Spike I.D.:	13-033		
Spike Concentration (pCi/mL):	19.848		
Volume Used (mL):	0.40		
Aliquot Volume (L, g, F):	0.501		
Target Conc. (pCi/L, g, F):	15.835		
Uncertainty (Calculated):	0.745		
Result (pCi/L, g, F):	13.485		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.100		
Numerical Performance Indicator:	-3.47		
Percent Recovery:	85.16%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30219997007	
Duplicate Sample I.D.:	30219997007DUP	
Sample Result (pCi/L, g, F):	0.243	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.181	
Sample Duplicate Result (pCi/L, g, F):	-0.039	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.145	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	2.376	
Duplicate RPD:	276.22%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Omaha 6/17*

June 20, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAE0946 Plant Bowen  
Pace Project No.: 30220414

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on June 01, 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: AAE0946 Plant Bowen

Pace Project No.: 30220414

### 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: AAE0946 Plant Bowen

Pace Project No.: 30220414

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30220414001	FBL053017	Water	05/30/17 14:20	06/01/17 10:20
30220414002	EQBL053017	Water	05/30/17 14:30	06/01/17 10:20
30220414003	BGWC-16	Water	05/30/17 14:30	06/01/17 10:20
30220414004	Dup-2	Water	05/30/17 00:00	06/01/17 10:20
30220414005	BGWC-17	Water	05/30/17 15:50	06/01/17 10:20

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAE0946 Plant Bowen  
Pace Project No.: 30220414

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30220414001	FBL053017	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220414002	EQBL053017	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220414003	BGWC-16	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220414004	Dup-2	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220414005	BGWC-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: AAE0946 Plant Bowen

Pace Project No.: 30220414

Sample: <b>FBL053017</b>		Lab ID: <b>30220414001</b>	Collected: 05/30/17 14:20	Received: 06/01/17 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>-0.0235 ± 0.0878 (0.292)</b> C:95% T:NA	pCi/L	06/08/17 12:14	13982-63-3	
Radium-228	EPA 9320	<b>0.526 ± 0.480 (0.970)</b> C:78% T:78%	pCi/L	06/14/17 18:21	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.526 ± 0.568 (1.26)</b>	pCi/L	06/20/17 07:55	7440-14-4	

Sample: <b>EQBL053017</b>		Lab ID: <b>30220414002</b>	Collected: 05/30/17 14:30	Received: 06/01/17 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>0.0242 ± 0.115 (0.307)</b> C:88% T:NA	pCi/L	06/08/17 12:14	13982-63-3	
Radium-228	EPA 9320	<b>0.258 ± 0.407 (0.883)</b> C:80% T:86%	pCi/L	06/14/17 18:22	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.282 ± 0.522 (1.19)</b>	pCi/L	06/20/17 07:55	7440-14-4	

Sample: <b>BGWC-16</b>		Lab ID: <b>30220414003</b>	Collected: 05/30/17 14:30	Received: 06/01/17 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>0.605 ± 0.272 (0.302)</b> C:94% T:NA	pCi/L	06/08/17 12:14	13982-63-3	
Radium-228	EPA 9320	<b>0.607 ± 0.490 (0.976)</b> C:79% T:86%	pCi/L	06/14/17 18:22	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.21 ± 0.762 (1.28)</b>	pCi/L	06/20/17 07:55	7440-14-4	

Sample: <b>Dup-2</b>		Lab ID: <b>30220414004</b>	Collected: 05/30/17 00:00	Received: 06/01/17 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>0.345 ± 0.235 (0.384)</b> C:90% T:NA	pCi/L	06/08/17 12:14	13982-63-3	
Radium-228	EPA 9320	<b>0.695 ± 0.493 (0.952)</b> C:79% T:85%	pCi/L	06/14/17 18:22	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.04 ± 0.728 (1.34)</b>	pCi/L	06/20/17 07:55	7440-14-4	

Sample: <b>BGWC-17</b>		Lab ID: <b>30220414005</b>	Collected: 05/30/17 15:50	Received: 06/01/17 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>0.182 ± 0.178 (0.320)</b> C:80% T:NA	pCi/L	06/08/17 12:14	13982-63-3	
Radium-228	EPA 9320	<b>0.468 ± 0.477 (0.982)</b> C:78% T:79%	pCi/L	06/14/17 18:22	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAE0946 Plant Bowen

Pace Project No.: 30220414

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**Sample: BGWC-17**      **Lab ID: 30220414005**      Collected: 05/30/17 15:50      Received: 06/01/17 10:20      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>0.650 ± 0.655 (1.30)</b>	pCi/L	06/20/17 07:55	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAE0946 Plant Bowen

Pace Project No.: 30220414

QC Batch: 260846

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30220414001, 30220414002, 30220414003, 30220414004, 30220414005

METHOD BLANK: 1284545

Matrix: Water

Associated Lab Samples: 30220414001, 30220414002, 30220414003, 30220414004, 30220414005

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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## QUALIFIERS

Project: AAE0946 Plant Bowen

Pace Project No.: 30220414

### 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

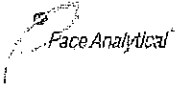
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Sample Condition Upon Receipt Pittsburgh



Client Name: Pace Georgia Project # 30220414

30220414

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5104 6730

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 6/1/17

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.
Filtered volume received for Dissolved tests			/	14.
All containers have been checked for preservation.	/			15. <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>KH</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>KH</u> Date: <u>6/1/17</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.**

Test: Ra-228  
Analyst: JLW  
Date: 6/9/2017  
Worklist: 36018  
Matrix: DW

Method Blank Assessment		
MB Sample ID	1284599	
MB concentration:	0.187	
M/B Counting Uncertainty:	0.333	
MB MDC:	0.733	
MB Numerical Performance Indicator:	1.10	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
	LCS36018		LCSD36018
Count Date:	6/14/2017		
Spike I.D.:	17-005		
Spike Concentration (pCi/mL):	24.293		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.805		
Target Conc. (pCi/L, g, F):	6.036		
Uncertainty (Calculated):	0.435		
Result (pCi/L, g, F):	5.976		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.656		
Numerical Performance Indicator:	-0.15		
Percent Recovery:	99.02%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30220163002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30220163002DUP	
Sample Result (pCi/L, g, F):	0.835	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.389	
Sample Duplicate Result (pCi/L, g, F):	1.347	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.390	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.822	30220163002
Duplicate RPD:	46.94%	30220163002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Handwritten signatures and initials: "JLW" and "Acepola"*



## Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test: Ra-226  
Analyst: JC2  
Date: 6/7/2017  
Worklist: 36008  
Matrix: DW

Method Blank Assessment		
MB Sample ID	1284545	
MB concentration:	0.052	
M/B Counting Uncertainty:	0.131	
MB MDC:	0.318	
MB Numerical Performance Indicator:	0.77	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS36008	LCS36008
Count Date:	6/8/2017	
Spike I.D.:	13-033	
Spike Concentration (pCi/mL):	19.848	
Volume Used (mL):	0.40	
Aliquot Volume (L, g, F):	0.501	
Target Conc. (pCi/L, g, F):	15.852	
Uncertainty (Calculated):	0.746	
Result (pCi/L, g, F):	12.493	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.060	
Numerical Performance Indicator:	-5.08	
Percent Recovery:	78.81%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30220161002	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30220161002DUP	
Sample Result (pCi/L, g, F):	0.088	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.147	
Sample Duplicate Result (pCi/L, g, F):	0.331	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.214	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-1.838	30220161002
Duplicate RPD:	115.95%	30220161002DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*LMC*

*Once 6/20/17*

June 22, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAF0060 Plant Bowen  
Pace Project No.: 30220650

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,  
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## CERTIFICATIONS

Project: AAF0060 Plant Bowen

Pace Project No.: 30220650

### 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: AAF0060 Plant Bowen

Pace Project No.: 30220650

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30220650001	BGWC-18	Water	06/01/17 09:25	06/05/17 09:30
30220650002	BGWC-19	Water	06/01/17 10:35	06/05/17 09:30
30220650003	BGWC-20	Water	06/01/17 11:50	06/05/17 09:30
30220650004	BGWC-25	Water	06/01/17 14:10	06/05/17 09:30
30220650005	BGWC-21	Water	06/01/17 15:40	06/05/17 09:30

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAF0060 Plant Bowen

Pace Project No.: 30220650

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30220650001	BGWC-18	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220650002	BGWC-19	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220650003	BGWC-20	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220650004	BGWC-25	EPA 9315	LAL	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220650005	BGWC-21	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: AAF0060 Plant Bowen

Pace Project No.: 30220650

Sample: <b>BGWC-18</b>		Lab ID: <b>30220650001</b>	Collected: 06/01/17 09:25	Received: 06/05/17 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>0.163 ± 0.140 (0.247)</b> C:83% T:NA	pCi/L	06/12/17 08:41	13982-63-3	
Radium-228	EPA 9320	<b>0.330 ± 0.421 (0.899)</b> C:73% T:90%	pCi/L	06/20/17 16:04	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.493 ± 0.561 (1.15)</b>	pCi/L	06/21/17 14:23	7440-14-4	

Sample: <b>BGWC-19</b>		Lab ID: <b>30220650002</b>	Collected: 06/01/17 10:35	Received: 06/05/17 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>0.240 ± 0.223 (0.427)</b> C:57% T:NA	pCi/L	06/12/17 08:41	13982-63-3	
Radium-228	EPA 9320	<b>0.0919 ± 0.331 (0.752)</b> C:75% T:90%	pCi/L	06/20/17 17:58	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.332 ± 0.554 (1.18)</b>	pCi/L	06/21/17 14:23	7440-14-4	

Sample: <b>BGWC-20</b>		Lab ID: <b>30220650003</b>	Collected: 06/01/17 11:50	Received: 06/05/17 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>0.885 ± 0.296 (0.265)</b> C:88% T:NA	pCi/L	06/12/17 08:41	13982-63-3	
Radium-228	EPA 9320	<b>0.723 ± 0.360 (0.585)</b> C:79% T:90%	pCi/L	06/20/17 17:58	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.61 ± 0.656 (0.850)</b>	pCi/L	06/21/17 14:23	7440-14-4	

Sample: <b>BGWC-25</b>		Lab ID: <b>30220650004</b>	Collected: 06/01/17 14:10	Received: 06/05/17 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>0.169 ± 0.147 (0.265)</b> C:83% T:NA	pCi/L	06/12/17 08:41	13982-63-3	
Radium-228	EPA 9320	<b>0.501 ± 0.379 (0.735)</b> C:78% T:87%	pCi/L	06/20/17 17:58	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.670 ± 0.526 (1.000)</b>	pCi/L	06/21/17 14:23	7440-14-4	

Sample: <b>BGWC-21</b>		Lab ID: <b>30220650005</b>	Collected: 06/01/17 15:40	Received: 06/05/17 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>0.219 ± 0.163 (0.271)</b> C:81% T:NA	pCi/L	06/12/17 08:41	13982-63-3	
Radium-228	EPA 9320	<b>0.618 ± 0.414 (0.780)</b> C:78% T:81%	pCi/L	06/20/17 17:58	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAF0060 Plant Bowen  
Pace Project No.: 30220650

**Sample: BGWC-21**      **Lab ID: 30220650005**      Collected: 06/01/17 15:40      Received: 06/05/17 09:30      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>0.837 ± 0.577 (1.05)</b>	pCi/L	06/21/17 14:23	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0060 Plant Bowen

Pace Project No.: 30220650

QC Batch: 261089

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30220650001, 30220650002, 30220650003, 30220650004, 30220650005

METHOD BLANK: 1285496

Matrix: Water

Associated Lab Samples: 30220650001, 30220650002, 30220650003, 30220650004, 30220650005

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: AAF0060 Plant Bowen

Pace Project No.: 30220650

QC Batch: 261179 Analysis Method: EPA 9315

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

Associated Lab Samples: 30220650001, 30220650002, 30220650003, 30220650004, 30220650005

METHOD BLANK: 1285893 Matrix: Water

Associated Lab Samples: 30220650001, 30220650002, 30220650003, 30220650004, 30220650005

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: AAF0060 Plant Bowen

Pace Project No.: 30220650

### 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, LLC - Atlanta GA  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

30220650

PAGE: 1 OF 1

CLIENT NAME: SOUTHERN COMPANY SERVICES				ANALYSIS REQUESTED										LAB ID NUMBER	CONTAINER TYPE		PRESERVATION							
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 RALPH MCGILL BLVD SE B10185 ATLANTA, GA 30308				CONTAINER TYPE: P3	P	P	3	MP								P - PLASTIC	1 - HCl, ≤6°C							
REPORT TO: JOJU ABRAHAM				PRESERVATION: P P PR		06/01/17									A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C								
REQUESTED COMPLETION DATE:				# of													G - CLEAR GLASS	3 - HNO <sub>3</sub>						
PROJECT NAME/STATE: PLANT BOWEN ASH POND CCR				CONTAINERS	METALS APF, III, IV, EPA 6020 & 7470										D	V - VOA VIAL		4 - NaOH, ≤6°C						
PROJECT #:					CI, F, SO4 TDS SM 2540C											E	S - STERILE		5 - NaOH/ZnAc, ≤6°C					
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION										F		O - OTHER		6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C					
										RADIUM 226 & 228										G	7 - ≤6°C not frozen			
05/01/17	0925	GW	X		BGWC-18	4	1	1	2															
06/01/17	1035	GW	X		BGWC-19	4	1	1	2															
06/01/17	1150	GW	X		BGWC-20	4	1	1	2															
06/01/17	1410	GW	X		BGWC-21	4	1	1	2															
06/01/17	1540	GW	X		BGWC-21	4	1	1	2															

SAMPLED BY AND TITLE: ROBERT MILL MICHAEL PATINKEN		DATE/TIME: 06/01/17 1620	RELINQUISHED BY: <i>[Signature]</i>	DATE/TIME: 06/17 0757	FOR LAB USE ONLY	
RECEIVED BY:		DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	LAB #:	AAFO060
RECEIVED BY LAB: <i>[Signature]</i>		DATE/TIME: 06/02/17 0757	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS		Entered into LIMS: <i>[Signature]</i>	
Custody Seal: Intact Broken Not Present		Temperature: 30	# of Coolers:	Cooler ID:	Tracking #:	

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, GA

Project # 30220650

AM

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5104 7336

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: QANA 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:	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.
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>QANA</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>QANA</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

Test: Ra-228  
Analyst: JLW  
Date: 6/15/2017  
Worklist: 36062  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
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*

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS36062	LCSD36062
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		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
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	30220542006
Duplicate RPD:	80.16%	30220542006DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*JLW/22/17*

## Quality Control Sample Performance Assessment



Test: Ra-226  
Analyst: LAL  
Date: 6/9/2017  
Worklist: 36070  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1285893
MB concentration:	0.103
M/B Counting Uncertainty:	0.108
MB MDC:	0.204
MB Numerical Performance Indicator:	1.88
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS36070	LCS36070
Count Date:	6/12/2017	
Spike I.D.:	13-033	
Spike Concentration (pCi/mL):	19.848	
Volume Used (mL):	0.40	
Aliquot Volume (L, g, F):	0.509	
Target Conc. (pCi/L, g, F):	15.597	
Uncertainty (Calculated):	0.734	
Result (pCi/L, g, F):	13.891	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.959	
Numerical Performance Indicator:	-2.77	
Percent Recovery:	89.06%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30220649001	
Duplicate Sample I.D.:	30220649001DUP	
Sample Result (pCi/L, g, F):	0.854	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.302	
Sample Duplicate Result (pCi/L, g, F):	0.572	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.228	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.458	30220649001
Duplicate RPD:	39.54%	30220649001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

\* Numerical Indicator is acceptable.

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

*6/22/17*

June 26, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAF0126 Plant Bowen  
Pace Project No.: 30220781

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

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

Project: AAF0126 Plant Bowen

Pace Project No.: 30220781

### 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

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## SAMPLE SUMMARY

Project: AAF0126 Plant Bowen

Pace Project No.: 30220781

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30220781001	BGWC-7	Water	06/02/17 11:10	06/06/17 10:15
30220781002	BGWC-10	Water	06/02/17 12:45	06/06/17 10:15
30220781003	BGWC-12	Water	06/02/17 12:47	06/06/17 10:15
30220781004	Dup-3	Water	06/02/17 00:00	06/06/17 10:15
30220781005	EQBL060217	Water	06/02/17 14:00	06/06/17 10:15
30220781006	FBL060217	Water	06/02/17 14:10	06/06/17 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAF0126 Plant Bowen  
Pace Project No.: 30220781

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30220781001	BGWC-7	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220781002	BGWC-10	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220781003	BGWC-12	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220781004	Dup-3	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220781005	EQBL060217	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30220781006	FBL060217	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAF0126 Plant Bowen

Pace Project No.: 30220781

Sample: <b>BGWC-7</b>		Lab ID: <b>30220781001</b>	Collected: 06/02/17 11:10	Received: 06/06/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.648 ± 0.311 (0.403)</b> C:91% T:NA	pCi/L	06/21/17 08:15	13982-63-3		
Radium-228	EPA 9320	<b>0.590 ± 0.434 (0.849)</b> C:73% T:83%	pCi/L	06/21/17 15:14	15262-20-1		
Total Radium	Total Radium Calculation	<b>1.24 ± 0.745 (1.25)</b>	pCi/L	06/23/17 12:18	7440-14-4		

Sample: <b>BGWC-10</b>		Lab ID: <b>30220781002</b>	Collected: 06/02/17 12:45	Received: 06/06/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.527 ± 0.310 (0.488)</b> C:84% T:NA	pCi/L	06/21/17 08:15	13982-63-3		
Radium-228	EPA 9320	<b>0.601 ± 0.428 (0.831)</b> C:77% T:75%	pCi/L	06/21/17 15:14	15262-20-1		
Total Radium	Total Radium Calculation	<b>1.13 ± 0.738 (1.32)</b>	pCi/L	06/23/17 12:18	7440-14-4		

Sample: <b>BGWC-12</b>		Lab ID: <b>30220781003</b>	Collected: 06/02/17 12:47	Received: 06/06/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.265 ± 0.219 (0.387)</b> C:90% T:NA	pCi/L	06/21/17 08:15	13982-63-3		
Radium-228	EPA 9320	<b>0.110 ± 0.423 (0.959)</b> C:69% T:74%	pCi/L	06/21/17 15:14	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.375 ± 0.642 (1.35)</b>	pCi/L	06/23/17 12:18	7440-14-4		

Sample: <b>Dup-3</b>		Lab ID: <b>30220781004</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	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.212 ± 0.211 (0.407)</b> C:93% T:NA	pCi/L	06/21/17 08:15	13982-63-3		
Radium-228	EPA 9320	<b>0.615 ± 0.445 (0.867)</b> C:75% T:74%	pCi/L	06/21/17 15:14	15262-20-1		
Total Radium	Total Radium Calculation	<b>0.827 ± 0.656 (1.27)</b>	pCi/L	06/23/17 12:18	7440-14-4		

Sample: <b>EQBL060217</b>		Lab ID: <b>30220781005</b>	Collected: 06/02/17 14:00	Received: 06/06/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual	
Radium-226	EPA 9315	<b>0.0149 ± 0.135 (0.374)</b> C:85% T:NA	pCi/L	06/21/17 08:15	13982-63-3		
Radium-228	EPA 9320	<b>0.379 ± 0.325 (0.650)</b> C:77% T:87%	pCi/L	06/21/17 15:14	15262-20-1		

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAF0126 Plant Bowen

Pace Project No.: 30220781

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	<b>0.394 ± 0.460 (1.02)</b>	pCi/L	06/23/17 12:18	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.68 ± 0.516 (0.447)</b> C:94% T:NA	pCi/L	06/21/17 08:15	13982-63-3	
Radium-228	EPA 9320	<b>0.594 ± 0.451 (0.898)</b> C:73% T:84%	pCi/L	06/21/17 15:14	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.27 ± 0.967 (1.35)</b>	pCi/L	06/23/17 12:18	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0126 Plant Bowen

Pace Project No.: 30220781

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QC Batch:	261654	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30220781001, 30220781002, 30220781003, 30220781004, 30220781005, 30220781006		

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METHOD BLANK:	1288485	Matrix:	Water
Associated Lab Samples:	30220781001, 30220781002, 30220781003, 30220781004, 30220781005, 30220781006		

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.

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## QUALIFIERS

Project: AAF0126 Plant Bowen  
Pace Project No.: 30220781

### 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: AAF0126

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 6/28/2017

<b>Report To:</b> Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)-734-4200	<b>Subcontract To:</b> Pace - Pittsburgh 1638 Roseytown Road Stes. 2,3,4 Greensburg, PA 15601 Phone (724) 850-5600	<b>Requested Analysis</b>
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WO#: 30220781



30220781

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-7	G	6/2/2017 11:10	AAF0126-01	GW	2				X	001
2	BGWC-10	G	6/2/2017 12:45	AAF0126-02	GW	2				X	002
3	BGWC-12	G	6/2/2017 12:47	AAF0126-03	GW	4				X	003
4	Dup-3	G	6/2/2017 0:00	AAF0126-04	GW	2				X	004
5	EQBL060217	G	6/2/2017 14:00	AAF0126-05	W	2				X	005
6	FBL060217	G	6/2/2017 14:10	AAF0126-06	W	2				X	006
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	M. RAHMAN	6/5/17	YRS Pace	6/6/17	1015
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 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  
30220781



Client Name: Pace GA

Project #: \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 6812 5104 7830

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: 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:	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.
All containers needing preservation are found to be in compliance with EPA recommendation.	X			<u>PHL2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed <u>6/6/17</u> Date/time of preservation <u>RTB</u>
				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>RTB</u> Date: <u>6/6/17</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.

CHAIN OF CUSTODY RECORD



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

30220781

PAGE: 1 OF 1

CLIENT NAME: <i>Southern Company Services</i>				ANALYSIS REQUESTED																																																																																																																																											
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <i>241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308</i>				CONTAINER TYPE:	3	7	3																																																																																																																																								
REPORT TO: <i>Joel Abraham</i>				CC:	<i>Maria Padilla</i>																																																																																																																																										
REQUESTED COMPLETION DATE:				PO#:	<i>GRC10684198</i>																																																																																																																																										
PROJECT NAME/STATE: <i>Plant Bowen - Ashford CLR</i>				CONTAINERS																																																																																																																																											
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<i>6/2/17</i>	<i>1110</i>	<i>GW</i>	<i>X</i>	<i>X</i>	<i>BGWC-7</i>	<i>4</i>	<i>1</i>	<i>1</i>	<i>2</i>																																																																																																																																						
<i>6/2/17</i>	<i>1245</i>	<i>GW</i>	<i>X</i>	<i>X</i>	<i>BGWC-10</i>	<i>4</i>	<i>1</i>	<i>1</i>	<i>2</i>																																																																																																																																						
<i>6/2/17</i>	<i>1247</i>	<i>GW</i>	<i>X</i>	<i>X</i>	<i>BGWC-12</i>	<i>6</i>	<i>1</i>	<i>1</i>	<i>4</i>																																																																																																																																						
<i>6/2/17</i>	<i>---</i>	<i>GW</i>	<i>X</i>	<i>X</i>	<i>Dwp-3</i>	<i>4</i>	<i>1</i>	<i>1</i>	<i>2</i>																																																																																																																																						
<i>6/2/17</i>	<i>1400</i>	<i>W</i>	<i>X</i>	<i>X</i>	<i>EQBL060217</i>	<i>4</i>	<i>1</i>	<i>1</i>	<i>2</i>																																																																																																																																						
<i>6/2/17</i>	<i>1410</i>	<i>W</i>	<i>X</i>	<i>X</i>	<i>FSL060217</i>	<i>4</i>	<i>1</i>	<i>1</i>	<i>2</i>																																																																																																																																						
SAMPLED BY AND TITLE: <i>Robert Mull / Michael Patanku</i>				DATE/TIME: <i>6/2/17 1445</i>	RELINQUISHED BY: <i>[Signature]</i>				DATE/TIME: <i>6/2/17 1550</i>	FOR LAB USE ONLY																																																																																																																																					
RECEIVED BY: <i>[Signature]</i>				DATE/TIME: <i>6/2/17 1650</i>	RECEIVED BY LAB: <i>[Signature]</i>				DATE/TIME: <i>6/2/17 1650</i>	LAB #: <i>AAF0126</i>																																																																																																																																					
pH checked: <i>NA</i>				Temperature: <i>72</i> Min: <i>72</i> Max: <i>72</i>	SAMPLE SHIPPED VIA: UPS <input checked="" type="checkbox"/> FED-EX <input type="checkbox"/> USPS <input type="checkbox"/> COURIER <input type="checkbox"/> CLIENT <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> FS <input type="checkbox"/>				Entered into LIMS: <i>[Signature]</i>																																																																																																																																						
Custody Seal: <i>Intact</i>				Custody Seal: <i>Intact</i>				E of Coolers: <i>0</i>				Cooler ID: <i>N/A</i>				Tracking #: <i>[Blank]</i>																																																																																																																															



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 6/20/2017  
Worklist: 36182  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
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	

Laboratory Control Sample Assessment		
	LCSD (Y or N)?	N
	LCS36182	LCSD36182
Count Date:	6/21/2017	
Spike I.D.:	13-033	
Spike Concentration (pCi/mL):	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	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.168	
Numerical Performance Indicator:	-2.41	
Percent Recovery:	89.12%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30220781003	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30220781003DUP	
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	30220781003
Duplicate RPD:	122.54%	30220781003DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: JLW  
Date: 6/16/2017  
Worklist: 36133  
Matrix: DW

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

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	

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS36133	LCS036133
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):	0.435	
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 Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30221115001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30221115001DUP	
Sample Result (pCi/L, g, F):	0.557	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.324	
Sample Duplicate Result (pCi/L, g, F):	0.155	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.381	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.576	
Duplicate RPD:	112.96%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.



June 26, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAF0227 Plant Bowen  
Pace Project No.: 30221033

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on June 08, 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: AAF0227 Plant Bowen  
Pace Project No.: 30221033

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAF0227 Plant Bowen

Pace Project No.: 30221033

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30221033001	BGWC-30	Water	06/05/17 10:35	06/08/17 10:15
30221033002	BGWC-22	Water	06/05/17 12:40	06/08/17 10:15
30221033003	BGWC-24	Water	06/05/17 12:40	06/08/17 10:15
30221033004	BGWC-23	Water	06/05/17 14:22	06/08/17 10:15

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### SAMPLE ANALYTE COUNT

Project: AAF0227 Plant Bowen

Pace Project No.: 30221033

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30221033001	BGWC-30	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30221033002	BGWC-22	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30221033003	BGWC-24	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1
30221033004	BGWC-23	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	CMC	1

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAF0227 Plant Bowen

Pace Project No.: 30221033

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.0481 ± 0.161 (0.406)</b> C:87% T:NA	pCi/L	06/21/17 08:15	13982-63-3	
Radium-228		EPA 9320	<b>0.812 ± 0.404 (0.695)</b> C:77% T:84%	pCi/L	06/21/17 15:14	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.860 ± 0.565 (1.10)</b>	pCi/L	06/23/17 12:43	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>1.15 ± 0.400 (0.359)</b> C:92% T:NA	pCi/L	06/21/17 08:15	13982-63-3	
Radium-228		EPA 9320	<b>0.447 ± 0.440 (0.909)</b> C:71% T:79%	pCi/L	06/21/17 15:14	15262-20-1	
Total Radium		Total Radium Calculation	<b>1.60 ± 0.840 (1.27)</b>	pCi/L	06/23/17 12:43	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>1.47 ± 0.470 (0.409)</b> C:86% T:NA	pCi/L	06/21/17 08:15	13982-63-3	
Radium-228		EPA 9320	<b>1.39 ± 0.487 (0.676)</b> C:81% T:79%	pCi/L	06/21/17 15:14	15262-20-1	
Total Radium		Total Radium Calculation	<b>2.86 ± 0.957 (1.09)</b>	pCi/L	06/23/17 12:43	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.674 ± 0.356 (0.553)</b> C:90% T:NA	pCi/L	06/21/17 08:16	13982-63-3	
Radium-228		EPA 9320	<b>0.656 ± 0.388 (0.715)</b> C:75% T:86%	pCi/L	06/21/17 15:14	15262-20-1	
Total Radium		Total Radium Calculation	<b>1.33 ± 0.744 (1.27)</b>	pCi/L	06/23/17 12:43	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0227 Plant Bowen

Pace Project No.: 30221033

---

QC Batch:	261654	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30221033001, 30221033002, 30221033003, 30221033004		

---

METHOD BLANK:	1288485	Matrix:	Water
Associated Lab Samples:	30221033001, 30221033002, 30221033003, 30221033004		

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: AAF0227 Plant Bowen

Pace Project No.: 30221033

QC Batch: 261827 Analysis Method: EPA 9315

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

Associated Lab Samples: 30221033001, 30221033002, 30221033003, 30221033004

METHOD BLANK: 1289194 Matrix: Water

Associated Lab Samples: 30221033001, 30221033002, 30221033003, 30221033004

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: AAF0227 Plant Bowen

Pace Project No.: 30221033

### 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

30221033



Workorder: AAF0227

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 6/30/2017

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-30	G	6/5/2017 10:35	AAF0227-01	GW	2				X	001
2	BGWC-22	G	6/5/2017 12:40	AAF0227-02	GW	2				X	002
3	BGWC-24	G	6/5/2017 12:40	AAF0227-03	GW	2				X	003
4	BGWC-23	G	6/5/2017 14:22	AAF0227-04	GW	2				X	004
5											
6											
7											
8											
9											
10											

WO#: 30221033  
  
 30221033

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1				6/8/17 10:15	
2					
3					

Cooler Temperature on Receipt 11A °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 Services, LLC - Atlanta GA  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:				ANALYSIS REQUESTED										L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:				CONTAINER TYPE:														
REPORT TO:				PRESERVATION:														
REQUESTED COMPLETION DATE:				# of														
Southern Company Services				CONTAINERS ↓ Metals AP, III + IV EPA 600/6-94 EPA 747D CI, F, SO <sub>4</sub> EPA 300 TDS EPA 1540L Rad. um 226 + 228 SW-846 9315 + 9320										P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	1 - HCl, ≤6°C 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C 3 - HNO <sub>3</sub> 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen			
241 Ralph McGill Blvd SE Bldg 85 Atlanta, GA 30308															*MATRIX CODES:			
PROJECT NAME/STATE:															DW - DRINKING WATER S - SOIL			
PROJECT #:															WW - WASTEWATER SL - SLUDGE			
Plant Bowen-Ash Pond CLR				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 O M P	G R A B	SAMPLE IDENTIFICATION	# of												
6/5/17	1035	GW		X	BGWL-30	4	1	1	2								1	
6/5/17	1240	GW		X	BGWL-22	4	1	1	2								2	
6/5/17	1240	GW		X	BGWL-24	4	1	1	2								3	
6/5/17	1427	GW		X	BGWL-23	4	1	1	2								4	
SAMPLED BY AND TITLE:				DATE/TIME:		RELINQUISHED BY:				DATE/TIME:		FOR LAB USE ONLY						
Tobias Mull/Michael Patinkin				6/5/17 1545		Kurt B. Bell				6/5/17 1815		LAB #: A11F-0227						
RECEIVED BY:				DATE/TIME:		RELINQUISHED BY:				DATE/TIME:		Entered into LIMS:						
Luzia Mardila				6/5/17 1815		Mike Nguyen				6/5/17 1424		GAL						
RECEIVED BY LAB:				DATE/TIME:		SAMPLE SHIPPED VIA:				CLIENT		OTHER FS						
Pace Analytical				6/5/17 1545		UPS FED-EX USPS COURIER				Pace Analytical								
Temperature:				Custody Seal:		# of Coolers				Cooler ID:								
Min: 4.5°C Max:				Intact Broken Not Present: N/A														

Sample Condition Upon Receipt Pittsburgh



30221033-1

Client Name: PACE - ATLANTA Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 0812 5104 8435

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing to 6°C

Date and Initials of person examining contents: ZH 6/8/17

Comments:	Yes	No	N/A	
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. <u>ZH 6/8/17</u>
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. <u>ZH 6/8/17</u>
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
-Includes date/time/ID Matrix: <u>WT</u>				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
-Pace Containers Used:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<u>Pit - 2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>ZH</u> Date/time of preservation: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	16.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>ZH</u> Date: <u>6/8/17</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



Test: Ra-226  
Analyst: JC2  
Date: 6/20/2017  
Worklist: 36182  
Matrix: DW

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

Method Blank Assessment	
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

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS36182	LCS36182
Count Date:	6/21/2017	
Spike I.D.:	13-033	
Spike Concentration (pCi/mL):	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	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.168	
Numerical Performance Indicator:	-2.41	
Percent Recovery:	89.12%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30220781003	
Duplicate Sample I.D.:	30220781003DUP	
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***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Signature*



## Quality Control Sample Performance Assessment

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

Test: Ra-228  
Analyst: JLW  
Date: 6/16/2017  
Worklist: 36133  
Matrix: DW

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

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS36133	LCSD36133
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):		0.435	
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 Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30221115001	
Duplicate Sample I.D.:	30221115001DUP	
Sample Result (pCi/L, g, F):	0.557	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.324	
Sample Duplicate Result (pCi/L, g, F):	0.155	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.381	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.576	30221115001
Duplicate RPD:	112.96%	30221115001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Signature*  
6/20/17



June 27, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAF0279 Plant Bowen  
Pace Project No.: 30221116

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on June 09, 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: AAF0279 Plant Bowen  
Pace Project No.: 30221116

### 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

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: AAF0279 Plant Bowen

Pace Project No.: 30221116

<b>Lab ID</b>	<b>Sample ID</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Date Received</b>
30221116001	BGWC-14	Water	06/06/17 09:22	06/09/17 10:05

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAF0279 Plant Bowen

Pace Project No.: 30221116

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30221116001	BGWC-14	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: AAF0279 Plant Bowen

Pace Project No.: 30221116

**Sample: BGWC-14**      **Lab ID: 30221116001**      Collected: 06/06/17 09:22      Received: 06/09/17 10:05      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>3.45 ± 0.792 (0.351)</b> <b>C:89% T:NA</b>	pCi/L	06/21/17 07:57	13982-63-3	
Radium-228	EPA 9320	<b>1.23 ± 0.548 (0.939)</b> <b>C:80% T:91%</b>	pCi/L	06/24/17 15:42	15262-20-1	
Total Radium	Total Radium Calculation	<b>4.68 ± 1.34 (1.29)</b>	pCi/L	06/26/17 14:19	7440-14-4	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAF0279 Plant Bowen

Pace Project No.: 30221116

QC Batch: 261656

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30221116001

METHOD BLANK: 1288490

Matrix: Water

Associated Lab Samples: 30221116001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	1.00 ± 0.494 (0.857) C:87% T:75%	pCi/L	06/24/17 15:41	

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: AAF0279 Plant Bowen

Pace Project No.: 30221116

QC Batch: 261828

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30221116001

METHOD BLANK: 1289195

Matrix: Water

Associated Lab Samples: 30221116001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0822 ± 0.158 (0.364) C:90% T:NA	pCi/L	06/21/17 08:17	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: AAF0279 Plant Bowen

Pace Project No.: 30221116

### 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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30221116 - 7

Chain of Custody



Workorder: AAF0279

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 7/3/2017

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													
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total		LAB USE ONLY			
1	BGWC-14	G	6/6/2017 9:22	AAF0279-01	GW	HNO3	2				X			001	
2															
3															
4															
5															
6															
7															
8															
9															
10															
Transfers	Released By	Date/Time	Received By	Date/Time	Comments										
1	M. RAHMAN	6/8/17	Allyson R. Muchoney	6/9/17	1005										
2															
3															

WO#: 30221116

Cooler Temperature on Receipt	<u>NA</u> °C	Custody Seal Y or N	<u>N</u>	Received on Ice Y or N	<u>N</u>	Sample Intact Y or N	<u>N</u>
-------------------------------	--------------	---------------------	----------	------------------------	----------	----------------------	----------

\*\*\*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.

30221116

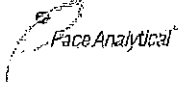
CHAIN OF CUSTODY RECORD



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: <i>Southern Company Services</i>		ANALYSIS REQUESTED						L A B I D E M E N T R I E S	CONTAINER TYPE		PRESERVATION					
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <i>241 Ralph McGill Blvd SE 310185 Atlanta, GA 30308</i>		CONTAINER TYPE: <i>4</i>	P	P	P					P - PLASTIC	1 - HCl, ≤6°C					
REPORT TO: <i>Joie Abraham</i>		PRESERVATION:	3	7	3					A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C					
REQUESTED COMPLETION DATE: <i>6/10/17</i>		# of								G - CLEAR GLASS	3 - HNO <sub>3</sub>					
PROJECT NAME/STATE: <i>Plant Bowen-Ash Pond CCR</i>		C O N T A I N E R S	<i>Mutak App. III &amp; IV EPA 1601D + EPA 1470 U.F. 504 EPA 300 TDS SM 2540L Rad um 226 + 228 SW-946 9315 + 9320</i>								V - VOA VIAL	4 - NaOH, ≤6°C				
PROJECT #:														S - STERILE	5 - NaOH/ZnAc, ≤6°C	
Collection DATE	Collection TIME						MATRIX CODE		C O M P	G R A B	SAMPLE IDENTIFICATION			O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
															7 - ≤6°C not frozen	
<i>6/6/17</i>	<i>0922</i>						<i>GW</i>		<i>X</i>	<i>X</i>	<i>BGWL-14</i>	<i>4</i>	<i>1</i>	*MATRIX CODES:		
<i>6/6/17</i>	<i>1050</i>						<i>GW</i>		<i>X</i>	<i>X</i>	<i>BGWL-15</i>	<i>2</i>	<i>1</i>	DW - DRINKING WATER	S - SOIL	
													WW - WASTEWATER	SL - SLUDGE		
													GW - GROUNDWATER	SD - SOLD		
													SW - SURFACE WATER	A - AIR		
													ST - STORM WATER	L - LIQUID		
								W - WATER	P - PRODUCT							
REMARKS/ADDITIONAL INFORMATION																
SAMPLED BY AND TITLE: <i>Robert Mull/Kevin Stelzer</i>		DATE/TIME: <i>6/6/17 1610</i>	RELINQUISHED BY: <i>KLS</i>			DATE/TIME: <i>6/10/17 0745</i>	FOR LAB USE ONLY									
RECEIVED BY:		DATE/TIME:	RELINQUISHED BY:			DATE/TIME:	LAB #: <i>AAF0239</i>									
RECEIVED BY LAB: <i>Maabman</i>		DATE/TIME: <i>6/10/17 0745</i>	SAMPLE SHIPPED VIA: UPS <input type="checkbox"/> FED-EX <input type="checkbox"/> USPS <input type="checkbox"/> COURIER <input checked="" type="checkbox"/> CLIENT <input type="checkbox"/> OTHER <input type="checkbox"/> FS <input type="checkbox"/>			Entered into LIMS: <i>MR</i>										
pH checked: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA		Temp checked: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	Custody Seal: Intact <input type="checkbox"/> Broken <input type="checkbox"/> Not Present <input checked="" type="checkbox"/> N/A			# of Coolers: <input checked="" type="checkbox"/>		Cooler ID:								



Client Name: Pace GA Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 081251048527

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ARM 6/9/17

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.
Filtered volume received for Dissolved tests			/	14.
All containers have been checked for preservation.	/			15.
All containers needing preservation are found to be in compliance with EPA recommendation.	/			<u>PH L2</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>ARM</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>ARM</u> Date: <u>6/9/17</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.**

Test: Ra-228  
Analyst: JLW  
Date: 6/21/2017  
Worklist: 36134  
Matrix: DW

Method Blank Assessment	
MB Sample ID	1288490
MB concentration:	1.004
M/B Counting Uncertainty:	0.460
MB MDC:	0.857
MB Numerical Performance Indicator:	4.28
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Fail*

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS36134	LCS36134
Count Date:	6/24/2017		
Spike I.D.:	17-005		
Spike Concentration (pCi/mL):	24.212		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.801		
Target Conc. (pCi/L, g, F):	6.047		
Uncertainty (Calculated):	0.435		
Result (pCi/L, g, F):	6.615		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.830		
Numerical Performance Indicator:	1.19		
Percent Recovery:	109.39%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30221115008	
Duplicate Sample I.D.:	30221115008DUP	
Sample Result (pCi/L, g, F):	0.437	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.426	
Sample Duplicate Result (pCi/L, g, F):	0.553	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.486	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.351	30221115008
Duplicate RPD:	23.37%	30221115008DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

**Comments:**

\*If the lowest activity sample in this batch is greater than ten times the blank value, the blank is acceptable; otherwise this batch must be re-prepped.

*Amurath*



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 6/20/2017  
Worklist: 36183  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1289195
MB concentration:	0.082
M/B Counting Uncertainty:	0.158
MB MDC:	0.364
MB Numerical Performance Indicator:	1.02
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS36183	LCS036183
Count Date:	6/21/2017	
Spike I.D.:	13-033	
Spike Concentration (pCi/mL):	19.847	
Volume Used (mL):	0.40	
Aliquot Volume (L, g, F):	0.507	
Target Conc. (pCi/L, g, F):	15.664	
Uncertainty (Calculated):	0.737	
Result (pCi/L, g, F):	13.692	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.155	
Numerical Performance Indicator:	-2.82	
Percent Recovery:	87.41%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30221115008	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30221115008DUP	
Sample Result (pCi/L, g, F):	0.334	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.279	
Sample Duplicate Result (pCi/L, g, F):	0.167	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.223	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.915	30221115008
Duplicate RPD:	66.49%	30221115008DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*Check*



**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: AAE0737**

**June 01, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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  
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Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 01, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-30	AAE0737-01	Ground Water	05/22/17 10:04	05/23/17 13:40



**PACE ANALYTICAL SERVICES, LLC.**

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June 01, 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.



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 01, 2017

Report No.: AAE0737

Project: CCR Event

Client ID: BGWC-30

Lab Number ID: AAE0737-01

Date/Time Sampled: 5/22/2017 10:04:00AM

Date/Time Received: 5/23/2017 1:40:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2470	25	10	mg/L	SM 2540 C		1	05/24/17 14:43	05/24/17 14:43	7050783	JPT
<b>Inorganic Anions</b>											
Chloride	890	25	1.3	mg/L	EPA 300.0		100	05/24/17 09:27	05/26/17 18:26	7050774	SLH
Fluoride	0.05	0.30	0.004	mg/L	EPA 300.0	J	1	05/24/17 09:27	05/24/17 13:53	7050774	SLH
Sulfate	460	100	9.2	mg/L	EPA 300.0		100	05/24/17 09:27	05/26/17 18:26	7050774	SLH
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	05/24/17 08:30	05/25/17 20:35	7050763	CSW
Arsenic	0.0034	0.0050	0.0004	mg/L	EPA 6020B	J	1	05/24/17 08:30	05/25/17 20:35	7050763	CSW
Barium	0.197	0.100	0.0027	mg/L	EPA 6020B		10	05/24/17 08:30	05/31/17 09:46	7050763	CSW
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	05/24/17 08:30	05/25/17 20:35	7050763	CSW
Boron	26.0	2.00	0.302	mg/L	EPA 6020B		50	05/24/17 08:30	05/25/17 20:40	7050763	CSW
Cadmium	0.0003	0.0010	0.00006	mg/L	EPA 6020B	J	1	05/24/17 08:30	05/25/17 20:35	7050763	CSW
Calcium	885	250	5.22	mg/L	EPA 6020B		500	05/24/17 08:30	05/30/17 15:04	7050763	CSW
Chromium	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	05/24/17 08:30	05/25/17 20:35	7050763	CSW
Cobalt	0.0008	0.0100	0.0005	mg/L	EPA 6020B	J	1	05/24/17 08:30	05/25/17 20:35	7050763	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	05/24/17 08:30	05/25/17 20:35	7050763	CSW
Molybdenum	0.0208	0.0100	0.0006	mg/L	EPA 6020B		1	05/24/17 08:30	05/25/17 20:35	7050763	CSW
Selenium	0.0094	0.0100	0.0014	mg/L	EPA 6020B	J	1	05/24/17 08:30	05/25/17 20:35	7050763	CSW
Thallium	0.0008	0.0010	0.00005	mg/L	EPA 6020B	J	1	05/24/17 08:30	05/25/17 20:35	7050763	CSW
Lithium	0.0167	0.0500	0.0011	mg/L	EPA 6020B	J	1	05/24/17 08:30	05/25/17 20:35	7050763	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	05/30/17 09:25	05/30/17 14:13	7050854	MTC





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June 01, 2017

**Report No.: AAE0737**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050783 - SM 2540 C</b>											
<b>Blank (7050783-BLK1)</b>						Prepared & Analyzed: 05/24/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7050783-BS1)</b>						Prepared & Analyzed: 05/24/17					
Total Dissolved Solids	372	25	10	mg/L	400.00		93	84-108			
<b>Duplicate (7050783-DUP1)</b>			<b>Source: AAE0736-03</b>			Prepared & Analyzed: 05/24/17					
Total Dissolved Solids	253	25	10	mg/L		263			4	10	



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**Report No.: AAE0737**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050774 - EPA 300.0</b>											
<b>Blank (7050774-BLK1)</b>						Prepared & Analyzed: 05/24/17					
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 (7050774-BS1)</b>						Prepared & Analyzed: 05/24/17					
Chloride	9.92	0.25	0.01	mg/L	10.020		99	90-110			
Fluoride	9.74	0.30	0.004	mg/L	10.020		97	90-110			
Sulfate	10.0	1.0	0.09	mg/L	10.050		100	90-110			
<b>Matrix Spike (7050774-MS1)</b>						Source: AAE0736-01 Prepared & Analyzed: 05/24/17					
Chloride	15.0	0.25	0.01	mg/L	10.020	4.57	104	90-110			
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.12	103	90-110			
Sulfate	75.4	1.0	0.09	mg/L	10.050	72.9	24	90-110			QM-02
<b>Matrix Spike (7050774-MS2)</b>						Source: AAE0738-03 Prepared & Analyzed: 05/24/17					
Chloride	11.6	0.25	0.01	mg/L	10.020	1.95	97	90-110			
Fluoride	9.96	0.30	0.004	mg/L	10.020	0.02	99	90-110			
Sulfate	11.6	1.0	0.09	mg/L	10.050	1.52	100	90-110			
<b>Matrix Spike Dup (7050774-MSD1)</b>						Source: AAE0736-01 Prepared & Analyzed: 05/24/17					
Chloride	15.0	0.25	0.01	mg/L	10.020	4.57	104	90-110	0.2	15	
Fluoride	10.4	0.30	0.004	mg/L	10.020	0.12	103	90-110	0.3	15	
Sulfate	75.4	1.0	0.09	mg/L	10.050	72.9	25	90-110	0.04	15	QM-02





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June 01, 2017

**Report No.: AAE0737**

**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 7050763 - EPA 3005A**

**Blank (7050763-BLK1)**

Prepared: 05/24/17 Analyzed: 05/25/17

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							

**LCS (7050763-BS1)**

Prepared: 05/24/17 Analyzed: 05/25/17

Antimony	0.110	0.0030	0.0003	mg/L	0.10000		110	80-120			
Arsenic	0.103	0.0050	0.0004	mg/L	0.10000		103	80-120			
Barium	0.107	0.0100	0.0003	mg/L	0.10000		107	80-120			
Beryllium	0.102	0.0030	0.00007	mg/L	0.10000		102	80-120			
Boron	1.01	0.0400	0.0060	mg/L	1.0000		101	80-120			
Cadmium	0.103	0.0010	0.00006	mg/L	0.10000		103	80-120			
Calcium	1.01	0.500	0.0104	mg/L	1.0000		101	80-120			
Chromium	0.105	0.0100	0.0003	mg/L	0.10000		105	80-120			
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000		101	80-120			
Copper	0.102	0.0250	0.0003	mg/L	0.10000		102	80-120			
Lead	0.104	0.0050	0.00007	mg/L	0.10000		104	80-120			
Molybdenum	0.111	0.0100	0.0006	mg/L	0.10000		111	80-120			
Nickel	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120			
Selenium	0.105	0.0100	0.0014	mg/L	0.10000		105	80-120			
Silver	0.106	0.0100	0.0003	mg/L	0.10000		106	80-120			
Thallium	0.106	0.0010	0.00005	mg/L	0.10000		106	80-120			
Vanadium	0.104	0.0100	0.0014	mg/L	0.10000		104	80-120			
Zinc	0.103	0.0100	0.0013	mg/L	0.10000		103	80-120			
Lithium	0.102	0.0500	0.0011	mg/L	0.10000		102	80-120			



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June 01, 2017

**Report No.: AAE0737**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050763 - EPA 3005A</b>											
<b>Matrix Spike (7050763-MS1)</b>			<b>Source: AAE0737-01</b>				Prepared: 05/24/17 Analyzed: 05/25/17				
Antimony	0.112	0.0030	0.0003	mg/L	0.10000	ND	112	75-125			
Arsenic	0.112	0.0050	0.0004	mg/L	0.10000	0.0034	108	75-125			
Barium	0.287	0.100	0.0027	mg/L	0.10000	0.197	90	75-125			
Beryllium	0.0923	0.0030	0.00007	mg/L	0.10000	ND	92	75-125			
Boron	26.8	2.00	0.302	mg/L	1.0000	26.0	79	75-125			
Cadmium	0.104	0.0010	0.00006	mg/L	0.10000	0.0003	103	75-125			
Calcium	909	250	5.22	mg/L	1.0000	885	NR	75-125			QM-02
Chromium	0.107	0.0100	0.0003	mg/L	0.10000	0.0004	107	75-125			
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	0.0008	101	75-125			
Copper	0.0949	0.0250	0.0003	mg/L	0.10000	0.0003	95	75-125			
Lead	0.0977	0.0050	0.00007	mg/L	0.10000	ND	98	75-125			
Molybdenum	0.133	0.0100	0.0006	mg/L	0.10000	0.0208	112	75-125			
Nickel	0.102	0.0100	0.0003	mg/L	0.10000	0.0027	99	75-125			
Selenium	0.118	0.0100	0.0014	mg/L	0.10000	0.0094	109	75-125			
Silver	0.0960	0.0100	0.0003	mg/L	0.10000	ND	96	75-125			
Thallium	0.105	0.0010	0.00005	mg/L	0.10000	0.0008	105	75-125			
Vanadium	0.110	0.0100	0.0014	mg/L	0.10000	ND	110	75-125			
Zinc	0.0985	0.0100	0.0013	mg/L	0.10000	0.0018	97	75-125			
Lithium	0.109	0.0500	0.0011	mg/L	0.10000	0.0167	92	75-125			
<b>Matrix Spike Dup (7050763-MSD1)</b>			<b>Source: AAE0737-01</b>				Prepared: 05/24/17 Analyzed: 05/25/17				
Antimony	0.111	0.0030	0.0003	mg/L	0.10000	ND	111	75-125	0.6	20	
Arsenic	0.111	0.0050	0.0004	mg/L	0.10000	0.0034	108	75-125	0.8	20	
Barium	0.290	0.100	0.0027	mg/L	0.10000	0.197	93	75-125	1	20	
Beryllium	0.0951	0.0030	0.00007	mg/L	0.10000	ND	95	75-125	3	20	
Boron	27.1	2.00	0.302	mg/L	1.0000	26.0	114	75-125	1	20	
Cadmium	0.103	0.0010	0.00006	mg/L	0.10000	0.0003	103	75-125	0.9	20	
Calcium	926	250	5.22	mg/L	1.0000	885	NR	75-125	2	20	QM-02
Chromium	0.107	0.0100	0.0003	mg/L	0.10000	0.0004	107	75-125	0.008	20	
Cobalt	0.102	0.0100	0.0005	mg/L	0.10000	0.0008	101	75-125	0.4	20	
Copper	0.0961	0.0250	0.0003	mg/L	0.10000	0.0003	96	75-125	1	20	
Lead	0.0977	0.0050	0.00007	mg/L	0.10000	ND	98	75-125	0.09	20	
Molybdenum	0.133	0.0100	0.0006	mg/L	0.10000	0.0208	112	75-125	0.03	20	
Nickel	0.101	0.0100	0.0003	mg/L	0.10000	0.0027	99	75-125	0.2	20	
Selenium	0.119	0.0100	0.0014	mg/L	0.10000	0.0094	110	75-125	0.9	20	
Silver	0.0960	0.0100	0.0003	mg/L	0.10000	ND	96	75-125	0.04	20	
Thallium	0.103	0.0010	0.00005	mg/L	0.10000	0.0008	103	75-125	2	20	
Vanadium	0.110	0.0100	0.0014	mg/L	0.10000	ND	110	75-125	0.005	20	
Zinc	0.0991	0.0100	0.0013	mg/L	0.10000	0.0018	97	75-125	0.6	20	
Lithium	0.111	0.0500	0.0011	mg/L	0.10000	0.0167	94	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 01, 2017

**Report No.: AAE0737**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050763 - EPA 3005A</b>											
<b>Post Spike (7050763-PS1)</b>			<b>Source: AAE0737-01</b>			<b>Prepared: 05/24/17 Analyzed: 05/25/17</b>					
Antimony	111			ug/L	100.00	0.177	111	80-120			
Arsenic	109			ug/L	100.00	3.44	105	80-120			
Barium	285			ug/L	100.00	197	88	80-120			
Beryllium	93.0			ug/L	100.00	0.0211	93	80-120			
Boron	28300			ug/L	1000.0	26000	228	80-120			QM-02
Cadmium	102			ug/L	100.00	0.299	101	80-120			
Calcium	900000			ug/L	1000.0	885000	NR	80-120			QM-02
Chromium	108			ug/L	100.00	0.358	108	80-120			
Cobalt	102			ug/L	100.00	0.799	101	80-120			
Copper	94.0			ug/L	100.00	0.315	94	80-120			
Lead	97.3			ug/L	100.00	0.0385	97	80-120			
Molybdenum	133			ug/L	100.00	20.8	112	80-120			
Nickel	101			ug/L	100.00	2.67	98	80-120			
Selenium	118			ug/L	100.00	9.41	108	80-120			
Silver	96.1			ug/L	100.00	0.0111	96	80-120			
Thallium	102			ug/L	100.00	0.778	101	80-120			
Vanadium	110			ug/L	100.00	0.754	110	80-120			
Zinc	96.5			ug/L	100.00	1.80	95	80-120			
Lithium	111			ug/L	100.00	16.7	95	80-120			

**Batch 7050854 - EPA 7470A**

<b>Blank (7050854-BLK1)</b>					<b>Prepared &amp; Analyzed: 05/30/17</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7050854-BS1)</b>					<b>Prepared &amp; Analyzed: 05/30/17</b>						
Mercury	0.00236	0.00050	0.000041	mg/L	2.5000E-3		94	80-120			



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 01, 2017

**Report No.: AAE0737**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7050854 - EPA 7470A</b>											
<b>Matrix Spike (7050854-MS1)</b>			<b>Source: AAE0770-02</b>			<b>Prepared &amp; Analyzed: 05/30/17</b>					
Mercury	0.00240	0.00050	0.000041	mg/L	2.5000E-3	ND	96	75-125			
<b>Matrix Spike Dup (7050854-MSD1)</b>			<b>Source: AAE0770-02</b>			<b>Prepared &amp; Analyzed: 05/30/17</b>					
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125	2	20	
<b>Post Spike (7050854-PS1)</b>			<b>Source: AAE0770-02</b>			<b>Prepared &amp; Analyzed: 05/30/17</b>					
Mercury	1.72			ug/L	1.6667	-0.00163	103	80-120			



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Attention: Mr. Joju Abraham

June 01, 2017

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## Legend

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### 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

**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.**

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

**LOG-IN CHECKLIST**

**Printed: 5/24/2017 9:38:25AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 05/23/17 13:40

**Work Order:** AAE0737

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 1

**#Containers:** 4

**Minimum Temp(C):** 1.3

**Maximum Temp(C):** 1.3

**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:**



**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: AAF0227**

**June 15, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

June 15, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-30	AAF0227-01	Ground Water	06/05/17 10:35	06/06/17 15:45
BGWC-22	AAF0227-02	Ground Water	06/05/17 12:40	06/06/17 15:45
BGWC-24	AAF0227-03	Ground Water	06/05/17 12:40	06/06/17 15:45
BGWC-23	AAF0227-04	Ground Water	06/05/17 14:22	06/06/17 15:45



**PACE ANALYTICAL SERVICES, LLC.**

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Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 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

June 15, 2017

Report No.: AAF0227

Project: CCR Event

Client ID: BGWC-30

Lab Number ID: AAF0227-01

Date/Time Sampled: 6/5/2017 10:35:00AM

Date/Time Received: 6/6/2017 3:45:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2780	25	10	mg/L	SM 2540 C		1	06/09/17 18:30	06/09/17 18:30	7060274	JPT
<b>Inorganic Anions</b>											
Chloride	870	5.0	0.26	mg/L	EPA 300.0		20	06/08/17 10:45	06/09/17 13:48	7060254	RLC
Fluoride	0.32	0.30	0.004	mg/L	EPA 300.0		1	06/08/17 10:45	06/08/17 19:02	7060254	RLC
Sulfate	440	20	1.8	mg/L	EPA 300.0		20	06/08/17 10:45	06/09/17 13:48	7060254	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Arsenic	0.0039	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Barium	0.201	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Boron	18.6	2.00	0.302	mg/L	EPA 6020B		50	06/08/17 09:20	06/13/17 11:36	7060221	KLH
Cadmium	0.0003	0.0010	0.00006	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Calcium	413	25.0	0.522	mg/L	EPA 6020B	B-01	50	06/08/17 09:20	06/09/17 20:45	7060221	KLH
Chromium	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Cobalt	0.0008	0.0100	0.0005	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Molybdenum	0.0191	0.0100	0.0006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Selenium	0.0118	0.0100	0.0014	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Thallium	0.0007	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 20:39	7060221	KLH
Lithium	0.0177	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:28	7060221	KLH
Mercury	0.00006	0.00050	0.000041	mg/L	EPA 7470A	J	1	06/09/17 08:50	06/09/17 13:07	7060158	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 2017

Report No.: AAF0227

Project: CCR Event

Client ID: BGWC-22

Lab Number ID: AAF0227-02

Date/Time Sampled: 6/5/2017 12:40:00PM

Date/Time Received: 6/6/2017 3:45:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2530	25	10	mg/L	SM 2540 C		1	06/09/17 18:30	06/09/17 18:30	7060274	JPT
<b>Inorganic Anions</b>											
Chloride	530	12	0.65	mg/L	EPA 300.0		50	06/08/17 10:45	06/09/17 14:08	7060254	RLC
Fluoride	0.29	0.30	0.004	mg/L	EPA 300.0	J	1	06/08/17 10:45	06/08/17 21:06	7060254	RLC
Sulfate	700	50	4.6	mg/L	EPA 300.0		50	06/08/17 10:45	06/09/17 14:08	7060254	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Arsenic	0.0035	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Barium	0.0875	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Boron	9.19	2.00	0.302	mg/L	EPA 6020B		50	06/08/17 09:20	06/13/17 11:42	7060221	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Calcium	398	25.0	0.522	mg/L	EPA 6020B	B-01	50	06/08/17 09:20	06/09/17 20:56	7060221	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Cobalt	0.0112	0.0100	0.0005	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Molybdenum	0.0710	0.0100	0.0006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Selenium	0.0018	0.0100	0.0014	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Thallium	0.0006	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 20:51	7060221	KLH
Lithium	0.0114	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:34	7060221	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/09/17 08:50	06/09/17 13:14	7060158	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 2017

Report No.: AAF0227

Project: CCR Event

Client ID: BGWC-24

Lab Number ID: AAF0227-03

Date/Time Sampled: 6/5/2017 12:40:00PM

Date/Time Received: 6/6/2017 3:45:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	5660	25	10	mg/L	SM 2540 C		1	06/09/17 18:30	06/09/17 18:30	7060274	JPT
<b>Inorganic Anions</b>											
Chloride	1900	50	2.6	mg/L	EPA 300.0		200	06/08/17 10:45	06/10/17 00:07	7060254	RLC
Fluoride	0.05	0.30	0.004	mg/L	EPA 300.0	J	1	06/08/17 10:45	06/08/17 21:27	7060254	RLC
Sulfate	700	20	1.8	mg/L	EPA 300.0		20	06/08/17 10:45	06/09/17 14:29	7060254	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Arsenic	0.0072	0.0050	0.0004	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Barium	0.135	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Boron	29.0	2.00	0.302	mg/L	EPA 6020B		50	06/08/17 09:20	06/13/17 12:06	7060221	KLH
Cadmium	0.0035	0.0010	0.00006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Calcium	1080	250	26.1	mg/L	EPA 6020B	B-01	2500	06/08/17 09:20	06/13/17 12:00	7060221	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Cobalt	0.0034	0.0100	0.0005	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Lead	0.00007	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Molybdenum	0.0015	0.0100	0.0006	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Selenium	0.0033	0.0100	0.0014	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Thallium	0.0004	0.0010	0.00005	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/09/17 21:02	7060221	KLH
Lithium	0.0068	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:51	7060221	KLH
Mercury	0.00013	0.00050	0.000041	mg/L	EPA 7470A	J	1	06/09/17 08:50	06/09/17 13:16	7060158	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 15, 2017

Report No.: AAF0227

Project: CCR Event

Client ID: BGWC-23

Lab Number ID: AAF0227-04

Date/Time Sampled: 6/5/2017 2:22:00PM

Date/Time Received: 6/6/2017 3:45:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2050	25	10	mg/L	SM 2540 C		1	06/09/17 18:30	06/09/17 18:30	7060274	JPT
<b>Inorganic Anions</b>											
Chloride	450	5.0	0.26	mg/L	EPA 300.0		20	06/08/17 10:45	06/12/17 21:56	7060254	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	06/08/17 10:45	06/08/17 21:48	7060254	RLC
Sulfate	480	20	1.8	mg/L	EPA 300.0		20	06/08/17 10:45	06/12/17 21:56	7060254	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Arsenic	0.0043	0.0050	0.0004	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Barium	0.0840	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Beryllium	ND	0.0030	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Boron	6.39	2.00	0.302	mg/L	EPA 6020B		50	06/08/17 09:20	06/13/17 12:11	7060221	KLH
Cadmium	ND	0.0010	0.00006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Calcium	310	25.0	0.522	mg/L	EPA 6020B	B-01	50	06/08/17 09:20	06/09/17 21:19	7060221	KLH
Chromium	ND	0.0100	0.0003	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Cobalt	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Molybdenum	0.0115	0.0100	0.0006	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Selenium	ND	0.0100	0.0014	mg/L	EPA 6020B		1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/08/17 09:20	06/09/17 21:14	7060221	KLH
Lithium	0.0108	0.0500	0.0011	mg/L	EPA 6020B	J	1	06/08/17 09:20	06/10/17 23:57	7060221	KLH
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	06/09/17 08:50	06/09/17 13:18	7060158	MTC



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June 15, 2017

**Report No.: AAF0227**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060274 - SM 2540 C</b>											
<b>Blank (7060274-BLK1)</b>						Prepared & Analyzed: 06/09/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7060274-BS1)</b>						Prepared & Analyzed: 06/09/17					
Total Dissolved Solids	423	25	10	mg/L	400.00		106	84-108			
<b>Duplicate (7060274-DUP1)</b>						Source: AAF0227-04 Prepared & Analyzed: 06/09/17					
Total Dissolved Solids	1940	25	10	mg/L		2050			5	10	



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June 15, 2017

**Report No.: AAF0227**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060254 - EPA 300.0</b>											
<b>Blank (7060254-BLK1)</b>						Prepared & Analyzed: 06/08/17					
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 (7060254-BS1)</b>						Prepared & Analyzed: 06/08/17					
Chloride	9.82	0.25	0.01	mg/L	10.020		98	90-110			
Fluoride	9.93	0.30	0.004	mg/L	10.020		99	90-110			
Sulfate	9.94	1.0	0.09	mg/L	10.050		99	90-110			
<b>Matrix Spike (7060254-MS1)</b>						Source: AAF0227-01 Prepared & Analyzed: 06/08/17					
Chloride	205	0.25	0.01	mg/L	10.020	236	NR	90-110			QM-02
Fluoride	10.1	0.30	0.004	mg/L	10.020	0.32	98	90-110			
Sulfate	247	1.0	0.09	mg/L	10.050	259	NR	90-110			QM-02
<b>Matrix Spike Dup (7060254-MSD1)</b>						Source: AAF0227-01 Prepared & Analyzed: 06/08/17					
Chloride	204	0.25	0.01	mg/L	10.020	236	NR	90-110	0.2	15	QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.32	98	90-110	0.02	15	
Sulfate	246	1.0	0.09	mg/L	10.050	259	NR	90-110	0.02	15	QM-02





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June 15, 2017

**Report No.: AAF0227**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060158 - EPA 7470A</b>											
<b>Blank (7060158-BLK1)</b> Prepared & Analyzed: 06/09/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7060158-BS1)</b> Prepared & Analyzed: 06/09/17											
Mercury	0.00229	0.00050	0.000041	mg/L	2.5000E-3		92	80-120			
<b>Matrix Spike (7060158-MS1)</b> Source: AAF0227-02 Prepared & Analyzed: 06/09/17											
Mercury	0.00236	0.00050	0.000041	mg/L	2.5000E-3	ND	95	75-125			
<b>Matrix Spike Dup (7060158-MSD1)</b> Source: AAF0227-02 Prepared & Analyzed: 06/09/17											
Mercury	0.00242	0.00050	0.000041	mg/L	2.5000E-3	ND	97	75-125	2	20	
<b>Post Spike (7060158-PS1)</b> Source: AAF0227-02 Prepared & Analyzed: 06/09/17											
Mercury	1.71			ug/L	1.6667	0.00050	102	80-120			
<b>Batch 7060221 - EPA 3005A</b>											
<b>Blank (7060221-BLK1)</b> Prepared: 06/08/17 Analyzed: 06/09/17											
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	0.0179	0.500	0.0104	mg/L							J
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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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 2017

**Report No.: AAF0227**

**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 7060221 - EPA 3005A**

**LCS (7060221-BS1)**

Prepared: 06/08/17 Analyzed: 06/09/17

Antimony	0.106	0.0030	0.0003	mg/L	0.10000		106	80-120			
Arsenic	0.104	0.0050	0.0004	mg/L	0.10000		104	80-120			
Barium	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			
Beryllium	0.107	0.0030	0.00007	mg/L	0.10000		107	80-120			
Boron	1.08	0.0400	0.0060	mg/L	1.0000		108	80-120			
Cadmium	0.102	0.0010	0.00006	mg/L	0.10000		102	80-120			
Calcium	0.993	0.500	0.0104	mg/L	1.0000		99	80-120			
Chromium	0.101	0.0100	0.0003	mg/L	0.10000		101	80-120			
Cobalt	0.0939	0.0100	0.0005	mg/L	0.10000		94	80-120			
Copper	0.102	0.0250	0.0003	mg/L	0.10000		102	80-120			
Lead	0.0990	0.0050	0.00007	mg/L	0.10000		99	80-120			
Molybdenum	0.0988	0.0100	0.0006	mg/L	0.10000		99	80-120			
Nickel	0.0985	0.0100	0.0003	mg/L	0.10000		99	80-120			
Selenium	0.0995	0.0100	0.0014	mg/L	0.10000		100	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	0.0953	0.0100	0.0014	mg/L	0.10000		95	80-120			
Zinc	0.105	0.0100	0.0013	mg/L	0.10000		105	80-120			
Lithium	0.109	0.0500	0.0011	mg/L	0.10000		109	80-120			

**Matrix Spike (7060221-MS1)**

Source: AAF0227-01

Prepared: 06/08/17 Analyzed: 06/09/17

Antimony	0.107	0.0030	0.0003	mg/L	0.10000	ND	107	75-125			
Arsenic	0.109	0.0050	0.0004	mg/L	0.10000	0.0039	105	75-125			
Barium	0.296	0.0100	0.0003	mg/L	0.10000	0.201	96	75-125			
Beryllium	0.0956	0.0030	0.00007	mg/L	0.10000	ND	96	75-125			
Boron	19.5	2.00	0.302	mg/L	1.0000	18.6	94	75-125			
Cadmium	0.102	0.0010	0.00006	mg/L	0.10000	0.0003	101	75-125			
Calcium	406	25.0	0.522	mg/L	1.0000	413	NR	75-125			QM-02
Chromium	0.102	0.0100	0.0003	mg/L	0.10000	0.0004	102	75-125			
Cobalt	0.100	0.0100	0.0005	mg/L	0.10000	0.0008	99	75-125			
Copper	0.0942	0.0250	0.0003	mg/L	0.10000	ND	94	75-125			
Lead	0.0921	0.0050	0.00007	mg/L	0.10000	ND	92	75-125			
Molybdenum	0.128	0.0100	0.0006	mg/L	0.10000	0.0191	109	75-125			
Nickel	0.103	0.0100	0.0003	mg/L	0.10000	0.0026	100	75-125			
Selenium	0.115	0.0100	0.0014	mg/L	0.10000	0.0118	103	75-125			
Silver	0.0946	0.0100	0.0003	mg/L	0.10000	ND	95	75-125			
Thallium	0.100	0.0010	0.00005	mg/L	0.10000	0.0007	100	75-125			
Vanadium	0.102	0.0100	0.0014	mg/L	0.10000	ND	102	75-125			
Zinc	0.0989	0.0100	0.0013	mg/L	0.10000	0.0014	98	75-125			
Lithium	0.117	0.0500	0.0011	mg/L	0.10000	0.0177	99	75-125			



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 2017

**Report No.: AAF0227**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060221 - EPA 3005A</b>											
<b>Matrix Spike Dup (7060221-MSD1)</b>			<b>Source: AAF0227-01</b>			<b>Prepared: 06/08/17 Analyzed: 06/09/17</b>					
Antimony	0.109	0.0030	0.0003	mg/L	0.10000	ND	109	75-125	1	20	
Arsenic	0.107	0.0050	0.0004	mg/L	0.10000	0.0039	103	75-125	2	20	
Barium	0.306	0.0100	0.0003	mg/L	0.10000	0.201	105	75-125	3	20	
Beryllium	0.0977	0.0030	0.00007	mg/L	0.10000	ND	98	75-125	2	20	
Boron	19.6	2.00	0.302	mg/L	1.0000	18.6	110	75-125	0.8	20	
Cadmium	0.0989	0.0010	0.00006	mg/L	0.10000	0.0003	99	75-125	3	20	
Calcium	423	25.0	0.522	mg/L	1.0000	413	NR	75-125	4	20	QM-02
Chromium	0.101	0.0100	0.0003	mg/L	0.10000	0.0004	101	75-125	0.6	20	
Cobalt	0.101	0.0100	0.0005	mg/L	0.10000	0.0008	101	75-125	1	20	
Copper	0.0915	0.0250	0.0003	mg/L	0.10000	ND	92	75-125	3	20	
Lead	0.0929	0.0050	0.00007	mg/L	0.10000	ND	93	75-125	0.9	20	
Molybdenum	0.122	0.0100	0.0006	mg/L	0.10000	0.0191	103	75-125	5	20	
Nickel	0.101	0.0100	0.0003	mg/L	0.10000	0.0026	99	75-125	1	20	
Selenium	0.116	0.0100	0.0014	mg/L	0.10000	0.0118	104	75-125	1	20	
Silver	0.0931	0.0100	0.0003	mg/L	0.10000	ND	93	75-125	2	20	
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	0.0007	100	75-125	0.3	20	
Vanadium	0.111	0.0100	0.0014	mg/L	0.10000	ND	111	75-125	8	20	
Zinc	0.0943	0.0100	0.0013	mg/L	0.10000	0.0014	93	75-125	5	20	
Lithium	0.121	0.0500	0.0011	mg/L	0.10000	0.0177	103	75-125	3	20	
<b>Post Spike (7060221-PS1)</b>											
<b>Source: AAF0227-01</b>			<b>Prepared: 06/08/17 Analyzed: 06/09/17</b>								
Antimony	107			ug/L	100.00	0.290	106	80-120			
Arsenic	105			ug/L	100.00	3.87	101	80-120			
Barium	298			ug/L	100.00	201	98	80-120			
Beryllium	97.6			ug/L	100.00	0.0183	98	80-120			
Boron	19300			ug/L	1000.0	18600	76	80-120			QM-02
Cadmium	98.2			ug/L	100.00	0.341	98	80-120			
Calcium	441000			ug/L	1000.0	413000	NR	80-120			QM-02
Chromium	96.4			ug/L	100.00	0.434	96	80-120			
Cobalt	93.8			ug/L	100.00	0.764	93	80-120			
Copper	85.7			ug/L	100.00	0.168	86	80-120			
Lead	91.8			ug/L	100.00	0.0222	92	80-120			
Molybdenum	123			ug/L	100.00	19.1	104	80-120			
Nickel	93.2			ug/L	100.00	2.58	91	80-120			
Selenium	111			ug/L	100.00	11.8	99	80-120			
Silver	92.4			ug/L	100.00	0.0207	92	80-120			
Thallium	98.6			ug/L	100.00	0.749	98	80-120			
Vanadium	98.6			ug/L	100.00	0.267	98	80-120			
Zinc	94.1			ug/L	100.00	1.36	93	80-120			
Lithium	118			ug/L	100.00	17.7	101	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 15, 2017

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## Legend

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### 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

- 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.**

Environmental Monitoring & Laboratory Analysis  
110 Technology Parkway, Peachtree Corners, GA 30092  
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**LOG-IN CHECKLIST**

**Printed: 6/7/2017 10:03:14AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 06/06/17 15:45

**Work Order:** AAF0227

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 4

**#Containers:** 16

**Minimum Temp(C):** 4.5

**Maximum Temp(C):** 4.5

**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:**



**PACE ANALYTICAL SERVICES, LLC.**

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: AAG0434**

**July 25, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 25, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-30	AAG0434-01	Ground Water	07/11/17 10:10	07/14/17 17:00
BGWC-9	AAG0434-02	Ground Water	07/11/17 14:30	07/14/17 17:00
Dup-2	AAG0434-03	Ground Water	07/11/17 00:00	07/14/17 17:00
BGWC-10	AAG0434-05	Ground Water	07/12/17 16:00	07/14/17 17:00





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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 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.



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 Atlanta GA, 30339

July 25, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0434

Project: CCR Event

Client ID: BGWC-30

Lab Number ID: AAG0434-01

Date/Time Sampled: 7/11/2017 10:10:00AM

Date/Time Received: 7/14/2017 5:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2580	25	10	mg/L	SM 2540 C		1	07/17/17 19:50	07/17/17 19:50	7070376	JPT
<b>Inorganic Anions</b>											
Chloride	840	25	2.4	mg/L	EPA 300.0		100	07/20/17 16:44	07/21/17 14:27	7070517	RLC
Fluoride	0.13	0.30	0.03	mg/L	EPA 300.0	J	1	07/20/17 16:44	07/20/17 20:56	7070517	RLC
Sulfate	420	100	1.7	mg/L	EPA 300.0		100	07/20/17 16:44	07/21/17 14:27	7070517	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Arsenic	0.0016	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Barium	0.179	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Boron	25.0	2.00	0.298	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:03	7070491	CSW
Cadmium	0.0005	0.0010	0.0001	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Calcium	449	25.0	2.02	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:03	7070491	CSW
Chromium	0.0012	0.0100	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Cobalt	0.0008	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Lead	0.00008	0.0050	0.00007	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Molybdenum	0.0218	0.0100	0.0010	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Selenium	0.0120	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Thallium	0.0007	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Lithium	0.0203	0.0500	0.0015	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Mercury	0.000091	0.00050	0.000041	mg/L	EPA 7470A	J	1	07/20/17 10:30	07/20/17 15:43	7070379	MTC



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 Atlanta GA, 30339

July 25, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0434

Project: CCR Event

Client ID: BGWC-9

Lab Number ID: AAG0434-02

Date/Time Sampled: 7/11/2017 2:30:00PM

Date/Time Received: 7/14/2017 5:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	387	25	10	mg/L	SM 2540 C		1	07/17/17 19:50	07/17/17 19:50	7070376	JPT
<b>Inorganic Anions</b>											
Chloride	33	0.25	0.02	mg/L	EPA 300.0		1	07/20/17 16:44	07/20/17 21:17	7070517	RLC
Fluoride	0.20	0.30	0.03	mg/L	EPA 300.0	J	1	07/20/17 16:44	07/20/17 21:17	7070517	RLC
Sulfate	110	5.0	0.08	mg/L	EPA 300.0		5	07/20/17 16:44	07/21/17 14:48	7070517	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Arsenic	0.0033	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Barium	0.0355	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Boron	0.633	0.0400	0.0060	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Calcium	66.9	25.0	2.02	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:26	7070491	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Molybdenum	0.0029	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/20/17 10:30	07/20/17 15:45	7070379	MTC



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Attention: Mr. Joju Abraham

July 25, 2017

**Report No.:** AAG0434

**Project:** CCR Event

**Client ID:** Dup-2

**Lab Number ID:** AAG0434-03

**Date/Time Sampled:** 7/11/2017 12:00:00AM

**Date/Time Received:** 7/14/2017 5:00:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2670	25	10	mg/L	SM 2540 C		1	07/17/17 19:50	07/17/17 19:50	7070376	JPT
<b>Inorganic Anions</b>											
Chloride	1700	25	2.4	mg/L	EPA 300.0		100	07/20/17 16:44	07/21/17 15:10	7070517	RLC
Fluoride	0.14	0.30	0.03	mg/L	EPA 300.0	J	1	07/20/17 16:44	07/20/17 22:19	7070517	RLC
Sulfate	840	100	1.7	mg/L	EPA 300.0		100	07/20/17 16:44	07/21/17 15:10	7070517	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Arsenic	0.0014	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Barium	0.179	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Boron	22.2	2.00	0.298	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:37	7070491	CSW
Cadmium	0.0005	0.0010	0.0001	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Calcium	432	25.0	2.02	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:37	7070491	CSW
Chromium	0.0010	0.0100	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Cobalt	0.0008	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Molybdenum	0.0213	0.0100	0.0010	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Selenium	0.0123	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Thallium	0.0007	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Lithium	0.0202	0.0500	0.0015	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Mercury	0.00009	0.00050	0.000041	mg/L	EPA 7470A	J	1	07/20/17 10:30	07/20/17 15:47	7070379	MTC



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July 25, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0434

Project: CCR Event

Client ID: BGWC-10

Lab Number ID: AAG0434-05

Date/Time Sampled: 7/12/2017 4:00:00PM

Date/Time Received: 7/14/2017 5:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	255	25	10	mg/L	SM 2540 C		1	07/18/17 16:15	07/18/17 16:15	7070411	JPT
<b>Inorganic Anions</b>											
Chloride	23	0.25	0.02	mg/L	EPA 300.0		1	07/20/17 16:44	07/20/17 22:40	7070517	RLC
Fluoride	0.15	0.30	0.03	mg/L	EPA 300.0	J	1	07/20/17 16:44	07/20/17 22:40	7070517	RLC
Sulfate	110	5.0	0.08	mg/L	EPA 300.0		5	07/20/17 16:44	07/21/17 15:31	7070517	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Arsenic	0.0063	0.0050	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Barium	0.0572	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Boron	0.508	0.0400	0.0060	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Calcium	58.1	25.0	2.02	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:49	7070491	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Molybdenum	0.0037	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/20/17 10:30	07/20/17 15:50	7070379	MTC



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July 25, 2017

**Report No.: AAG0434**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070376 - SM 2540 C</b>											
<b>Blank (7070376-BLK1)</b>						Prepared & Analyzed: 07/17/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7070376-BS1)</b>						Prepared & Analyzed: 07/17/17					
Total Dissolved Solids	340	25	10	mg/L	400.00		85	84-108			
<b>Duplicate (7070376-DUP1)</b>						Source: AAG0277-09 Prepared & Analyzed: 07/17/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7070376-DUP2)</b>						Source: AAG0387-03 Prepared & Analyzed: 07/17/17					
Total Dissolved Solids	236	25	10	mg/L		238			0.8	10	
<b>Batch 7070411 - SM 2540 C</b>											
<b>Blank (7070411-BLK1)</b>						Prepared & Analyzed: 07/18/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7070411-BS1)</b>						Prepared & Analyzed: 07/18/17					
Total Dissolved Solids	430	25	10	mg/L	400.00		108	84-108			
<b>Duplicate (7070411-DUP1)</b>						Source: AAG0383-06 Prepared & Analyzed: 07/18/17					
Total Dissolved Solids	1100	25	10	mg/L		1070			3	10	
<b>Duplicate (7070411-DUP2)</b>						Source: AAG0383-09 Prepared & Analyzed: 07/18/17					
Total Dissolved Solids	ND	25	10	mg/L		13				10	



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July 25, 2017

**Report No.: AAG0434**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070517 - EPA 300.0</b>											
<b>Blank (7070517-BLK1)</b>						Prepared & Analyzed: 07/20/17					
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 (7070517-BS1)</b>						Prepared & Analyzed: 07/20/17					
Chloride	10.3	0.25	0.02	mg/L	10.020		102	90-110			
Fluoride	10.1	0.30	0.03	mg/L	10.020		101	90-110			
Sulfate	10.4	1.0	0.02	mg/L	10.050		104	90-110			
<b>Matrix Spike (7070517-MS1)</b>						Source: AAG0434-02 Prepared & Analyzed: 07/20/17					
Chloride	39.3	0.25	0.02	mg/L	10.020	32.7	66	90-110			QM-02
Fluoride	10.5	0.30	0.03	mg/L	10.020	0.20	102	90-110			
Sulfate	99.0	1.0	0.02	mg/L	10.050	99.3	NR	90-110			QM-02
<b>Matrix Spike Dup (7070517-MSD1)</b>						Source: AAG0434-02 Prepared & Analyzed: 07/20/17					
Chloride	39.2	0.25	0.02	mg/L	10.020	32.7	65	90-110	0.2	15	QM-02
Fluoride	10.5	0.30	0.03	mg/L	10.020	0.20	103	90-110	0.3	15	
Sulfate	98.8	1.0	0.02	mg/L	10.050	99.3	NR	90-110	0.2	15	QM-02



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**Report No.: AAG0434**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070379 - EPA 7470A</b>											
<b>Blank (7070379-BLK1)</b> Prepared & Analyzed: 07/20/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7070379-BS1)</b> Prepared & Analyzed: 07/20/17											
Mercury	0.00229	0.00050	0.000041	mg/L	2.5000E-3		92	80-120			
<b>Matrix Spike (7070379-MS1)</b> Source: AAG0383-02 Prepared & Analyzed: 07/20/17											
Mercury	0.00215	0.00050	0.000041	mg/L	2.5000E-3	ND	86	75-125			
<b>Matrix Spike Dup (7070379-MSD1)</b> Source: AAG0383-02 Prepared & Analyzed: 07/20/17											
Mercury	0.00224	0.00050	0.000041	mg/L	2.5000E-3	ND	89	75-125	4	20	
<b>Post Spike (7070379-PS1)</b> Source: AAG0383-02 Prepared & Analyzed: 07/20/17											
Mercury	1.66			ug/L	1.6667	0.00794	99	80-120			
<b>Batch 7070491 - EPA 3005A</b>											
<b>Blank (7070491-BLK1)</b> Prepared: 07/20/17 Analyzed: 07/21/17											
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	0.0003	0.0250	0.0003	mg/L							J
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							





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July 25, 2017

**Report No.: AAG0434**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070491 - EPA 3005A</b>											
<b>LCS (7070491-BS1)</b>						Prepared: 07/20/17 Analyzed: 07/24/17					
Antimony	0.120	0.0030	0.0006	mg/L	0.10000		120	80-120			
Arsenic	0.114	0.0050	0.0005	mg/L	0.10000		114	80-120			
Barium	0.106	0.0100	0.0004	mg/L	0.10000		106	80-120			
Beryllium	0.111	0.0030	0.00009	mg/L	0.10000		111	80-120			
Boron	1.13	0.0400	0.0060	mg/L	1.0000		113	80-120			
Cadmium	0.120	0.0010	0.0001	mg/L	0.10000		120	80-120			
Calcium	1.18	0.500	0.0404	mg/L	1.0000		118	80-120			
Chromium	0.114	0.0100	0.0005	mg/L	0.10000		114	80-120			
Cobalt	0.115	0.0100	0.0003	mg/L	0.10000		115	80-120			
Copper	0.114	0.0250	0.0003	mg/L	0.10000		114	80-120			
Lead	0.113	0.0050	0.00007	mg/L	0.10000		113	80-120			
Molybdenum	0.119	0.0100	0.0010	mg/L	0.10000		119	80-120			
Nickel	0.116	0.0100	0.0005	mg/L	0.10000		116	80-120			
Selenium	0.111	0.0100	0.0018	mg/L	0.10000		111	80-120			
Silver	0.117	0.0100	0.0002	mg/L	0.10000		117	80-120			
Thallium	0.116	0.0010	0.00005	mg/L	0.10000		116	80-120			
Vanadium	0.115	0.0100	0.0012	mg/L	0.10000		115	80-120			
Zinc	0.116	0.0100	0.0012	mg/L	0.10000		116	80-120			
Lithium	0.109	0.0500	0.0015	mg/L	0.10000		109	80-120			
<b>Matrix Spike (7070491-MS1)</b>						Source: AAG0387-01 Prepared: 07/20/17 Analyzed: 07/21/17					
Antimony	0.115	0.0030	0.0006	mg/L	0.10000	0.0006	114	75-125			
Arsenic	0.0995	0.0050	0.0005	mg/L	0.10000	ND	99	75-125			
Barium	0.117	0.0100	0.0004	mg/L	0.10000	0.0233	94	75-125			
Beryllium	0.0981	0.0030	0.00009	mg/L	0.10000	ND	98	75-125			
Boron	1.02	0.0400	0.0060	mg/L	1.0000	0.0131	101	75-125			
Cadmium	0.106	0.0010	0.0001	mg/L	0.10000	ND	106	75-125			
Calcium	15.3	25.0	2.02	mg/L	1.0000	14.3	101	75-125			J
Chromium	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Cobalt	0.118	0.0100	0.0003	mg/L	0.10000	0.0096	109	75-125			
Copper	0.0984	0.0250	0.0003	mg/L	0.10000	0.0004	98	75-125			
Lead	0.0978	0.0050	0.00007	mg/L	0.10000	ND	98	75-125			
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000	ND	106	75-125			
Nickel	0.104	0.0100	0.0005	mg/L	0.10000	0.0025	102	75-125			
Selenium	0.100	0.0100	0.0018	mg/L	0.10000	ND	100	75-125			
Silver	0.0994	0.0100	0.0002	mg/L	0.10000	ND	99	75-125			
Thallium	0.100	0.0010	0.00005	mg/L	0.10000	ND	100	75-125			
Vanadium	0.104	0.0100	0.0012	mg/L	0.10000	ND	104	75-125			
Zinc	0.108	0.0100	0.0012	mg/L	0.10000	0.0043	104	75-125			
Lithium	0.103	0.0500	0.0015	mg/L	0.10000	0.0051	98	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

July 25, 2017

**Report No.: AAG0434**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070491 - EPA 3005A</b>											
<b>Matrix Spike Dup (7070491-MSD1)</b>			<b>Source: AAG0387-01</b>			<b>Prepared: 07/20/17 Analyzed: 07/21/17</b>					
Antimony	0.117	0.0030	0.0006	mg/L	0.10000	0.0006	117	75-125	2	20	
Arsenic	0.103	0.0050	0.0005	mg/L	0.10000	ND	103	75-125	3	20	
Barium	0.120	0.0100	0.0004	mg/L	0.10000	0.0233	97	75-125	3	20	
Beryllium	0.104	0.0030	0.00009	mg/L	0.10000	ND	104	75-125	6	20	
Boron	1.06	0.0400	0.0060	mg/L	1.0000	0.0131	105	75-125	4	20	
Cadmium	0.101	0.0010	0.0001	mg/L	0.10000	ND	101	75-125	5	20	
Calcium	15.5	25.0	2.02	mg/L	1.0000	14.3	123	75-125	1	20	J
Chromium	0.106	0.0100	0.0005	mg/L	0.10000	ND	106	75-125	3	20	
Cobalt	0.117	0.0100	0.0003	mg/L	0.10000	0.0096	108	75-125	1	20	
Copper	0.0987	0.0250	0.0003	mg/L	0.10000	0.0004	98	75-125	0.3	20	
Lead	0.0981	0.0050	0.00007	mg/L	0.10000	ND	98	75-125	0.3	20	
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000	ND	106	75-125	0.05	20	
Nickel	0.107	0.0100	0.0005	mg/L	0.10000	0.0025	104	75-125	3	20	
Selenium	0.102	0.0100	0.0018	mg/L	0.10000	ND	102	75-125	2	20	
Silver	0.101	0.0100	0.0002	mg/L	0.10000	ND	101	75-125	2	20	
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	ND	101	75-125	0.6	20	
Vanadium	0.107	0.0100	0.0012	mg/L	0.10000	ND	107	75-125	3	20	
Zinc	0.107	0.0100	0.0012	mg/L	0.10000	0.0043	103	75-125	0.8	20	
Lithium	0.110	0.0500	0.0015	mg/L	0.10000	0.0051	104	75-125	6	20	
<b>Post Spike (7070491-PS1)</b>			<b>Source: AAG0387-01</b>			<b>Prepared: 07/20/17 Analyzed: 07/21/17</b>					
Antimony	106			ug/L	100.00	0.648	105	80-120			
Arsenic	102			ug/L	100.00	0.0447	102	80-120			
Barium	115			ug/L	100.00	23.3	92	80-120			
Beryllium	100			ug/L	100.00	0.0625	100	80-120			
Boron	1030			ug/L	1000.0	13.1	102	80-120			
Cadmium	103			ug/L	100.00	0.142	103	80-120			
Calcium	15300			ug/L	1000.0	14300	95	80-120			
Chromium	101			ug/L	100.00	0.196	101	80-120			
Cobalt	113			ug/L	100.00	9.61	103	80-120			
Copper	100			ug/L	100.00	0.386	100	80-120			
Lead	97.0			ug/L	100.00	0.0209	97	80-120			
Molybdenum	103			ug/L	100.00	0.316	103	80-120			
Nickel	99.9			ug/L	100.00	2.47	97	80-120			
Selenium	104			ug/L	100.00	1.29	103	80-120			
Silver	99.1			ug/L	100.00	-0.0002	99	80-120			
Thallium	98.5			ug/L	100.00	0.0377	98	80-120			
Vanadium	105			ug/L	100.00	0.324	105	80-120			
Zinc	105			ug/L	100.00	4.33	101	80-120			
Lithium	103			ug/L	100.00	5.08	98	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 25, 2017

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## Legend

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### 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

**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

<b>CLIENT NAME:</b> <u>Southern Company Services</u>			<b>ANALYSIS REQUESTED</b>			<b>L A B  I D  N U M B E R</b>	<b>CONTAINER TYPE</b>		<b>PRESERVATION</b>			
<b>CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:</b> <u>241 Keith McGill Blvd SE B10185</u> <u>Atlanta, GA 30308</u>			<b>CONTAINER TYPE:</b> P P P PRESERVATION: 3 7 3				P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER		1 - HCl, ≤6°C 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C 3 - HNO <sub>3</sub> 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen			
<b>REPORT TO:</b> <u>Joie Abraham</u>		<b>CC:</b> <u>Marin Pakilla</u>		<b>C O N T A I N E R S</b>			<b>*MATRIX CODES:</b> 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					
<b>REQUESTED COMPLETION DATE:</b> <u>6/21/08</u>			<b>PO #:</b> <u>6PL10681198</u>				<b>REMARKS/ADDITIONAL INFORMATION</b>					
<b>PROJECT NAME/STATE:</b> <u>Plant Bowen - Ash Pond CLR</u>			<b>PROJECT #:</b>									
<b>Collection DATE</b>	<b>Collection TIME</b>	<b>MATRIX CODE*</b>	<b>C O M P</b>		<b>G R A B</b>	<b>SAMPLE IDENTIFICATION</b>	<b># of</b>					
<u>7/12/17</u>	<u>1055</u>	<u>GW</u>			<u>X</u>	<u>B612L-14</u>	<u>2</u>				<u>4</u>	
<u>7/12/17</u>	<u>1600</u>	<u>GW</u>		<u>X</u>	<u>B612L-1D</u>	<u>4</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>5</u>		
<b>SAMPLED BY AND TITLE:</b> <u>Yusef Mulla / Michael Patinkin</u>			<b>DATE/TIME:</b> <u>7/12/17 1651</u>		<b>RELINQUISHED BY:</b> <u>Andy Mardi</u>			<b>DATE/TIME:</b> <u>7/12/17 500</u>		<b>FOR LAB USE ONLY</b> LAB #: <u>AAG10434</u>		
<b>RECEIVED BY:</b> <u>Mike Nguyen</u>			<b>DATE/TIME:</b> <u>7/12/17 1353</u>		<b>RELINQUISHED BY:</b>			<b>DATE/TIME:</b>		Entered into LIMS: <u>MR</u>		
<b>RECEIVED BY LAB:</b> <u>[Signature]</u>			<b>DATE/TIME:</b> <u>7/14/17 1700</u>		<b>SAMPLE SHIPPED VIA:</b> UPS FED-EX USPS COURIER <u>PACE</u> CLIENT OTHER FS			<b>Tracking #:</b>				
<b>Checked:</b> es No NA		<b>Temp:</b> Min: <u>1.5</u> Max:		<b>Custody Seal:</b> Intact Broken Not Present N/A			<b>Prof Coolers:</b>		<b>Cooler ID:</b>			

**Sample Condition Upon Receipt**



Client Name: GIA power

Project # AAG10434

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

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

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used IR-2 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 1.5 Biological Tissue is Frozen: Yes No  Comments: \_\_\_\_\_

Date and Initials of person examining contents: 7/14/17 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:			
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: 7/17/2017 3:58:22PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 07/14/17 17:00

**Work Order:** AAG0434

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 20

**Minimum Temp(C):** 1.5

**Maximum Temp(C):** 1.5

**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:**



**PACE ANALYTICAL SERVICES, LLC.**

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(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: AAF0650**

**June 23, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

June 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>
BGWC-14	AAF0650-01	Ground Water	06/15/17 09:28	06/16/17 16:20



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 23, 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

June 23, 2017

**Report No.:** AAF0650

**Project:** CCR Event

**Client ID:** BGWC-14

**Lab Number ID:** AAF0650-01

**Date/Time Sampled:** 6/15/2017 9:28:00AM

**Date/Time Received:** 6/16/2017 4:20:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>Metals, Total</b>											
Antimony	0.0015	0.0030	0.0006	mg/L	EPA 6020B	B-01, J	1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Arsenic	0.0024	0.0050	0.0005	mg/L	EPA 6020B	J	1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Barium	0.0822	0.0100	0.0004	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Boron	0.819	0.0400	0.0060	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Calcium	108	25.0	2.02	mg/L	EPA 6020B		50	06/21/17 07:30	06/21/17 23:21	7060607	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Cobalt	0.0003	0.0100	0.0003	mg/L	EPA 6020B	J	1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Lead	0.00009	0.0050	0.00007	mg/L	EPA 6020B	J	1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Molybdenum	0.0052	0.0100	0.0010	mg/L	EPA 6020B	J	1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	06/21/17 07:30	06/21/17 23:15	7060607	CSW
Mercury	0.000062	0.00050	0.000041	mg/L	EPA 7470A	B-01, J	1	06/21/17 09:20	06/21/17 16:08	7060604	DDN



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 23, 2017

**Report No.: AAF0650**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060604 - EPA 7470A</b>											
<b>Blank (7060604-BLK1)</b>						Prepared & Analyzed: 06/21/17					
Mercury	0.00007	0.00050	0.000041	mg/L							J
<b>LCS (7060604-BS1)</b>						Prepared & Analyzed: 06/21/17					
Mercury	0.00262	0.00050	0.000041	mg/L	2.5000E-3		105	80-120			
<b>Matrix Spike (7060604-MS1)</b>						Source: AAF0737-02 Prepared & Analyzed: 06/21/17					
Mercury	0.00253	0.00050	0.000041	mg/L	2.5000E-3	0.00008	98	75-125			
<b>Matrix Spike Dup (7060604-MSD1)</b>						Source: AAF0737-02 Prepared & Analyzed: 06/21/17					
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3	0.00008	96	75-125	2	20	
<b>Post Spike (7060604-PS1)</b>						Source: AAF0737-02 Prepared & Analyzed: 06/21/17					
Mercury	1.84			ug/L	1.6667	0.0501	108	80-120			
<b>Batch 7060607 - EPA 3005A</b>											
<b>Blank (7060607-BLK1)</b>						Prepared & Analyzed: 06/21/17					
Antimony	0.0009	0.0030	0.0006	mg/L							J
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	0.0005	0.0250	0.0003	mg/L							J
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							



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

Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 23, 2017

**Report No.: AAF0650**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060607 - EPA 3005A</b>											
<b>LCS (7060607-BS1)</b>						Prepared & Analyzed: 06/21/17					
Antimony	0.108	0.0030	0.0006	mg/L	0.10000		108	80-120			
Arsenic	0.0939	0.0050	0.0005	mg/L	0.10000		94	80-120			
Barium	0.0996	0.0100	0.0004	mg/L	0.10000		100	80-120			
Beryllium	0.0996	0.0030	0.00009	mg/L	0.10000		100	80-120			
Boron	1.03	0.0400	0.0060	mg/L	1.0000		103	80-120			
Cadmium	0.102	0.0010	0.0001	mg/L	0.10000		102	80-120			
Calcium	1.03	0.500	0.0404	mg/L	1.0000		103	80-120			
Chromium	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120			
Cobalt	0.102	0.0100	0.0003	mg/L	0.10000		102	80-120			
Copper	0.104	0.0250	0.0003	mg/L	0.10000		104	80-120			
Lead	0.0928	0.0050	0.00007	mg/L	0.10000		93	80-120			
Molybdenum	0.103	0.0100	0.0010	mg/L	0.10000		103	80-120			
Nickel	0.104	0.0100	0.0005	mg/L	0.10000		104	80-120			
Selenium	0.0968	0.0100	0.0018	mg/L	0.10000		97	80-120			
Silver	0.100	0.0100	0.0002	mg/L	0.10000		100	80-120			
Thallium	0.0946	0.0010	0.00005	mg/L	0.10000		95	80-120			
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000		105	80-120			
Zinc	0.106	0.0100	0.0012	mg/L	0.10000		106	80-120			
Lithium	0.106	0.0500	0.0015	mg/L	0.10000		106	80-120			
<b>Matrix Spike (7060607-MS1)</b>						Source: AAF0737-01 Prepared & Analyzed: 06/21/17					
Antimony	0.111	0.0030	0.0006	mg/L	0.10000	0.0009	111	75-125			
Arsenic	0.0997	0.0050	0.0005	mg/L	0.10000	0.0007	99	75-125			
Barium	0.139	0.0100	0.0004	mg/L	0.10000	0.0457	93	75-125			
Beryllium	0.0952	0.0030	0.00009	mg/L	0.10000	0.00009	95	75-125			
Boron	0.992	0.0400	0.0060	mg/L	1.0000	0.0269	96	75-125			
Cadmium	0.0998	0.0010	0.0001	mg/L	0.10000	ND	100	75-125			
Calcium	62.5	25.0	2.02	mg/L	1.0000	62.3	15	75-125			QM-02
Chromium	0.110	0.0100	0.0005	mg/L	0.10000	0.0072	102	75-125			
Cobalt	0.0985	0.0100	0.0003	mg/L	0.10000	ND	99	75-125			
Copper	0.0995	0.0250	0.0003	mg/L	0.10000	0.0004	99	75-125			
Lead	0.0925	0.0050	0.00007	mg/L	0.10000	0.0002	92	75-125			
Molybdenum	0.108	0.0100	0.0010	mg/L	0.10000	ND	108	75-125			
Nickel	0.100	0.0100	0.0005	mg/L	0.10000	ND	100	75-125			
Selenium	0.107	0.0100	0.0018	mg/L	0.10000	0.0070	100	75-125			
Silver	0.101	0.0100	0.0002	mg/L	0.10000	ND	101	75-125			
Thallium	0.0945	0.0010	0.00005	mg/L	0.10000	ND	95	75-125			
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000	ND	105	75-125			
Zinc	0.107	0.0100	0.0012	mg/L	0.10000	0.0042	103	75-125			
Lithium	0.0993	0.0500	0.0015	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 23, 2017

**Report No.: AAF0650**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7060607 - EPA 3005A</b>											
<b>Matrix Spike Dup (7060607-MSD1)</b>			<b>Source: AAF0737-01</b>			<b>Prepared &amp; Analyzed: 06/21/17</b>					
Antimony	0.113	0.0030	0.0006	mg/L	0.10000	0.0009	113	75-125	2	20	
Arsenic	0.100	0.0050	0.0005	mg/L	0.10000	0.0007	99	75-125	0.4	20	
Barium	0.140	0.0100	0.0004	mg/L	0.10000	0.0457	95	75-125	1	20	
Beryllium	0.0950	0.0030	0.00009	mg/L	0.10000	0.00009	95	75-125	0.1	20	
Boron	0.982	0.0400	0.0060	mg/L	1.0000	0.0269	95	75-125	1	20	
Cadmium	0.103	0.0010	0.0001	mg/L	0.10000	ND	103	75-125	3	20	
Calcium	61.0	25.0	2.02	mg/L	1.0000	62.3	NR	75-125	2	20	QM-02
Chromium	0.108	0.0100	0.0005	mg/L	0.10000	0.0072	101	75-125	1	20	
Cobalt	0.0963	0.0100	0.0003	mg/L	0.10000	ND	96	75-125	2	20	
Copper	0.0948	0.0250	0.0003	mg/L	0.10000	0.0004	94	75-125	5	20	
Lead	0.0902	0.0050	0.00007	mg/L	0.10000	0.0002	90	75-125	2	20	
Molybdenum	0.107	0.0100	0.0010	mg/L	0.10000	ND	107	75-125	0.4	20	
Nickel	0.0950	0.0100	0.0005	mg/L	0.10000	ND	95	75-125	6	20	
Selenium	0.107	0.0100	0.0018	mg/L	0.10000	0.0070	100	75-125	0.4	20	
Silver	0.0995	0.0100	0.0002	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.0921	0.0010	0.00005	mg/L	0.10000	ND	92	75-125	3	20	
Vanadium	0.104	0.0100	0.0012	mg/L	0.10000	ND	104	75-125	1	20	
Zinc	0.103	0.0100	0.0012	mg/L	0.10000	0.0042	98	75-125	5	20	
Lithium	0.102	0.0500	0.0015	mg/L	0.10000	ND	102	75-125	3	20	
<b>Post Spike (7060607-PS1)</b>			<b>Source: AAF0737-01</b>			<b>Prepared &amp; Analyzed: 06/21/17</b>					
Antimony	105			ug/L	100.00	0.873	104	80-120			
Arsenic	104			ug/L	100.00	0.666	103	80-120			
Barium	137			ug/L	100.00	45.7	91	80-120			
Beryllium	97.0			ug/L	100.00	0.0933	97	80-120			
Boron	1040			ug/L	1000.0	26.9	101	80-120			
Cadmium	104			ug/L	100.00	0.0534	104	80-120			
Calcium	63500			ug/L	1000.0	62300	122	80-120			QM-02
Chromium	112			ug/L	100.00	7.15	105	80-120			
Cobalt	101			ug/L	100.00	0.185	100	80-120			
Copper	101			ug/L	100.00	0.367	100	80-120			
Lead	92.7			ug/L	100.00	0.156	93	80-120			
Molybdenum	107			ug/L	100.00	0.425	106	80-120			
Nickel	101			ug/L	100.00	0.434	100	80-120			
Selenium	108			ug/L	100.00	7.04	101	80-120			
Silver	99.3			ug/L	100.00	-0.0011	99	80-120			
Thallium	95.7			ug/L	100.00	0.0227	96	80-120			
Vanadium	106			ug/L	100.00	1.06	105	80-120			
Zinc	109			ug/L	100.00	4.20	105	80-120			
Lithium	101			ug/L	100.00	0.248	101	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

June 23, 2017

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## Legend

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### 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

- 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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June 23, 2017

## Report Notes

No unpreserved sample volume was provided; therefore, TDS and Ion Chromatograph parameters could not be analyzed. There were only 2 containers present in the cooler for Radium analysis. Consequently, the Lab split 1 container and analyzed metals 6020 and 7470. MMR







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**LOG-IN CHECKLIST**

**Printed: 6/19/2017 12:16:12PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 06/16/17 16:20

**Work Order:** AAF0650

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 1

**#Containers:** 3

**Minimum Temp(C):** 1.5

**Maximum Temp(C):** 1.5

**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	NO
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:**

No unpreserved sample volume was provided; therefore, TDS and Ion Chromatograph parameters could not be analyzed. There were only 2 containers present in the cooler for Radium analysis. Consequently, the Lab split 1 container and analyzed metals 6020 and 7470. MMR



**PACE ANALYTICAL SERVICES, LLC.**

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: AAG0166**

**July 14, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel" written over a horizontal line.

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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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 14, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-2	AAG0166-01	Ground Water	07/07/17 10:28	07/07/17 16:40
BGWA-28	AAG0166-02	Ground Water	07/07/17 11:02	07/07/17 16:40
BGWA-6	AAG0166-03	Ground Water	07/07/17 13:42	07/07/17 16:40
FBL070717	AAG0166-04	Water	07/07/17 14:30	07/07/17 16:40
EQBL070717	AAG0166-05	Water	07/07/17 14:36	07/07/17 16:40
Dup-1	AAG0166-06	Ground Water	07/07/17 00:00	07/07/17 16:40



**PACE ANALYTICAL SERVICES, LLC.**

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July 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.



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 14, 2017

**Report No.:** AAG0166

**Project:** CCR Event

**Client ID:** BGWA-2

**Lab Number ID:** AAG0166-01

**Date/Time Sampled:** 7/7/2017 10:28:00AM

**Date/Time Received:** 7/7/2017 4:40:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	165	25	10	mg/L	SM 2540 C		1	07/10/17 14:00	07/10/17 14:00	7070185	JPT
<b>Inorganic Anions</b>											
Chloride	1.9	0.25	0.01	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 15:06	7070181	RLC
Fluoride	0.13	0.30	0.004	mg/L	EPA 300.0	J	1	07/10/17 09:52	07/10/17 15:06	7070181	RLC
Sulfate	6.3	1.0	0.09	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 15:06	7070181	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Arsenic	0.0010	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Barium	0.148	0.0100	0.0004	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Boron	0.0090	0.0400	0.0060	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Calcium	33.1	25.0	2.02	mg/L	EPA 6020B		50	07/11/17 09:00	07/11/17 18:08	7070195	CSW
Chromium	0.0008	0.0100	0.0005	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Molybdenum	0.0017	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Thallium	0.00009	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:02	7070195	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/13/17 09:00	07/13/17 14:24	7070231	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 14, 2017

**Report No.:** AAG0166

**Project:** CCR Event

**Client ID:** BGWA-28

**Lab Number ID:** AAG0166-02

**Date/Time Sampled:** 7/7/2017 11:02:00AM

**Date/Time Received:** 7/7/2017 4:40:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	278	25	10	mg/L	SM 2540 C		1	07/10/17 14:00	07/10/17 14:00	7070185	JPT
<b>Inorganic Anions</b>											
Chloride	32	0.25	0.01	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 15:27	7070181	RLC
Fluoride	0.09	0.30	0.004	mg/L	EPA 300.0	J	1	07/10/17 09:52	07/10/17 15:27	7070181	RLC
Sulfate	21	1.0	0.09	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 15:27	7070181	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Barium	0.176	0.0500	0.0021	mg/L	EPA 6020B		5	07/11/17 09:00	07/13/17 14:49	7070195	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Boron	0.138	0.0400	0.0060	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Calcium	49.8	25.0	2.02	mg/L	EPA 6020B		50	07/11/17 09:00	07/11/17 18:30	7070195	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Selenium	0.0022	0.0100	0.0018	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:25	7070195	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/13/17 09:00	07/13/17 14:27	7070231	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

July 14, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0166

Project: CCR Event

Client ID: BGWA-6

Lab Number ID: AAG0166-03

Date/Time Sampled: 7/7/2017 1:42:00PM

Date/Time Received: 7/7/2017 4:40:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	265	25	10	mg/L	SM 2540 C		1	07/10/17 14:00	07/10/17 14:00	7070185	JPT
<b>Inorganic Anions</b>											
Chloride	12	0.25	0.01	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 17:31	7070181	RLC
Fluoride	0.12	0.30	0.004	mg/L	EPA 300.0	J	1	07/10/17 09:52	07/10/17 17:31	7070181	RLC
Sulfate	25	1.0	0.09	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 17:31	7070181	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Barium	0.0120	0.0100	0.0004	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Boron	0.0190	0.0400	0.0060	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Calcium	57.8	25.0	2.02	mg/L	EPA 6020B		50	07/11/17 09:00	07/11/17 18:42	7070195	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Thallium	0.00007	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:36	7070195	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/13/17 09:00	07/13/17 14:29	7070231	MTC





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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 14, 2017

Report No.: AAG0166

Project: CCR Event

Client ID: FBL070717

Lab Number ID: AAG0166-04

Date/Time Sampled: 7/7/2017 2:30:00PM

Date/Time Received: 7/7/2017 4:40:00PM

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	07/10/17 14:00	07/10/17 14:00	7070185	JPT
<b>Inorganic Anions</b>											
Chloride	0.20	0.25	0.01	mg/L	EPA 300.0	J	1	07/10/17 09:52	07/10/17 17:51	7070181	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 17:51	7070181	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 17:51	7070181	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:48	7070195	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/13/17 09:00	07/13/17 14:31	7070231	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 14, 2017

Report No.: AAG0166

Project: CCR Event

Client ID: EQBL070717

Lab Number ID: AAG0166-05

Date/Time Sampled: 7/7/2017 2:36:00PM

Date/Time Received: 7/7/2017 4:40:00PM

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	07/10/17 14:00	07/10/17 14:00	7070185	JPT
<b>Inorganic Anions</b>											
Chloride	0.08	0.25	0.01	mg/L	EPA 300.0	J	1	07/10/17 09:52	07/10/17 18:12	7070181	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 18:12	7070181	RLC
Sulfate	ND	1.0	0.09	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 18:12	7070181	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Calcium	0.0478	0.500	0.0404	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:53	7070195	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/13/17 09:00	07/13/17 14:34	7070231	MTC



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July 14, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAG0166

**Project:** CCR Event

**Client ID:** Dup-1

**Lab Number ID:** AAG0166-06

**Date/Time Sampled:** 7/7/2017 12:00:00AM

**Date/Time Received:** 7/7/2017 4:40:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	176	25	10	mg/L	SM 2540 C		1	07/10/17 14:00	07/10/17 14:00	7070185	JPT
<b>Inorganic Anions</b>											
Chloride	1.9	0.25	0.01	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 18:33	7070181	RLC
Fluoride	0.08	0.30	0.004	mg/L	EPA 300.0	J	1	07/10/17 09:52	07/10/17 18:33	7070181	RLC
Sulfate	6.4	1.0	0.09	mg/L	EPA 300.0		1	07/10/17 09:52	07/10/17 18:33	7070181	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Arsenic	0.0011	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Barium	0.165	0.0500	0.0021	mg/L	EPA 6020B		5	07/11/17 09:00	07/11/17 19:11	7070195	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Boron	0.0069	0.0400	0.0060	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Calcium	141	2.50	0.202	mg/L	EPA 6020B		5	07/11/17 09:00	07/11/17 19:11	7070195	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Lead	0.00007	0.0050	0.00007	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Molybdenum	0.0017	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Thallium	0.00009	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/11/17 09:00	07/11/17 18:59	7070195	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/13/17 09:00	07/13/17 14:36	7070231	MTC



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July 14, 2017

**Report No.: AAG0166**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070185 - SM 2540 C</b>											
<b>Blank (7070185-BLK1)</b>						Prepared & Analyzed: 07/10/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7070185-BS1)</b>						Prepared & Analyzed: 07/10/17					
Total Dissolved Solids	373	25	10	mg/L	400.00		93	84-108			
<b>Duplicate (7070185-DUP1)</b>						Source: AAG0163-03 Prepared & Analyzed: 07/10/17					
Total Dissolved Solids	243	25	10	mg/L		236			3	10	
<b>Duplicate (7070185-DUP2)</b>						Source: AAG0166-05 Prepared & Analyzed: 07/10/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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July 14, 2017

**Report No.: AAG0166**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070181 - EPA 300.0</b>											
<b>Blank (7070181-BLK1)</b>						Prepared & Analyzed: 07/10/17					
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 (7070181-BS1)</b>						Prepared & Analyzed: 07/10/17					
Chloride	10.2	0.25	0.01	mg/L	10.020		102	90-110			
Fluoride	10.0	0.30	0.004	mg/L	10.020		100	90-110			
Sulfate	10.3	1.0	0.09	mg/L	10.050		103	90-110			
<b>Matrix Spike (7070181-MS1)</b>						Source: AAG0163-05 Prepared & Analyzed: 07/10/17					
Chloride	27.0	0.25	0.01	mg/L	10.020	18.5	85	90-110			QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.11	101	90-110			
Sulfate	17.6	1.0	0.09	mg/L	10.050	8.07	95	90-110			
<b>Matrix Spike (7070181-MS2)</b>						Source: AAG0166-02 Prepared & Analyzed: 07/10/17					
Chloride	38.5	0.25	0.01	mg/L	10.020	32.2	63	90-110			QM-02
Fluoride	10.2	0.30	0.004	mg/L	10.020	0.09	101	90-110			
Sulfate	29.7	1.0	0.09	mg/L	10.050	21.3	83	90-110			QM-02
<b>Matrix Spike Dup (7070181-MSD1)</b>						Source: AAG0163-05 Prepared & Analyzed: 07/10/17					
Chloride	27.0	0.25	0.01	mg/L	10.020	18.5	85	90-110	0.004	15	QM-02
Fluoride	10.3	0.30	0.004	mg/L	10.020	0.11	101	90-110	0.2	15	
Sulfate	17.6	1.0	0.09	mg/L	10.050	8.07	95	90-110	0.2	15	



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July 14, 2017

**Report No.: AAG0166**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070195 - EPA 3005A</b>											
<b>Blank (7070195-BLK1)</b>						Prepared & Analyzed: 07/11/17					
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	0.0173	0.0250	0.0003	mg/L							J
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	0.0041	0.0100	0.0012	mg/L							J
Lithium	ND	0.0500	0.0015	mg/L							
<b>LCS (7070195-BS1)</b>						Prepared & Analyzed: 07/11/17					
Antimony	0.112	0.0030	0.0006	mg/L	0.10000		112	80-120			
Arsenic	0.102	0.0050	0.0005	mg/L	0.10000		102	80-120			
Barium	0.101	0.0100	0.0004	mg/L	0.10000		101	80-120			
Beryllium	0.106	0.0030	0.00009	mg/L	0.10000		106	80-120			
Boron	0.996	0.0400	0.0060	mg/L	1.0000		100	80-120			
Cadmium	0.104	0.0010	0.0001	mg/L	0.10000		104	80-120			
Calcium	1.00	0.500	0.0404	mg/L	1.0000		100	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	0.118	0.0250	0.0003	mg/L	0.10000		118	80-120			
Lead	0.0983	0.0050	0.00007	mg/L	0.10000		98	80-120			
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000		106	80-120			
Nickel	0.0990	0.0100	0.0005	mg/L	0.10000		99	80-120			
Selenium	0.104	0.0100	0.0018	mg/L	0.10000		104	80-120			
Silver	0.104	0.0100	0.0002	mg/L	0.10000		104	80-120			
Thallium	0.100	0.0010	0.00005	mg/L	0.10000		100	80-120			
Vanadium	0.100	0.0100	0.0012	mg/L	0.10000		100	80-120			
Zinc	0.108	0.0100	0.0012	mg/L	0.10000		108	80-120			
Lithium	0.104	0.0500	0.0015	mg/L	0.10000		104	80-120			



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

July 14, 2017

**Report No.: AAG0166**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070195 - EPA 3005A</b>											
<b>Matrix Spike (7070195-MS1)</b>			<b>Source: AAG0163-01</b>				<b>Prepared &amp; Analyzed: 07/11/17</b>				
Antimony	0.112	0.0030	0.0006	mg/L	0.10000	0.0007	112	75-125			
Arsenic	0.107	0.0050	0.0005	mg/L	0.10000	ND	107	75-125			
Barium	0.117	0.0100	0.0004	mg/L	0.10000	0.0188	98	75-125			
Beryllium	0.101	0.0030	0.00009	mg/L	0.10000	0.0007	100	75-125			
Boron	6.68	2.00	0.298	mg/L	1.0000	5.98	70	75-125			QM-02
Cadmium	0.105	0.0010	0.0001	mg/L	0.10000	ND	105	75-125			
Calcium	52.3	25.0	2.02	mg/L	1.0000	54.4	NR	75-125			QM-02
Chromium	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125			
Cobalt	0.102	0.0100	0.0003	mg/L	0.10000	0.0011	101	75-125			
Copper	0.0969	0.0250	0.0003	mg/L	0.10000	0.0024	94	75-125			
Lead	0.0948	0.0050	0.00007	mg/L	0.10000	0.0001	95	75-125			
Molybdenum	0.104	0.0100	0.0010	mg/L	0.10000	ND	104	75-125			
Nickel	0.0969	0.0100	0.0005	mg/L	0.10000	ND	97	75-125			
Selenium	0.122	0.0100	0.0018	mg/L	0.10000	0.0147	107	75-125			
Silver	0.0982	0.0100	0.0002	mg/L	0.10000	ND	98	75-125			
Thallium	0.0983	0.0010	0.00005	mg/L	0.10000	0.00006	98	75-125			
Vanadium	0.102	0.0100	0.0012	mg/L	0.10000	ND	102	75-125			
Zinc	0.117	0.0100	0.0012	mg/L	0.10000	0.0183	99	75-125			
Lithium	0.100	0.0500	0.0015	mg/L	0.10000	0.0016	99	75-125			
<b>Matrix Spike Dup (7070195-MSD1)</b>			<b>Source: AAG0163-01</b>				<b>Prepared &amp; Analyzed: 07/11/17</b>				
Antimony	0.117	0.0030	0.0006	mg/L	0.10000	0.0007	116	75-125	4	20	
Arsenic	0.107	0.0050	0.0005	mg/L	0.10000	ND	107	75-125	0.3	20	
Barium	0.123	0.0100	0.0004	mg/L	0.10000	0.0188	104	75-125	5	20	
Beryllium	0.0990	0.0030	0.00009	mg/L	0.10000	0.0007	98	75-125	2	20	
Boron	6.59	2.00	0.298	mg/L	1.0000	5.98	61	75-125	1	20	QM-02
Cadmium	0.104	0.0010	0.0001	mg/L	0.10000	ND	104	75-125	0.8	20	
Calcium	50.6	25.0	2.02	mg/L	1.0000	54.4	NR	75-125	3	20	QM-02
Chromium	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125	3	20	
Cobalt	0.102	0.0100	0.0003	mg/L	0.10000	0.0011	101	75-125	0.6	20	
Copper	0.0968	0.0250	0.0003	mg/L	0.10000	0.0024	94	75-125	0.1	20	
Lead	0.0960	0.0050	0.00007	mg/L	0.10000	0.0001	96	75-125	1	20	
Molybdenum	0.109	0.0100	0.0010	mg/L	0.10000	ND	109	75-125	5	20	
Nickel	0.0971	0.0100	0.0005	mg/L	0.10000	ND	97	75-125	0.3	20	
Selenium	0.128	0.0100	0.0018	mg/L	0.10000	0.0147	113	75-125	5	20	
Silver	0.100	0.0100	0.0002	mg/L	0.10000	ND	100	75-125	2	20	
Thallium	0.0997	0.0010	0.00005	mg/L	0.10000	0.00006	100	75-125	1	20	
Vanadium	0.102	0.0100	0.0012	mg/L	0.10000	ND	102	75-125	0.5	20	
Zinc	0.119	0.0100	0.0012	mg/L	0.10000	0.0183	101	75-125	2	20	
Lithium	0.0946	0.0500	0.0015	mg/L	0.10000	0.0016	93	75-125	6	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

July 14, 2017

**Report No.: AAG0166**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070195 - EPA 3005A</b>											
<b>Post Spike (7070195-PS1)</b>			<b>Source: AAG0163-01</b>			<b>Prepared &amp; Analyzed: 07/11/17</b>					
Antimony	103			ug/L	100.00	0.748	102	80-120			
Arsenic	105			ug/L	100.00	0.327	105	80-120			
Barium	120			ug/L	100.00	18.8	101	80-120			
Beryllium	101			ug/L	100.00	0.705	100	80-120			
Boron	6840			ug/L	1000.0	5980	86	80-120			
Cadmium	108			ug/L	100.00	0.140	108	80-120			
Calcium	53300			ug/L	1000.0	54400	NR	80-120			QM-02
Chromium	100			ug/L	100.00	0.179	100	80-120			
Cobalt	98.0			ug/L	100.00	1.08	97	80-120			
Copper	95.7			ug/L	100.00	2.40	93	80-120			
Lead	94.9			ug/L	100.00	0.110	95	80-120			
Molybdenum	104			ug/L	100.00	0.0822	104	80-120			
Nickel	95.3			ug/L	100.00	0.138	95	80-120			
Selenium	127			ug/L	100.00	14.7	112	80-120			
Silver	96.8			ug/L	100.00	0.0006	97	80-120			
Thallium	97.9			ug/L	100.00	0.0588	98	80-120			
Vanadium	99.4			ug/L	100.00	-0.301	99	80-120			
Zinc	122			ug/L	100.00	18.3	103	80-120			
Lithium	98.3			ug/L	100.00	1.59	97	80-120			

**Batch 7070231 - EPA 7470A**

<b>Blank (7070231-BLK1)</b>					<b>Prepared &amp; Analyzed: 07/13/17</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7070231-BS1)</b>					<b>Prepared &amp; Analyzed: 07/13/17</b>						
Mercury	0.00252	0.00050	0.000041	mg/L	2.5000E-3		101	80-120			





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 14, 2017

**Report No.: AAG0166**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070231 - EPA 7470A</b>											
<b>Duplicate (7070231-DUP1)</b>			<b>Source: AAG0141-01</b>			<b>Prepared &amp; Analyzed: 07/13/17</b>					
Mercury	ND	0.00050	0.000041	mg/L		ND				20	
<b>Matrix Spike (7070231-MS1)</b>			<b>Source: AAG0230-01</b>			<b>Prepared &amp; Analyzed: 07/13/17</b>					
Mercury	0.00251	0.00050	0.000041	mg/L	2.5000E-3	ND	100	75-125			
<b>Matrix Spike Dup (7070231-MSD1)</b>			<b>Source: AAG0230-01</b>			<b>Prepared &amp; Analyzed: 07/13/17</b>					
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125	1	20	
<b>Post Spike (7070231-PS1)</b>			<b>Source: AAG0230-01</b>			<b>Prepared &amp; Analyzed: 07/13/17</b>					
Mercury	1.79			ug/L	1.6667	-0.0120	107	80-120			



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 14, 2017

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## Legend

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### 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

**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:		ANALYSIS REQUESTED										LAB ID NUMBER	CONTAINER TYPE		PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:	PRESERVATION:		# of												
Sonsford Company Services		3	7	W													
241 Ralph McGill Blvd NE 81085 Atlanta, GA 30308																	
REPORT TO: <u>John Adamson</u>		CC: <u>Maria Padak</u>															
REQUESTED COMPLETION DATE:		PO #:															
PROJECT NAME/STATE:		GPC 10624108															
PROJECT #:		Plant Basin Acid Pond C&P															
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of											
7/7/17	1028	GW		X	RGWA-2	6	1	1	1								
7/7/17	1107	GW		X	RGWA-2B	4	1	1	1								
7/7/17	1342	GW		X	RGWA-6	4	1	1	1								
7/7/17	1430	W		X	FB1070717	4	1	1	1								
7/7/17	1436	W		X	FB1070717	4	1	1	1								
7/7/17	-	GW		X	Dup-1	4	1	1	1								
SAMPLED BY AND TITLE:		DATE/TIME:		RELINQUISHED BY:				DATE/TIME:				FOR LAB USE ONLY					
<u>John Adamson</u>		7/7/17 @ 1450		<u>John Adamson</u>				7/7/17 1640				LAB #: <u>AA610166</u>					
RECEIVED BY:		DATE/TIME:		RECEIVED BY:				DATE/TIME:				Entered into LIMS:					
<u>John Adamson</u>		7/7/17 1640		<u>John Adamson</u>								Tracking #: <u>MR</u>					
RECEIVED BY LAB:		DATE/TIME:		SAMPLE SHIPPED VIA:				CLIENT:				OTHER:					
<u>John Adamson</u>		7/7/17 1640		UPS FED-EX USPS COURIER				<u>John Adamson</u>									
Checked: <u>NA</u>		Temperature: <u>3.7</u> Min: <u>3.7</u> Max:		Custody Seal: Intact Broken Not Present <u>N/A</u>				# of Coolers: <u>0</u>				Cooler ID:					

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: 7/10/2017 10:56:02AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 07/07/17 16:40

**Work Order:** AAG0166

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 6

**#Containers:** 26

**Minimum Temp(C):** 3.7

**Maximum Temp(C):** 3.7

**Custody Seal(s) Used:** 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 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:**

August 01, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAG0166 Plant Bowen  
Pace Project No.: 30223681

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on July 10, 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: AAG0166 Plant Bowen

Pace Project No.: 30223681

### 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: AAG0166 Plant Bowen  
Pace Project No.: 30223681

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30223681001	BGWA-2	Water	07/07/17 10:28	07/10/17 09:15
30223681002	BGWA-28	Water	07/07/17 11:02	07/10/17 09:15
30223681003	BGWA-6	Water	07/07/17 13:42	07/10/17 09:15
30223681004	FBL070717	Water	07/07/17 14:30	07/10/17 09:15
30223681005	EQBL070717	Water	07/07/17 14:30	07/10/17 09:15
30223681006	Dup-1	Water	07/07/17 00:00	07/10/17 09:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAG0166 Plant Bowen

Pace Project No.: 30223681

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30223681001	BGWA-2	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30223681002	BGWA-28	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30223681003	BGWA-6	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30223681004	FBL070717	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30223681005	EQBL070717	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30223681006	Dup-1	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: AAG0166 Plant Bowen

Pace Project No.: 30223681

Sample: <b>BGWA-2</b>		Lab ID: <b>30223681001</b>	Collected: 07/07/17 10:28	Received: 07/10/17 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.722 ± 0.262 (0.226)</b> C:87% T:NA	pCi/L	07/17/17 08:33	13982-63-3	
Radium-228	EPA 9320	<b>0.730 ± 0.391 (0.697)</b> C:78% T:83%	pCi/L	07/21/17 11:26	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.45 ± 0.653 (0.923)</b>	pCi/L	07/27/17 11:26	7440-14-4	

Sample: <b>BGWA-28</b>		Lab ID: <b>30223681002</b>	Collected: 07/07/17 11:02	Received: 07/10/17 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.419 ± 0.221 (0.303)</b> C:76% T:NA	pCi/L	07/17/17 08:33	13982-63-3	
Radium-228	EPA 9320	<b>1.12 ± 0.449 (0.723)</b> C:79% T:92%	pCi/L	07/21/17 15:58	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.54 ± 0.670 (1.03)</b>	pCi/L	07/27/17 11:26	7440-14-4	

Sample: <b>BGWA-6</b>		Lab ID: <b>30223681003</b>	Collected: 07/07/17 13:42	Received: 07/10/17 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.183 ± 0.148 (0.256)</b> C:90% T:NA	pCi/L	07/17/17 08:33	13982-63-3	
Radium-228	EPA 9320	<b>0.693 ± 0.384 (0.694)</b> C:78% T:85%	pCi/L	07/21/17 15:58	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.876 ± 0.532 (0.950)</b>	pCi/L	07/27/17 11:26	7440-14-4	

Sample: <b>FBL070717</b>		Lab ID: <b>30223681004</b>	Collected: 07/07/17 14:30	Received: 07/10/17 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.0566 ± 0.0948 (0.209)</b> C:85% T:NA	pCi/L	07/17/17 08:33	13982-63-3	
Radium-228	EPA 9320	<b>0.192 ± 0.396 (0.873)</b> C:76% T:80%	pCi/L	07/21/17 15:58	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.249 ± 0.491 (1.08)</b>	pCi/L	07/27/17 11:26	7440-14-4	

Sample: <b>EQBL070717</b>		Lab ID: <b>30223681005</b>	Collected: 07/07/17 14:30	Received: 07/10/17 09:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.125 ± 0.127 (0.240)</b> C:88% T:NA	pCi/L	07/17/17 08:33	13982-63-3	
Radium-228	EPA 9320	<b>-0.0500 ± 0.327 (0.770)</b> C:81% T:80%	pCi/L	07/21/17 15:59	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAG0166 Plant Bowen

Pace Project No.: 30223681

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Total Radium	Total Radium Calculation	<b>0.125 ± 0.454 (1.01)</b>	pCi/L	07/27/17 11:26	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.712 ± 0.276 (0.307)</b> C:83% T:NA	pCi/L	07/17/17 08:33	13982-63-3	
Radium-228	EPA 9320	<b>0.741 ± 0.435 (0.807)</b> C:74% T:82%	pCi/L	07/21/17 15:59	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.45 ± 0.711 (1.11)</b>	pCi/L	07/27/17 11:26	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAG0166 Plant Bowen

Pace Project No.: 30223681

QC Batch: 264891

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30223681001, 30223681002, 30223681003, 30223681004, 30223681005, 30223681006

METHOD BLANK: 1304632

Matrix: Water

Associated Lab Samples: 30223681001, 30223681002, 30223681003, 30223681004, 30223681005, 30223681006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0334 ± 0.0891 (0.219) C:89% T:NA	pCi/L	07/17/17 08:45	

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAG0166 Plant Bowen

Pace Project No.: 30223681

QC Batch: 264893

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30223681001, 30223681002, 30223681003, 30223681004, 30223681005, 30223681006

METHOD BLANK: 1304634

Matrix: Water

Associated Lab Samples: 30223681001, 30223681002, 30223681003, 30223681004, 30223681005, 30223681006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.399 ± 0.326 (0.649) C:79% T:87%	pCi/L	07/21/17 11:27	

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: AAG0166 Plant Bowen

Pace Project No.: 30223681

### 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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30223681-

CHAIN OF CUSTODY RECORD

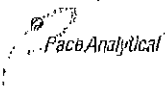


Pace Analytical Services, LLC - Atlanta GA  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:					ANALYSIS REQUESTED										CONTAINER TYPE		PRESERVATION			
Southern Company Services CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: 241 Ralph McGill Blvd NE 81085 Atlanta, GA 30308 REPORT TO: <u>John Almon</u> CC: <u>Maria Poble</u> REQUESTED COMPLETION DATE: PO#: <u>GPC1062108</u> PROJECT NAME/STATE: <u>Duck Pond And Pond C&amp;P</u> PROJECT #:					CONTAINER TYPE:															
					PRESERVATION:															
					# of															
					C O N T A I N E R S															
Collection DATE	Collection TIME	MATRIX CODE	C O M P	R A B	SAMPLE IDENTIFICATION															
7/7/17	1028	GW	X		86WA-2															
7/7/17	1107	GW	X		86WA-28															
7/7/17	1342	GW	X		86WA-6															
7/7/17	1430	W	X		FB1070717															
7/7/17	1436	W	X		FB1070717															
7/7/17	-	GW	X		Dup-1															
SAMPLED BY AND TITLE: <u>John Almon</u>					DATE/TIME: <u>7/7/17 @ 1450</u>	RELINQUISHED BY: <u>[Signature]</u>	DATE/TIME: <u>7/7/17 1640</u>	FOR LAB USE ONLY												
RECEIVED BY: <u>[Signature]</u>					DATE/TIME: <u>7/7/17 1640</u>	RELINQUISHED BY: <u>[Signature]</u>	DATE/TIME: <u>7/7/17 1640</u>	LAB #:	<u>AA-610166</u>											
RECEIVED BY LAB: <u>[Signature]</u>					DATE/TIME: <u>7/7/17 1640</u>	SAMPLE SHIPPED VIA: <u>UPS</u>	DATE/TIME: <u>7/7/17 1640</u>	Entered into LIMS:	<u>MR</u>											
pH checked: <u>Yes</u>					Temperature: <u>3.7</u>	Custody Seal: <u>Intact</u>	Tracking #:													
Temperature: <u>3.7</u>					Temperature: <u>3.7</u>	Custody Seal: <u>Intact</u>	Tracking #:													
Temperature: <u>3.7</u>					Temperature: <u>3.7</u>	Custody Seal: <u>Intact</u>	Tracking #:													

Sample Condition Upon Receipt Pittsburgh



Client Name: Pace, GA

Project # 30223681

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7413 6657 0505

Label	<u>ANL</u>
LIMS Login	<u>BLM</u>

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 \_\_\_\_\_ °C    Correction Factor: \_\_\_\_\_ °C    Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing to 6°C

Date and Initials of person examining contents: ANL 7-10-17

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>PHL2</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>ANL</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):		X	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>ANL</u> Date: <u>7-10-17</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



Test: Ra-226  
Analyst: JC2  
Date: 7/14/2017  
Worklist: 36627  
Matrix: DW

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

Method Blank Assessment	
MB Sample ID	1304632
MB concentration:	0.033
M/B Counting Uncertainty:	0.089
MB MDC:	0.219
MB Numerical Performance Indicator:	0.74
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS36627	LCS36627
Count Date:	7/17/2017		
Spike I.D.:	17-030		
Spike Concentration (pCi/mL):	80.198		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.500		
Target Conc. (pCi/L, g, F):	16.025		
Uncertainty (Calculated):	1.476		
Result (pCi/L, g, F):	13.450		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.676		
Numerical Performance Indicator:	-3.11		
Percent Recovery:	83.93%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30223681001	
Duplicate Sample I.D.:	30223681001DUP	
Sample Result (pCi/L, g, F):	0.722	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.240	
Sample Duplicate Result (pCi/L, g, F):	0.561	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.150	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	4.118	30223681001
Duplicate RPD:	25.14%	30223681001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*\* Numerical Indicators acceptable.*

*7/27/17*



## Quality Control Sample Performance Assessment

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

Test: Ra-228  
Analyst: JLW  
Date: 7/19/2017  
Worklist: 36629  
Matrix: DW

Method Blank Assessment		
MB Sample ID		1304634
MB concentration:		0.399
M/B Counting Uncertainty:		0.318
MB MDC:		0.649
MB Numerical Performance Indicator:		2.46
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS36629	LCSD36629
Count Date:	7/21/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	23.998	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.803	
Target Conc. (pCi/L, g, F):	5.975	
Uncertainty (Calculated):	0.430	
Result (pCi/L, g, F):	4.020	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.685	
Numerical Performance Indicator:	-4.74	
Percent Recovery:	67.28%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Duplicate Sample Assessment		
Sample I.D.:	30223681001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30223681001DUP	
Sample Result (pCi/L, g, F):	0.730	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.368	
Sample Duplicate Result (pCi/L, g, F):	0.737	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.354	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.028	30223681001
Duplicate RPD:	0.99%	30223681001DUP
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:

*JLW*

Sample Matrix Spike Control Assessment	
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):	
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:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	



**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: AAG0230**

**July 19, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

Project Manager

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All test results relate only to the samples analyzed.



**PACE ANALYTICAL SERVICES, LLC.**

---

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

July 19, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-26	AAG0230-01	Ground Water	07/10/17 10:40	07/11/17 14:50
BGWA-27	AAG0230-02	Ground Water	07/10/17 12:30	07/11/17 14:50
BGWC-8	AAG0230-03	Ground Water	07/10/17 14:40	07/11/17 14:50
BGWA-29	AAG0230-04	Ground Water	07/10/17 14:55	07/11/17 14:50



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 19, 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

July 19, 2017

Report No.: AAG0230

Project: CCR Event

Client ID: BGWA-26

Lab Number ID: AAG0230-01

Date/Time Sampled: 7/10/2017 10:40:00AM

Date/Time Received: 7/11/2017 2:50:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	224	25	10	mg/L	SM 2540 C		1	07/12/17 12:30	07/12/17 12:30	7070253	JPT
<b>Inorganic Anions</b>											
Chloride	5.4	0.25	0.01	mg/L	EPA 300.0	B-01	1	07/12/17 09:33	07/12/17 12:26	7070247	RLC
Fluoride	0.14	0.30	0.004	mg/L	EPA 300.0	J	1	07/12/17 09:33	07/12/17 12:26	7070247	RLC
Sulfate	25	1.0	0.09	mg/L	EPA 300.0		1	07/12/17 09:33	07/12/17 12:26	7070247	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Arsenic	0.0018	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Barium	0.0482	0.0100	0.0004	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Boron	0.0085	0.0400	0.0060	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/14/17 14:15	7070270	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Calcium	33.3	25.0	2.02	mg/L	EPA 6020B		50	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Molybdenum	0.0043	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Lithium	0.0016	0.0500	0.0015	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/13/17 18:30	7070270	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/13/17 09:00	07/13/17 14:48	7070231	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

July 19, 2017

Report No.: AAG0230

Project: CCR Event

Client ID: BGWA-27

Lab Number ID: AAG0230-02

Date/Time Sampled: 7/10/2017 12:30:00PM

Date/Time Received: 7/11/2017 2:50:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	263	25	10	mg/L	SM 2540 C		1	07/12/17 12:30	07/12/17 12:30	7070253	JPT
<b>Inorganic Anions</b>											
Chloride	20	0.25	0.01	mg/L	EPA 300.0	B-01	1	07/12/17 09:33	07/12/17 12:47	7070247	RLC
Fluoride	ND	0.30	0.004	mg/L	EPA 300.0		1	07/12/17 09:33	07/12/17 12:47	7070247	RLC
Sulfate	13	1.0	0.09	mg/L	EPA 300.0		1	07/12/17 09:33	07/12/17 12:47	7070247	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Arsenic	0.0007	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Barium	0.0505	0.0100	0.0004	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Boron	0.0319	0.0400	0.0060	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/14/17 14:21	7070270	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Calcium	46.8	25.0	2.02	mg/L	EPA 6020B		50	07/13/17 09:45	07/13/17 18:59	7070270	CSW
Chromium	0.0007	0.0100	0.0005	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Lead	0.0011	0.0050	0.00007	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 18:53	7070270	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/13/17 09:00	07/13/17 14:50	7070231	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 19, 2017

Report No.: AAG0230

Project: CCR Event

Client ID: BGWC-8

Lab Number ID: AAG0230-03

Date/Time Sampled: 7/10/2017 2:40:00PM

Date/Time Received: 7/11/2017 2:50:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	211	25	10	mg/L	SM 2540 C		1	07/12/17 12:30	07/12/17 12:30	7070253	JPT
<b>Inorganic Anions</b>											
Chloride	1.5	0.25	0.01	mg/L	EPA 300.0	B-01	1	07/12/17 09:33	07/12/17 13:08	7070247	RLC
Fluoride	0.03	0.30	0.004	mg/L	EPA 300.0	J	1	07/12/17 09:33	07/12/17 13:08	7070247	RLC
Sulfate	28	1.0	0.09	mg/L	EPA 300.0		1	07/12/17 09:33	07/12/17 13:08	7070247	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Arsenic	0.0011	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Barium	0.0305	0.0100	0.0004	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Boron	0.0534	0.0400	0.0060	mg/L	EPA 6020B		1	07/13/17 09:45	07/14/17 14:27	7070270	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Calcium	39.0	25.0	2.02	mg/L	EPA 6020B		50	07/13/17 09:45	07/13/17 19:10	7070270	CSW
Chromium	0.0009	0.0100	0.0005	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Molybdenum	0.0013	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:04	7070270	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/13/17 09:00	07/13/17 14:53	7070231	MTC





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 Atlanta GA, 30339

July 19, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0230

Project: CCR Event

Client ID: BGWA-29

Lab Number ID: AAG0230-04

Date/Time Sampled: 7/10/2017 2:55:00PM

Date/Time Received: 7/11/2017 2:50:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	140	25	10	mg/L	SM 2540 C		1	07/12/17 12:30	07/12/17 12:30	7070253	JPT
<b>Inorganic Anions</b>											
Chloride	1.6	0.25	0.01	mg/L	EPA 300.0	B-01	1	07/12/17 09:33	07/12/17 14:12	7070247	RLC
Fluoride	0.06	0.30	0.004	mg/L	EPA 300.0	J	1	07/12/17 09:33	07/12/17 14:12	7070247	RLC
Sulfate	3.5	1.0	0.09	mg/L	EPA 300.0		1	07/12/17 09:33	07/12/17 14:12	7070247	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Arsenic	0.0008	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Barium	0.0207	0.0100	0.0004	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	07/13/17 09:45	07/14/17 14:32	7070270	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Calcium	22.3	5.00	2.02	mg/L	EPA 6020B		50	07/13/17 09:45	07/13/17 19:22	7070270	CSW
Chromium	0.0005	0.0100	0.0005	mg/L	EPA 6020B	J	1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/13/17 09:45	07/13/17 19:16	7070270	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/13/17 09:00	07/13/17 14:55	7070231	MTC



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July 19, 2017

**Report No.: AAG0230**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070253 - SM 2540 C</b>											
<b>Blank (7070253-BLK1)</b>						Prepared & Analyzed: 07/12/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7070253-BS1)</b>						Prepared & Analyzed: 07/12/17					
Total Dissolved Solids	397	25	10	mg/L	400.00		99	84-108			
<b>Duplicate (7070253-DUP1)</b>			<b>Source: AAG0230-04</b>			Prepared & Analyzed: 07/12/17					
Total Dissolved Solids	126	25	10	mg/L		140			11	10	QR-03



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July 19, 2017

**Report No.: AAG0230**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070247 - EPA 300.0</b>											
<b>Blank (7070247-BLK1)</b>						Prepared & Analyzed: 07/12/17					
Chloride	0.07	0.25	0.01	mg/L							J
Fluoride	ND	0.30	0.004	mg/L							
Sulfate	ND	1.0	0.09	mg/L							
<b>LCS (7070247-BS1)</b>						Prepared & Analyzed: 07/12/17					
Chloride	10.0	0.25	0.01	mg/L	10.020		100	90-110			
Fluoride	9.92	0.30	0.004	mg/L	10.020		99	90-110			
Sulfate	10.1	1.0	0.09	mg/L	10.050		101	90-110			
<b>Matrix Spike (7070247-MS1)</b>						Source: AAG0230-03 Prepared & Analyzed: 07/12/17					
Chloride	11.8	0.25	0.01	mg/L	10.020	1.54	102	90-110			
Fluoride	10.1	0.30	0.004	mg/L	10.020	0.03	101	90-110			
Sulfate	35.8	1.0	0.09	mg/L	10.050	28.2	76	90-110			QM-02
<b>Matrix Spike Dup (7070247-MSD1)</b>						Source: AAG0230-03 Prepared & Analyzed: 07/12/17					
Chloride	11.7	0.25	0.01	mg/L	10.020	1.54	102	90-110	0.3	15	
Fluoride	10.1	0.30	0.004	mg/L	10.020	0.03	101	90-110	0.06	15	
Sulfate	35.9	1.0	0.09	mg/L	10.050	28.2	77	90-110	0.2	15	QM-02



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**Report No.: AAG0230**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070231 - EPA 7470A</b>											
<b>Blank (7070231-BLK1)</b> Prepared & Analyzed: 07/13/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7070231-BS1)</b> Prepared & Analyzed: 07/13/17											
Mercury	0.00252	0.00050	0.000041	mg/L	2.5000E-3		101	80-120			
<b>Duplicate (7070231-DUP1)</b> Source: AAG0141-01 Prepared & Analyzed: 07/13/17											
Mercury	ND	0.00050	0.000041	mg/L		ND				20	
<b>Matrix Spike (7070231-MS1)</b> Source: AAG0230-01 Prepared & Analyzed: 07/13/17											
Mercury	0.00251	0.00050	0.000041	mg/L	2.5000E-3	ND	100	75-125			
<b>Matrix Spike Dup (7070231-MSD1)</b> Source: AAG0230-01 Prepared & Analyzed: 07/13/17											
Mercury	0.00248	0.00050	0.000041	mg/L	2.5000E-3	ND	99	75-125	1	20	
<b>Post Spike (7070231-PS1)</b> Source: AAG0230-01 Prepared & Analyzed: 07/13/17											
Mercury	1.79			ug/L	1.6667	-0.0120	107	80-120			
<b>Batch 7070270 - EPA 3005A</b>											
<b>Blank (7070270-BLK1)</b> Prepared & Analyzed: 07/13/17											
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	0.0003	0.0250	0.0003	mg/L							J
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							



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July 19, 2017

**Report No.: AAG0230**

**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 7070270 - EPA 3005A**

**LCS (7070270-BS1)**

Prepared & Analyzed: 07/13/17

Antimony	0.104	0.0030	0.0006	mg/L	0.10000		104	80-120			
Arsenic	0.100	0.0050	0.0005	mg/L	0.10000		100	80-120			
Barium	0.0945	0.0100	0.0004	mg/L	0.10000		94	80-120			
Beryllium	0.104	0.0030	0.00009	mg/L	0.10000		104	80-120			
Boron	1.05	0.0400	0.0060	mg/L	1.0000		105	80-120			
Cadmium	0.105	0.0010	0.0001	mg/L	0.10000		105	80-120			
Calcium	1.03	0.500	0.0404	mg/L	1.0000		103	80-120			
Chromium	0.104	0.0100	0.0005	mg/L	0.10000		104	80-120			
Cobalt	0.101	0.0100	0.0003	mg/L	0.10000		101	80-120			
Copper	0.100	0.0250	0.0003	mg/L	0.10000		100	80-120			
Lead	0.103	0.0050	0.00007	mg/L	0.10000		103	80-120			
Molybdenum	0.105	0.0100	0.0010	mg/L	0.10000		105	80-120			
Nickel	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120			
Selenium	0.102	0.0100	0.0018	mg/L	0.10000		102	80-120			
Silver	0.103	0.0100	0.0002	mg/L	0.10000		103	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	0.103	0.0100	0.0012	mg/L	0.10000		103	80-120			
Lithium	0.106	0.0500	0.0015	mg/L	0.10000		106	80-120			

**Matrix Spike (7070270-MS1)**

Source: AAG0230-03

Prepared & Analyzed: 07/13/17

Antimony	0.106	0.0030	0.0006	mg/L	0.10000	ND	106	75-125			
Arsenic	0.103	0.0050	0.0005	mg/L	0.10000	0.0011	102	75-125			
Barium	0.121	0.0100	0.0004	mg/L	0.10000	0.0305	90	75-125			
Beryllium	0.0993	0.0030	0.00009	mg/L	0.10000	ND	99	75-125			
Boron	1.03	0.0400	0.0060	mg/L	1.0000	0.0534	98	75-125			
Cadmium	0.103	0.0010	0.0001	mg/L	0.10000	ND	103	75-125			
Calcium	40.3	25.0	2.02	mg/L	1.0000	39.0	136	75-125			QM-02
Chromium	0.101	0.0100	0.0005	mg/L	0.10000	0.0009	100	75-125			
Cobalt	0.0986	0.0100	0.0003	mg/L	0.10000	ND	99	75-125			
Copper	0.0966	0.0250	0.0003	mg/L	0.10000	ND	97	75-125			
Lead	0.101	0.0050	0.00007	mg/L	0.10000	ND	101	75-125			
Molybdenum	0.108	0.0100	0.0010	mg/L	0.10000	0.0013	107	75-125			
Nickel	0.0990	0.0100	0.0005	mg/L	0.10000	ND	99	75-125			
Selenium	0.102	0.0100	0.0018	mg/L	0.10000	ND	102	75-125			
Silver	0.102	0.0100	0.0002	mg/L	0.10000	ND	102	75-125			
Thallium	0.104	0.0010	0.00005	mg/L	0.10000	ND	104	75-125			
Vanadium	0.102	0.0100	0.0012	mg/L	0.10000	ND	102	75-125			
Zinc	0.101	0.0100	0.0012	mg/L	0.10000	ND	101	75-125			
Lithium	0.0972	0.0500	0.0015	mg/L	0.10000	ND	97	75-125			



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Attention: Mr. Joju Abraham

July 19, 2017

**Report No.: AAG0230**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070270 - EPA 3005A</b>											
<b>Matrix Spike Dup (7070270-MSD1)</b>			<b>Source: AAG0230-03</b>				<b>Prepared &amp; Analyzed: 07/13/17</b>				
Antimony	0.106	0.0030	0.0006	mg/L	0.10000	ND	106	75-125	0.4	20	
Arsenic	0.103	0.0050	0.0005	mg/L	0.10000	0.0011	102	75-125	0.4	20	
Barium	0.122	0.0100	0.0004	mg/L	0.10000	0.0305	92	75-125	1	20	
Beryllium	0.0961	0.0030	0.00009	mg/L	0.10000	ND	96	75-125	3	20	
Boron	1.02	0.0400	0.0060	mg/L	1.0000	0.0534	97	75-125	1	20	
Cadmium	0.102	0.0010	0.0001	mg/L	0.10000	ND	102	75-125	1	20	
Calcium	40.9	25.0	2.02	mg/L	1.0000	39.0	190	75-125	1	20	QM-02
Chromium	0.102	0.0100	0.0005	mg/L	0.10000	0.0009	101	75-125	1	20	
Cobalt	0.0990	0.0100	0.0003	mg/L	0.10000	ND	99	75-125	0.4	20	
Copper	0.0962	0.0250	0.0003	mg/L	0.10000	ND	96	75-125	0.5	20	
Lead	0.0998	0.0050	0.00007	mg/L	0.10000	ND	100	75-125	1	20	
Molybdenum	0.107	0.0100	0.0010	mg/L	0.10000	0.0013	106	75-125	1	20	
Nickel	0.0992	0.0100	0.0005	mg/L	0.10000	ND	99	75-125	0.2	20	
Selenium	0.101	0.0100	0.0018	mg/L	0.10000	ND	101	75-125	2	20	
Silver	0.0998	0.0100	0.0002	mg/L	0.10000	ND	100	75-125	2	20	
Thallium	0.102	0.0010	0.00005	mg/L	0.10000	ND	102	75-125	2	20	
Vanadium	0.103	0.0100	0.0012	mg/L	0.10000	ND	103	75-125	1	20	
Zinc	0.101	0.0100	0.0012	mg/L	0.10000	ND	101	75-125	0.06	20	
Lithium	0.0970	0.0500	0.0015	mg/L	0.10000	ND	97	75-125	0.2	20	
<b>Post Spike (7070270-PS1)</b>			<b>Source: AAG0230-03</b>				<b>Prepared &amp; Analyzed: 07/13/17</b>				
Antimony	104			ug/L	100.00	0.235	103	80-120			
Arsenic	105			ug/L	100.00	1.07	104	80-120			
Barium	123			ug/L	100.00	30.5	93	80-120			
Beryllium	99.0			ug/L	100.00	-0.0033	99	80-120			
Boron	1040			ug/L	1000.0	53.4	99	80-120			
Cadmium	103			ug/L	100.00	0.0002	103	80-120			
Calcium	41600			ug/L	1000.0	39000	266	80-120			QM-02
Chromium	104			ug/L	100.00	0.949	103	80-120			
Cobalt	101			ug/L	100.00	-0.0112	101	80-120			
Copper	99.8			ug/L	100.00	0.0455	100	80-120			
Lead	102			ug/L	100.00	-0.0029	102	80-120			
Molybdenum	110			ug/L	100.00	1.28	108	80-120			
Nickel	103			ug/L	100.00	0.126	103	80-120			
Selenium	103			ug/L	100.00	-0.139	103	80-120			
Silver	103			ug/L	100.00	-0.0060	103	80-120			
Thallium	104			ug/L	100.00	-0.0074	104	80-120			
Vanadium	104			ug/L	100.00	1.00	103	80-120			
Zinc	103			ug/L	100.00	0.520	103	80-120			
Lithium	97.5			ug/L	100.00	0.0887	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

July 19, 2017

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## Legend

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### 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

- 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.**







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

**LOG-IN CHECKLIST**

**Printed: 7/12/2017 11:34:05AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 07/11/17 14:50

**Work Order:** AAG0230

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 4

**#Containers:** 16

**Minimum Temp(C):** 4.3

**Maximum Temp(C):** 4.3

**Custody Seal(s) Used:** 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	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:**

August 04, 2017

Maria Padilla  
GA Power  
2480 Maner Rd  
Atlanta, GA 30339

RE: Project: AAG0230 Plant Bowen  
Pace Project No.: 30224001

Dear Maria Padilla:

Enclosed are the analytical results for sample(s) received by the laboratory on July 13, 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: AAG0230 Plant Bowen

Pace Project No.: 30224001

### 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: AAG0230 Plant Bowen

Pace Project No.: 30224001

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30224001001	BGWA-26	Water	07/10/17 10:40	07/13/17 10:15
30224001002	BGWA-27	Water	07/10/17 12:30	07/13/17 10:15
30224001003	BGWC-8	Water	07/10/17 14:40	07/13/17 10:15
30224001004	BGWA-29	Water	07/10/17 14:55	07/13/17 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAG0230 Plant Bowen

Pace Project No.: 30224001

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30224001001	BGWA-26	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224001002	BGWA-27	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224001003	BGWC-8	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224001004	BGWA-29	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAG0230 Plant Bowen

Pace Project No.: 30224001

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.271 ± 0.146 (0.195)</b> C:81% T:NA	pCi/L	07/25/17 11:59	13982-63-3	
Radium-228		EPA 9320	<b>0.130 ± 0.353 (0.790)</b> C:77% T:76%	pCi/L	07/28/17 11:27	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.401 ± 0.499 (0.985)</b>	pCi/L	08/02/17 11:00	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.269 ± 0.150 (0.225)</b> C:88% T:NA	pCi/L	07/25/17 11:59	13982-63-3	
Radium-228		EPA 9320	<b>0.816 ± 0.413 (0.722)</b> C:72% T:90%	pCi/L	07/28/17 11:27	15262-20-1	
Total Radium		Total Radium Calculation	<b>1.09 ± 0.563 (0.947)</b>	pCi/L	08/02/17 11:00	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.119 ± 0.0740 (0.114)</b> C:82% T:NA	pCi/L	07/25/17 12:04	13982-63-3	
Radium-228		EPA 9320	<b>0.446 ± 0.352 (0.694)</b> C:73% T:86%	pCi/L	07/28/17 11:27	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.565 ± 0.426 (0.808)</b>	pCi/L	08/02/17 11:00	7440-14-4	

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226		EPA 9315	<b>0.0809 ± 0.0679 (0.125)</b> C:92% T:NA	pCi/L	07/25/17 12:04	13982-63-3	
Radium-228		EPA 9320	<b>0.508 ± 0.373 (0.726)</b> C:73% T:84%	pCi/L	07/28/17 11:27	15262-20-1	
Total Radium		Total Radium Calculation	<b>0.589 ± 0.441 (0.851)</b>	pCi/L	08/02/17 11:00	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAG0230 Plant Bowen

Pace Project No.: 30224001

QC Batch: 265165 Analysis Method: EPA 9320

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

Associated Lab Samples: 30224001001, 30224001002, 30224001003, 30224001004

METHOD BLANK: 1306528 Matrix: Water

Associated Lab Samples: 30224001001, 30224001002, 30224001003, 30224001004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0806 ± 0.263 (0.593) C:80% T:100%	pCi/L	07/28/17 11:27	

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: AAG0230 Plant Bowen

Pace Project No.: 30224001

QC Batch: 265160 Analysis Method: EPA 9315

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

Associated Lab Samples: 30224001001, 30224001002, 30224001003, 30224001004

METHOD BLANK: 1306523 Matrix: Water

Associated Lab Samples: 30224001001, 30224001002, 30224001003, 30224001004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0171 ± 0.0541 (0.175) C:91% T:NA	pCi/L	07/25/17 10:10	

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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## QUALIFIERS

Project: AAG0230 Plant Bowen

Pace Project No.: 30224001

### 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



Workorder: AAG0230

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 8/3/2017

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				WO#: 30224001  Radium 226, 228, Total									
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HNO3	Preserved Containers			Radium 226, 228, Total	LAB USE ONLY				
1	BGWA-26	G	7/10/2017 10:40	AAG0230-01	GW	2				X					001
2	BGWA-27	G	7/10/2017 12:30	AAG0230-02	GW	2				X					002
3	BGWC-8	G	7/10/2017 14:40	AAG0230-03	GW	2				X					003
4	BGWA-29	G	7/10/2017 14:55	AAG0230-04	GW	2				X					004
5															
6															
7															
8															
9															
10															
Transfers	Released By	Date/Time	Received By	Date/Time	Comments										
1	M. RAHMAN	7/12/17		7/13/17											
2															
3															

Cooler Temperature on Receipt	<u>N/A</u> °C	Custody Seal Y or N	<u>Y</u>	Received on Ice Y or N	<u>Y</u>	Sample Intact Y or N	<u>Y</u>
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\*\*\*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

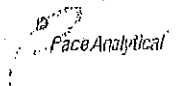


Pace Analytical Services, LLC - Atlanta GA  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

CLIENT NAME: <u>Southern Company Services</u>					ANALYSIS REQUESTED					CONTAINER TYPE	PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>211 Ralph McGill Blvd SE 310185 Atlanta, GA 30308</u>					CONTAINER TYPE:	PRESERVATION:	# of	CONTAINERS				MATRIX CODES:	
REPORT TO: <u>Jojo Abraham</u>			CC: <u>Marva Padilla</u>										REMARKS/ADDITIONAL INFORMATION
REQUESTED COMPLETION DATE:			PO #: <u>GR 10684198</u>										
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond CCR</u>													
Collection DATE	Collection TIME	MATRIX CODE	C O M P	G R A B	SAMPLE IDENTIFICATION								
7/10/17	1040	GW	X		B6WA-26	4	1	1	2		1		
7/10/17	1730	GW	X		B6WA-27	4	1	1	2		2		
7/10/17	1440	GW	X		B6WL-8	4	1	1	2		3		
7/10/17	1455	GW	X		B6WA-29	4	1	1	2		4		
30224001													
SAMPLED BY AND TITLE: <u>Robert F. Mill / Brian Steele</u>			DATE/TIME: <u>7/10/17 1558</u>		RELINQUISHED BY: <u>Cindy Mandie</u>			DATE/TIME: <u>7/11/2017 11:05</u>		FOR LAB USE ONLY LAB #: <u>AA60230</u>			
RECEIVED BY: <u>Mike Nguyen</u>			DATE/TIME: <u>7/11/17 1105</u>		RELINQUISHED BY:			DATE/TIME:		Entered into LIMS: <u>MR</u>			
RECEIVED BY LAB: <u>Michael...</u>			DATE/TIME: <u>7/11/17 1450</u>		SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER ES			Cooler ID:		Tracking #:			
pH checked: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> NA <input type="checkbox"/>			Temperature: <u>4.3</u>		Custody Seal: Intact: Broken: Not Present: <u>N/A</u>			Cooler ID:					

30224001

Sample Condition Upon Receipt Pittsburgh



Client Name: PACE - GA Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 741366571247

Label <u>ZL</u>
LIMS Login

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 \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ZL 7/13/17

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. <u>ZL 7/13/17</u>
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.
Filtered volume received for Dissolved tests			/	14.
All containers have been checked for preservation.	/			15.
All containers needing preservation are found to be in compliance with EPA recommendation.	/			<u>PHLZ</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				
				Initial when completed <u>ZL</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>ZL</u> Date: <u>7/13/17</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

Test: Ra-226  
Analyst: JC2  
Date: 7/20/2017  
Worklist: 36691  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1306523
MB concentration:	-0.017
M/B Counting Uncertainty:	0.054
MB MDC:	0.175
MB Numerical Performance Indicator:	-0.62
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCS (Y or N)?	N
	LCS36691	LCS36691
Count Date:	7/25/2017	
Spike I.D.:	17-030	
Spike Concentration (pCi/mL):	80.197	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.503	
Target Conc. (pCi/L, g, F):	15.937	
Uncertainty (Calculated):	1.468	
Result (pCi/L, g, F):	13.249	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.807	
Numerical Performance Indicator:	-3.14	
Percent Recovery:	83.13%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30223998001	
Duplicate Sample I.D.:	30223998001DUP	
Sample Result (pCi/L, g, F):	0.630	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.204	
Sample Duplicate Result (pCi/L, g, F):	0.359	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.155	
Are sample and/or duplicate results below MDC?	See-Below.##	
Duplicate Numerical Performance Indicator:	2.076	30223998001
Duplicate RPD:	54.88%	30223998001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*7/20/17*

*Sample results = 50 MDC, use numerical indicator < 2 acceptable for DW < 3 acceptable for all other matrices*



## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: VAL  
Date: 7/24/2017  
Worklist: 36694  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1306528	
MB concentration:	0.081	
M/B Counting Uncertainty:	0.263	
MB MDC:	0.593	
MB Numerical Performance Indicator:	0.60	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		LCS (Y or N)?	N
		LCS36694	LCSD36694
Count Date:	7/28/2017		
Spike I.D.:	17-005		
Spike Concentration (pCi/mL):	23.943		
Volume Used (mL):	0.20		
Aliquot Volume (L, g, F):	0.800		
Target Conc. (pCi/L, g, F):	5.986		
Uncertainty (Calculated):	0.431		
Result (pCi/L, g, F):	4.848		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.599		
Numerical Performance Indicator:	-3.02		
Percent Recovery:	81.00%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30223998001	
Duplicate Sample I.D.:	30223998001DUP	
Sample Result (pCi/L, g, F):	0.919	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.431	
Sample Duplicate Result (pCi/L, g, F):	1.199	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.426	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-0.906	30223998001
Duplicate RPD:	26.46%	30223998001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*07/23/17*



**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: AAG0434**

**July 25, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 McDaniel". The signature is written over a horizontal line.

Project Manager

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All test results relate only to the samples analyzed.



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Attention: Mr. Joju Abraham

July 25, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-30	AAG0434-01	Ground Water	07/11/17 10:10	07/14/17 17:00
BGWC-9	AAG0434-02	Ground Water	07/11/17 14:30	07/14/17 17:00
Dup-2	AAG0434-03	Ground Water	07/11/17 00:00	07/14/17 17:00
BGWC-10	AAG0434-05	Ground Water	07/12/17 16:00	07/14/17 17:00





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July 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.



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 Atlanta GA, 30339

July 25, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0434

Project: CCR Event

Client ID: BGWC-30

Lab Number ID: AAG0434-01

Date/Time Sampled: 7/11/2017 10:10:00AM

Date/Time Received: 7/14/2017 5:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2580	25	10	mg/L	SM 2540 C		1	07/17/17 19:50	07/17/17 19:50	7070376	JPT
<b>Inorganic Anions</b>											
Chloride	840	25	2.4	mg/L	EPA 300.0		100	07/20/17 16:44	07/21/17 14:27	7070517	RLC
Fluoride	0.13	0.30	0.03	mg/L	EPA 300.0	J	1	07/20/17 16:44	07/20/17 20:56	7070517	RLC
Sulfate	420	100	1.7	mg/L	EPA 300.0		100	07/20/17 16:44	07/21/17 14:27	7070517	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Arsenic	0.0016	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Barium	0.179	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Boron	25.0	2.00	0.298	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:03	7070491	CSW
Cadmium	0.0005	0.0010	0.0001	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Calcium	449	25.0	2.02	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:03	7070491	CSW
Chromium	0.0012	0.0100	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Cobalt	0.0008	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Lead	0.00008	0.0050	0.00007	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Molybdenum	0.0218	0.0100	0.0010	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Selenium	0.0120	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Thallium	0.0007	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Lithium	0.0203	0.0500	0.0015	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 00:57	7070491	CSW
Mercury	0.000091	0.00050	0.000041	mg/L	EPA 7470A	J	1	07/20/17 10:30	07/20/17 15:43	7070379	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

July 25, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0434

Project: CCR Event

Client ID: BGWC-9

Lab Number ID: AAG0434-02

Date/Time Sampled: 7/11/2017 2:30:00PM

Date/Time Received: 7/14/2017 5:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	387	25	10	mg/L	SM 2540 C		1	07/17/17 19:50	07/17/17 19:50	7070376	JPT
<b>Inorganic Anions</b>											
Chloride	33	0.25	0.02	mg/L	EPA 300.0		1	07/20/17 16:44	07/20/17 21:17	7070517	RLC
Fluoride	0.20	0.30	0.03	mg/L	EPA 300.0	J	1	07/20/17 16:44	07/20/17 21:17	7070517	RLC
Sulfate	110	5.0	0.08	mg/L	EPA 300.0		5	07/20/17 16:44	07/21/17 14:48	7070517	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Arsenic	0.0033	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Barium	0.0355	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Boron	0.633	0.0400	0.0060	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Calcium	66.9	25.0	2.02	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:26	7070491	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Molybdenum	0.0029	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:20	7070491	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/20/17 10:30	07/20/17 15:45	7070379	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 25, 2017

**Report No.:** AAG0434

**Project:** CCR Event

**Client ID:** Dup-2

**Lab Number ID:** AAG0434-03

**Date/Time Sampled:** 7/11/2017 12:00:00AM

**Date/Time Received:** 7/14/2017 5:00:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2670	25	10	mg/L	SM 2540 C		1	07/17/17 19:50	07/17/17 19:50	7070376	JPT
<b>Inorganic Anions</b>											
Chloride	1700	25	2.4	mg/L	EPA 300.0		100	07/20/17 16:44	07/21/17 15:10	7070517	RLC
Fluoride	0.14	0.30	0.03	mg/L	EPA 300.0	J	1	07/20/17 16:44	07/20/17 22:19	7070517	RLC
Sulfate	840	100	1.7	mg/L	EPA 300.0		100	07/20/17 16:44	07/21/17 15:10	7070517	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Arsenic	0.0014	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Barium	0.179	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Boron	22.2	2.00	0.298	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:37	7070491	CSW
Cadmium	0.0005	0.0010	0.0001	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Calcium	432	25.0	2.02	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:37	7070491	CSW
Chromium	0.0010	0.0100	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Cobalt	0.0008	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Molybdenum	0.0213	0.0100	0.0010	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Selenium	0.0123	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Thallium	0.0007	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Lithium	0.0202	0.0500	0.0015	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:32	7070491	CSW
Mercury	0.00009	0.00050	0.000041	mg/L	EPA 7470A	J	1	07/20/17 10:30	07/20/17 15:47	7070379	MTC



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July 25, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0434

Project: CCR Event

Client ID: BGWC-10

Lab Number ID: AAG0434-05

Date/Time Sampled: 7/12/2017 4:00:00PM

Date/Time Received: 7/14/2017 5:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	255	25	10	mg/L	SM 2540 C		1	07/18/17 16:15	07/18/17 16:15	7070411	JPT
<b>Inorganic Anions</b>											
Chloride	23	0.25	0.02	mg/L	EPA 300.0		1	07/20/17 16:44	07/20/17 22:40	7070517	RLC
Fluoride	0.15	0.30	0.03	mg/L	EPA 300.0	J	1	07/20/17 16:44	07/20/17 22:40	7070517	RLC
Sulfate	110	5.0	0.08	mg/L	EPA 300.0		5	07/20/17 16:44	07/21/17 15:31	7070517	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Arsenic	0.0063	0.0050	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Barium	0.0572	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Boron	0.508	0.0400	0.0060	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Calcium	58.1	25.0	2.02	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 01:49	7070491	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Molybdenum	0.0037	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:43	7070491	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/20/17 10:30	07/20/17 15:50	7070379	MTC



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Attention: Mr. Joju Abraham

July 25, 2017

**Report No.: AAG0434**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070376 - SM 2540 C</b>											
<b>Blank (7070376-BLK1)</b>						Prepared & Analyzed: 07/17/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7070376-BS1)</b>						Prepared & Analyzed: 07/17/17					
Total Dissolved Solids	340	25	10	mg/L	400.00		85	84-108			
<b>Duplicate (7070376-DUP1)</b>						Source: AAG0277-09 Prepared & Analyzed: 07/17/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7070376-DUP2)</b>						Source: AAG0387-03 Prepared & Analyzed: 07/17/17					
Total Dissolved Solids	236	25	10	mg/L		238			0.8	10	
<b>Batch 7070411 - SM 2540 C</b>											
<b>Blank (7070411-BLK1)</b>						Prepared & Analyzed: 07/18/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7070411-BS1)</b>						Prepared & Analyzed: 07/18/17					
Total Dissolved Solids	430	25	10	mg/L	400.00		108	84-108			
<b>Duplicate (7070411-DUP1)</b>						Source: AAG0383-06 Prepared & Analyzed: 07/18/17					
Total Dissolved Solids	1100	25	10	mg/L		1070			3	10	
<b>Duplicate (7070411-DUP2)</b>						Source: AAG0383-09 Prepared & Analyzed: 07/18/17					
Total Dissolved Solids	ND	25	10	mg/L		13				10	



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July 25, 2017

**Report No.: AAG0434**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070517 - EPA 300.0</b>											
<b>Blank (7070517-BLK1)</b>						Prepared & Analyzed: 07/20/17					
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 (7070517-BS1)</b>						Prepared & Analyzed: 07/20/17					
Chloride	10.3	0.25	0.02	mg/L	10.020		102	90-110			
Fluoride	10.1	0.30	0.03	mg/L	10.020		101	90-110			
Sulfate	10.4	1.0	0.02	mg/L	10.050		104	90-110			
<b>Matrix Spike (7070517-MS1)</b>						Source: AAG0434-02 Prepared & Analyzed: 07/20/17					
Chloride	39.3	0.25	0.02	mg/L	10.020	32.7	66	90-110			QM-02
Fluoride	10.5	0.30	0.03	mg/L	10.020	0.20	102	90-110			
Sulfate	99.0	1.0	0.02	mg/L	10.050	99.3	NR	90-110			QM-02
<b>Matrix Spike Dup (7070517-MSD1)</b>						Source: AAG0434-02 Prepared & Analyzed: 07/20/17					
Chloride	39.2	0.25	0.02	mg/L	10.020	32.7	65	90-110	0.2	15	QM-02
Fluoride	10.5	0.30	0.03	mg/L	10.020	0.20	103	90-110	0.3	15	
Sulfate	98.8	1.0	0.02	mg/L	10.050	99.3	NR	90-110	0.2	15	QM-02



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**Report No.: AAG0434**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070379 - EPA 7470A</b>											
<b>Blank (7070379-BLK1)</b> Prepared & Analyzed: 07/20/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7070379-BS1)</b> Prepared & Analyzed: 07/20/17											
Mercury	0.00229	0.00050	0.000041	mg/L	2.5000E-3		92	80-120			
<b>Matrix Spike (7070379-MS1)</b> Source: AAG0383-02 Prepared & Analyzed: 07/20/17											
Mercury	0.00215	0.00050	0.000041	mg/L	2.5000E-3	ND	86	75-125			
<b>Matrix Spike Dup (7070379-MSD1)</b> Source: AAG0383-02 Prepared & Analyzed: 07/20/17											
Mercury	0.00224	0.00050	0.000041	mg/L	2.5000E-3	ND	89	75-125	4	20	
<b>Post Spike (7070379-PS1)</b> Source: AAG0383-02 Prepared & Analyzed: 07/20/17											
Mercury	1.66			ug/L	1.6667	0.00794	99	80-120			
<b>Batch 7070491 - EPA 3005A</b>											
<b>Blank (7070491-BLK1)</b> Prepared: 07/20/17 Analyzed: 07/21/17											
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	0.0003	0.0250	0.0003	mg/L							J
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							





**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

July 25, 2017

**Report No.: AAG0434**

**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 7070491 - EPA 3005A**

**LCS (7070491-BS1)**

Prepared: 07/20/17 Analyzed: 07/24/17

Antimony	0.120	0.0030	0.0006	mg/L	0.10000		120	80-120			
Arsenic	0.114	0.0050	0.0005	mg/L	0.10000		114	80-120			
Barium	0.106	0.0100	0.0004	mg/L	0.10000		106	80-120			
Beryllium	0.111	0.0030	0.00009	mg/L	0.10000		111	80-120			
Boron	1.13	0.0400	0.0060	mg/L	1.0000		113	80-120			
Cadmium	0.120	0.0010	0.0001	mg/L	0.10000		120	80-120			
Calcium	1.18	0.500	0.0404	mg/L	1.0000		118	80-120			
Chromium	0.114	0.0100	0.0005	mg/L	0.10000		114	80-120			
Cobalt	0.115	0.0100	0.0003	mg/L	0.10000		115	80-120			
Copper	0.114	0.0250	0.0003	mg/L	0.10000		114	80-120			
Lead	0.113	0.0050	0.00007	mg/L	0.10000		113	80-120			
Molybdenum	0.119	0.0100	0.0010	mg/L	0.10000		119	80-120			
Nickel	0.116	0.0100	0.0005	mg/L	0.10000		116	80-120			
Selenium	0.111	0.0100	0.0018	mg/L	0.10000		111	80-120			
Silver	0.117	0.0100	0.0002	mg/L	0.10000		117	80-120			
Thallium	0.116	0.0010	0.00005	mg/L	0.10000		116	80-120			
Vanadium	0.115	0.0100	0.0012	mg/L	0.10000		115	80-120			
Zinc	0.116	0.0100	0.0012	mg/L	0.10000		116	80-120			
Lithium	0.109	0.0500	0.0015	mg/L	0.10000		109	80-120			

**Matrix Spike (7070491-MS1)**

Source: AAG0387-01

Prepared: 07/20/17 Analyzed: 07/21/17

Antimony	0.115	0.0030	0.0006	mg/L	0.10000	0.0006	114	75-125			
Arsenic	0.0995	0.0050	0.0005	mg/L	0.10000	ND	99	75-125			
Barium	0.117	0.0100	0.0004	mg/L	0.10000	0.0233	94	75-125			
Beryllium	0.0981	0.0030	0.00009	mg/L	0.10000	ND	98	75-125			
Boron	1.02	0.0400	0.0060	mg/L	1.0000	0.0131	101	75-125			
Cadmium	0.106	0.0010	0.0001	mg/L	0.10000	ND	106	75-125			
Calcium	15.3	25.0	2.02	mg/L	1.0000	14.3	101	75-125			J
Chromium	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Cobalt	0.118	0.0100	0.0003	mg/L	0.10000	0.0096	109	75-125			
Copper	0.0984	0.0250	0.0003	mg/L	0.10000	0.0004	98	75-125			
Lead	0.0978	0.0050	0.00007	mg/L	0.10000	ND	98	75-125			
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000	ND	106	75-125			
Nickel	0.104	0.0100	0.0005	mg/L	0.10000	0.0025	102	75-125			
Selenium	0.100	0.0100	0.0018	mg/L	0.10000	ND	100	75-125			
Silver	0.0994	0.0100	0.0002	mg/L	0.10000	ND	99	75-125			
Thallium	0.100	0.0010	0.00005	mg/L	0.10000	ND	100	75-125			
Vanadium	0.104	0.0100	0.0012	mg/L	0.10000	ND	104	75-125			
Zinc	0.108	0.0100	0.0012	mg/L	0.10000	0.0043	104	75-125			
Lithium	0.103	0.0500	0.0015	mg/L	0.10000	0.0051	98	75-125			



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 25, 2017

**Report No.: AAG0434**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070491 - EPA 3005A</b>											
<b>Matrix Spike Dup (7070491-MSD1)</b>			<b>Source: AAG0387-01</b>			<b>Prepared: 07/20/17 Analyzed: 07/21/17</b>					
Antimony	0.117	0.0030	0.0006	mg/L	0.10000	0.0006	117	75-125	2	20	
Arsenic	0.103	0.0050	0.0005	mg/L	0.10000	ND	103	75-125	3	20	
Barium	0.120	0.0100	0.0004	mg/L	0.10000	0.0233	97	75-125	3	20	
Beryllium	0.104	0.0030	0.00009	mg/L	0.10000	ND	104	75-125	6	20	
Boron	1.06	0.0400	0.0060	mg/L	1.0000	0.0131	105	75-125	4	20	
Cadmium	0.101	0.0010	0.0001	mg/L	0.10000	ND	101	75-125	5	20	
Calcium	15.5	25.0	2.02	mg/L	1.0000	14.3	123	75-125	1	20	J
Chromium	0.106	0.0100	0.0005	mg/L	0.10000	ND	106	75-125	3	20	
Cobalt	0.117	0.0100	0.0003	mg/L	0.10000	0.0096	108	75-125	1	20	
Copper	0.0987	0.0250	0.0003	mg/L	0.10000	0.0004	98	75-125	0.3	20	
Lead	0.0981	0.0050	0.00007	mg/L	0.10000	ND	98	75-125	0.3	20	
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000	ND	106	75-125	0.05	20	
Nickel	0.107	0.0100	0.0005	mg/L	0.10000	0.0025	104	75-125	3	20	
Selenium	0.102	0.0100	0.0018	mg/L	0.10000	ND	102	75-125	2	20	
Silver	0.101	0.0100	0.0002	mg/L	0.10000	ND	101	75-125	2	20	
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	ND	101	75-125	0.6	20	
Vanadium	0.107	0.0100	0.0012	mg/L	0.10000	ND	107	75-125	3	20	
Zinc	0.107	0.0100	0.0012	mg/L	0.10000	0.0043	103	75-125	0.8	20	
Lithium	0.110	0.0500	0.0015	mg/L	0.10000	0.0051	104	75-125	6	20	
<b>Post Spike (7070491-PS1)</b>											
<b>Source: AAG0387-01</b>			<b>Prepared: 07/20/17 Analyzed: 07/21/17</b>								
Antimony	106			ug/L	100.00	0.648	105	80-120			
Arsenic	102			ug/L	100.00	0.0447	102	80-120			
Barium	115			ug/L	100.00	23.3	92	80-120			
Beryllium	100			ug/L	100.00	0.0625	100	80-120			
Boron	1030			ug/L	1000.0	13.1	102	80-120			
Cadmium	103			ug/L	100.00	0.142	103	80-120			
Calcium	15300			ug/L	1000.0	14300	95	80-120			
Chromium	101			ug/L	100.00	0.196	101	80-120			
Cobalt	113			ug/L	100.00	9.61	103	80-120			
Copper	100			ug/L	100.00	0.386	100	80-120			
Lead	97.0			ug/L	100.00	0.0209	97	80-120			
Molybdenum	103			ug/L	100.00	0.316	103	80-120			
Nickel	99.9			ug/L	100.00	2.47	97	80-120			
Selenium	104			ug/L	100.00	1.29	103	80-120			
Silver	99.1			ug/L	100.00	-0.0002	99	80-120			
Thallium	98.5			ug/L	100.00	0.0377	98	80-120			
Vanadium	105			ug/L	100.00	0.324	105	80-120			
Zinc	105			ug/L	100.00	4.33	101	80-120			
Lithium	103			ug/L	100.00	5.08	98	80-120			



**PACE ANALYTICAL SERVICES, LLC.**

Environmental Monitoring & Laboratory Analysis  
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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 25, 2017

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## Legend

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### 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

**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:				ANALYSIS REQUESTED										L A B  I D  N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:				CONTAINER TYPE:		PRESERVATION:		# of		C O N T A I N E R S		P - PLASTIC			1 - HCl, ≤6°C			
Southern Company Services				P		P		P						A - AMBER GLASS		2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
241 Ralph McGill Blvd SE B10125 Atlanta, GA 30308				3		7		3						G - CLEAR GLASS		3 - HNO <sub>3</sub>		
REPORT TO: <u>Seim Abraham</u>		CC: <u>Maria Patilla</u>		↓		↓		↓		↓				V - VOA VIAL		4 - NaOH, ≤6°C		
REQUESTED COMPLETION DATE:		PO #:		↓		↓		↓		↓				S - STERILE		5 - NaOH/ZnAc, ≤6°C		
PROJECT NAME/STATE:		PROJECT #:		↓		↓		↓		↓				O - OTHER		6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C		
Plant Bowen - Ash Pond CCR				↓		↓		↓		↓				*MATRIX CODES:				
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of									DW - DRINKING WATER	S - SOIL		
7/11/17	1010	GW	X	X	B6WA-30	6									WW - WASTEWATER	SL - SLUDGE		
7/11/17	1430	GW	X	X	B6WL-9	4									GW - GROUNDWATER	SD - SOLID		
7/11/17		GW	X	X	Dup-2	4									SW - SURFACE WATER	A - AIR		
															ST - STORM WATER	L - LIQUID		
															W - WATER	P - PRODUCT		
															REMARKS/ADDITIONAL INFORMATION			
SAMPLED BY AND TITLE: <u>Robert Mull / Michael Patinkin</u>				DATE/TIME: <u>7/11/17 1635</u>		RELINQUISHED BY: <u>Cindy Mardo</u>				DATE/TIME: <u>7/12/17 8:00 AM</u>		LAB #: <u>AA620434</u>						
RECEIVED BY: <u>Mike Noyes</u>				DATE/TIME: <u>7/11/17 1353</u>		RELINQUISHED BY:				DATE/TIME:		Entered into LIMS: <u>MR</u>						
RECEIVED BY LAB: <u>Seim Abraham</u>				DATE/TIME: <u>7/14/17 1700</u>		SAMPLE SHIPPED VIA: <u>Pace</u>				DATE/TIME:		Tracking #:						
Checked: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Temperature: <u>1.5</u> Min: <u>1.5</u> Max: <u>Mac</u>		Custody Seal: <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Broken <input type="checkbox"/> Not Present <input type="checkbox"/> N/A		# of Coolers: <u>1</u>		Cooler ID:								

Page 14 of 17

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: <u>Southern Company Services</u>				ANALYSIS REQUESTED										L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION			
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Keith McGill Blvd SE B10185 Atlanta, GA 30308</u>				CONTAINER TYPE: <u>P P P</u>															P - PLASTIC	1 - HCl, ≤6°C
REPORT TO: <u>Joie Abraham</u> CC: <u>Marin Pabilla</u>				PRESERVATION: <u>3 7 3</u>															A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C
REQUESTED COMPLETION DATE: <u>6/12/17</u> PO#: <u>10681198</u>				# of															G - CLEAR GLASS	3 - HNO <sub>3</sub>
PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond CLR</u>				C O N T A I N E R S  ↓														V - VOA VIAL	4 - NaOH, ≤6°C	
PROJECT #:																		S - STERILE	5 - NaOH/ZnAc, ≤6°C	
Collection DATE	Collection TIME	MATRIX CODE*	C O M P		G R A B	SAMPLE IDENTIFICATION												O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C	
																		7 - ≤6°C not frozen		
<u>7/12/17</u>	<u>1055</u>	<u>GW</u>			<u>X</u>	<u>B612L-14</u>	<u>2</u>													
<u>7/12/17</u>	<u>1600</u>	<u>GW</u>			<u>X</u>	<u>B612L-1D</u>	<u>4</u>		<u>1</u>	<u>1</u>	<u>2</u>									
SAMPLED BY AND TITLE: <u>Yoliet Mull / Michael Patinkin</u>					DATE/TIME: <u>7/12/17 1651</u>	RELINQUISHED BY: <u>Andy Mardi</u>				DATE/TIME: <u>7/12/17 500</u>	FOR LAB USE ONLY									
RECEIVED BY: <u>Mike Nguyen</u>				DATE/TIME: <u>7/12/17 1353</u>	RELINQUISHED BY:				DATE/TIME:	LAB #: <u>AAG10434</u>										
RECEIVED BY LAB: <u>[Signature]</u>				DATE/TIME: <u>7/14/17 1700</u>	SAMPLE SHIPPED VIA: <u>Space</u>				Entered into LIMS: <u>[Signature]</u>											
Checked: <u>[Signature]</u>				Temperature: <u>Min: 1.5 Max:</u>	Custody Seal: <u>[Signature]</u>				Tracking #: <u>[Signature]</u>											
es No NA				Yes No NA	Intact Broken Not Present N/A				Cooler ID:											

**Sample Condition Upon Receipt**



Client Name: GIA power

Project # AAG10434

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

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

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used IR-2 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 1.5 Biological Tissue is Frozen: Yes No  Comments: \_\_\_\_\_

Date and Initials of person examining contents: 7/14/17 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:			
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: 7/17/2017 3:58:22PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 07/14/17 17:00

**Work Order:** AAG0434

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 20

**Minimum Temp(C):** 1.5

**Maximum Temp(C):** 1.5

**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:**

August 07, 2017

Ms. Lauren Petty  
GA Power  
42 Inverness Center Parkway  
Birmingham, AL 35242

RE: Project: AAG0434 Plant Bowen  
Pace Project No.: 30224586

Dear Ms. Petty:

Enclosed are the analytical results for sample(s) received by the laboratory on July 19, 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: AAG0434 Plant Bowen  
Pace Project No.: 30224586

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAG0434 Plant Bowen

Pace Project No.: 30224586

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30224586001	BGWC-30	Water	07/11/17 10:10	07/19/17 10:15
30224586002	BGWC-9	Water	07/11/17 14:30	07/19/17 10:15
30224586003	Dup-2	Water	07/11/17 00:00	07/19/17 10:15
30224586004	BGWC-14	Water	07/12/17 10:55	07/19/17 10:15
30224586005	BGWC-10	Water	07/12/17 16:00	07/19/17 10:15

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### SAMPLE ANALYTE COUNT

Project: AAG0434 Plant Bowen  
Pace Project No.: 30224586

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30224586001	BGWC-30	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224586002	BGWC-9	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224586003	Dup-2	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224586004	BGWC-14	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224586005	BGWC-10	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAG0434 Plant Bowen  
Pace Project No.: 30224586

Sample: <b>BGWC-30</b>		Lab ID: <b>30224586001</b>	Collected: 07/11/17 10:10	Received: 07/19/17 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.28 ± 0.313 (0.194)</b> C:93% T:NA	pCi/L	08/02/17 09:43	13982-63-3	
Radium-228	EPA 9320	<b>0.589 ± 0.412 (0.798)</b> C:78% T:79%	pCi/L	08/02/17 14:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.87 ± 0.725 (0.992)</b>	pCi/L	08/04/17 11:48	7440-14-4	

Sample: <b>BGWC-9</b>		Lab ID: <b>30224586002</b>	Collected: 07/11/17 14:30	Received: 07/19/17 10:15	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 ± 0.148 (0.152)</b> C:91% T:NA	pCi/L	08/02/17 09:43	13982-63-3	
Radium-228	EPA 9320	<b>0.146 ± 0.439 (0.979)</b> C:76% T:87%	pCi/L	08/02/17 14:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.502 ± 0.587 (1.13)</b>	pCi/L	08/04/17 11:48	7440-14-4	

Sample: <b>Dup-2</b>		Lab ID: <b>30224586003</b>	Collected: 07/11/17 00:00	Received: 07/19/17 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.43 ± 0.340 (0.198)</b> C:96% T:NA	pCi/L	08/02/17 09:43	13982-63-3	
Radium-228	EPA 9320	<b>0.708 ± 0.404 (0.738)</b> C:73% T:95%	pCi/L	08/02/17 14:40	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.14 ± 0.744 (0.936)</b>	pCi/L	08/04/17 11:48	7440-14-4	

Sample: <b>BGWC-14</b>		Lab ID: <b>30224586004</b>	Collected: 07/12/17 10:55	Received: 07/19/17 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.82 ± 0.386 (0.131)</b> C:103% T:NA	pCi/L	08/02/17 09:43	13982-63-3	
Radium-228	EPA 9320	<b>1.10 ± 0.479 (0.789)</b> C:78% T:80%	pCi/L	08/02/17 14:41	15262-20-1	
Total Radium	Total Radium Calculation	<b>2.92 ± 0.865 (0.920)</b>	pCi/L	08/04/17 11:48	7440-14-4	

Sample: <b>BGWC-10</b>		Lab ID: <b>30224586005</b>	Collected: 07/12/17 16:00	Received: 07/19/17 10:15	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.583 ± 0.208 (0.216)</b> C:84% T:NA	pCi/L	08/02/17 09:43	13982-63-3	
Radium-228	EPA 9320	<b>0.702 ± 0.445 (0.846)</b> C:73% T:84%	pCi/L	08/02/17 14:41	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAG0434 Plant Bowen  
Pace Project No.: 30224586

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**Sample: BGWC-10**      **Lab ID: 30224586005**      Collected: 07/12/17 16:00      Received: 07/19/17 10:15      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>1.29 ± 0.653 (1.06)</b>	pCi/L	08/04/17 11:48	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAG0434 Plant Bowen

Pace Project No.: 30224586

QC Batch: 265654

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30224586001, 30224586002, 30224586003, 30224586004, 30224586005

METHOD BLANK: 1308231

Matrix: Water

Associated Lab Samples: 30224586001, 30224586002, 30224586003, 30224586004, 30224586005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.205 ± 0.314 (0.680) C:81% T:86%	pCi/L	08/02/17 14:40	

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: AAG0434 Plant Bowen

Pace Project No.: 30224586

QC Batch: 265658 Analysis Method: EPA 9315

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

Associated Lab Samples: 30224586001, 30224586002, 30224586003, 30224586004, 30224586005

METHOD BLANK: 1308241 Matrix: Water

Associated Lab Samples: 30224586001, 30224586002, 30224586003, 30224586004, 30224586005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.434 ± 0.177 (0.187) C:83% T:NA	pCi/L	08/02/17 09:43	

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: AAG0434 Plant Bowen  
Pace Project No.: 30224586

### 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



Workorder: AAG0434

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 8/9/2017

<b>Report To:</b> Betsy McDaniel Pace Analytical Atlanta 110 Technology Parkway Peachtree Corners, GA 30092 Phone (770)-734-4200	<b>Subcontract To:</b> Pace - Pittsburgh 1638 Roseytown Road Stes. 2,3,4 Greensburg, PA 15601 Phone (724) 850-5600	<b>Requested Analysis</b>
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VIO#: 30224586

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-30	G	7/11/2017 10:10	AAG0434-01	GW	4				X	001
2	BGWC-9	G	7/11/2017 14:30	AAG0434-02	GW	2				X	002
3	Dup-2	G	7/11/2017 0:00	AAG0434-03	GW	2				X	003
4	BGWC-14	G	7/12/2017 10:55	AAG0434-04	GW	2				X	004
5	BGWC-10	G	7/12/2017 16:00	AAG0434-05	GW	2				X	005
6											
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	M. RAHMAN	7/17/17	[Signature]	7/19/2015	
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 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 Services, LLC - Atlanta GA  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME: <i>Southern Company Services</i>				ANALYSIS REQUESTED				LAB ID NUMBER	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <i>241 Ralph McGill Blvd SE B10125 Atlanta, GA 30308</i>				CONTAINER TYPE: <i>3 3 3</i>						P - PLASTIC	1 - HCl, ≤6°C	
REPORT TO: <i>Sara Abraham</i> CC: <i>Maria Patilla</i>				PRESERVATION					A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤8°C		
REQUESTED COMPLETION DATE:				# of					G - CLEAR GLASS	3 - HNO <sub>3</sub>		
PROJECT NAME/STATE: <i>Plant Bowen - Ash Pond CER</i>				CONTAINERS					V - VOA VIAL	4 - NaOH, ≤6°C		
PROJECT #:									S - STERILE	5 - NaOH/ZnAc, ≤6°C		
Collection DATE									O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C		
Collection TIME									*MATRIX CODES:			
MATRIX CODE*								DW - DRINKING WATER	S - SOIL			
C O M P								WW - WASTEWATER	SL - SLUDGE			
G R A B								GW - GROUNDWATER	SD - SOLID			
SAMPLE IDENTIFICATION								SW - SURFACE WATER	A - AIR			
								ST - STORM WATER	L - LIQUID			
								W - WATER	P - PRODUCT			
								REMARKS/ADDITIONAL INFORMATION				
								<i>30224586</i>				
SAMPLED BY AND TITLE: <i>Robert Mull / Michael Patinkin</i>				DATE/TIME: <i>7/11/17 1635</i>	RELINQUISHED BY: <i>Andy Mando</i>	DATE/TIME: <i>7/11/17 1353</i>	FOR LAB USE ONLY					
RECEIVED BY: <i>Mike Noyce A</i>				DATE/TIME: <i>7/11/17 1353</i>	RELINQUISHED BY:	DATE/TIME:	LAB #: <i>AA610434</i>					
RECEIVED BY LAB: <i>M. Abraham</i>				DATE/TIME: <i>7/11/17 1702</i>	SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS	Entered into LIMS: <i>MR</i>						
pH checked: Yes No NA				Temperature: Min Max <i>1.5 Max</i>	Custody Seal: Intact Broken Not Present N/A	# of Coolers	Cooler ID:					





Sample Condition Upon Receipt

Client Name: GIA power

Project # 30 2 2 4 5 8 6  
AAG 0434

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: \_\_\_\_\_

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used IR-2 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 1.5 Biological Tissue is Frozen: Yes No  
Temp should be above freezing to 6°C

Date and initials of person examining contents: 7/14/17 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:			
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: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_

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

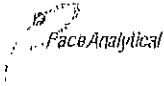
Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

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)

F-ALLC003rev.3, 11September2006

Sample Condition Upon Receipt Pittsburgh

30224586



Client Name: PACE-GA Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 741366572894

Label	<u>ZH</u>
LIMS Login	<u>AMC</u>

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

Thermometer Used \_\_\_\_\_ 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: ZH 7/19/17

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.
Filtered volume received for Dissolved tests			/	14.
All containers have been checked for preservation.	/			15. <u>PHCZ</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>ZH</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>ZH</u> Date: <u>7/19/17</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 reports.

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

Test: Ra-228  
Analyst: VAL  
Date: 7/27/2017  
Worklist: 36804  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1308231	
MB concentration:	0.205	
M/B Counting Uncertainty:	0.312	
MB MDC:	0.680	
MB Numerical Performance Indicator:	1.29	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCS (Y or N)?	N
	LCS36804	LCS D36804
Count Date:	8/2/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	23.902	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.801	
Target Conc. (pCi/L, g, F):	5.969	
Uncertainty (Calculated):	0.430	
Result (pCi/L, g, F):	7.265	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.750	
Numerical Performance Indicator:	2.94	
Percent Recovery:	121.73%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Duplicate Sample Assessment		
Sample I.D.:	30224586001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30224586001DUP	
Sample Result (pCi/L, g, F):	0.589	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.398	
Sample Duplicate Result (pCi/L, g, F):	0.821	
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:	-0.813	
Duplicate RPD:	32.95%	
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:

*28/7/17*

Sample Matrix Spike Control Assessment	
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):	
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:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 7/27/2017  
Worklist: 36808  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1308241
MB concentration:	0.434
M/B Counting Uncertainty:	0.165
MB MDC:	0.187
MB Numerical Performance Indicator:	5.15
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
	LCS36808		LCSD36808
Count Date:	8/2/2017		
Spike I.D.:	17-030		
Spike Concentration (pCi/mL):	80.197		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.502		
Target Conc. (pCi/L, g, F):	15.984		
Uncertainty (Calculated):	1.472		
Result (pCi/L, g, F):	13.401		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.805		
Numerical Performance Indicator:	-3.02		
Percent Recovery:	83.84%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30224586001	
Duplicate Sample I.D.	30224586001DUP	
Sample Result (pCi/L, g, F):	1.277	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.253	
Sample Duplicate Result (pCi/L, g, F):	1.136	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.240	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.792	
Duplicate RPD:	11.68%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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



**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: AAG0436**

**July 27, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

July 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>
BGWC-15	AAG0436-01	Ground Water	07/13/17 09:34	07/14/17 17:10
BGWC-11	AAG0436-02	Ground Water	07/13/17 12:15	07/14/17 17:10
BGWC-12	AAG0436-03	Ground Water	07/13/17 13:45	07/14/17 17:10
BGWC-16	AAG0436-04	Ground Water	07/14/17 09:25	07/14/17 17:10
BGWC-17	AAG0436-05	Ground Water	07/14/17 11:00	07/14/17 17:10
BGWC-18	AAG0436-06	Ground Water	07/14/17 12:25	07/14/17 17:10
BGWC-19	AAG0436-07	Ground Water	07/14/17 13:45	07/14/17 17:10
FBL071417	AAG0436-08	Water	07/14/17 13:34	07/14/17 17:10
EQBL071417	AAG0436-09	Water	07/14/17 13:42	07/14/17 17:10
BGWC-7	AAG0436-10	Ground Water	07/14/17 08:31	07/14/17 17:10



**PACE ANALYTICAL SERVICES, LLC.**

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Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 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.

Total Dissolved Solids by SM 2540C (H-02 qualifier):

The original analyses for AAG0436-01 (BGWC-15) and AAG0436-02 (BGWC-11) were analyzed within the holding time of 7 days, but required re-analysis due to possible laboratory error. Upon re-analysis, the samples yielded data consistent with history for these locations. The re-analysis data outside of the method holding time are reported and the data flagged accordingly.



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

**Report No.:** AAG0436

**Project:** CCR Event

**Client ID:** BGWC-15

**Lab Number ID:** AAG0436-01

**Date/Time Sampled:** 7/13/2017 9:34:00AM

**Date/Time Received:** 7/14/2017 5:10:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	937	25	10	mg/L	SM 2540 C	H-02	1	07/21/17 19:20	07/21/17 19:20	7070536	JPT
<b>Inorganic Anions</b>											
Chloride	9.9	0.25	0.02	mg/L	EPA 300.0		1	07/21/17 12:00	07/21/17 18:21	7070552	RLC
Fluoride	0.18	0.30	0.03	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 18:21	7070552	RLC
Sulfate	410	10	0.17	mg/L	EPA 300.0		10	07/21/17 12:00	07/23/17 08:17	7070552	RLC
<b>Metals, Total</b>											
Antimony	0.0014	0.0030	0.0006	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Arsenic	0.0016	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Barium	0.0947	0.0100	0.0004	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Boron	0.0762	0.0400	0.0060	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Calcium	144	25.0	2.02	mg/L	EPA 6020B		50	07/24/17 15:20	07/25/17 19:21	7070582	CSW
Chromium	0.0010	0.0100	0.0005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Cobalt	0.0029	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Lead	0.0004	0.0050	0.00007	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Molybdenum	0.0227	0.0100	0.0010	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Thallium	0.0001	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:15	7070582	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/18/17 12:40	07/18/17 18:26	7070382	MTC



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

Report No.: AAG0436

Project: CCR Event

Client ID: BGWC-11

Lab Number ID: AAG0436-02

Date/Time Sampled: 7/13/2017 12:15:00PM

Date/Time Received: 7/14/2017 5:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	254	25	10	mg/L	SM 2540 C	H-02	1	07/21/17 19:20	07/21/17 19:20	7070536	JPT
<b>Inorganic Anions</b>											
Chloride	10	0.25	0.02	mg/L	EPA 300.0		1	07/21/17 12:00	07/21/17 18:42	7070552	RLC
Fluoride	0.05	0.30	0.03	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 18:42	7070552	RLC
Sulfate	84	10	0.17	mg/L	EPA 300.0		10	07/21/17 12:00	07/23/17 08:38	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Arsenic	0.0019	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Barium	0.0228	0.0100	0.0004	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Boron	0.184	0.0400	0.0060	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Calcium	44.4	25.0	2.02	mg/L	EPA 6020B		50	07/24/17 15:20	07/25/17 19:33	7070582	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Lead	0.00007	0.0050	0.00007	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Molybdenum	0.0039	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:27	7070582	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/18/17 12:40	07/18/17 18:28	7070382	MTC



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 Atlanta GA, 30339

July 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0436

Project: CCR Event

Client ID: BGWC-12

Lab Number ID: AAG0436-03

Date/Time Sampled: 7/13/2017 1:45:00PM

Date/Time Received: 7/14/2017 5:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	617	25	10	mg/L	SM 2540 C		1	07/20/17 19:30	07/20/17 19:30	7070490	JPT
<b>Inorganic Anions</b>											
Chloride	38	0.25	0.02	mg/L	EPA 300.0		1	07/21/17 12:00	07/21/17 19:03	7070552	RLC
Fluoride	0.17	0.30	0.03	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 19:03	7070552	RLC
Sulfate	250	10	0.17	mg/L	EPA 300.0		10	07/21/17 12:00	07/23/17 08:58	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Arsenic	0.0006	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Barium	0.0329	0.0100	0.0004	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Boron	0.945	0.0400	0.0060	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Calcium	111	25.0	2.02	mg/L	EPA 6020B		50	07/24/17 15:20	07/25/17 19:44	7070582	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Cobalt	0.0003	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Thallium	0.00008	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:38	7070582	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/18/17 12:40	07/18/17 18:31	7070382	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

Report No.: AAG0436

Project: CCR Event

Client ID: BGWC-16

Lab Number ID: AAG0436-04

Date/Time Sampled: 7/14/2017 9:25:00AM

Date/Time Received: 7/14/2017 5:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	569	25	10	mg/L	SM 2540 C		1	07/20/17 19:30	07/20/17 19:30	7070490	JPT
<b>Inorganic Anions</b>											
Chloride	35	0.25	0.02	mg/L	EPA 300.0		1	07/21/17 12:00	07/21/17 20:07	7070552	RLC
Fluoride	0.14	0.30	0.03	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 20:07	7070552	RLC
Sulfate	260	10	0.17	mg/L	EPA 300.0		10	07/21/17 12:00	07/23/17 09:19	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Arsenic	0.0008	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Barium	0.0290	0.0100	0.0004	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Boron	1.26	0.0400	0.0060	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Cadmium	0.0012	0.0010	0.0001	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Calcium	109	25.0	2.02	mg/L	EPA 6020B		50	07/24/17 15:20	07/25/17 19:55	7070582	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Cobalt	0.0049	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Lead	0.0002	0.0050	0.00007	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Thallium	0.0002	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 19:50	7070582	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/18/17 12:40	07/18/17 18:33	7070382	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

Report No.: AAG0436

Project: CCR Event

Client ID: BGWC-17

Lab Number ID: AAG0436-05

Date/Time Sampled: 7/14/2017 11:00:00AM

Date/Time Received: 7/14/2017 5:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	391	25	10	mg/L	SM 2540 C		1	07/20/17 19:30	07/20/17 19:30	7070490	JPT
<b>Inorganic Anions</b>											
Chloride	36	0.25	0.02	mg/L	EPA 300.0		1	07/21/17 12:00	07/21/17 20:28	7070552	RLC
Fluoride	0.16	0.30	0.03	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 20:28	7070552	RLC
Sulfate	110	10	0.17	mg/L	EPA 300.0		10	07/21/17 12:00	07/23/17 09:40	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Barium	0.0191	0.0100	0.0004	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Boron	1.26	0.0400	0.0060	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Cadmium	0.0002	0.0010	0.0001	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Calcium	70.6	25.0	2.02	mg/L	EPA 6020B		50	07/24/17 15:20	07/25/17 20:07	7070582	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Thallium	0.00009	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:01	7070582	CSW
Mercury	0.00016	0.00050	0.000041	mg/L	EPA 7470A	J	1	07/18/17 12:40	07/18/17 18:36	7070382	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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

July 27, 2017

Report No.: AAG0436

Project: CCR Event

Client ID: BGWC-18

Lab Number ID: AAG0436-06

Date/Time Sampled: 7/14/2017 12:25:00PM

Date/Time Received: 7/14/2017 5:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	281	25	10	mg/L	SM 2540 C		1	07/20/17 19:30	07/20/17 19:30	7070490	JPT
<b>Inorganic Anions</b>											
Chloride	11	0.25	0.02	mg/L	EPA 300.0		1	07/21/17 12:00	07/21/17 20:50	7070552	RLC
Fluoride	0.06	0.30	0.03	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 20:50	7070552	RLC
Sulfate	78	10	0.17	mg/L	EPA 300.0		10	07/21/17 12:00	07/23/17 10:00	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Barium	0.0349	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Boron	0.787	0.0400	0.0060	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Cadmium	0.0002	0.0010	0.0001	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Calcium	60.0	25.0	2.02	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 02:00	7070491	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 01:55	7070491	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/18/17 12:40	07/18/17 18:43	7070382	MTC





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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

Report No.: AAG0436

Project: CCR Event

Client ID: BGWC-19

Lab Number ID: AAG0436-07

Date/Time Sampled: 7/14/2017 1:45:00PM

Date/Time Received: 7/14/2017 5:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	325	25	10	mg/L	SM 2540 C		1	07/20/17 19:30	07/20/17 19:30	7070490	JPT
<b>Inorganic Anions</b>											
Chloride	19	0.25	0.02	mg/L	EPA 300.0		1	07/21/17 12:00	07/21/17 21:11	7070552	RLC
Fluoride	0.08	0.30	0.03	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 21:11	7070552	RLC
Sulfate	110	10	0.17	mg/L	EPA 300.0		10	07/21/17 12:00	07/23/17 10:21	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Arsenic	0.0006	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Barium	0.0405	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Boron	0.645	0.0400	0.0060	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Calcium	67.0	25.0	2.02	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 02:12	7070491	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Thallium	0.00008	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:06	7070491	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/18/17 12:40	07/18/17 18:45	7070382	MTC



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

Report No.: AAG0436

Project: CCR Event

Client ID: FBL071417

Lab Number ID: AAG0436-08

Date/Time Sampled: 7/14/2017 1:34:00PM

Date/Time Received: 7/14/2017 5:10:00PM

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	07/20/17 19:30	07/20/17 19:30	7070490	JPT
<b>Inorganic Anions</b>											
Chloride	0.10	0.25	0.02	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 22:38	7070552	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	07/21/17 12:00	07/21/17 22:38	7070552	RLC
Sulfate	0.06	1.0	0.02	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 22:38	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:29	7070491	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/18/17 12:40	07/18/17 18:47	7070382	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

Report No.: AAG0436

Project: CCR Event

Client ID: EQBL071417

Lab Number ID: AAG0436-09

Date/Time Sampled: 7/14/2017 1:42:00PM

Date/Time Received: 7/14/2017 5:10:00PM

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	07/20/17 19:30	07/20/17 19:30	7070490	JPT
<b>Inorganic Anions</b>											
Chloride	0.08	0.25	0.02	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 23:00	7070552	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	07/21/17 12:00	07/21/17 23:00	7070552	RLC
Sulfate	0.06	1.0	0.02	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 23:00	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:35	7070491	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/18/17 12:40	07/18/17 18:50	7070382	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

Report No.: AAG0436

Project: CCR Event

Client ID: BGWC-7

Lab Number ID: AAG0436-10

Date/Time Sampled: 7/14/2017 8:31:00AM

Date/Time Received: 7/14/2017 5:10:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	887	25	10	mg/L	SM 2540 C		1	07/20/17 19:30	07/20/17 19:30	7070490	JPT
<b>Inorganic Anions</b>											
Chloride	11	0.25	0.02	mg/L	EPA 300.0		1	07/21/17 12:00	07/21/17 23:22	7070552	RLC
Fluoride	0.23	0.30	0.03	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/21/17 23:22	7070552	RLC
Sulfate	230	10	0.17	mg/L	EPA 300.0		10	07/21/17 12:00	07/23/17 10:42	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Arsenic	0.0017	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Barium	0.0394	0.0100	0.0004	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Boron	1.85	0.0400	0.0060	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Calcium	157	25.0	2.02	mg/L	EPA 6020B		50	07/20/17 15:35	07/22/17 02:46	7070491	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Cobalt	0.0006	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Molybdenum	0.0129	0.0100	0.0010	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Lithium	0.0092	0.0500	0.0015	mg/L	EPA 6020B	J	1	07/20/17 15:35	07/22/17 02:40	7070491	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/18/17 12:40	07/18/17 18:52	7070382	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

**Report No.: AAG0436**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070490 - SM 2540 C</b>											
<b>Blank (7070490-BLK1)</b>						Prepared & Analyzed: 07/20/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7070490-BS1)</b>						Prepared & Analyzed: 07/20/17					
Total Dissolved Solids	379	25	10	mg/L	400.00		95	84-108			
<b>Duplicate (7070490-DUP1)</b>						Source: AAG0435-01 Prepared & Analyzed: 07/20/17					
Total Dissolved Solids	117	25	10	mg/L		121			3	10	
<b>Duplicate (7070490-DUP2)</b>						Source: AAG0436-08 Prepared & Analyzed: 07/20/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Batch 7070536 - SM 2540 C</b>											
<b>Blank (7070536-BLK1)</b>						Prepared & Analyzed: 07/21/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7070536-BS1)</b>						Prepared & Analyzed: 07/21/17					
Total Dissolved Solids	382	25	10	mg/L	400.00		96	84-108			
<b>Duplicate (7070536-DUP1)</b>						Source: AAG0338-15RE1 Prepared & Analyzed: 07/21/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7070536-DUP2)</b>						Source: AAG0505-04 Prepared & Analyzed: 07/21/17					
Total Dissolved Solids	11	25	10	mg/L		13			17	10	QR-03, J



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

**Report No.: AAG0436**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070552 - EPA 300.0</b>											
<b>Blank (7070552-BLK1)</b>						Prepared & Analyzed: 07/21/17					
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 (7070552-BS1)</b>						Prepared & Analyzed: 07/21/17					
Chloride	10.1	0.25	0.02	mg/L	10.020		101	90-110			
Fluoride	10.2	0.30	0.03	mg/L	10.020		102	90-110			
Sulfate	10.2	1.0	0.02	mg/L	10.050		102	90-110			
<b>Matrix Spike (7070552-MS1)</b>						Source: AAG0436-03 Prepared & Analyzed: 07/21/17					
Chloride	42.7	0.25	0.02	mg/L	10.020	37.6	52	90-110			QM-02
Fluoride	10.8	0.30	0.03	mg/L	10.020	0.17	106	90-110			QM-02
Sulfate	179	1.0	0.02	mg/L	10.050	187	NR	90-110			QM-02
<b>Matrix Spike (7070552-MS2)</b>						Source: AAG0505-01 Prepared: 07/21/17 Analyzed: 07/22/17					
Chloride	412	0.25	0.02	mg/L	10.020	590	NR	90-110			QM-02
Fluoride	11.4	0.30	0.03	mg/L	10.020	2.48	89	90-110			QM-05
Sulfate	345	1.0	0.02	mg/L	10.050	365	NR	90-110			QM-02
<b>Matrix Spike Dup (7070552-MSD1)</b>						Source: AAG0436-03 Prepared & Analyzed: 07/21/17					
Chloride	42.8	0.25	0.02	mg/L	10.020	37.6	53	90-110	0.2	15	QM-02
Fluoride	10.8	0.30	0.03	mg/L	10.020	0.17	106	90-110	0.6	15	QM-02
Sulfate	179	1.0	0.02	mg/L	10.050	187	NR	90-110	0.02	15	QM-02



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

**Report No.: AAG0436**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070382 - EPA 7470A</b>											
<b>Blank (7070382-BLK1)</b> Prepared & Analyzed: 07/18/17											
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7070382-BS1)</b> Prepared & Analyzed: 07/18/17											
Mercury	0.00231	0.00050	0.000041	mg/L	2.5000E-3		92	80-120			
<b>Matrix Spike (7070382-MS1)</b> Source: AAG0436-02 Prepared & Analyzed: 07/18/17											
Mercury	0.00231	0.00050	0.000041	mg/L	2.5000E-3	ND	92	75-125			
<b>Matrix Spike Dup (7070382-MSD1)</b> Source: AAG0436-02 Prepared & Analyzed: 07/18/17											
Mercury	0.00230	0.00050	0.000041	mg/L	2.5000E-3	ND	92	75-125	0.2	20	
<b>Post Spike (7070382-PS1)</b> Source: AAG0436-02 Prepared & Analyzed: 07/18/17											
Mercury	1.73			ug/L	1.6667	0.00137	104	80-120			
<b>Batch 7070491 - EPA 3005A</b>											
<b>Blank (7070491-BLK1)</b> Prepared: 07/20/17 Analyzed: 07/21/17											
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	0.0003	0.0250	0.0003	mg/L							J
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							



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Attention: Mr. Joju Abraham

July 27, 2017

**Report No.: AAG0436**

**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 7070491 - EPA 3005A**

**LCS (7070491-BS1)**

Prepared: 07/20/17 Analyzed: 07/24/17

Antimony	0.120	0.0030	0.0006	mg/L	0.10000		120	80-120			
Arsenic	0.114	0.0050	0.0005	mg/L	0.10000		114	80-120			
Barium	0.106	0.0100	0.0004	mg/L	0.10000		106	80-120			
Beryllium	0.111	0.0030	0.00009	mg/L	0.10000		111	80-120			
Boron	1.13	0.0400	0.0060	mg/L	1.0000		113	80-120			
Cadmium	0.120	0.0010	0.0001	mg/L	0.10000		120	80-120			
Calcium	1.18	0.500	0.0404	mg/L	1.0000		118	80-120			
Chromium	0.114	0.0100	0.0005	mg/L	0.10000		114	80-120			
Cobalt	0.115	0.0100	0.0003	mg/L	0.10000		115	80-120			
Copper	0.114	0.0250	0.0003	mg/L	0.10000		114	80-120			
Lead	0.113	0.0050	0.00007	mg/L	0.10000		113	80-120			
Molybdenum	0.119	0.0100	0.0010	mg/L	0.10000		119	80-120			
Nickel	0.116	0.0100	0.0005	mg/L	0.10000		116	80-120			
Selenium	0.111	0.0100	0.0018	mg/L	0.10000		111	80-120			
Silver	0.117	0.0100	0.0002	mg/L	0.10000		117	80-120			
Thallium	0.116	0.0010	0.00005	mg/L	0.10000		116	80-120			
Vanadium	0.115	0.0100	0.0012	mg/L	0.10000		115	80-120			
Zinc	0.116	0.0100	0.0012	mg/L	0.10000		116	80-120			
Lithium	0.109	0.0500	0.0015	mg/L	0.10000		109	80-120			

**Matrix Spike (7070491-MS1)**

Source: AAG0387-01

Prepared: 07/20/17 Analyzed: 07/21/17

Antimony	0.115	0.0030	0.0006	mg/L	0.10000	0.0006	114	75-125			
Arsenic	0.0995	0.0050	0.0005	mg/L	0.10000	ND	99	75-125			
Barium	0.117	0.0100	0.0004	mg/L	0.10000	0.0233	94	75-125			
Beryllium	0.0981	0.0030	0.00009	mg/L	0.10000	ND	98	75-125			
Boron	1.02	0.0400	0.0060	mg/L	1.0000	0.0131	101	75-125			
Cadmium	0.106	0.0010	0.0001	mg/L	0.10000	ND	106	75-125			
Calcium	15.3	25.0	2.02	mg/L	1.0000	14.3	101	75-125			J
Chromium	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Cobalt	0.118	0.0100	0.0003	mg/L	0.10000	0.0096	109	75-125			
Copper	0.0984	0.0250	0.0003	mg/L	0.10000	0.0004	98	75-125			
Lead	0.0978	0.0050	0.00007	mg/L	0.10000	ND	98	75-125			
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000	ND	106	75-125			
Nickel	0.104	0.0100	0.0005	mg/L	0.10000	0.0025	102	75-125			
Selenium	0.100	0.0100	0.0018	mg/L	0.10000	ND	100	75-125			
Silver	0.0994	0.0100	0.0002	mg/L	0.10000	ND	99	75-125			
Thallium	0.100	0.0010	0.00005	mg/L	0.10000	ND	100	75-125			
Vanadium	0.104	0.0100	0.0012	mg/L	0.10000	ND	104	75-125			
Zinc	0.108	0.0100	0.0012	mg/L	0.10000	0.0043	104	75-125			
Lithium	0.103	0.0500	0.0015	mg/L	0.10000	0.0051	98	75-125			





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Attention: Mr. Joju Abraham

July 27, 2017

**Report No.: AAG0436**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070491 - EPA 3005A</b>											
<b>Matrix Spike Dup (7070491-MSD1)</b>			<b>Source: AAG0387-01</b>			<b>Prepared: 07/20/17 Analyzed: 07/21/17</b>					
Antimony	0.117	0.0030	0.0006	mg/L	0.10000	0.0006	117	75-125	2	20	
Arsenic	0.103	0.0050	0.0005	mg/L	0.10000	ND	103	75-125	3	20	
Barium	0.120	0.0100	0.0004	mg/L	0.10000	0.0233	97	75-125	3	20	
Beryllium	0.104	0.0030	0.00009	mg/L	0.10000	ND	104	75-125	6	20	
Boron	1.06	0.0400	0.0060	mg/L	1.0000	0.0131	105	75-125	4	20	
Cadmium	0.101	0.0010	0.0001	mg/L	0.10000	ND	101	75-125	5	20	
Calcium	15.5	25.0	2.02	mg/L	1.0000	14.3	123	75-125	1	20	J
Chromium	0.106	0.0100	0.0005	mg/L	0.10000	ND	106	75-125	3	20	
Cobalt	0.117	0.0100	0.0003	mg/L	0.10000	0.0096	108	75-125	1	20	
Copper	0.0987	0.0250	0.0003	mg/L	0.10000	0.0004	98	75-125	0.3	20	
Lead	0.0981	0.0050	0.00007	mg/L	0.10000	ND	98	75-125	0.3	20	
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000	ND	106	75-125	0.05	20	
Nickel	0.107	0.0100	0.0005	mg/L	0.10000	0.0025	104	75-125	3	20	
Selenium	0.102	0.0100	0.0018	mg/L	0.10000	ND	102	75-125	2	20	
Silver	0.101	0.0100	0.0002	mg/L	0.10000	ND	101	75-125	2	20	
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	ND	101	75-125	0.6	20	
Vanadium	0.107	0.0100	0.0012	mg/L	0.10000	ND	107	75-125	3	20	
Zinc	0.107	0.0100	0.0012	mg/L	0.10000	0.0043	103	75-125	0.8	20	
Lithium	0.110	0.0500	0.0015	mg/L	0.10000	0.0051	104	75-125	6	20	
<b>Post Spike (7070491-PS1)</b>											
<b>Source: AAG0387-01</b>			<b>Prepared: 07/20/17 Analyzed: 07/21/17</b>								
Antimony	106			ug/L	100.00	0.648	105	80-120			
Arsenic	102			ug/L	100.00	0.0447	102	80-120			
Barium	115			ug/L	100.00	23.3	92	80-120			
Beryllium	100			ug/L	100.00	0.0625	100	80-120			
Boron	1030			ug/L	1000.0	13.1	102	80-120			
Cadmium	103			ug/L	100.00	0.142	103	80-120			
Calcium	15300			ug/L	1000.0	14300	95	80-120			
Chromium	101			ug/L	100.00	0.196	101	80-120			
Cobalt	113			ug/L	100.00	9.61	103	80-120			
Copper	100			ug/L	100.00	0.386	100	80-120			
Lead	97.0			ug/L	100.00	0.0209	97	80-120			
Molybdenum	103			ug/L	100.00	0.316	103	80-120			
Nickel	99.9			ug/L	100.00	2.47	97	80-120			
Selenium	104			ug/L	100.00	1.29	103	80-120			
Silver	99.1			ug/L	100.00	-0.0002	99	80-120			
Thallium	98.5			ug/L	100.00	0.0377	98	80-120			
Vanadium	105			ug/L	100.00	0.324	105	80-120			
Zinc	105			ug/L	100.00	4.33	101	80-120			
Lithium	103			ug/L	100.00	5.08	98	80-120			



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July 27, 2017

**Report No.: AAG0436**

**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 7070582 - EPA 3005A**

**Blank (7070582-BLK1)**

Prepared: 07/24/17 Analyzed: 07/25/17

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 (7070582-BS1)**

Prepared: 07/24/17 Analyzed: 07/25/17

Antimony	0.109	0.0030	0.0006	mg/L	0.10000		109	80-120			
Arsenic	0.0976	0.0050	0.0005	mg/L	0.10000		98	80-120			
Barium	0.101	0.0100	0.0004	mg/L	0.10000		101	80-120			
Beryllium	0.104	0.0030	0.00009	mg/L	0.10000		104	80-120			
Boron	0.989	0.0400	0.0060	mg/L	1.0000		99	80-120			
Cadmium	0.107	0.0010	0.0001	mg/L	0.10000		107	80-120			
Calcium	1.01	0.500	0.0404	mg/L	1.0000		101	80-120			
Chromium	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120			
Cobalt	0.0977	0.0100	0.0003	mg/L	0.10000		98	80-120			
Copper	0.101	0.0250	0.0003	mg/L	0.10000		101	80-120			
Lead	0.100	0.0050	0.00007	mg/L	0.10000		100	80-120			
Molybdenum	0.104	0.0100	0.0010	mg/L	0.10000		104	80-120			
Nickel	0.101	0.0100	0.0005	mg/L	0.10000		101	80-120			
Selenium	0.101	0.0100	0.0018	mg/L	0.10000		101	80-120			
Silver	0.0982	0.0100	0.0002	mg/L	0.10000		98	80-120			
Thallium	0.105	0.0010	0.00005	mg/L	0.10000		105	80-120			
Vanadium	0.104	0.0100	0.0012	mg/L	0.10000		104	80-120			
Zinc	0.101	0.0100	0.0012	mg/L	0.10000		101	80-120			
Lithium	0.105	0.0500	0.0015	mg/L	0.10000		105	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
<b>Batch 7070582 - EPA 3005A</b>											
<b>Matrix Spike (7070582-MS1)</b>			<b>Source: AAG0435-01</b>				Prepared: 07/24/17 Analyzed: 07/25/17				
Antimony	0.109	0.0030	0.0006	mg/L	0.10000	0.0008	108	75-125			
Arsenic	0.102	0.0050	0.0005	mg/L	0.10000	0.0029	99	75-125			
Barium	0.122	0.0100	0.0004	mg/L	0.10000	0.0245	98	75-125			
Beryllium	0.101	0.0030	0.00009	mg/L	0.10000	ND	101	75-125			
Boron	0.978	0.0400	0.0060	mg/L	1.0000	0.0070	97	75-125			
Cadmium	0.106	0.0010	0.0001	mg/L	0.10000	ND	106	75-125			
Calcium	25.0	25.0	2.02	mg/L	1.0000	24.8	22	75-125			QM-02, J
Chromium	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125			
Cobalt	0.103	0.0100	0.0003	mg/L	0.10000	0.0005	103	75-125			
Copper	0.102	0.0250	0.0003	mg/L	0.10000	ND	102	75-125			
Lead	0.0985	0.0050	0.00007	mg/L	0.10000	ND	98	75-125			
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000	0.0027	104	75-125			
Nickel	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Selenium	0.104	0.0100	0.0018	mg/L	0.10000	ND	104	75-125			
Silver	0.0988	0.0100	0.0002	mg/L	0.10000	ND	99	75-125			
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	ND	101	75-125			
Vanadium	0.101	0.0100	0.0012	mg/L	0.10000	ND	101	75-125			
Zinc	0.102	0.0100	0.0012	mg/L	0.10000	ND	102	75-125			
Lithium	0.102	0.0500	0.0015	mg/L	0.10000	ND	102	75-125			
<b>Matrix Spike Dup (7070582-MSD1)</b>			<b>Source: AAG0435-01</b>				Prepared: 07/24/17 Analyzed: 07/25/17				
Antimony	0.110	0.0030	0.0006	mg/L	0.10000	0.0008	109	75-125	0.8	20	
Arsenic	0.104	0.0050	0.0005	mg/L	0.10000	0.0029	101	75-125	2	20	
Barium	0.122	0.0100	0.0004	mg/L	0.10000	0.0245	98	75-125	0.2	20	
Beryllium	0.102	0.0030	0.00009	mg/L	0.10000	ND	102	75-125	1	20	
Boron	0.979	0.0400	0.0060	mg/L	1.0000	0.0070	97	75-125	0.05	20	
Cadmium	0.107	0.0010	0.0001	mg/L	0.10000	ND	107	75-125	2	20	
Calcium	27.8	25.0	2.02	mg/L	1.0000	24.8	304	75-125	11	20	QM-02
Chromium	0.108	0.0100	0.0005	mg/L	0.10000	ND	108	75-125	4	20	
Cobalt	0.105	0.0100	0.0003	mg/L	0.10000	0.0005	105	75-125	2	20	
Copper	0.104	0.0250	0.0003	mg/L	0.10000	ND	104	75-125	2	20	
Lead	0.0967	0.0050	0.00007	mg/L	0.10000	ND	97	75-125	2	20	
Molybdenum	0.107	0.0100	0.0010	mg/L	0.10000	0.0027	104	75-125	0.7	20	
Nickel	0.107	0.0100	0.0005	mg/L	0.10000	ND	107	75-125	4	20	
Selenium	0.103	0.0100	0.0018	mg/L	0.10000	ND	103	75-125	0.5	20	
Silver	0.0999	0.0100	0.0002	mg/L	0.10000	ND	100	75-125	1	20	
Thallium	0.0993	0.0010	0.00005	mg/L	0.10000	ND	99	75-125	2	20	
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000	ND	105	75-125	4	20	
Zinc	0.102	0.0100	0.0012	mg/L	0.10000	ND	102	75-125	0.02	20	
Lithium	0.103	0.0500	0.0015	mg/L	0.10000	ND	103	75-125	0.8	20	



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July 27, 2017

**Report No.: AAG0436**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070582 - EPA 3005A</b>											
<b>Post Spike (7070582-PS1)</b>			<b>Source: AAG0435-01</b>			<b>Prepared: 07/24/17 Analyzed: 07/25/17</b>					
Antimony	102			ug/L	100.00	0.765	101	80-120			
Arsenic	98.7			ug/L	100.00	2.90	96	80-120			
Barium	121			ug/L	100.00	24.5	96	80-120			
Beryllium	96.7			ug/L	100.00	0.0123	97	80-120			
Boron	983			ug/L	1000.0	7.02	98	80-120			
Cadmium	104			ug/L	100.00	0.0302	104	80-120			
Calcium	25100			ug/L	1000.0	24800	33	80-120			QM-02
Chromium	97.5			ug/L	100.00	0.225	97	80-120			
Cobalt	96.1			ug/L	100.00	0.503	96	80-120			
Copper	98.4			ug/L	100.00	0.119	98	80-120			
Lead	95.3			ug/L	100.00	0.0125	95	80-120			
Molybdenum	106			ug/L	100.00	2.71	103	80-120			
Nickel	95.7			ug/L	100.00	0.455	95	80-120			
Selenium	101			ug/L	100.00	0.481	100	80-120			
Silver	94.2			ug/L	100.00	0.0001	94	80-120			
Thallium	96.7			ug/L	100.00	0.0241	97	80-120			
Vanadium	97.6			ug/L	100.00	-0.912	98	80-120			
Zinc	97.6			ug/L	100.00	1.04	97	80-120			
Lithium	100			ug/L	100.00	0.698	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

July 27, 2017

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## Legend

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### 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

- 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).
- H-02** Sample was prepared and/or analyzed outside of the EPA recommended holding time. See Case Narrative.

**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

July 27, 2017

## Report Notes

BGWC-7 was not listed on the COC and was added to the report taking information from the container labels. MMR

**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:		ANALYSIS REQUESTED		CONTAINER TYPE	PRESERVATION		
Southern Company Services		CONTAINER TYPE:					
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		PRESERVATION:		LAB	PRESERVATION		
241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308		# of					
REPORT TO:	CC:	CONTAINERS	↓	NUMBER	REMARKS/ADDITIONAL INFORMATION		
Requested Completion Date:	PO#:						
Project Name/State:							
Project #:		Metal App. III + IV EPA 8020 + EPA 7470 L.F. 504 EPA 300 TDS SM 2540C Radium 226 + 228 SW-846 9315 + 9320		LAB NUMBER ↓	CONTAINER TYPE PRESERVATION		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P			G R A B	SAMPLE IDENTIFICATION
7/13/17	0934	GW				X	B6WC-15
7/13/17	1215	GW				X	B6WC-11
7/13/17	1345	GW				X	B6WC-12
7/14/17	0925	GW				X	B6WC-16
7/14/17	1100	GW				X	B6WC-17
7/14/17	1225	GW				X	B6WC-18
7/14/17	1345	GW				X	B6WC-19
7/14/17	1334	W				X	FBL071417
7/14/17	1342	W		X	EQBL071417		
SAMPLED BY AND TITLE:		DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	LAB #:		
Robert Mull / Michael Patinkin		7/14/17 1405	Robert Mull	7/14/17 1710	FOR LAB USE ONLY AA 610436 MR		
RECEIVED BY:		DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	Entered into LIMS:		
Chandler Hawks		7/14/17 1710			Tracking #:		
RECEIVED BY LAB:		DATE/TIME:	SAMPLE SHIPPED VIA:	CLIENT			
Checked: [ ] No [ ] NA [ ] Yes [ ] No [ ] NA		Temperature: Min: 4.5 (Max: )	UPS FED-EX USPS COURIER OTHER FS	<input checked="" type="checkbox"/>			
Custody Seal: Intact Broken Not Present: [ ] N/A		# of Coolers: [ ] Cooler ID: [ ]					

B6WC-7 collected on 7/14/17 @ 0831 per labels. MR 7/14/17



Client Name: BIA Power

Project # AA610436

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other  
Tracking #: \_\_\_\_\_

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used IR-1 Type of Ice: Wet Blue None  Samples on Ice, cooling process has begun

Cooler Temperature 4.5 Biological Tissue is Frozen: Yes No  
Temp should be above freezing to 6°C

Date and Initials of person examining contents: 7/11/17 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.	<u>B6WOC-7 was not listed on the COC</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: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Field Data Required? Y / N  
Person Contacted: \_\_\_\_\_  
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: 7/17/2017 4:02:10PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 07/14/17 17:10

**Work Order:** AAG0436

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 10

**#Containers:** 38

**Minimum Temp(C):** 4.5

**Maximum Temp(C):** 4.5

**Custody Seal(s) Used:** N/A

**CHECKLIST ITEMS**

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	NO
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:**

BGWC-7 was not listed on the COC and was added to the report taking information from the container labels. MMR

August 07, 2017

Ms. Lauren Petty  
GA Power  
42 Inverness Center Parkway  
Birmingham, AL 35242

RE: Project: AAG0436 Plant Bowen  
Pace Project No.: 30224589

Dear Ms. Petty:

Enclosed are the analytical results for sample(s) received by the laboratory on July 19, 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: AAG0436 Plant Bowen

Pace Project No.: 30224589

### 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: AAG0436 Plant Bowen  
Pace Project No.: 30224589

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30224589001	BGWC-11	Water	07/13/17 12:15	07/19/17 10:15
30224589002	BGWC-12	Water	07/13/17 13:45	07/19/17 10:15
30224589003	BGWC-16	Water	07/14/17 09:25	07/19/17 10:15
30224589004	BGWC-17	Water	07/14/17 11:00	07/19/17 10:15
30224589005	BGWC-18	Water	07/14/17 12:25	07/19/17 10:15
30224589006	BGWC-19	Water	07/14/17 13:45	07/19/17 10:15
30224589007	FBL071417	Water	07/14/17 13:34	07/19/17 10:15
30224589008	EQBL071417	Water	07/14/17 13:42	07/19/17 10:15
30224589009	BGWC-7	Water	07/14/17 08:31	07/19/17 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAG0436 Plant Bowen  
Pace Project No.: 30224589

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30224589001	BGWC-11	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224589002	BGWC-12	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224589003	BGWC-16	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224589004	BGWC-17	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224589005	BGWC-18	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224589006	BGWC-19	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224589007	FBL071417	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224589008	EQBL071417	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224589009	BGWC-7	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAG0436 Plant Bowen

Pace Project No.: 30224589

Sample: <b>BGWC-11</b>		Lab ID: <b>30224589001</b>	Collected: 07/13/17 12:15	Received: 07/19/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.378 ± 0.179 (0.251)</b>		pCi/L	08/02/17 09:38	13982-63-3	
		<b>C:81% T:NA</b>					
Radium-228	EPA 9320	<b>-0.0188 ± 0.305 (0.719)</b>		pCi/L	08/02/17 14:41	15262-20-1	
		<b>C:77% T:82%</b>					
Total Radium	Total Radium Calculation	<b>0.378 ± 0.484 (0.970)</b>		pCi/L	08/04/17 11:56	7440-14-4	

Sample: <b>BGWC-12</b>		Lab ID: <b>30224589002</b>	Collected: 07/13/17 13:45	Received: 07/19/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.367 ± 0.156 (0.166)</b>		pCi/L	08/02/17 09:38	13982-63-3	
		<b>C:89% T:NA</b>					
Radium-228	EPA 9320	<b>0.269 ± 0.413 (0.893)</b>		pCi/L	08/02/17 14:41	15262-20-1	
		<b>C:79% T:82%</b>					
Total Radium	Total Radium Calculation	<b>0.636 ± 0.569 (1.06)</b>		pCi/L	08/04/17 11:56	7440-14-4	

Sample: <b>BGWC-16</b>		Lab ID: <b>30224589003</b>	Collected: 07/14/17 09:25	Received: 07/19/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.317 ± 0.153 (0.196)</b>		pCi/L	08/02/17 09:39	13982-63-3	
		<b>C:84% T:NA</b>					
Radium-228	EPA 9320	<b>0.209 ± 0.355 (0.775)</b>		pCi/L	08/02/17 14:41	15262-20-1	
		<b>C:74% T:79%</b>					
Total Radium	Total Radium Calculation	<b>0.526 ± 0.508 (0.971)</b>		pCi/L	08/04/17 11:56	7440-14-4	

Sample: <b>BGWC-17</b>		Lab ID: <b>30224589004</b>	Collected: 07/14/17 11:00	Received: 07/19/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.187 ± 0.138 (0.240)</b>		pCi/L	08/02/17 09:41	13982-63-3	
		<b>C:75% T:NA</b>					
Radium-228	EPA 9320	<b>0.405 ± 0.365 (0.745)</b>		pCi/L	08/02/17 14:41	15262-20-1	
		<b>C:80% T:87%</b>					
Total Radium	Total Radium Calculation	<b>0.592 ± 0.503 (0.985)</b>		pCi/L	08/04/17 11:56	7440-14-4	

Sample: <b>BGWC-18</b>		Lab ID: <b>30224589005</b>	Collected: 07/14/17 12:25	Received: 07/19/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.212 ± 0.0891 (0.103)</b>		pCi/L	08/02/17 11:33	13982-63-3	
		<b>C:82% T:NA</b>					
Radium-228	EPA 9320	<b>0.335 ± 0.311 (0.633)</b>		pCi/L	08/02/17 14:41	15262-20-1	
		<b>C:79% T:91%</b>					

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAG0436 Plant Bowen  
Pace Project No.: 30224589

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-18</b> <b>Lab ID: 30224589005</b> Collected: 07/14/17 12:25      Received: 07/19/17 10:15      Matrix: Water PWS:      Site ID:      Sample Type:						
Total Radium	Total Radium Calculation	<b>0.547 ± 0.400 (0.736)</b>	pCi/L	08/04/17 11:56	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-19</b> <b>Lab ID: 30224589006</b> Collected: 07/14/17 13:45      Received: 07/19/17 10:15      Matrix: Water PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.499 ± 0.148 (0.108)</b> C:68% T:NA	pCi/L	08/02/17 11:33	13982-63-3	
Radium-228	EPA 9320	<b>0.773 ± 0.397 (0.698)</b> C:76% T:88%	pCi/L	08/02/17 14:41	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.27 ± 0.545 (0.806)</b>	pCi/L	08/04/17 11:56	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: FBL071417</b> <b>Lab ID: 30224589007</b> Collected: 07/14/17 13:34      Received: 07/19/17 10:15      Matrix: Water PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.222 ± 0.0878 (0.0986)</b> C:91% T:NA	pCi/L	08/02/17 11:33	13982-63-3	
Radium-228	EPA 9320	<b>0.206 ± 0.329 (0.714)</b> C:81% T:80%	pCi/L	08/02/17 14:41	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.428 ± 0.417 (0.813)</b>	pCi/L	08/04/17 11:56	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: EQBL071417</b> <b>Lab ID: 30224589008</b> Collected: 07/14/17 13:42      Received: 07/19/17 10:15      Matrix: Water PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.225 ± 0.0884 (0.0998)</b> C:96% T:NA	pCi/L	08/02/17 11:33	13982-63-3	
Radium-228	EPA 9320	<b>0.271 ± 0.329 (0.696)</b> C:76% T:86%	pCi/L	08/02/17 14:41	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.496 ± 0.417 (0.796)</b>	pCi/L	08/04/17 11:56	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-7</b> <b>Lab ID: 30224589009</b> Collected: 07/14/17 08:31      Received: 07/19/17 10:15      Matrix: Water PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>0.828 ± 0.191 (0.111)</b> C:91% T:NA	pCi/L	08/02/17 11:33	13982-63-3	
Radium-228	EPA 9320	<b>0.724 ± 0.381 (0.677)</b> C:79% T:90%	pCi/L	08/02/17 14:41	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.55 ± 0.572 (0.788)</b>	pCi/L	08/04/17 11:56	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAG0436 Plant Bowen

Pace Project No.: 30224589

QC Batch: 265654

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30224589001, 30224589002, 30224589003, 30224589004, 30224589005, 30224589006, 30224589007, 30224589008, 30224589009

METHOD BLANK: 1308231

Matrix: Water

Associated Lab Samples: 30224589001, 30224589002, 30224589003, 30224589004, 30224589005, 30224589006, 30224589007, 30224589008, 30224589009

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.205 ± 0.314 (0.680) C:81% T:86%	pCi/L	08/02/17 14:40	

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: AAG0436 Plant Bowen  
Pace Project No.: 30224589

### 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



Workorder: AAG0436

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 8/9/2017

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

WO#: 30224589



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-11	G	7/13/2017 12:15	AAG0436-02	GW	2				X	001
2	BGWC-12	G	7/13/2017 13:45	AAG0436-03	GW	2				X	002
3	BGWC-16	G	7/14/2017 9:25	AAG0436-04	GW	2				X	003
4	BGWC-17	G	7/14/2017 11:00	AAG0436-05	GW	2				X	004
5	BGWC-18	G	7/14/2017 12:25	AAG0436-06	GW	2				X	005
6	BGWC-19	G	7/14/2017 13:45	AAG0436-07	GW	2				X	006
7	FBL071417	G	7/14/2017 13:34	AAG0436-08	W	2				X	007
8	EQBL071417	G	7/14/2017 13:42	AAG0436-09	W	2				X	008
9	BGWC-7	G	7/14/2017 8:31	AAG0436-10	GW	2				X	009
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	M. RAHMAN	7/17/17	[Signature]	7/19/17	AAG0436-01 does not get Rad analysis.
2					
3					

Cooler Temperature on Receipt <u>N/A</u> °C	Custody Seal <u>Y</u> or <u>N</u>	Received on Ice <u>Y</u> or <u>N</u>	Sample Intact <u>Y</u> or <u>N</u>
---	-----------------------------------	--------------------------------------	------------------------------------

\*\*\*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 Services, LLC - Atlanta GA  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME: <u>Southern Company Services</u>				ANALYSIS REQUESTED				LAB ID NUMBER	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>241 Ralph McGill Blvd SE B10185 Atlanta, GA 30308</u>				CONTAINER TYPE: <u>P</u>	<u>P</u>	<u>P</u>						
REPORT TO: <u>Joan Abraham</u> CC: <u>Meria Padilla</u>				PRESERVATION: <u>3</u>	<u>7</u>	<u>3</u>						
REQUESTED COMPLETION DATE:				# of								
PROJECT NAME/STATE: <u>Plant Bowen-Ash Pond CCR</u>				CONTAINERS	↓	↓	↓		↓	*MATRIX CODES:		
PROJECT #:												
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION							
7/13/17	0934	GW	X		B6WC-15	2	1		1			
7/13/17	1215	GW	X		B6WC-11	4	1		1	2		
7/13/17	1345	GW	X		B6WC-12	4	1		1	2		
7/14/17	0925	GW	X		B6WC-16	4	1	1	2			
7/14/17	1100	GW	X		B6WC-17	4	1	1	2			
7/14/17	1225	GW	X		B6WC-18	4	1	1	2			
7/14/17	1345	GW	X		B6WC-19	4	1	1	2			
7/14/17	1534	W	X		FBL071417	4	1	1	2			
7/14/17	1342	W	X		EQBL071417	4	1	1	2			
SAMPLED BY AND TITLE: <u>Robert Mull/ Michael Patinkin</u>				DATE/TIME: <u>7/14/17 1405</u>	RELINQUISHED BY: <u>Robert Mull</u>	DATE/TIME: <u>7/14/17 1710</u>	FOR LAB USE ONLY					
RECEIVED BY:				DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	LAB #: <u>PA-G10456</u>					
RECEIVED BY LAB: <u>Charles Hanks</u>				DATE/TIME: <u>7/14/17 1710</u>	SAMPLE SHIPPED VIA:		Entered Into LIMS:					
MR Checked: <u>No</u> NA <u>No</u> NA				Temperature: <u>4.5</u> (Max)	UPS <input type="checkbox"/> FED-EX <input type="checkbox"/> USPS <input type="checkbox"/> COURIER <input checked="" type="checkbox"/> CLIENT <input type="checkbox"/> OTHER <input type="checkbox"/> FS <input type="checkbox"/>		Tracking #:					
				Custody Seal: <u>Intact</u> Broken <input type="checkbox"/> Not Present <input checked="" type="checkbox"/>	# of Coolers: <u>0</u>		Cooler ID:					

30224589

B6WC-7 collected on 7/14/17 @ 0831 per labels. MR 7/14/17



Client Name: GTA Power

Project # AAG10436

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other

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

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other

Thermometer Used IR-1 Type of Ice: Wet Blue None  Samples on Ice, cooling process has begun

Cooler Temperature 4.5 Biological Tissue Is Frozen: Yes No

Temp should be above freezing to 8°C

Date and initials of person examining contents: 7/11/17 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12.	<u>BGW-7 was not listed on the COC</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: \_\_\_\_\_

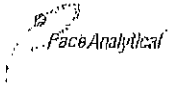
Project Manager Review: \_\_\_\_\_

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

30224589



Client Name: PACE-GA Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 741366572894

Label	<u>ZH</u>
LIMS Login	<u>AM</u>

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

Thermometer Used \_\_\_\_\_ 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: ZH 7/19/17

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.
Filtered volume received for Dissolved tests			/	14.
All containers have been checked for preservation.	/			15. <u>PHCZ</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>ZH</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>ZH</u> Date: <u>7/19/17</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 reports.

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

Test: Ra-228  
Analyst: VAL  
Date: 7/27/2017  
Worklist: 36804  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1308231	
MB concentration:	0.205	
M/B Counting Uncertainty:	0.312	
MB MDC:	0.680	
MB Numerical Performance Indicator:	1.29	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment		
	LCS (Y or N)?	N
	LCS36804	LCS36804
Count Date:	8/2/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	23.902	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.801	
Target Conc. (pCi/L, g, F):	5.969	
Uncertainty (Calculated):	0.430	
Result (pCi/L, g, F):	7.266	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.750	
Numerical Performance Indicator:	2.94	
Percent Recovery:	121.73%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Duplicate Sample Assessment		
Sample I.D.:	30224586001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30224586001DUP	
Sample Result (pCi/L, g, F):	0.589	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.398	
Sample Duplicate Result (pCi/L, g, F):	0.821	
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:	-0.813	
Duplicate RPD:	32.95%	
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:

*Q8/17/17*

Sample Matrix Spike Control Assessment	
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):	
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:	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	



## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 7/27/2017  
Worklist: 36808  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1308241
MB concentration:	0.434
M/B Counting Uncertainty:	0.165
MB MDC:	0.187
MB Numerical Performance Indicator:	5.15
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDQ:	See Comment*

Laboratory Control Sample Assessment		
	LCS(D (Y or N)?	N
	LCS36808	LCS36808
Count Date:	8/2/2017	
Spike I.D.:	17-030	
Spike Concentration (pCi/mL):	80.197	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.502	
Target Conc. (pCi/L, g, F):	15.984	
Uncertainty (Calculated):	1.472	
Result (pCi/L, g, F):	13.401	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.805	
Numerical Performance Indicator:	-3.02	
Percent Recovery:	83.84%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30224586001	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	30224586001DUP	
Sample Result (pCi/L, g, F):	1.277	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.253	
Sample Duplicate Result (pCi/L, g, F):	1.136	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.240	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	0.792	30224586001
Duplicate RPD:	11.68%	30224586001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

*QC*





**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: AAG0505**

**July 27, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel", written over a horizontal line.

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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 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>
BGWC-24	AAG0505-01	Ground Water	07/17/17 10:44	07/18/17 14:00
BGWC-25	AAG0505-02	Ground Water	07/17/17 13:12	07/18/17 14:00
BGWC-23	AAG0505-03	Ground Water	07/17/17 15:30	07/18/17 14:00
FBL071717	AAG0505-04	Water	07/17/17 15:50	07/18/17 14:00
EQBL071717	AAG0505-05	Water	07/17/17 15:55	07/18/17 14:00



**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

July 27, 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

July 27, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0505

Project: CCR Event

Client ID: BGWC-24

Lab Number ID: AAG0505-01

Date/Time Sampled: 7/17/2017 10:44:00AM

Date/Time Received: 7/18/2017 2:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	5080	25	10	mg/L	SM 2540 C		1	07/21/17 19:20	07/21/17 19:20	7070536	JPT
<b>Inorganic Anions</b>											
Chloride	2100	25	2.4	mg/L	EPA 300.0		100	07/21/17 12:00	07/23/17 11:02	7070552	RLC
Fluoride	2.5	0.30	0.03	mg/L	EPA 300.0		1	07/21/17 12:00	07/21/17 23:44	7070552	RLC
Sulfate	670	100	1.7	mg/L	EPA 300.0		100	07/21/17 12:00	07/23/17 11:02	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:24	7070582	CSW
Arsenic	0.0031	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 20:24	7070582	CSW
Barium	0.134	0.0100	0.0004	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:24	7070582	CSW
Beryllium	ND	0.0030	0.0005	mg/L	EPA 6020B		5	07/24/17 15:20	07/26/17 16:15	7070582	CSW
Boron	33.8	2.00	0.298	mg/L	EPA 6020B		50	07/24/17 15:20	07/26/17 16:09	7070582	CSW
Cadmium	0.0037	0.0010	0.0001	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:24	7070582	CSW
Calcium	1120	250	20.2	mg/L	EPA 6020B		500	07/24/17 15:20	07/26/17 16:04	7070582	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:24	7070582	CSW
Cobalt	0.0033	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 20:24	7070582	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:24	7070582	CSW
Molybdenum	0.0013	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 20:24	7070582	CSW
Selenium	0.0052	0.0100	0.0018	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 20:24	7070582	CSW
Thallium	0.0004	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 20:24	7070582	CSW
Lithium	ND	0.250	0.0075	mg/L	EPA 6020B	R-01	5	07/24/17 15:20	07/26/17 16:15	7070582	CSW
Mercury	0.00013	0.00050	0.000041	mg/L	EPA 7470A	J	1	07/25/17 08:45	07/25/17 12:04	7070599	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 2480 Maner Road  
 Atlanta GA, 30339

July 27, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAG0505

**Project:** CCR Event

**Client ID:** BGWC-25

**Lab Number ID:** AAG0505-02

**Date/Time Sampled:** 7/17/2017 1:12:00PM

**Date/Time Received:** 7/18/2017 2:00:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	238	25	10	mg/L	SM 2540 C		1	07/21/17 19:20	07/21/17 19:20	7070536	JPT
<b>Inorganic Anions</b>											
Chloride	5.0	0.25	0.02	mg/L	EPA 300.0		1	07/21/17 12:00	07/22/17 00:27	7070552	RLC
Fluoride	0.07	0.30	0.03	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/22/17 00:27	7070552	RLC
Sulfate	25	1.0	0.02	mg/L	EPA 300.0		1	07/21/17 12:00	07/22/17 00:27	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:36	7070582	CSW
Arsenic	0.0021	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 20:36	7070582	CSW
Barium	0.0251	0.0100	0.0004	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:36	7070582	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/24/17 15:20	07/26/17 14:21	7070582	CSW
Boron	0.0171	0.0400	0.0060	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/26/17 14:21	7070582	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:36	7070582	CSW
Calcium	41.9	25.0	2.02	mg/L	EPA 6020B		50	07/24/17 15:20	07/25/17 20:41	7070582	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:36	7070582	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:36	7070582	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:36	7070582	CSW
Molybdenum	0.0024	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 20:36	7070582	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:36	7070582	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:36	7070582	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:36	7070582	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/25/17 08:45	07/25/17 12:07	7070599	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

Report No.: AAG0505

Project: CCR Event

Client ID: BGWC-23

Lab Number ID: AAG0505-03

Date/Time Sampled: 7/17/2017 3:30:00PM

Date/Time Received: 7/18/2017 2:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1810	25	10	mg/L	SM 2540 C		1	07/21/17 19:20	07/21/17 19:20	7070536	JPT
<b>Inorganic Anions</b>											
Chloride	470	12	1.2	mg/L	EPA 300.0		50	07/21/17 12:00	07/23/17 15:03	7070552	RLC
Fluoride	0.09	0.30	0.03	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/22/17 00:49	7070552	RLC
Sulfate	510	50	0.85	mg/L	EPA 300.0		50	07/21/17 12:00	07/23/17 15:03	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:47	7070582	CSW
Arsenic	0.0017	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 20:47	7070582	CSW
Barium	0.0809	0.0100	0.0004	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:47	7070582	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/24/17 15:20	07/26/17 14:32	7070582	CSW
Boron	7.06	2.00	0.298	mg/L	EPA 6020B		50	07/24/17 15:20	07/26/17 14:26	7070582	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:47	7070582	CSW
Calcium	319	25.0	2.02	mg/L	EPA 6020B		50	07/24/17 15:20	07/25/17 20:53	7070582	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:47	7070582	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:47	7070582	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:47	7070582	CSW
Molybdenum	0.0131	0.0100	0.0010	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:47	7070582	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:47	7070582	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:47	7070582	CSW
Lithium	0.0095	0.0500	0.0015	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/25/17 20:47	7070582	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/25/17 08:45	07/25/17 12:09	7070599	MTC



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

Report No.: AAG0505

Project: CCR Event

Client ID: FBL071717

Lab Number ID: AAG0505-04

Date/Time Sampled: 7/17/2017 3:50:00PM

Date/Time Received: 7/18/2017 2:00:00PM

Matrix: Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	13	25	10	mg/L	SM 2540 C	J	1	07/21/17 19:20	07/21/17 19:20	7070536	JPT
<b>Inorganic Anions</b>											
Chloride	0.31	0.25	0.02	mg/L	EPA 300.0		1	07/21/17 12:00	07/22/17 01:11	7070552	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	07/21/17 12:00	07/22/17 01:11	7070552	RLC
Sulfate	0.23	1.0	0.02	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/22/17 01:11	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/24/17 15:20	07/26/17 14:38	7070582	CSW
Boron	0.0278	0.0400	0.0060	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/26/17 14:38	7070582	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 20:58	7070582	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/25/17 08:45	07/25/17 12:11	7070599	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

Report No.: AAG0505

Project: CCR Event

Client ID: EQBL071717

Lab Number ID: AAG0505-05

Date/Time Sampled: 7/17/2017 3:55:00PM

Date/Time Received: 7/18/2017 2:00:00PM

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	07/21/17 19:20	07/21/17 19:20	7070536	JPT
<b>Inorganic Anions</b>											
Chloride	0.10	0.25	0.02	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/22/17 01:33	7070552	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	07/21/17 12:00	07/22/17 01:33	7070552	RLC
Sulfate	0.12	1.0	0.02	mg/L	EPA 300.0	J	1	07/21/17 12:00	07/22/17 01:33	7070552	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Arsenic	ND	0.0050	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Barium	ND	0.0100	0.0004	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/24/17 15:20	07/26/17 14:43	7070582	CSW
Boron	0.0130	0.0400	0.0060	mg/L	EPA 6020B	J	1	07/24/17 15:20	07/26/17 14:43	7070582	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Molybdenum	ND	0.0100	0.0010	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/24/17 15:20	07/25/17 21:04	7070582	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/25/17 08:45	07/25/17 12:18	7070599	MTC





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July 27, 2017

**Report No.: AAG0505**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070536 - SM 2540 C</b>											
<b>Blank (7070536-BLK1)</b>						Prepared & Analyzed: 07/21/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7070536-BS1)</b>						Prepared & Analyzed: 07/21/17					
Total Dissolved Solids	382	25	10	mg/L	400.00		96	84-108			
<b>Duplicate (7070536-DUP1)</b>						Source: AAG0338-15RE1 Prepared & Analyzed: 07/21/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7070536-DUP2)</b>						Source: AAG0505-04 Prepared & Analyzed: 07/21/17					
Total Dissolved Solids	11	25	10	mg/L		13			17	10	QR-03, J



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Attention: Mr. Joju Abraham

July 27, 2017

**Report No.: AAG0505**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070552 - EPA 300.0</b>											
<b>Blank (7070552-BLK1)</b>						Prepared & Analyzed: 07/21/17					
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 (7070552-BS1)</b>						Prepared & Analyzed: 07/21/17					
Chloride	10.1	0.25	0.02	mg/L	10.020		101	90-110			
Fluoride	10.2	0.30	0.03	mg/L	10.020		102	90-110			
Sulfate	10.2	1.0	0.02	mg/L	10.050		102	90-110			
<b>Matrix Spike (7070552-MS1)</b>						Source: AAG0436-03 Prepared & Analyzed: 07/21/17					
Chloride	42.7	0.25	0.02	mg/L	10.020	37.6	52	90-110			QM-02
Fluoride	10.8	0.30	0.03	mg/L	10.020	0.17	106	90-110			QM-02
Sulfate	179	1.0	0.02	mg/L	10.050	187	NR	90-110			QM-02
<b>Matrix Spike (7070552-MS2)</b>						Source: AAG0505-01 Prepared: 07/21/17 Analyzed: 07/22/17					
Chloride	412	0.25	0.02	mg/L	10.020	590	NR	90-110			QM-02
Fluoride	11.4	0.30	0.03	mg/L	10.020	2.48	89	90-110			QM-05
Sulfate	345	1.0	0.02	mg/L	10.050	365	NR	90-110			QM-02
<b>Matrix Spike Dup (7070552-MSD1)</b>						Source: AAG0436-03 Prepared & Analyzed: 07/21/17					
Chloride	42.8	0.25	0.02	mg/L	10.020	37.6	53	90-110	0.2	15	QM-02
Fluoride	10.8	0.30	0.03	mg/L	10.020	0.17	106	90-110	0.6	15	QM-02
Sulfate	179	1.0	0.02	mg/L	10.050	187	NR	90-110	0.02	15	QM-02



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July 27, 2017

**Report No.: AAG0505**

**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 7070582 - EPA 3005A**

**Blank (7070582-BLK1)**

Prepared: 07/24/17 Analyzed: 07/25/17

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 (7070582-BS1)**

Prepared: 07/24/17 Analyzed: 07/25/17

Antimony	0.109	0.0030	0.0006	mg/L	0.10000		109	80-120			
Arsenic	0.0976	0.0050	0.0005	mg/L	0.10000		98	80-120			
Barium	0.101	0.0100	0.0004	mg/L	0.10000		101	80-120			
Beryllium	0.104	0.0030	0.00009	mg/L	0.10000		104	80-120			
Boron	0.989	0.0400	0.0060	mg/L	1.0000		99	80-120			
Cadmium	0.107	0.0010	0.0001	mg/L	0.10000		107	80-120			
Calcium	1.01	0.500	0.0404	mg/L	1.0000		101	80-120			
Chromium	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120			
Cobalt	0.0977	0.0100	0.0003	mg/L	0.10000		98	80-120			
Copper	0.101	0.0250	0.0003	mg/L	0.10000		101	80-120			
Lead	0.100	0.0050	0.00007	mg/L	0.10000		100	80-120			
Molybdenum	0.104	0.0100	0.0010	mg/L	0.10000		104	80-120			
Nickel	0.101	0.0100	0.0005	mg/L	0.10000		101	80-120			
Selenium	0.101	0.0100	0.0018	mg/L	0.10000		101	80-120			
Silver	0.0982	0.0100	0.0002	mg/L	0.10000		98	80-120			
Thallium	0.105	0.0010	0.00005	mg/L	0.10000		105	80-120			
Vanadium	0.104	0.0100	0.0012	mg/L	0.10000		104	80-120			
Zinc	0.101	0.0100	0.0012	mg/L	0.10000		101	80-120			
Lithium	0.105	0.0500	0.0015	mg/L	0.10000		105	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

July 27, 2017

**Report No.: AAG0505**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070582 - EPA 3005A</b>											
<b>Matrix Spike (7070582-MS1)</b>			<b>Source: AAG0435-01</b>				Prepared: 07/24/17 Analyzed: 07/25/17				
Antimony	0.109	0.0030	0.0006	mg/L	0.10000	0.0008	108	75-125			
Arsenic	0.102	0.0050	0.0005	mg/L	0.10000	0.0029	99	75-125			
Barium	0.122	0.0100	0.0004	mg/L	0.10000	0.0245	98	75-125			
Beryllium	0.101	0.0030	0.00009	mg/L	0.10000	ND	101	75-125			
Boron	0.978	0.0400	0.0060	mg/L	1.0000	0.0070	97	75-125			
Cadmium	0.106	0.0010	0.0001	mg/L	0.10000	ND	106	75-125			
Calcium	25.0	25.0	2.02	mg/L	1.0000	24.8	22	75-125			QM-02, J
Chromium	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125			
Cobalt	0.103	0.0100	0.0003	mg/L	0.10000	0.0005	103	75-125			
Copper	0.102	0.0250	0.0003	mg/L	0.10000	ND	102	75-125			
Lead	0.0985	0.0050	0.00007	mg/L	0.10000	ND	98	75-125			
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000	0.0027	104	75-125			
Nickel	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125			
Selenium	0.104	0.0100	0.0018	mg/L	0.10000	ND	104	75-125			
Silver	0.0988	0.0100	0.0002	mg/L	0.10000	ND	99	75-125			
Thallium	0.101	0.0010	0.00005	mg/L	0.10000	ND	101	75-125			
Vanadium	0.101	0.0100	0.0012	mg/L	0.10000	ND	101	75-125			
Zinc	0.102	0.0100	0.0012	mg/L	0.10000	ND	102	75-125			
Lithium	0.102	0.0500	0.0015	mg/L	0.10000	ND	102	75-125			
<b>Matrix Spike Dup (7070582-MSD1)</b>			<b>Source: AAG0435-01</b>				Prepared: 07/24/17 Analyzed: 07/25/17				
Antimony	0.110	0.0030	0.0006	mg/L	0.10000	0.0008	109	75-125	0.8	20	
Arsenic	0.104	0.0050	0.0005	mg/L	0.10000	0.0029	101	75-125	2	20	
Barium	0.122	0.0100	0.0004	mg/L	0.10000	0.0245	98	75-125	0.2	20	
Beryllium	0.102	0.0030	0.00009	mg/L	0.10000	ND	102	75-125	1	20	
Boron	0.979	0.0400	0.0060	mg/L	1.0000	0.0070	97	75-125	0.05	20	
Cadmium	0.107	0.0010	0.0001	mg/L	0.10000	ND	107	75-125	2	20	
Calcium	27.8	25.0	2.02	mg/L	1.0000	24.8	304	75-125	11	20	QM-02
Chromium	0.108	0.0100	0.0005	mg/L	0.10000	ND	108	75-125	4	20	
Cobalt	0.105	0.0100	0.0003	mg/L	0.10000	0.0005	105	75-125	2	20	
Copper	0.104	0.0250	0.0003	mg/L	0.10000	ND	104	75-125	2	20	
Lead	0.0967	0.0050	0.00007	mg/L	0.10000	ND	97	75-125	2	20	
Molybdenum	0.107	0.0100	0.0010	mg/L	0.10000	0.0027	104	75-125	0.7	20	
Nickel	0.107	0.0100	0.0005	mg/L	0.10000	ND	107	75-125	4	20	
Selenium	0.103	0.0100	0.0018	mg/L	0.10000	ND	103	75-125	0.5	20	
Silver	0.0999	0.0100	0.0002	mg/L	0.10000	ND	100	75-125	1	20	
Thallium	0.0993	0.0010	0.00005	mg/L	0.10000	ND	99	75-125	2	20	
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000	ND	105	75-125	4	20	
Zinc	0.102	0.0100	0.0012	mg/L	0.10000	ND	102	75-125	0.02	20	
Lithium	0.103	0.0500	0.0015	mg/L	0.10000	ND	103	75-125	0.8	20	



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

**Report No.: AAG0505**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070582 - EPA 3005A</b>											
<b>Post Spike (7070582-PS1)</b>			<b>Source: AAG0435-01</b>			<b>Prepared: 07/24/17 Analyzed: 07/25/17</b>					
Antimony	102			ug/L	100.00	0.765	101	80-120			
Arsenic	98.7			ug/L	100.00	2.90	96	80-120			
Barium	121			ug/L	100.00	24.5	96	80-120			
Beryllium	96.7			ug/L	100.00	0.0123	97	80-120			
Boron	983			ug/L	1000.0	7.02	98	80-120			
Cadmium	104			ug/L	100.00	0.0302	104	80-120			
Calcium	25100			ug/L	1000.0	24800	33	80-120			QM-02
Chromium	97.5			ug/L	100.00	0.225	97	80-120			
Cobalt	96.1			ug/L	100.00	0.503	96	80-120			
Copper	98.4			ug/L	100.00	0.119	98	80-120			
Lead	95.3			ug/L	100.00	0.0125	95	80-120			
Molybdenum	106			ug/L	100.00	2.71	103	80-120			
Nickel	95.7			ug/L	100.00	0.455	95	80-120			
Selenium	101			ug/L	100.00	0.481	100	80-120			
Silver	94.2			ug/L	100.00	0.0001	94	80-120			
Thallium	96.7			ug/L	100.00	0.0241	97	80-120			
Vanadium	97.6			ug/L	100.00	-0.912	98	80-120			
Zinc	97.6			ug/L	100.00	1.04	97	80-120			
Lithium	100			ug/L	100.00	0.698	100	80-120			

**Batch 7070599 - EPA 7470A**

<b>Blank (7070599-BLK1)</b>					<b>Prepared &amp; Analyzed: 07/25/17</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7070599-BS1)</b>					<b>Prepared &amp; Analyzed: 07/25/17</b>						
Mercury	0.00233	0.00050	0.000041	mg/L	2.5000E-3		93	80-120			



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

**Report No.: AAG0505**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070599 - EPA 7470A</b>											
<b>Matrix Spike (7070599-MS1)</b>			<b>Source: AAG0505-01</b>			<b>Prepared &amp; Analyzed: 07/25/17</b>					
Mercury	0.00215	0.00050	0.000041	mg/L	2.5000E-3	0.00013	81	75-125			
<b>Matrix Spike Dup (7070599-MSD1)</b>			<b>Source: AAG0505-01</b>			<b>Prepared &amp; Analyzed: 07/25/17</b>					
Mercury	0.00206	0.00050	0.000041	mg/L	2.5000E-3	0.00013	77	75-125	4	20	
<b>Post Spike (7070599-PS1)</b>			<b>Source: AAG0505-01</b>			<b>Prepared &amp; Analyzed: 07/25/17</b>					
Mercury	1.51			ug/L	1.6667	0.0851	85	80-120			



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Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 27, 2017

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## Legend

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### 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.
- 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.**

**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:						ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:						CONTAINER TYPE:														
REPORT TO:						PRESERVATION:		# of		C		O		N		T		A		
REQUESTED COMPLETION DATE:						I		N		E		R		S		E		R		
PROJECT NAME/STATE:						D		O		W		N		E		R		S		
PROJECT #:						E		R		S		E		R		S		E		
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION															
7/17/17	1044	GW		X	BCWC-24	4	1	1	2											
7/17/17	1312	GW		X	BCWC-25	4	1	1	2											
7/17/17	1530	GW		X	BCWC-23	4	1	1	2											
7/17/17	1550	W		X	EBLO71717	4	1	1	2											
7/17/17	1555	W		X	EQBLO71717	4	1	1	2											

SAMPLED BY AND TITLE:			DATE/TIME:			RELINQUISHED BY:			DATE/TIME:			FOR LAB USE ONLY		
RECEIVED BY: Mike Nguyen			7/18/17 @ 1600			Kevin St...			7/18/17 @ 0640			LAB #: AAG-0505		
RECEIVED BY LAB: Karle...			7/18/17 1400			SAMPLE SHIPPED VIA: COURIER			CLIENT OTHER FS			Entered into LIMS: 024		
Checked: No NA Yes No NA			Temperature: Min: 2.9°C Max:			Custody Seal: Intact Broken Not Present N/A			# of Coolers			Cooler ID:		

Page 16 of 18



**Sample Condition Upon Receipt**



Client Name: Georgia Power Project # AAC-0505

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

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

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used IR-1 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 2.9°C Biological Tissue is Frozen: Yes  No

Temp should be above freezing to 6°C

Comments: \_\_\_\_\_

Optional Proj. Due Date: Proj. Name:
--

Date and Initials of person examining contents: <u>CSH 7/18/17</u>
--

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 checked="" type="checkbox"/> N/A	12. <u>CSH 7/18/17</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 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)



**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: 7/19/2017 11:40:55AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 07/18/17 14:00

**Work Order:** AAG0505

**Logged In By:** Charles Hawks

**OBSERVATIONS**

**#Samples:** 5

**#Containers:** 20

**Minimum Temp(C):** 2.9

**Maximum Temp(C):** 2.9

**Custody Seal(s) Used:** 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:**

August 07, 2017

Ms. Lauren Petty  
GA Power  
42 Inverness Center Parkway  
Birmingham, AL 35242

RE: Project: AAG0505 Plant Bowen  
Pace Project No.: 30224582

Dear Ms. Petty:

Enclosed are the analytical results for sample(s) received by the laboratory on July 19, 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: AAG0505 Plant Bowen

Pace Project No.: 30224582

### 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: AAG0505 Plant Bowen

Pace Project No.: 30224582

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30224582001	BGWC-24	Water	07/17/17 10:44	07/19/17 10:15
30224582002	BGWC-25	Water	07/17/17 13:12	07/19/17 10:15
30224582003	BGWC-23	Water	07/17/17 15:30	07/19/17 10:15
30224582004	FBL071717	Water	07/17/17 15:50	07/19/17 10:15
30224582005	EQBL071717	Water	07/17/17 15:55	07/19/17 10:15

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAG0505 Plant Bowen  
Pace Project No.: 30224582

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30224582001	BGWC-24	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224582002	BGWC-25	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224582003	BGWC-23	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224582004	FBL071717	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224582005	EQBL071717	EPA 9315	JC2	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAG0505 Plant Bowen

Pace Project No.: 30224582

Sample: <b>BGWC-24</b>		Lab ID: <b>30224582001</b>	Collected: 07/17/17 10:44	Received: 07/19/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>1.34 ± 0.328 (0.131)</b>		pCi/L	08/02/17 09:12	13982-63-3	
		<b>C:88% T:NA</b>					
Radium-228	EPA 9320	<b>1.53 ± 0.611 (0.967)</b>		pCi/L	08/02/17 18:10	15262-20-1	
		<b>C:82% T:80%</b>					
Total Radium	Total Radium Calculation	<b>2.87 ± 0.939 (1.10)</b>		pCi/L	08/04/17 11:43	7440-14-4	

Sample: <b>BGWC-25</b>		Lab ID: <b>30224582002</b>	Collected: 07/17/17 13:12	Received: 07/19/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.489 ± 0.193 (0.187)</b>		pCi/L	08/02/17 09:42	13982-63-3	
		<b>C:82% T:NA</b>					
Radium-228	EPA 9320	<b>0.764 ± 0.567 (1.10)</b>		pCi/L	08/02/17 18:10	15262-20-1	
		<b>C:78% T:63%</b>					
Total Radium	Total Radium Calculation	<b>1.25 ± 0.760 (1.29)</b>		pCi/L	08/04/17 11:43	7440-14-4	

Sample: <b>BGWC-23</b>		Lab ID: <b>30224582003</b>	Collected: 07/17/17 15:30	Received: 07/19/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.884 ± 0.259 (0.179)</b>		pCi/L	08/02/17 09:42	13982-63-3	
		<b>C:81% T:NA</b>					
Radium-228	EPA 9320	<b>0.157 ± 0.354 (0.787)</b>		pCi/L	08/02/17 18:10	15262-20-1	
		<b>C:80% T:89%</b>					
Total Radium	Total Radium Calculation	<b>1.04 ± 0.613 (0.966)</b>		pCi/L	08/04/17 11:43	7440-14-4	

Sample: <b>FBL071717</b>		Lab ID: <b>30224582004</b>	Collected: 07/17/17 15:50	Received: 07/19/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.181 ± 0.124 (0.202)</b>		pCi/L	08/02/17 09:42	13982-63-3	
		<b>C:79% T:NA</b>					
Radium-228	EPA 9320	<b>0.437 ± 0.417 (0.855)</b>		pCi/L	08/02/17 18:10	15262-20-1	
		<b>C:81% T:86%</b>					
Total Radium	Total Radium Calculation	<b>0.618 ± 0.541 (1.06)</b>		pCi/L	08/04/17 11:43	7440-14-4	

Sample: <b>EQBL071717</b>		Lab ID: <b>30224582005</b>	Collected: 07/17/17 15:55	Received: 07/19/17 10:15	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-226	EPA 9315	<b>0.217 ± 0.136 (0.222)</b>		pCi/L	08/02/17 09:42	13982-63-3	
		<b>C:94% T:NA</b>					
Radium-228	EPA 9320	<b>-0.129 ± 0.300 (0.741)</b>		pCi/L	08/02/17 18:10	15262-20-1	
		<b>C:80% T:89%</b>					

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAG0505 Plant Bowen  
Pace Project No.: 30224582

**Sample: EQBL071717**      **Lab ID: 30224582005**      Collected: 07/17/17 15:55      Received: 07/19/17 10:15      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>0.217 ± 0.436 (0.963)</b>	pCi/L	08/04/17 11:43	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAG0505 Plant Bowen

Pace Project No.: 30224582

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QC Batch:	265653	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30224582001, 30224582002, 30224582003, 30224582004, 30224582005		

---

METHOD BLANK:	1308228	Matrix:	Water
Associated Lab Samples:	30224582001, 30224582002, 30224582003, 30224582004, 30224582005		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.302 ± 0.274 (0.549) C:82% T:85%	pCi/L	08/02/17 16:00	

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: AAG0505 Plant Bowen

Pace Project No.: 30224582

QC Batch: 265657 Analysis Method: EPA 9315

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

Associated Lab Samples: 30224582001, 30224582002, 30224582003, 30224582004, 30224582005

METHOD BLANK: 1308239 Matrix: Water

Associated Lab Samples: 30224582001, 30224582002, 30224582003, 30224582004, 30224582005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.254 ± 0.116 (0.177) C:89% T:NA	pCi/L	08/01/17 19:52	

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: AAG0505 Plant Bowen

Pace Project No.: 30224582

### 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



Workorder: AAG0505

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 8/10/2017

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

WO#: 30224582

30224582

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total	LAB USE ONLY
						HNO3					
1	BGWC-24	G	7/17/2017 10:44	AAG0505-01	GW	2				X	
2	BGWC-25	G	7/17/2017 13:12	AAG0505-02	GW	2				X	001
3	BGWC-23	G	7/17/2017 15:30	AAG0505-03	GW	2				X	002
4	FBL071717	G	7/17/2017 15:50	AAG0505-04	W	2				X	003
5	EQBL071717	G	7/17/2017 15:55	AAG0505-05	W	2				X	004
6											005
7											
8											
9											
10											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1					
2			<i>[Signature]</i>	7/17/2017 10:45	
3					

Cooler Temperature on Receipt <u>N/A</u> °C	Custody Seal <u>Y</u> or <u>N</u>	Received on Ice <u>Y</u> or <u>N</u>	Sample Intact <u>Y</u> or <u>N</u>
---	-----------------------------------	--------------------------------------	------------------------------------

\*\*\*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



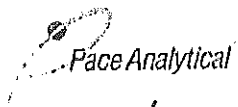
Pace Analytical Services, LLC - Atlanta GA  
 110 TECHNOLOGY PARKWAY, PEACHTREE CORNERS, GA 30092  
 (770) 734-4200 : FAX (770) 734-4201

PAGE: 1 OF 1

CLIENT NAME:				ANALYSIS REQUESTED												L A B  I D  N U M B E R  ↓	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:				CONTAINER TYPE:	# of									P	A		1	2		
REPORT TO:				PRESERVATION:	C									I	A		3	4		
PROJECT NAME/STATE:				# of	O									I	A		5	6		
241 Ralph McGill Blvd NE B10185 Atlanta, GA 30328				Methods App. DE 701 EPA 8220, 8460 C.F. 801 EPA 830 TOX 316, 317, 318 Radon 222, 226 SIO: 816, 915, 1032												P - PLASTIC		1 - HCl, ≤6°C		
REQUESTED COMPLETION DATE:																A - AMBER GLASS		2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
PROJECT #:																G - CLEAR GLASS		3 - HNO <sub>3</sub>		
Collection DATE																V - VOA VIAL		4 - NaOH, ≤6°C		
Collection TIME																S - STERILE		5 - NaOH/ZnAc, ≤6°C		
MATRIX CODE*																O - OTHER		6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C		
COM																		7 - ≤6°C not frozen		
GRAB																*MATRIX CODES:				
SAMPLE IDENTIFICATION																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																				
30224582																				
SAMPLED BY AND TITLE:				DATE/TIME:				RELINQUISHED BY:				DATE/TIME:				FOR LAB USE ONLY				
RECEIVED BY:				DATE/TIME:				RELINQUISHED BY:				DATE/TIME:				LAB #:				
RECEIVED BY LAB:				DATE/TIME:				SAMPLE SHIPPED VIA:				DATE/TIME:				Entered into LIMS:				
pH checked:				Temperature:				Custody Seal:				# of Coolers				Cooler ID:				
Yes No NA				Min: Max:				Intact Broken Not Present N/A												

30224582

**Sample Condition Upon Receipt**



Client Name: Georgia Power

Project # AA6-0505

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

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

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used IR-1 Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 2.9°C

Biological Tissue is Frozen: Yes  No

Date and Initials of person examining contents: CAH 7/18/17

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 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 checked="" type="checkbox"/> N/A	12. <u>CO # 118117</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-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 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: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

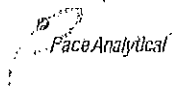
\_\_\_\_\_

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

30224582



Client Name: PACE - GA

Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 741366573401

Label	<u>ZH</u>
LIMS Login	<u>AM</u>

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

Thermometer Used \_\_\_\_\_      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: ZH 7/19/17

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.
Filtered volume received for Dissolved tests			-	14.
All containers have been checked for preservation.	-			15.
All containers needing preservation are found to be in compliance with EPA recommendation.	-			
exceptions: VOA, coliform, TOC, O&G, Phenolics				
				Initial when completed <u>ZH</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>ZH</u> Date: <u>7/19/17</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 reports.

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: VAL  
Date: 7/26/2017  
Worklist: 36803  
Matrix: DW

Method Blank Assessment		
MB Sample ID		1308228
MB concentration:		0.302
M/B Counting Uncertainty:		0.268
MB MDC:		0.549
MB Numerical Performance Indicator:		2.21
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	N
	LCS36803	LCSD36803
Count Date:	8/2/2017	
Spike I.D.:	17-005	
Spike Concentration (pCi/mL):	23.902	
Volume Used (mL):	0.20	
Aliquot Volume (L, g, F):	0.820	
Target Conc. (pCi/L, g, F):	5.833	
Uncertainty (Calculated):	0.420	
Result (pCi/L, g, F):	6.019	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.700	
Numerical Performance Indicator:	0.45	
Percent Recovery:	103.19%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30224382005	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30224382005DUP	
Sample Result (pCi/L, g, F):	0.296	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.346	
Sample Duplicate Result (pCi/L, g, F):	0.756	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.446	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	* -1.599	30224382005
Duplicate RPD:	87.57%	30224382005DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

## 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.

*Q8/17/17*





## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 7/27/2017  
Worklist: 36807  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
MB Sample ID	1308239	
MB concentration:	0.254	
M/B Counting Uncertainty:	0.110	
MB MDC:	0.177	
MB Numerical Performance Indicator:	4.54	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	See Comment*	

Laboratory Control Sample Assessment		
	LCS (Y or N)?	N
	LCS36807	LCS36807
Count Date:	8/2/2017	
Spike I.D.:	17-030	
Spike Concentration (pCi/mL):	80.197	
Volume Used (mL):	0.10	
Aliquot Volume (L, g, F):	0.515	
Target Conc. (pCi/L, g, F):	15.579	
Uncertainty (Calculated):	1.435	
Result (pCi/L, g, F):	13.665	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.836	
Numerical Performance Indicator:	-2.28	
Percent Recovery:	87.72%	
Status vs Numerical Indicator:	N/A	
Status vs Recovery:	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	30224382005	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	30224382005DUP	
Sample Result (pCi/L, g, F):	0.322	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.134	
Sample Duplicate Result (pCi/L, g, F):	0.152	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.122	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.842	30224382005
Duplicate RPD:	71.88%	30224382005DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

\*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.*

*QC 8/1/17*



**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: AAG0596**

**July 31, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

July 31, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-20	AAG0596-01	Ground Water	07/18/17 12:40	07/20/17 13:51
BGWC-21	AAG0596-02	Ground Water	07/18/17 14:40	07/20/17 13:51
Dup-3	AAG0596-03	Ground Water	07/18/17 00:00	07/20/17 13:51
BGWC-14	AAG0596-04	Ground Water	07/19/17 09:00	07/20/17 13:51
BGWC-22	AAG0596-05	Ground Water	07/19/17 11:00	07/20/17 13:51



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

July 31, 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.



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 Atlanta GA, 30339

July 31, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0596

Project: CCR Event

Client ID: BGWC-20

Lab Number ID: AAG0596-01

Date/Time Sampled: 7/18/2017 12:40:00PM

Date/Time Received: 7/20/2017 1:51:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1160	25	10	mg/L	SM 2540 C		1	07/24/17 18:15	07/24/17 18:15	7070574	JPT
<b>Inorganic Anions</b>											
Chloride	140	5.0	0.48	mg/L	EPA 300.0		20	07/24/17 11:21	07/26/17 06:24	7070573	RLC
Fluoride	0.36	0.30	0.03	mg/L	EPA 300.0		1	07/24/17 11:21	07/24/17 19:26	7070573	RLC
Sulfate	590	20	0.34	mg/L	EPA 300.0		20	07/24/17 11:21	07/26/17 06:24	7070573	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Arsenic	0.0018	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Barium	0.0346	0.0100	0.0004	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Boron	3.37	2.00	0.298	mg/L	EPA 6020B		50	07/25/17 14:50	07/28/17 11:45	7070592	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Calcium	244	25.0	2.02	mg/L	EPA 6020B		50	07/25/17 14:50	07/26/17 20:06	7070592	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Cobalt	ND	0.0100	0.0003	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Molybdenum	0.0155	0.0100	0.0010	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Lithium	0.0207	0.0500	0.0015	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:00	7070592	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/27/17 07:45	07/27/17 13:00	7070682	MTC



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 Atlanta GA, 30339

July 31, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAG0596

**Project:** CCR Event

**Client ID:** BGWC-21

**Lab Number ID:** AAG0596-02

**Date/Time Sampled:** 7/18/2017 2:40:00PM

**Date/Time Received:** 7/20/2017 1:51:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	219	25	10	mg/L	SM 2540 C		1	07/24/17 18:15	07/24/17 18:15	7070574	JPT
<b>Inorganic Anions</b>											
Chloride	4.2	0.25	0.02	mg/L	EPA 300.0		1	07/24/17 11:21	07/24/17 19:47	7070573	RLC
Fluoride	0.08	0.30	0.03	mg/L	EPA 300.0	J	1	07/24/17 11:21	07/24/17 19:47	7070573	RLC
Sulfate	50	5.0	0.08	mg/L	EPA 300.0		5	07/24/17 11:21	07/26/17 06:44	7070573	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Arsenic	0.0015	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Barium	0.0494	0.0100	0.0004	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Boron	0.0544	0.0400	0.0060	mg/L	EPA 6020B		1	07/25/17 14:50	07/28/17 11:50	7070592	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Calcium	40.9	25.0	2.02	mg/L	EPA 6020B		50	07/25/17 14:50	07/26/17 20:17	7070592	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Cobalt	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Molybdenum	0.0013	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:12	7070592	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/27/17 07:45	07/27/17 13:03	7070682	MTC



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July 31, 2017

Attention: Mr. Joju Abraham

**Report No.: AAG0596**

**Project: CCR Event**

**Client ID: Dup-3**

**Lab Number ID: AAG0596-03**

**Date/Time Sampled: 7/18/2017 12:00:00AM**

**Date/Time Received: 7/20/2017 1:51:00PM**

**Matrix: Ground Water**

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	224	25	10	mg/L	SM 2540 C		1	07/24/17 18:15	07/24/17 18:15	7070574	JPT
<b>Inorganic Anions</b>											
Chloride	4.3	0.25	0.02	mg/L	EPA 300.0		1	07/24/17 11:21	07/24/17 20:08	7070573	RLC
Fluoride	0.06	0.30	0.03	mg/L	EPA 300.0	J	1	07/24/17 11:21	07/24/17 20:08	7070573	RLC
Sulfate	49	5.0	0.08	mg/L	EPA 300.0		5	07/24/17 11:21	07/26/17 07:05	7070573	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Arsenic	0.0013	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Barium	0.0471	0.0100	0.0004	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Boron	0.0570	0.0400	0.0060	mg/L	EPA 6020B		1	07/25/17 14:50	07/28/17 11:56	7070592	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Calcium	40.1	25.0	2.02	mg/L	EPA 6020B		50	07/25/17 14:50	07/26/17 20:40	7070592	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Cobalt	0.0004	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Molybdenum	0.0013	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:35	7070592	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/27/17 07:45	07/27/17 13:05	7070682	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 31, 2017

Report No.: AAG0596

Project: CCR Event

Client ID: BGWC-14

Lab Number ID: AAG0596-04

Date/Time Sampled: 7/19/2017 9:00:00AM

Date/Time Received: 7/20/2017 1:51:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	631	25	10	mg/L	SM 2540 C		1	07/24/17 18:15	07/24/17 18:15	7070574	JPT
<b>Inorganic Anions</b>											
Chloride	36	0.25	0.02	mg/L	EPA 300.0		1	07/24/17 11:21	07/24/17 20:28	7070573	RLC
Fluoride	0.18	0.30	0.03	mg/L	EPA 300.0	J	1	07/24/17 11:21	07/24/17 20:28	7070573	RLC
Sulfate	240	20	0.34	mg/L	EPA 300.0		20	07/24/17 11:21	07/26/17 07:26	7070573	RLC
<b>Metals, Total</b>											
Antimony	0.0008	0.0030	0.0006	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Arsenic	0.0031	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Barium	0.0910	0.0100	0.0004	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Boron	0.872	0.400	0.0595	mg/L	EPA 6020B		10	07/25/17 14:50	07/28/17 12:02	7070592	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Calcium	113	25.0	2.02	mg/L	EPA 6020B		50	07/25/17 14:50	07/26/17 20:52	7070592	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Cobalt	0.0003	0.0100	0.0003	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Molybdenum	0.0073	0.0100	0.0010	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:46	7070592	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/27/17 07:45	07/27/17 13:12	7070682	MTC





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 Atlanta GA, 30339

July 31, 2017

Attention: Mr. Joju Abraham

Report No.: AAG0596

Project: CCR Event

Client ID: BGWC-22

Lab Number ID: AAG0596-05

Date/Time Sampled: 7/19/2017 11:00:00AM

Date/Time Received: 7/20/2017 1:51:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2650	25	10	mg/L	SM 2540 C		1	07/24/17 18:15	07/24/17 18:15	7070574	JPT
<b>Inorganic Anions</b>											
Chloride	540	25	2.4	mg/L	EPA 300.0		100	07/24/17 11:21	07/26/17 07:47	7070573	RLC
Fluoride	0.33	0.30	0.03	mg/L	EPA 300.0		1	07/24/17 11:21	07/24/17 21:10	7070573	RLC
Sulfate	720	100	1.7	mg/L	EPA 300.0		100	07/24/17 11:21	07/26/17 07:47	7070573	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Arsenic	0.0028	0.0050	0.0005	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Barium	0.0877	0.0100	0.0004	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Boron	10.6	2.00	0.298	mg/L	EPA 6020B		50	07/25/17 14:50	07/28/17 12:08	7070592	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Calcium	461	25.0	2.02	mg/L	EPA 6020B		50	07/25/17 14:50	07/26/17 21:03	7070592	CSW
Chromium	ND	0.0100	0.0005	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Cobalt	0.0131	0.0100	0.0003	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Molybdenum	0.0703	0.0100	0.0010	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Thallium	0.0007	0.0010	0.00005	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Lithium	0.0126	0.0500	0.0015	mg/L	EPA 6020B	J	1	07/25/17 14:50	07/26/17 20:57	7070592	CSW
Mercury	ND	0.00050	0.000041	mg/L	EPA 7470A		1	07/27/17 07:45	07/27/17 13:14	7070682	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 31, 2017

**Report No.: AAG0596**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070574 - SM 2540 C</b>											
<b>Blank (7070574-BLK1)</b>						Prepared & Analyzed: 07/24/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7070574-BS1)</b>						Prepared & Analyzed: 07/24/17					
Total Dissolved Solids	368	25	10	mg/L	400.00		92	84-108			
<b>Duplicate (7070574-DUP1)</b>						Source: AAG0537-04 Prepared & Analyzed: 07/24/17					
Total Dissolved Solids	1260	25	10	mg/L		1270			0.9	10	
<b>Duplicate (7070574-DUP2)</b>						Source: AAG0537-05 Prepared & Analyzed: 07/24/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 31, 2017

**Report No.: AAG0596**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070573 - EPA 300.0</b>											
<b>Blank (7070573-BLK1)</b>						Prepared & Analyzed: 07/24/17					
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 (7070573-BS1)</b>						Prepared & Analyzed: 07/24/17					
Chloride	10.2	0.25	0.02	mg/L	10.020		102	90-110			
Fluoride	9.92	0.30	0.03	mg/L	10.020		99	90-110			
Sulfate	10.4	1.0	0.02	mg/L	10.050		104	90-110			
<b>Matrix Spike (7070573-MS1)</b>						Source: AAG0595-01 Prepared & Analyzed: 07/24/17					
Chloride	16.9	0.25	0.02	mg/L	10.020	7.37	95	90-110			
Fluoride	12.0	0.30	0.03	mg/L	10.020	0.21	118	90-110			QM-05
Sulfate	47.7	1.0	0.02	mg/L	10.050	48.3	NR	90-110			QM-02
<b>Matrix Spike (7070573-MS2)</b>						Source: AAG0596-04 Prepared & Analyzed: 07/24/17					
Chloride	41.9	0.25	0.02	mg/L	10.020	35.5	64	90-110			QM-05
Fluoride	10.6	0.30	0.03	mg/L	10.020	0.18	104	90-110			QM-02
Sulfate	178	1.0	0.02	mg/L	10.050	186	NR	90-110			
<b>Matrix Spike Dup (7070573-MSD1)</b>						Source: AAG0595-01 Prepared & Analyzed: 07/24/17					
Chloride	16.9	0.25	0.02	mg/L	10.020	7.37	95	90-110	0.04	15	
Fluoride	12.0	0.30	0.03	mg/L	10.020	0.21	117	90-110	0.7	15	QM-05
Sulfate	47.2	1.0	0.02	mg/L	10.050	48.3	NR	90-110	1	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

July 31, 2017

**Report No.: AAG0596**

**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 7070592 - EPA 3005A**

**Blank (7070592-BLK1)**

Prepared: 07/25/17 Analyzed: 07/26/17

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	0.0004	0.0250	0.0003	mg/L							J
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 (7070592-BS1)**

Prepared: 07/25/17 Analyzed: 07/26/17

Antimony	0.110	0.0030	0.0006	mg/L	0.10000		110	80-120			
Arsenic	0.104	0.0050	0.0005	mg/L	0.10000		104	80-120			
Barium	0.104	0.0100	0.0004	mg/L	0.10000		104	80-120			
Beryllium	0.100	0.0030	0.00009	mg/L	0.10000		100	80-120			
Boron	1.05	0.0400	0.0060	mg/L	1.0000		105	80-120			
Cadmium	0.108	0.0010	0.0001	mg/L	0.10000		108	80-120			
Calcium	1.03	0.500	0.0404	mg/L	1.0000		103	80-120			
Chromium	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120			
Cobalt	0.103	0.0100	0.0003	mg/L	0.10000		103	80-120			
Copper	0.104	0.0250	0.0003	mg/L	0.10000		104	80-120			
Lead	0.104	0.0050	0.00007	mg/L	0.10000		104	80-120			
Molybdenum	0.109	0.0100	0.0010	mg/L	0.10000		109	80-120			
Nickel	0.103	0.0100	0.0005	mg/L	0.10000		103	80-120			
Selenium	0.108	0.0100	0.0018	mg/L	0.10000		108	80-120			
Silver	0.101	0.0100	0.0002	mg/L	0.10000		101	80-120			
Thallium	0.106	0.0010	0.00005	mg/L	0.10000		106	80-120			
Vanadium	0.103	0.0100	0.0012	mg/L	0.10000		103	80-120			
Zinc	0.109	0.0100	0.0012	mg/L	0.10000		109	80-120			
Lithium	0.0993	0.0500	0.0015	mg/L	0.10000		99	80-120			



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Attention: Mr. Joju Abraham

July 31, 2017

**Report No.: AAG0596**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070592 - EPA 3005A</b>											
<b>Matrix Spike (7070592-MS1)</b>			<b>Source: AAG0593-01</b>				Prepared: 07/25/17 Analyzed: 07/26/17				
Antimony	0.109	0.0030	0.0006	mg/L	0.10000	ND	109	75-125			
Arsenic	0.108	0.0050	0.0005	mg/L	0.10000	0.0009	107	75-125			
Barium	0.126	0.0100	0.0004	mg/L	0.10000	0.0304	95	75-125			
Beryllium	0.102	0.0030	0.00009	mg/L	0.10000	ND	102	75-125			
Boron	1.06	0.0400	0.0060	mg/L	1.0000	0.0091	105	75-125			
Cadmium	0.107	0.0010	0.0001	mg/L	0.10000	ND	107	75-125			
Calcium	49.8	25.0	2.02	mg/L	1.0000	47.5	236	75-125			QM-02
Chromium	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125			
Cobalt	0.114	0.0100	0.0003	mg/L	0.10000	0.0109	103	75-125			
Copper	0.103	0.0250	0.0003	mg/L	0.10000	ND	103	75-125			
Lead	0.104	0.0050	0.00007	mg/L	0.10000	ND	104	75-125			
Molybdenum	0.112	0.0100	0.0010	mg/L	0.10000	0.0028	110	75-125			
Nickel	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125			
Selenium	0.108	0.0100	0.0018	mg/L	0.10000	ND	108	75-125			
Silver	0.0984	0.0100	0.0002	mg/L	0.10000	ND	98	75-125			
Thallium	0.106	0.0010	0.00005	mg/L	0.10000	ND	106	75-125			
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000	ND	105	75-125			
Zinc	0.111	0.0100	0.0012	mg/L	0.10000	0.0025	108	75-125			
Lithium	0.0997	0.0500	0.0015	mg/L	0.10000	ND	100	75-125			
<b>Matrix Spike Dup (7070592-MSD1)</b>			<b>Source: AAG0593-01</b>				Prepared: 07/25/17 Analyzed: 07/26/17				
Antimony	0.107	0.0030	0.0006	mg/L	0.10000	ND	107	75-125	2	20	
Arsenic	0.105	0.0050	0.0005	mg/L	0.10000	0.0009	104	75-125	3	20	
Barium	0.125	0.0100	0.0004	mg/L	0.10000	0.0304	95	75-125	0.5	20	
Beryllium	0.0986	0.0030	0.00009	mg/L	0.10000	ND	99	75-125	4	20	
Boron	1.03	0.0400	0.0060	mg/L	1.0000	0.0091	102	75-125	3	20	
Cadmium	0.106	0.0010	0.0001	mg/L	0.10000	ND	106	75-125	1	20	
Calcium	48.7	25.0	2.02	mg/L	1.0000	47.5	119	75-125	2	20	
Chromium	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125	2	20	
Cobalt	0.112	0.0100	0.0003	mg/L	0.10000	0.0109	101	75-125	1	20	
Copper	0.101	0.0250	0.0003	mg/L	0.10000	ND	101	75-125	1	20	
Lead	0.101	0.0050	0.00007	mg/L	0.10000	ND	101	75-125	3	20	
Molybdenum	0.111	0.0100	0.0010	mg/L	0.10000	0.0028	108	75-125	1	20	
Nickel	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125	1	20	
Selenium	0.108	0.0100	0.0018	mg/L	0.10000	ND	108	75-125	0.08	20	
Silver	0.0966	0.0100	0.0002	mg/L	0.10000	ND	97	75-125	2	20	
Thallium	0.102	0.0010	0.00005	mg/L	0.10000	ND	102	75-125	4	20	
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000	ND	105	75-125	0.4	20	
Zinc	0.109	0.0100	0.0012	mg/L	0.10000	0.0025	106	75-125	2	20	
Lithium	0.0953	0.0500	0.0015	mg/L	0.10000	ND	95	75-125	5	20	



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 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

July 31, 2017

**Report No.: AAG0596**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070592 - EPA 3005A</b>											
<b>Post Spike (7070592-PS1)</b>			<b>Source: AAG0593-01</b>			<b>Prepared: 07/25/17 Analyzed: 07/26/17</b>					
Antimony	105			ug/L	100.00	0.379	105	80-120			
Arsenic	105			ug/L	100.00	0.902	104	80-120			
Barium	123			ug/L	100.00	30.4	93	80-120			
Beryllium	98.8			ug/L	100.00	0.0017	99	80-120			
Boron	1050			ug/L	1000.0	9.06	104	80-120			
Cadmium	103			ug/L	100.00	0.0156	103	80-120			
Calcium	48300			ug/L	1000.0	47500	85	80-120			
Chromium	102			ug/L	100.00	0.187	102	80-120			
Cobalt	112			ug/L	100.00	10.9	101	80-120			
Copper	102			ug/L	100.00	0.266	102	80-120			
Lead	101			ug/L	100.00	0.0221	101	80-120			
Molybdenum	112			ug/L	100.00	2.81	109	80-120			
Nickel	101			ug/L	100.00	0.223	101	80-120			
Selenium	103			ug/L	100.00	1.10	102	80-120			
Silver	98.6			ug/L	100.00	0.0014	99	80-120			
Thallium	102			ug/L	100.00	0.0060	102	80-120			
Vanadium	104			ug/L	100.00	0.537	104	80-120			
Zinc	109			ug/L	100.00	2.49	106	80-120			
Lithium	98.0			ug/L	100.00	0.0451	98	80-120			

**Batch 7070682 - EPA 7470A**

<b>Blank (7070682-BLK1)</b>					<b>Prepared &amp; Analyzed: 07/27/17</b>						
Mercury	ND	0.00050	0.000041	mg/L							
<b>LCS (7070682-BS1)</b>					<b>Prepared &amp; Analyzed: 07/27/17</b>						
Mercury	0.00235	0.00050	0.000041	mg/L	2.5000E-3		94	80-120			



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Attention: Mr. Joju Abraham

July 31, 2017

**Report No.: AAG0596**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7070682 - EPA 7470A</b>											
<b>Matrix Spike (7070682-MS1)</b>			<b>Source: AAG0594-01</b>			<b>Prepared &amp; Analyzed: 07/27/17</b>					
Mercury	0.00236	0.00050	0.000041	mg/L	2.5000E-3	ND	94	75-125			
<b>Matrix Spike Dup (7070682-MSD1)</b>			<b>Source: AAG0594-01</b>			<b>Prepared &amp; Analyzed: 07/27/17</b>					
Mercury	0.00231	0.00050	0.000041	mg/L	2.5000E-3	ND	93	75-125	2	20	
<b>Post Spike (7070682-PS1)</b>			<b>Source: AAG0594-01</b>			<b>Prepared &amp; Analyzed: 07/27/17</b>					
Mercury	1.67			ug/L	1.6667	-0.00319	100	80-120			



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Attention: Mr. Joju Abraham

July 31, 2017

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## Legend

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### 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

- 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, LLC.**

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July 31, 2017

## Report Notes

Low volume on BGWC-20 7/18/2017. Second bottle for radiologicals analysis collected 7/19/2017. Pace-Pittsburgh has been instructed to perform radium-226 analysis on the volume collected 7/18 and radium-228 analysis on the volume collected 7/19. Client will be charged for half radiologicals analysis on AAG0596-01 and the other half on AAG0596-06. BMcD



**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:					ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION			
Southern Company Services					CONTAINER TYPE:	P	P	P										P - PLASTIC	1 - HCl, ≤6°C		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					PRESERVATION:	3	7	3										A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
241 Ralph McGill Blvd NE B10185 Atlanta, GA 30308					# of													G - CLEAR GLASS	3 - HNO <sub>3</sub>		
REPORT TO:			CC:		CONTAINERS	↓	Methylc. 80% ME + III EPA 609 EPA C/F 30% EPA 300 TDS SW/SDS Pesticides 22% SUC-SH 9% SUC-SH 23%														
Toxic Airborn			Mama Padilla																		
REQUESTED COMPLETION DATE:			PO #:																		
PROJECT NAME/STATE:																					
Plant Bowen A&S Padco																					
PROJECT #:																					
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION																
7/19/17	0900	GW	X		B6WC-14	Z															4
7/19/17	1100	GW	X		B6WC-22	6															5
7/19/17	1410	GW	K		B6WC-20	1															6

SAMPLED BY AND TITLE:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		FOR LAB USE ONLY	
Kevon Stenhouse Robert Mull		7/19/17 1430		Kevon Stenhouse		7/20/17 1352		LAB #: AAG0596	
RECEIVED BY:		DATE/TIME:		RELINQUISHED BY:		DATE/TIME:		Entered into LIMS:	
P. H. ...		7/20/17 1352						MK	
RECEIVED BY LAB:		DATE/TIME:		SAMPLE SHIPPED VIA:		CLIENT:		Tracking #:	
P. H. ...		7/20/17 1352		UPS		COURIER			
Checked: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Temperature: Min: 0.8°C		Custody Seal: Intact		# of Coolers: 0		Cooler ID:	
NA: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Mac:		Not Present (N/A)					

**Sample Condition Upon Receipt**



Client Name: GIA power

Project # AAG10596

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

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



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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used IR-1    Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 0.8    Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: MK 7/20/17

Temp should be above freezing to 8°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 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:			
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: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_

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.**

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**LOG-IN CHECKLIST**

**Printed: 7/21/2017 10:43:02AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 07/20/17 13:51

**Work Order:** AAG0596

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 6

**#Containers:** 20

**Minimum Temp(C):** 0.8

**Maximum Temp(C):** 0.8

**Custody Seal(s) Used:** 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	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:**

Low volume on BGWC-20 7/18/2017. Second bottle for radiologicals analysis collected 7/19/2017. Pace-Pittsburgh has been instructed to perform radium-226 analysis on the volume collected 7/18 and radium-228 analysis on the volume collected 7/19. Client will be charged for half radiologicals analysis on AAG0596-01 and the other half on AAG0596-06. BMcD

August 11, 2017

Ms. Lauren Petty  
GA Power  
42 Inverness Center Parkway  
Birmingham, AL 35242

RE: Project: AAG0596 Plant Bowen  
Pace Project No.: 30224933

Dear Ms. Petty:

Enclosed are the analytical results for sample(s) received by the laboratory on July 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: AAG0596 Plant Bowen

Pace Project No.: 30224933

### 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: AAG0596 Plant Bowen

Pace Project No.: 30224933

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30224933001	BGWC-20	Water	07/18/17 12:40	07/21/17 10:00
30224933002	BGWC-21	Water	07/18/17 14:40	07/21/17 10:00
30224933003	Dup-3	Water	07/18/17 00:00	07/21/17 10:00
30224933004	BGWC-22	Water	07/19/17 11:00	07/21/17 10:00
30224933005	BGWC-20	Water	07/19/17 14:10	07/21/17 10:00

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAG0596 Plant Bowen

Pace Project No.: 30224933

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30224933001	BGWC-20	EPA 9315	LAL	1
30224933002	BGWC-21	EPA 9315	LAL	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224933003	Dup-3	EPA 9315	LAL	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224933004	BGWC-22	EPA 9315	LAL	1
		EPA 9320	VAL	1
		Total Radium Calculation	RMK	1
30224933005	BGWC-20	EPA 9320	VAL	1

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AAG0596 Plant Bowen  
Pace Project No.: 30224933

Sample: <b>BGWC-20</b>		Lab ID: <b>30224933001</b>	Collected: 07/18/17 12:40	Received: 07/21/17 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>0.634 ± 0.257 (0.259)</b> C:89% T:NA		pCi/L	08/06/17 12:22	13982-63-3	

Sample: <b>BGWC-21</b>		Lab ID: <b>30224933002</b>	Collected: 07/18/17 14:40	Received: 07/21/17 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>0.266 ± 0.172 (0.232)</b> C:78% T:NA		pCi/L	08/06/17 12:22	13982-63-3	
Radium-228	EPA 9320	<b>0.232 ± 0.389 (0.848)</b> C:76% T:80%		pCi/L	08/09/17 18:22	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.498 ± 0.561 (1.08)</b>		pCi/L	08/10/17 17:26	7440-14-4	

Sample: <b>Dup-3</b>		Lab ID: <b>30224933003</b>	Collected: 07/18/17 00:00	Received: 07/21/17 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>0.364 ± 0.213 (0.320)</b> C:85% T:NA		pCi/L	08/06/17 12:22	13982-63-3	
Radium-228	EPA 9320	<b>0.355 ± 0.487 (1.04)</b> C:78% T:75%		pCi/L	08/09/17 18:22	15262-20-1	
Total Radium	Total Radium Calculation	<b>0.719 ± 0.700 (1.36)</b>		pCi/L	08/10/17 17:26	7440-14-4	

Sample: <b>BGWC-22</b>		Lab ID: <b>30224933004</b>	Collected: 07/19/17 11:00	Received: 07/21/17 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>1.09 ± 0.316 (0.180)</b> C:92% T:NA		pCi/L	08/07/17 08:37	13982-63-3	
Radium-228	EPA 9320	<b>0.666 ± 0.438 (0.825)</b> C:80% T:81%		pCi/L	08/09/17 18:22	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.76 ± 0.754 (1.01)</b>		pCi/L	08/10/17 17:26	7440-14-4	

Sample: <b>BGWC-20</b>		Lab ID: <b>30224933005</b>	Collected: 07/19/17 14:10	Received: 07/21/17 10:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Radium-228	EPA 9320	<b>0.992 ± 0.485 (0.808)</b> C:77% T:78%		pCi/L	08/09/17 18:22	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAG0596 Plant Bowen

Pace Project No.: 30224933

QC Batch: 267090

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30224933002, 30224933003, 30224933004, 30224933005

METHOD BLANK: 1314904

Matrix: Water

Associated Lab Samples: 30224933002, 30224933003, 30224933004, 30224933005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0648 ± 0.279 (0.664) C:81% T:91%	pCi/L	08/09/17 16:30	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: AAG0596 Plant Bowen

Pace Project No.: 30224933

### 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



Workorder: AAG0596

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 8/14/2017

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

WO#: 30224933



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, Total	Radium 228, Total	Radium 228, Total	LAB USE ONLY
						H	N						
1	BGWC-20	G	7/18/2017 12:40	AAG0596-01	GW	1							
2	BGWC-21	G	7/18/2017 14:40	AAG0596-02	GW	2			X				001
3	Dup-3	G	7/18/2017 0:00	AAG0596-03	GW	2			X				002
4	BGWC-22	G	7/19/2017 11:00	AAG0596-05	GW	4			X				003
5	BGWC-20	G	7/19/2017 14:10	AAG0596-06	GW	1				X			004
6													005
7													
8													
9													
10													

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	M. RAHMAN	7/20/17	[Signature]	7/21/17 10:00	BGWC-20 volume collected over 2 days No rads on AAG0596-04
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 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

Sample Condition Upon Receipt Pittsburgh

30224933



Client Name: DALE - GA

Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7413106574154

Label	<u>ZH</u>
LIMS Login	<u>AMM</u>

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

Thermometer Used \_\_\_\_\_ 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: ZH 7/21/17

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.
Filtered volume received for Dissolved tests			/	14.
All containers have been checked for preservation.	/			15.
All containers needing preservation are found to be in compliance with EPA recommendation.	/			<u>PHCZ</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed: <u>ZH</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 > 0.6 mrem/hr	/			Initial when completed: <u>ZH</u> Date: <u>7/21/17</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

Test: Ra-226  
Analyst: LAL  
Date: 8/4/2017  
Worklist: 37010  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1314903
MB concentration:	0.382
M/B Counting Uncertainty:	0.184
MB MDC:	0.208
MB Numerical Performance Indicator:	4.07
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment		LCS/D (Y or N)?	N
	LCS37010	LCS037010	
Count Date:	8/7/2017		
Spike I.D.:	17-030		
Spike Concentration (pCi/mL):	80.196		
Volume Used (mL):	0.10		
Aliquot Volume (L, g, F):	0.500		
Target Conc. (pCi/L, g, F):	16.035		
Uncertainty (Calculated):	1.477		
Result (pCi/L, g, F):	13.495		
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.946		
Numerical Performance Indicator:	-2.84		
Percent Recovery:	84.16%		
Status vs Numerical Indicator:	N/A		
Status vs Recovery:	Pass		

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	30224715001	
Duplicate Sample I.D.:	30224715001DUP	
Sample Result (pCi/L, g, F):	0.635	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.257	
Sample Duplicate Result (pCi/L, g, F):	0.366	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.181	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	1.679	30224715001
Duplicate RPD:	53.85%	30224715001DUP
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail**	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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

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





## Quality Control Sample Performance Assessment

Test: Ra-228  
Analyst: VAL  
Date: 8/6/2017  
Worklist: 37011  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1314904	
MB concentration:	-0.065	
M/B Counting Uncertainty:	0.279	
MB MDC:	0.664	
MB Numerical Performance Indicator:	-0.46	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCS37011	Y
Count Date:	8/9/2017	8/9/2017
Spike I.D.:	17-005	17-005
Spike Concentration (pCi/mL):	23.847	23.847
Volume Used (mL):	0.20	0.20
Aliquot Volume (L, g, F):	0.803	0.805
Target Conc. (pCi/L, g, F):	5.942	5.923
Uncertainty (Calculated):	0.428	0.426
Result (pCi/L, g, F):	6.542	6.578
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.717	0.651
Numerical Performance Indicator:	1.41	1.65
Percent Recovery:	110.09%	111.06%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	LCS37011	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD37011	
Sample Result (pCi/L, g, F):	6.542	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.717	
Sample Duplicate Result (pCi/L, g, F):	6.578	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.651	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	-0.072	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	0.87%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:

*Am 8/11/17*



**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: AAH0440**

**August 18, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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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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 18, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-15	AAH0440-02	Ground Water	08/10/17 09:48	08/11/17 14:30



**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

August 18, 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

August 18, 2017

Attention: Mr. Joju Abraham

Report No.: AAH0440

Project: CCR Event

Client ID: BGWC-15

Lab Number ID: AAH0440-02

Date/Time Sampled: 8/10/2017 9:48:00AM

Date/Time Received: 8/11/2017 2:30:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	932	25	10	mg/L	SM 2540 C		1	08/15/17 16:20	08/15/17 16:20	7080392	JPT
<b>Inorganic Anions</b>											
Chloride	9.7	0.25	0.02	mg/L	EPA 300.0		1	08/14/17 11:41	08/15/17 01:25	7080352	RLC
Fluoride	0.20	0.30	0.03	mg/L	EPA 300.0	J, B-01	1	08/14/17 11:41	08/15/17 01:25	7080352	RLC
Sulfate	440	10	0.17	mg/L	EPA 300.0		10	08/14/17 11:41	08/16/17 21:07	7080352	RLC
<b>Metals, Total</b>											
Antimony	0.0007	0.0030	0.0006	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Arsenic	0.0017	0.0050	0.0005	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Barium	0.0805	0.0100	0.0004	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Boron	0.0892	0.0400	0.0060	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Calcium	155	25.0	2.02	mg/L	EPA 6020B		50	08/17/17 09:25	08/18/17 12:59	7080373	CSW
Chromium	0.0008	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Cobalt	0.0023	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Lead	0.00009	0.0050	0.00007	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Molybdenum	0.0232	0.0100	0.0010	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Thallium	0.00007	0.0010	0.00005	mg/L	EPA 6020B	J	1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/17/17 09:25	08/17/17 20:10	7080373	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/15/17 08:40	08/15/17 16:48	7080361	MTC



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

August 18, 2017

**Report No.: AAH0440**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080392 - SM 2540 C</b>											
<b>Blank (7080392-BLK1)</b>						Prepared & Analyzed: 08/15/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7080392-BS1)</b>						Prepared & Analyzed: 08/15/17					
Total Dissolved Solids	369	25	10	mg/L	400.00		92	84-108			
<b>Duplicate (7080392-DUP1)</b>						Source: AAH0439-10 Prepared & Analyzed: 08/15/17					
Total Dissolved Solids	198	25	10	mg/L		208			5	10	
<b>Duplicate (7080392-DUP2)</b>						Source: AAH0439-13 Prepared & Analyzed: 08/15/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	



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**Report No.: AAH0440**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080352 - EPA 300.0</b>											
<b>Blank (7080352-BLK1)</b>						Prepared & Analyzed: 08/14/17					
Chloride	ND	0.25	0.02	mg/L							
Fluoride	0.17	0.30	0.03	mg/L							J
Sulfate	ND	1.0	0.02	mg/L							
<b>LCS (7080352-BS1)</b>						Prepared & Analyzed: 08/14/17					
Chloride	10.0	0.25	0.02	mg/L	10.020		100	90-110			
Fluoride	9.95	0.30	0.03	mg/L	10.020		99	90-110			
Sulfate	10.1	1.0	0.02	mg/L	10.050		101	90-110			
<b>Matrix Spike (7080352-MS1)</b>						Source: AAH0433-02 Prepared & Analyzed: 08/14/17					
Chloride	12.9	0.25	0.02	mg/L	10.020	2.88	100	90-110			
Fluoride	10.3	0.30	0.03	mg/L	10.020	0.10	102	90-110			
Sulfate	71.9	1.0	0.02	mg/L	10.050	69.7	22	90-110			QM-02
<b>Matrix Spike (7080352-MS2)</b>						Source: AAH0439-02 Prepared & Analyzed: 08/14/17					
Chloride	15.4	0.25	0.02	mg/L	10.020	5.24	101	90-110			
Fluoride	10.2	0.30	0.03	mg/L	10.020	0.03	102	90-110			
Sulfate	10.9	1.0	0.02	mg/L	10.050	0.66	102	90-110			
<b>Matrix Spike Dup (7080352-MSD1)</b>						Source: AAH0433-02 Prepared & Analyzed: 08/14/17					
Chloride	12.9	0.25	0.02	mg/L	10.020	2.88	100	90-110	0.02	15	
Fluoride	10.3	0.30	0.03	mg/L	10.020	0.10	102	90-110	0.1	15	
Sulfate	71.8	1.0	0.02	mg/L	10.050	69.7	21	90-110	0.1	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
<b>Batch 7080361 - EPA 7470A</b>											
<b>Blank (7080361-BLK1)</b> Prepared & Analyzed: 08/15/17											
Mercury	ND	0.00050	0.000036	mg/L							
<b>LCS (7080361-BS1)</b> Prepared & Analyzed: 08/15/17											
Mercury	0.00241	0.00050	0.000036	mg/L	2.5000E-3		96	80-120			
<b>Matrix Spike (7080361-MS1)</b> Source: AAH0433-01 Prepared & Analyzed: 08/15/17											
Mercury	0.00245	0.00050	0.000036	mg/L	2.5000E-3	ND	98	75-125			
<b>Matrix Spike Dup (7080361-MSD1)</b> Source: AAH0433-01 Prepared & Analyzed: 08/15/17											
Mercury	0.00242	0.00050	0.000036	mg/L	2.5000E-3	ND	97	75-125	1	20	
<b>Post Spike (7080361-PS1)</b> Source: AAH0433-01 Prepared & Analyzed: 08/15/17											
Mercury	1.71			ug/L	1.6667	0.00991	102	80-120			
<b>Batch 7080373 - EPA 3005A</b>											
<b>Blank (7080373-BLK1)</b> Prepared & Analyzed: 08/17/17											
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							





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August 18, 2017

**Report No.: AAH0440**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080373 - EPA 3005A</b>											
<b>LCS (7080373-BS1)</b>						Prepared & Analyzed: 08/17/17					
Antimony	0.0989	0.0030	0.0006	mg/L	0.10000		99	80-120			
Arsenic	0.0977	0.0050	0.0005	mg/L	0.10000		98	80-120			
Barium	0.102	0.0100	0.0004	mg/L	0.10000		102	80-120			
Beryllium	0.105	0.0030	0.00009	mg/L	0.10000		105	80-120			
Boron	1.07	0.0400	0.0060	mg/L	1.0000		107	80-120			
Cadmium	0.101	0.0010	0.0001	mg/L	0.10000		101	80-120			
Calcium	1.02	0.500	0.0404	mg/L	1.0000		102	80-120			
Chromium	0.0987	0.0100	0.0005	mg/L	0.10000		99	80-120			
Cobalt	0.0982	0.0100	0.0003	mg/L	0.10000		98	80-120			
Copper	0.0984	0.0250	0.0003	mg/L	0.10000		98	80-120			
Lead	0.101	0.0050	0.00007	mg/L	0.10000		101	80-120			
Molybdenum	0.102	0.0100	0.0010	mg/L	0.10000		102	80-120			
Nickel	0.0976	0.0100	0.0005	mg/L	0.10000		98	80-120			
Selenium	0.0984	0.0100	0.0018	mg/L	0.10000		98	80-120			
Silver	0.101	0.0100	0.0002	mg/L	0.10000		101	80-120			
Thallium	0.102	0.0010	0.00005	mg/L	0.10000		102	80-120			
Vanadium	0.0990	0.0100	0.0012	mg/L	0.10000		99	80-120			
Zinc	0.0974	0.0100	0.0012	mg/L	0.10000		97	80-120			
Lithium	0.106	0.0500	0.0015	mg/L	0.10000		106	80-120			
<b>Matrix Spike (7080373-MS1)</b>			<b>Source: AAH0433-02</b>			Prepared & Analyzed: 08/17/17					
Antimony	0.102	0.0030	0.0006	mg/L	0.10000	ND	102	75-125			
Arsenic	0.104	0.0050	0.0005	mg/L	0.10000	ND	104	75-125			
Barium	0.165	0.0100	0.0004	mg/L	0.10000	0.0672	97	75-125			
Beryllium	0.0954	0.0030	0.00009	mg/L	0.10000	ND	95	75-125			
Boron	1.57	0.0400	0.0060	mg/L	1.0000	0.524	105	75-125			
Cadmium	0.104	0.0010	0.0001	mg/L	0.10000	ND	104	75-125			
Calcium	104	25.0	2.02	mg/L	1.0000	99.1	456	75-125			QM-02
Chromium	0.100	0.0100	0.0005	mg/L	0.10000	ND	100	75-125			
Cobalt	0.101	0.0100	0.0003	mg/L	0.10000	ND	101	75-125			
Copper	0.0984	0.0250	0.0003	mg/L	0.10000	ND	98	75-125			
Lead	0.0995	0.0050	0.00007	mg/L	0.10000	0.00008	99	75-125			
Molybdenum	0.107	0.0100	0.0010	mg/L	0.10000	0.0013	106	75-125			
Nickel	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Selenium	0.107	0.0100	0.0018	mg/L	0.10000	ND	107	75-125			
Silver	0.100	0.0100	0.0002	mg/L	0.10000	ND	100	75-125			
Thallium	0.103	0.0010	0.00005	mg/L	0.10000	ND	103	75-125			
Vanadium	0.102	0.0100	0.0012	mg/L	0.10000	ND	102	75-125			
Zinc	0.0997	0.0100	0.0012	mg/L	0.10000	0.0012	98	75-125			
Lithium	0.0960	0.0500	0.0015	mg/L	0.10000	ND	96	75-125			



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Attention: Mr. Joju Abraham

August 18, 2017

**Report No.: AAH0440**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080373 - EPA 3005A</b>											
<b>Matrix Spike Dup (7080373-MSD1)</b>			<b>Source: AAH0433-02</b>			<b>Prepared &amp; Analyzed: 08/17/17</b>					
Antimony	0.102	0.0030	0.0006	mg/L	0.10000	ND	102	75-125	0.05	20	
Arsenic	0.102	0.0050	0.0005	mg/L	0.10000	ND	102	75-125	2	20	
Barium	0.163	0.0100	0.0004	mg/L	0.10000	0.0672	96	75-125	0.9	20	
Beryllium	0.0899	0.0030	0.00009	mg/L	0.10000	ND	90	75-125	6	20	
Boron	1.49	0.0400	0.0060	mg/L	1.0000	0.524	96	75-125	5	20	
Cadmium	0.104	0.0010	0.0001	mg/L	0.10000	ND	104	75-125	0.2	20	
Calcium	110	25.0	2.02	mg/L	1.0000	99.1	NR	75-125	6	20	QM-02
Chromium	0.100	0.0100	0.0005	mg/L	0.10000	ND	100	75-125	0.07	20	
Cobalt	0.0983	0.0100	0.0003	mg/L	0.10000	ND	98	75-125	3	20	
Copper	0.0969	0.0250	0.0003	mg/L	0.10000	ND	97	75-125	2	20	
Lead	0.0986	0.0050	0.00007	mg/L	0.10000	0.00008	99	75-125	0.9	20	
Molybdenum	0.107	0.0100	0.0010	mg/L	0.10000	0.0013	105	75-125	0.4	20	
Nickel	0.0992	0.0100	0.0005	mg/L	0.10000	ND	99	75-125	3	20	
Selenium	0.104	0.0100	0.0018	mg/L	0.10000	ND	104	75-125	3	20	
Silver	0.0980	0.0100	0.0002	mg/L	0.10000	ND	98	75-125	2	20	
Thallium	0.102	0.0010	0.00005	mg/L	0.10000	ND	102	75-125	1	20	
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000	ND	105	75-125	2	20	
Zinc	0.101	0.0100	0.0012	mg/L	0.10000	0.0012	99	75-125	0.8	20	
Lithium	0.0922	0.0500	0.0015	mg/L	0.10000	ND	92	75-125	4	20	
<b>Post Spike (7080373-PS1)</b>			<b>Source: AAH0433-02</b>			<b>Prepared &amp; Analyzed: 08/17/17</b>					
Antimony	92.9			ug/L	100.00	0.116	93	80-120			
Arsenic	101			ug/L	100.00	0.161	101	80-120			
Barium	159			ug/L	100.00	67.2	91	80-120			
Beryllium	92.1			ug/L	100.00	0.0081	92	80-120			
Boron	1510			ug/L	1000.0	524	98	80-120			
Cadmium	103			ug/L	100.00	-0.0059	103	80-120			
Calcium	102000			ug/L	1000.0	99100	340	80-120			QM-02
Chromium	98.7			ug/L	100.00	0.227	98	80-120			
Cobalt	97.5			ug/L	100.00	0.100	97	80-120			
Copper	95.8			ug/L	100.00	0.196	96	80-120			
Lead	97.4			ug/L	100.00	0.0751	97	80-120			
Molybdenum	105			ug/L	100.00	1.27	104	80-120			
Nickel	97.2			ug/L	100.00	0.342	97	80-120			
Selenium	103			ug/L	100.00	1.33	102	80-120			
Silver	95.9			ug/L	100.00	0.0027	96	80-120			
Thallium	99.1			ug/L	100.00	0.0030	99	80-120			
Vanadium	104			ug/L	100.00	-0.345	104	80-120			
Zinc	98.6			ug/L	100.00	1.21	97	80-120			
Lithium	93.2			ug/L	100.00	1.02	92	80-120			



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Attention: Mr. Joju Abraham

August 18, 2017

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## Legend

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### 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

- 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.**



**Sample Condition Upon Receipt**



Client Name: GIA Power

Project # AAH0440

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

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

Custody Seal on Cooler/Box Present:  Yes  No Seals intact:  Yes  No

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used IR-4 Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 1.1  
Temp should be above freezing to 6°C

Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 8/11/17 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:	<u>GCD</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, W-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: \_\_\_\_\_ Date/Time \_\_\_\_\_ Field Data Required? Y / N

Person Contacted \_\_\_\_\_

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. (e.g. 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: 8/14/2017 12:18:18PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 08/11/17 14:30

**Work Order:** AAH0440

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 2

**#Containers:** 5

**Minimum Temp(C):** 1.1

**Maximum Temp(C):** 1.1

**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:**

September 01, 2017

Ms. Lauren Petty  
GA Power  
42 Inverness Center Parkway  
Birmingham, AL 35242

RE: Project: AAH0440 Plant Bowen  
Pace Project No.: 30227124

Dear Ms. Petty:

Enclosed are the analytical results for sample(s) received by the laboratory on August 14, 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: AAH0440 Plant Bowen  
Pace Project No.: 30227124

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAH0440 Plant Bowen

Pace Project No.: 30227124

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30227124001	BGWC-14	Water	08/10/17 11:58	08/14/17 09:30
30227124002	BGWC-15	Water	08/10/17 09:48	08/14/17 09:30

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAH0440 Plant Bowen

Pace Project No.: 30227124

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30227124001	BGWC-14	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	JAL	1
30227124002	BGWC-15	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: AAH0440 Plant Bowen

Pace Project No.: 30227124

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-14</b> <b>Lab ID: 30227124001</b> Collected: 08/10/17 11:58      Received: 08/14/17 09:30      Matrix: Water						
PWS:      Site ID:      Sample Type:						
Radium-226	EPA 9315	<b>4.51 ± 0.960 (0.381)</b> C:85% T:NA	pCi/L	08/25/17 10:20	13982-63-3	
Radium-228	EPA 9320	<b>2.00 ± 0.588 (0.677)</b> C:77% T:81%	pCi/L	08/29/17 15:56	15262-20-1	
Total Radium	Total Radium Calculation	<b>6.51 ± 1.55 (1.06)</b>	pCi/L	09/01/17 09:09	7440-14-4	

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-15</b> <b>Lab ID: 30227124002</b> Collected: 08/10/17 09:48      Received: 08/14/17 09:30      Matrix: Water						
PWS:      Site ID:      Sample Type:						
Comments: • Low volume received, client notified to analyze at low volume.						
Radium-226	EPA 9315	<b>1.08 ± 0.482 (0.651)</b> C:92% T:NA	pCi/L	08/25/17 09:55	13982-63-3	
Radium-228	EPA 9320	<b>0.813 ± 0.467 (0.833)</b> C:73% T:79%	pCi/L	08/29/17 15:56	15262-20-1	
Total Radium	Total Radium Calculation	<b>1.89 ± 0.949 (1.48)</b>	pCi/L	09/01/17 09:09	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAH0440 Plant Bowen

Pace Project No.: 30227124

---

QC Batch:	269152	Analysis Method:	EPA 9320
QC Batch Method:	EPA 9320	Analysis Description:	9320 Radium 228
Associated Lab Samples:	30227124001, 30227124002		

---

METHOD BLANK:	1324795	Matrix:	Water
Associated Lab Samples:	30227124001, 30227124002		

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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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAH0440 Plant Bowen

Pace Project No.: 30227124

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QC Batch:	269151	Analysis Method:	EPA 9315
QC Batch Method:	EPA 9315	Analysis Description:	9315 Total Radium
Associated Lab Samples:	30227124001, 30227124002		

---

METHOD BLANK:	1324793	Matrix:	Water
Associated Lab Samples:	30227124001, 30227124002		

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: AAH0440 Plant Bowen  
Pace Project No.: 30227124

### 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



Workorder: AAH0440

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 9/6/2017

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				Radium 226, 228, Total						LAB USE ONLY
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HNO3										
1	BGWC-14	G	8/10/2017 11:58	AAH0440-01	GW	2										
2	BGWC-15		8/10/2017 9:48	AAH0440-02	GW	1										
3																
4																
5																
6																
7																
8																
9																
10																
Transfers	Released By	Date/Time	Received By	Date/Time	Comments											
1	M. RAHMAN	8/11/17	[Signature]	8/10/17	Limited volume on BGWC-15											
2																
3																

Cooler Temperature on Receipt	NA °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

WO#: 30227124

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

Page 1 of 1



30227124

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:				ANALYSIS REQUESTED												CONTAINER TYPE		PRESERVATION		
Southland Consulting Services 241 Ralph McGill Bldg SE 810185 Atlanta, GA 30308				CONTAINER TYPE:	P	P	P											P - PLASTIC	1 - HCl, $\leq 6^{\circ}C$	
REPORT TO: Joe Alvarado				CC:													A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , $\leq 6^{\circ}C$		
REQUESTED COMPLETION DATE:				PO#:													G - CLEAR GLASS	3 - HNO <sub>3</sub>		
PROJECT NAME/STATE:																	V - VOA VIAL	4 - NaOH, $\leq 6^{\circ}C$		
PROJECT #:																	S - STERILE	5 - NaOH/ZnAc, $\leq 6^{\circ}C$		
																	O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , $\leq 6^{\circ}C$		
																		7 - $\leq 6^{\circ}C$ not frozen		
																	<b>MATRIX CODES:</b>			
Collection DATE	Collection TIME	MATRIX CODE	C O M P	G R A B	SAMPLE IDENTIFICATION												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			
8/10/17 1158 GW				X	R6-DC-14												2	1 2 SUSPENS - Rodium 81 Pesticide - WDU Rod Day		
8/10/17 0948 GW				X	R6-DC-15												3			
SAMPLED BY AND TITLE: Kenny Stepien				DATE/TIME: 8/10/17 12:55	RELINQUISHED BY: Candy Warden				DATE/TIME: 8/10/17 12:55	FOR LAB USE ONLY: LAB #: AK40440 Entered into LIMS: MK Tracking #:										
RECEIVED BY: Mike Nguyen				DATE/TIME: 8/11/17 12:14	RELINQUISHED BY:				DATE/TIME:											
RECEIVED BY LAB: M. Alaman				DATE/TIME: 08/11/17 14:00	SAMPLE SHIPPED VIA: UPS <input checked="" type="checkbox"/> FED-EX <input type="checkbox"/> USPS <input type="checkbox"/>				COURIER: Pace	CLIENT: OTHER: FS:										
Checked: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/>				Temperature: Min: 1.1 Max: _____				Custody Seal: Intact <input checked="" type="checkbox"/> Broken <input type="checkbox"/> Not Present <input type="checkbox"/> N/A				Cooler ID:								

30227124



**Sample Condition Upon Receipt**



Client Name: GIA Power

Project # AAH0440

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
 Tracking #: \_\_\_\_\_

Custody Seal on Cooler/Box Present:  Yes  No Seals intact:  Yes  No

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used IR-4 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 1.1 Biological Tissue is Frozen: Yes No  
 Temp should be above freezing to 6°C

Date and Initials of person examining contents: 8/11/17 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.	<u>30227124</u>
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>G-10</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, W-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: [Signature] 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 re: out of hold, incorrect preservative, out of temp, incorrect containers

PA-11-200 (rev. 3) 11 September 2006

Sample Condition Upon Receipt Pittsburgh

30227124

Pace Analytical

Client Name: Pace-GA

Project # \_\_\_\_\_

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7413.66578399

Label AMV  
LIMS Login AMV

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 8-14-17

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. <u>SAMPLE CO2 IS LOW VOLUME</u>
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.
All containers needing preservation are found to be in compliance with EPA recommendation.	/			<u>PH62</u>
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):			/	16.
Trip Blank Present:			/	17.
Trip Blank Custody Seals Present			/	
Rad Aqueous Samples Screened > 0.5 mrem/hr		/		Initial when completed: <u>BLM</u> Date: <u>8-14-17</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



Test: Ra-226  
Analyst: JC2  
Date: 8/24/2017  
Worklist: 37341  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment		
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	

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD37341	LCSD37341
Count Date:	8/25/2017	8/25/2017
Spike I.D.:	17-030	17-030
Spike Concentration (pCi/mL):	80.195	80.195
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.504	0.503
Target Conc. (pCi/L, g, F):	15.913	15.942
Uncertainty (Calculated):	1.466	1.469
Result (pCi/L, g, F):	13.814	13.835
I.CS/LCSD Counting Uncertainty (pCi/L, g, F):	1.213	1.107
Numerical Performance Indicator:	-2.16	-2.25
Percent Recovery:	86.81%	86.79%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		
Sample I.D.:	LCSD37341	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.:	LCSD37341	
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 RPD:	0.15%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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.

Test: Ra-228  
Analyst: JLW  
Date: 8/24/2017  
Worklist: 37342  
Matrix: DW

Method Blank Assessment		
MB Sample ID		1324795
MB concentration:		0.351
M/B Counting Uncertainty:		0.316
MB MDC:		0.654
MB Numerical Performance Indicator:		2.18
MB Status vs Numerical Indicator:		N/A
MB Status vs. MDC:		Pass

Laboratory Control Sample Assessment		LCSD (Y or N)?	N
		LCS37342	LCSD37342
Count Date:		8/29/2017	
Spike I.D.:		17-005	
Spike Concentration (pCi/mL):		23.690	
Volume Used (mL):		0.20	
Aliquot Volume (L, g, F):		0.803	
Target Conc. (pCi/L, g, F):		5.903	
Uncertainty (Calculated):		0.425	
Result (pCi/L, g, F):		6.566	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):		0.741	
Numerical Performance Indicator:		1.52	
Percent Recovery:		111.24%	
Status vs Numerical Indicator:		N/A	
Status vs Recovery:		Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

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 Result Counting Uncertainty (pCi/L, g, F):	0.262	
Sample Duplicate Result (pCi/L, g, F):	0.682	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.317	
Are sample and/or duplicate results below MDC?	See Below ##	
Duplicate Numerical Performance Indicator:	-2.479	
Duplicate RPD:	123.47%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

### 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: AAH0837**

**September 01, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

Project Manager

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All test results relate only to the samples analyzed.



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Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 01, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWC-30	AAH0837-01	Ground Water	08/23/17 14:26	08/25/17 15:00
BGWC-15	AAH0837-03	Ground Water	08/25/17 10:12	08/25/17 15:00



**PACE ANALYTICAL SERVICES, LLC.**

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September 01, 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.



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 Atlanta GA, 30339

September 01, 2017

Attention: Mr. Joju Abraham

Report No.: AAH0837

Project: CCR Event

Client ID: BGWC-30

Lab Number ID: AAH0837-01

Date/Time Sampled: 8/23/2017 2:26:00PM

Date/Time Received: 8/25/2017 3:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2400	25	10	mg/L	SM 2540 C		1	08/30/17 12:00	08/30/17 12:00	7080799	JPT
<b>Inorganic Anions</b>											
Chloride	800	12	1.2	mg/L	EPA 300.0		50	08/29/17 16:01	09/01/17 04:13	7080779	RLC
Fluoride	0.17	0.30	0.03	mg/L	EPA 300.0	J	1	08/29/17 16:01	08/29/17 22:01	7080779	RLC
Sulfate	390	50	0.85	mg/L	EPA 300.0		50	08/29/17 16:01	09/01/17 04:13	7080779	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Arsenic	0.0010	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Barium	0.150	0.0100	0.0004	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Boron	20.2	2.00	0.298	mg/L	EPA 6020B		50	08/30/17 13:30	08/30/17 18:35	7080785	CSW
Cadmium	0.0004	0.0010	0.0001	mg/L	EPA 6020B	J	1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Calcium	409	25.0	2.02	mg/L	EPA 6020B		50	08/30/17 13:30	08/30/17 18:35	7080785	CSW
Chromium	0.0009	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Cobalt	0.0006	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Lead	ND	0.0050	0.00007	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Molybdenum	0.0218	0.0100	0.0010	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Selenium	0.0097	0.0100	0.0018	mg/L	EPA 6020B	J	1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Thallium	0.0007	0.0010	0.00005	mg/L	EPA 6020B	J	1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Lithium	0.0182	0.0500	0.0015	mg/L	EPA 6020B	J	1	08/30/17 13:30	08/30/17 18:30	7080785	CSW
Mercury	0.00005	0.00050	0.000036	mg/L	EPA 7470A	J	1	08/28/17 12:40	08/28/17 19:35	7080733	MTC





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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 01, 2017

Report No.: AAH0837

Project: CCR Event

Client ID: BGWC-15

Lab Number ID: AAH0837-03

Date/Time Sampled: 8/25/2017 10:12:00AM

Date/Time Received: 8/25/2017 3:00:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	962	25	10	mg/L	SM 2540 C		1	08/30/17 12:00	08/30/17 12:00	7080799	JPT
<b>Inorganic Anions</b>											
Chloride	10	0.25	0.02	mg/L	EPA 300.0		1	08/29/17 16:01	08/29/17 22:22	7080779	RLC
Fluoride	0.07	0.30	0.03	mg/L	EPA 300.0	J	1	08/29/17 16:01	08/29/17 22:22	7080779	RLC
Sulfate	450	10	0.17	mg/L	EPA 300.0		10	08/29/17 16:01	08/31/17 15:39	7080779	RLC
<b>Metals, Total</b>											
Antimony	ND	0.0030	0.0006	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Arsenic	0.0015	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Barium	0.0824	0.0100	0.0004	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Beryllium	ND	0.0030	0.00009	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Boron	0.110	0.0400	0.0060	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Cadmium	ND	0.0010	0.0001	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Calcium	142	25.0	2.02	mg/L	EPA 6020B		50	08/30/17 13:30	08/30/17 18:47	7080785	CSW
Chromium	0.0007	0.0100	0.0005	mg/L	EPA 6020B	J	1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Cobalt	0.0014	0.0100	0.0003	mg/L	EPA 6020B	J	1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Lead	0.0001	0.0050	0.00007	mg/L	EPA 6020B	J	1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Molybdenum	0.0198	0.0100	0.0010	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Selenium	ND	0.0100	0.0018	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Thallium	ND	0.0010	0.00005	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Lithium	ND	0.0500	0.0015	mg/L	EPA 6020B		1	08/30/17 13:30	08/30/17 18:41	7080785	CSW
Mercury	ND	0.00050	0.000036	mg/L	EPA 7470A		1	08/28/17 12:40	08/28/17 19:37	7080733	MTC



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September 01, 2017

**Report No.: AAH0837**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080799 - SM 2540 C</b>											
<b>Blank (7080799-BLK1)</b>						Prepared & Analyzed: 08/30/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7080799-BS1)</b>						Prepared & Analyzed: 08/30/17					
Total Dissolved Solids	389	25	10	mg/L	400.00		97	84-108			
<b>Duplicate (7080799-DUP1)</b>						Source: AAH0837-01 Prepared & Analyzed: 08/30/17					
Total Dissolved Solids	2440	25	10	mg/L		2400			2	10	



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September 01, 2017

**Report No.: AAH0837**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080779 - EPA 300.0</b>											
<b>Blank (7080779-BLK1)</b>						Prepared & Analyzed: 08/29/17					
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 (7080779-BS1)</b>						Prepared & Analyzed: 08/29/17					
Chloride	10.3	0.25	0.02	mg/L	10.020		103	90-110			
Fluoride	10.3	0.30	0.03	mg/L	10.020		103	90-110			
Sulfate	10.3	1.0	0.02	mg/L	10.050		103	90-110			
<b>Matrix Spike (7080779-MS1)</b>						Source: AAH0836-01 Prepared & Analyzed: 08/29/17					
Chloride	13.1	0.25	0.02	mg/L	10.020	2.88	102	90-110			
Fluoride	10.5	0.30	0.03	mg/L	10.020	0.16	104	90-110			
Sulfate	29.0	1.0	0.02	mg/L	10.050	20.7	83	90-110			QM-02
<b>Matrix Spike Dup (7080779-MSD1)</b>						Source: AAH0836-01 Prepared & Analyzed: 08/29/17					
Chloride	13.1	0.25	0.02	mg/L	10.020	2.88	102	90-110	0.08	15	
Fluoride	10.6	0.30	0.03	mg/L	10.020	0.16	104	90-110	0.2	15	
Sulfate	29.0	1.0	0.02	mg/L	10.050	20.7	83	90-110	0.03	15	QM-02



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September 01, 2017

**Report No.: AAH0837**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080733 - EPA 7470A</b>											
<b>Blank (7080733-BLK1)</b> Prepared & Analyzed: 08/28/17											
Mercury	ND	0.00020	0.000036	mg/L							
<b>LCS (7080733-BS1)</b> Prepared & Analyzed: 08/28/17											
Mercury	0.00250	0.00020	0.000036	mg/L	2.5000E-3		100	80-120			
<b>Duplicate (7080733-DUP1)</b> Source: AAH0775-30 Prepared & Analyzed: 08/28/17											
Mercury	0.00040	0.00020	0.000036	mg/L		0.00038			3	20	
<b>Matrix Spike (7080733-MS1)</b> Source: AAH0836-01 Prepared & Analyzed: 08/28/17											
Mercury	0.00254	0.00020	0.000036	mg/L	2.5000E-3	ND	102	75-125			
<b>Matrix Spike Dup (7080733-MSD1)</b> Source: AAH0836-01 Prepared & Analyzed: 08/28/17											
Mercury	0.00249	0.00020	0.000036	mg/L	2.5000E-3	ND	99	75-125	2	20	
<b>Post Spike (7080733-PS1)</b> Source: AAH0836-01 Prepared & Analyzed: 08/28/17											
Mercury	1.72			ug/L	1.6667	0.00754	103	80-120			
<b>Batch 7080785 - EPA 3005A</b>											
<b>Blank (7080785-BLK1)</b> Prepared & Analyzed: 08/30/17											
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	0.0037	0.0100	0.0012	mg/L							
Lithium	ND	0.0500	0.0015	mg/L							

J



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Attention: Mr. Joju Abraham

September 01, 2017

**Report No.: AAH0837**

**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 7080785 - EPA 3005A**

**LCS (7080785-BS1)**

Prepared & Analyzed: 08/30/17

Antimony	0.0991	0.0030	0.0006	mg/L	0.10000		99	80-120			
Arsenic	0.0956	0.0050	0.0005	mg/L	0.10000		96	80-120			
Barium	0.0956	0.0100	0.0004	mg/L	0.10000		96	80-120			
Beryllium	0.0974	0.0030	0.00009	mg/L	0.10000		97	80-120			
Boron	0.997	0.0400	0.0060	mg/L	1.0000		100	80-120			
Cadmium	0.0976	0.0010	0.0001	mg/L	0.10000		98	80-120			
Calcium	0.962	0.500	0.0404	mg/L	1.0000		96	80-120			
Chromium	0.101	0.0100	0.0005	mg/L	0.10000		101	80-120			
Cobalt	0.0990	0.0100	0.0003	mg/L	0.10000		99	80-120			
Copper	0.0959	0.0250	0.0003	mg/L	0.10000		96	80-120			
Lead	0.0955	0.0050	0.00007	mg/L	0.10000		96	80-120			
Molybdenum	0.0986	0.0100	0.0010	mg/L	0.10000		99	80-120			
Nickel	0.0992	0.0100	0.0005	mg/L	0.10000		99	80-120			
Selenium	0.0982	0.0100	0.0018	mg/L	0.10000		98	80-120			
Silver	0.100	0.0100	0.0002	mg/L	0.10000		100	80-120			
Thallium	0.0981	0.0010	0.00005	mg/L	0.10000		98	80-120			
Vanadium	0.100	0.0100	0.0012	mg/L	0.10000		100	80-120			
Zinc	0.102	0.0100	0.0012	mg/L	0.10000		102	80-120			
Lithium	0.0959	0.0500	0.0015	mg/L	0.10000		96	80-120			

**Matrix Spike (7080785-MS1)**

Source: AAH0836-01

Prepared & Analyzed: 08/30/17

Antimony	0.101	0.0030	0.0006	mg/L	0.10000	0.0007	100	75-125			
Arsenic	0.0996	0.0050	0.0005	mg/L	0.10000	0.0007	99	75-125			
Barium	0.127	0.0100	0.0004	mg/L	0.10000	0.0285	98	75-125			
Beryllium	0.0993	0.0030	0.00009	mg/L	0.10000	ND	99	75-125			
Boron	1.01	0.0400	0.0060	mg/L	1.0000	0.0062	100	75-125			
Cadmium	0.101	0.0010	0.0001	mg/L	0.10000	ND	101	75-125			
Calcium	41.8	25.0	2.02	mg/L	1.0000	41.9	NR	75-125			QM-02
Chromium	0.106	0.0100	0.0005	mg/L	0.10000	ND	106	75-125			
Cobalt	0.110	0.0100	0.0003	mg/L	0.10000	0.0076	103	75-125			
Copper	0.102	0.0250	0.0003	mg/L	0.10000	0.0003	101	75-125			
Lead	0.0967	0.0050	0.00007	mg/L	0.10000	ND	97	75-125			
Molybdenum	0.106	0.0100	0.0010	mg/L	0.10000	0.0027	103	75-125			
Nickel	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Selenium	0.0999	0.0100	0.0018	mg/L	0.10000	ND	100	75-125			
Silver	0.102	0.0100	0.0002	mg/L	0.10000	ND	102	75-125			
Thallium	0.0995	0.0010	0.00005	mg/L	0.10000	ND	99	75-125			
Vanadium	0.110	0.0100	0.0012	mg/L	0.10000	ND	110	75-125			
Zinc	0.106	0.0100	0.0012	mg/L	0.10000	0.0047	101	75-125			
Lithium	0.0999	0.0500	0.0015	mg/L	0.10000	ND	100	75-125			



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

September 01, 2017

**Report No.: AAH0837**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080785 - EPA 3005A</b>											
<b>Matrix Spike Dup (7080785-MSD1)</b>			<b>Source: AAH0836-01</b>			<b>Prepared &amp; Analyzed: 08/30/17</b>					
Antimony	0.103	0.0030	0.0006	mg/L	0.10000	0.0007	103	75-125	2	20	
Arsenic	0.101	0.0050	0.0005	mg/L	0.10000	0.0007	100	75-125	1	20	
Barium	0.130	0.0100	0.0004	mg/L	0.10000	0.0285	101	75-125	2	20	
Beryllium	0.102	0.0030	0.00009	mg/L	0.10000	ND	102	75-125	2	20	
Boron	1.03	0.0400	0.0060	mg/L	1.0000	0.0062	102	75-125	2	20	
Cadmium	0.101	0.0010	0.0001	mg/L	0.10000	ND	101	75-125	0.6	20	
Calcium	0.905	0.500	0.0404	mg/L	1.0000	41.9	NR	75-125	192	20	QM-02, QR-03
Chromium	0.105	0.0100	0.0005	mg/L	0.10000	ND	105	75-125	1	20	
Cobalt	0.109	0.0100	0.0003	mg/L	0.10000	0.0076	101	75-125	2	20	
Copper	0.0988	0.0250	0.0003	mg/L	0.10000	0.0003	99	75-125	3	20	
Lead	0.0954	0.0050	0.00007	mg/L	0.10000	ND	95	75-125	1	20	
Molybdenum	0.107	0.0100	0.0010	mg/L	0.10000	0.0027	104	75-125	0.7	20	
Nickel	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125	0.1	20	
Selenium	0.103	0.0100	0.0018	mg/L	0.10000	ND	103	75-125	3	20	
Silver	0.103	0.0100	0.0002	mg/L	0.10000	ND	103	75-125	0.8	20	
Thallium	0.0987	0.0010	0.00005	mg/L	0.10000	ND	99	75-125	0.8	20	
Vanadium	0.110	0.0100	0.0012	mg/L	0.10000	ND	110	75-125	0.05	20	
Zinc	0.102	0.0100	0.0012	mg/L	0.10000	0.0047	97	75-125	4	20	
Lithium	0.0987	0.0500	0.0015	mg/L	0.10000	ND	99	75-125	1	20	
<b>Post Spike (7080785-PS1)</b>											
<b>Source: AAH0836-01</b>			<b>Prepared &amp; Analyzed: 08/30/17</b>								
Antimony	93.1			ug/L	100.00	0.666	92	80-120			
Arsenic	102			ug/L	100.00	0.657	101	80-120			
Barium	126			ug/L	100.00	28.5	97	80-120			
Beryllium	97.5			ug/L	100.00	-0.0011	97	80-120			
Boron	1010			ug/L	1000.0	6.21	100	80-120			
Cadmium	102			ug/L	100.00	-0.0337	102	80-120			
Calcium	41600			ug/L	1000.0	41900	NR	80-120			QM-02
Chromium	102			ug/L	100.00	0.217	102	80-120			
Cobalt	107			ug/L	100.00	7.63	100	80-120			
Copper	97.4			ug/L	100.00	0.283	97	80-120			
Lead	96.6			ug/L	100.00	0.0217	97	80-120			
Molybdenum	106			ug/L	100.00	2.75	103	80-120			
Nickel	97.5			ug/L	100.00	0.187	97	80-120			
Selenium	106			ug/L	100.00	0.728	105	80-120			
Silver	100			ug/L	100.00	0.0003	100	80-120			
Thallium	98.9			ug/L	100.00	0.0159	99	80-120			
Vanadium	106			ug/L	100.00	0.258	105	80-120			
Zinc	100			ug/L	100.00	4.74	95	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

September 01, 2017

**Report No.: AAH0837**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7080785 - EPA 3005A</b>											
<b>Post Spike (7080785-PS1)</b>			<b>Source: AAH0836-01</b>			<b>Prepared &amp; Analyzed: 08/30/17</b>					
Lithium	100			ug/L	100.00	0.0464	100	80-120			



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2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

September 01, 2017

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## Legend

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### 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

- 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).

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





**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

September 01, 2017

## Report Notes

Consultant provided limited volume for sample BGWC-15 (AAH0837-03), but there was sufficient sample to proceed with analyses. BMcD

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

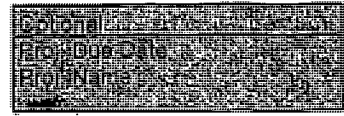
CLIENT NAME:			ANALYSIS REQUESTED			L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION	
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:			CONTAINER TYPE:	P	P		P	P	P	P
Southern Company Services			PRESERVATION:	3	7	3				
241 Ralph McGill Blvd SE 151085			# of							
Atlanta, GA 30308			CONTAINERS							
REPORT TO:	CC:									
REQUESTED COMPLETION DATE:	PO #:									
PROJECT NAME/STATE:										
Plant Bowen - Ash Pond CCR										
PROJECT #:										
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION					
8/23/17	1426	GW	X		BGWL-30	4	1	1	2	1
8/25/17	0856	GW	X		BGWL-14	2			2	2
8/25/17	1012	GW	X		BGWL-15	2	1	1		3
<p>MATRIX CODES:</p> <p>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</p>										
REMARKS/ADDITIONAL INFORMATION										
TDS bottle only partially filled										
SAMPLED BY AND TITLE:			DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	FOR LAB USE ONLY				
Robert Mill/Kevin Stephenson			8/25/17 1100	Robert Mill	8/25/17 1500	LAB #: AAH0837				
RECEIVED BY:			DATE/TIME:	RELINQUISHED BY:	DATE/TIME:	Entered into LIMS: [Signature]				
RECEIVED BY LAB:			DATE/TIME:	SAMPLE SHIPPED VIA:	DATE/TIME:	Tracking #:				
[Signature]			8/25/17 1500	UPS FED-EX USPS COURIER CLIENT OTHER FS	8/25/17 1500					
Checked: [Signature]			Temperature: [Signature]	Custody Seal: [Signature]	# of Coolers: [Signature]	Cooler ID: [Signature]				
es: No NA			Min: [Signature] Max: [Signature]	Intact Broken Not Present N/A						



Sample Condition Upon Receipt

Client Name: GA Power Project # AAH0837

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_  
Tracking #: \_\_\_\_\_



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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used IR-4 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temperature 0.8 Biological Tissue Is Frozen: Yes No

Date and Initials of person examining contents: 8/25/17 MK

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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.	<u>insufficient sample for TDS/c-300</u>
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>GLW</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: 9/1/2017 11:46:23AM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 08/25/17 15:00

**Work Order:** AAH0837

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 3

**#Containers:** 8

**Minimum Temp(C):** 0.8

**Maximum Temp(C):** 0.8

**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	NO
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:**

Consultant provided limited volume for sample BGWC-15 (AAH0837-03), but there was sufficient sample to proceed with analyses. BMcD

September 15, 2017

Mr. Joju Abraham  
Georgia Power  
2480 Maner Road  
Atlanta, GA 30339

RE: Project: AAH0837 Plant Bowen  
Pace Project No.: 30228383

Dear Mr. Abraham:

Enclosed are the analytical results for sample(s) received by the laboratory on August 28, 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: AAH0837 Plant Bowen  
Pace Project No.: 30228383

### 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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: AAH0837 Plant Bowen

Pace Project No.: 30228383

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30228383001	BGWC-30	Water	08/23/17 14:26	08/28/17 09:00
30228383002	BGWC-14	Water	08/25/17 08:56	08/28/17 09:00

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: AAH0837 Plant Bowen

Pace Project No.: 30228383

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30228383001	BGWC-30	EPA 9315	JC2	1
		EPA 9320	JLW	1
		Total Radium Calculation	RMK	1
30228383002	BGWC-14	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: AAH0837 Plant Bowen

Pace Project No.: 30228383

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-30</b>		<b>Lab ID: 30228383001</b>	Collected: 08/23/17 14:26	Received: 08/28/17 09:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	<b>1.58 ± 0.388 (0.222)</b>	pCi/L	09/05/17 07:30	13982-63-3		
Radium-228	EPA 9320	<b>1.81 ± 0.664 (0.937)</b>	pCi/L	09/07/17 15:16	15262-20-1		
Total Radium	Total Radium Calculation	<b>3.39 ± 1.05 (1.16)</b>	pCi/L	09/10/17 13:12	7440-14-4		

Parameters		Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: BGWC-14</b>		<b>Lab ID: 30228383002</b>	Collected: 08/25/17 08:56	Received: 08/28/17 09:00	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Radium-226	EPA 9315	<b>4.76 ± 0.879 (0.223)</b>	pCi/L	09/05/17 07:30	13982-63-3		
Radium-228	EPA 9320	<b>2.28 ± 0.684 (0.763)</b>	pCi/L	09/07/17 15:16	15262-20-1		
Total Radium	Total Radium Calculation	<b>7.04 ± 1.56 (0.986)</b>	pCi/L	09/10/17 13:12	7440-14-4		

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: AAH0837 Plant Bowen

Pace Project No.: 30228383

QC Batch: 270015

Analysis Method: EPA 9315

QC Batch Method: EPA 9315

Analysis Description: 9315 Total Radium

Associated Lab Samples: 30228383001, 30228383002

METHOD BLANK: 1328717

Matrix: Water

Associated Lab Samples: 30228383001, 30228383002

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: AAH0837 Plant Bowen

Pace Project No.: 30228383

QC Batch: 270013

Analysis Method: EPA 9320

QC Batch Method: EPA 9320

Analysis Description: 9320 Radium 228

Associated Lab Samples: 30228383001, 30228383002

METHOD BLANK: 1328715

Matrix: Water

Associated Lab Samples: 30228383001, 30228383002

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: AAH0837 Plant Bowen

Pace Project No.: 30228383

### 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,  
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WO# : 30228383



30228383



Chain of Custody

Workorder: AAH0837

Workorder Name: Plant Bowen

Owner Received Date:

Results Requested By: 9/20/2017

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																
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers				Radium 226, 228, Total							LAB USE ONLY	
						HNO3												
1	BGWC-30	G	8/23/2017 14:26	AAH0837-01	GW	2				X								
2	BGWC-14	G	8/25/2017 8:56	AAH0837-02	GW	2				X								
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
Transfers	Released By	Date/Time	Received By	Date/Time	Comments													
1	M. RAHMAN	8/25/17	C. CANNON	8/28/17	COU													
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.

30228383

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

Form containing client information (Southern Company Services), analysis requested details, container types, collection dates (8/23/17, 8/25/17), sample IDs (BGWL-30, 14, 15), and shipping/receiving signatures.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: Pace GA

Project # 30228383

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

Tracking #: 7413 6658 2071

Label CAC  
LIMS Login BVM

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

Thermometer Used NA Type of ice: Wet Blue None

Cooler Temperature Observed Temp NA °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing to 6°C

Date and initials of person examining contents: 8/28/17 CAC

Comments:	Yes	No	N/A	
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. <u>you 8/28/17</u>
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	<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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16. <u>PAK 2</u>
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>CAC</u> Date/time of preservation: _____
				Lot # of added preservative: _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.
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>CAC</u> Date: <u>8/28/17</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

Test: Ra-228  
Analyst: JLW  
Date: 9/5/2017  
Worklist: 37502  
Matrix: DW

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

Method Blank Assessment		
MB Sample ID	1328715	
MB concentration:	-0.045	
M/B Counting Uncertainty:	0.342	
MB MDC:	0.809	
MB Numerical Performance Indicator:	-0.26	
MB Status vs Numerical Indicator:	N/A	
MB Status vs. MDC:	Pass	

Laboratory Control Sample Assessment			
	LCSD (Y or N)?	Y	
	LCS37502	LCSD37502	
Count Date:	9/7/2017	9/7/2017	
Spike I.D.:	17-005	17-005	
Spike Concentration (pCi/mL):	23.620	23.620	
Volume Used (mL):	0.20	0.20	
Aliquot Volume (L, g, F):	0.807	0.805	
Target Conc. (pCi/L, g, F):	5.854	5.866	
Uncertainty (Calculated):	0.421	0.422	
Result (pCi/L, g, F):	6.476	7.838	
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.753	0.793	
Numerical Performance Indicator:	1.41	4.30	
Percent Recovery:	110.63%	133.62%	
Status vs Numerical Indicator:	N/A	N/A	
Status vs Recovery:	Pass	Pass	

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment			
Sample I.D.:	LCS37502	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.	
Duplicate Sample I.D.:	LCSD37502		
Sample Result (pCi/L, g, F):	6.476		
Sample Result Counting Uncertainty (pCi/L, g, F):	0.753		
Sample Duplicate Result (pCi/L, g, F):	7.838		
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.793		
Are sample and/or duplicate results below MDC?	NO		
Duplicate Numerical Performance Indicator:	-2.441		
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	18.83%		
Duplicate Status vs Numerical Indicator:	N/A		
Duplicate Status vs RPD:	Pass		

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	

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

Comments:





## Quality Control Sample Performance Assessment

Test: Ra-226  
Analyst: JC2  
Date: 9/1/2017  
Worklist: 37503  
Matrix: DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	1328717
MB concentration:	0.268
M/B Counting Uncertainty:	0.133
MB MDC:	0.154
MB Numerical Performance Indicator:	3.95
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	See Comment*

Laboratory Control Sample Assessment	LCSD (Y or N)?	
	LCSD37503	LCSD37503
Count Date:	9/5/2017	9/5/2017
Spike I.D.:	17-030	17-030
Spike Concentration (pCi/mL):	80.193	80.193
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.506	0.506
Target Conc. (pCi/L, g, F):	15.837	15.859
Uncertainty (Calculated):	1.459	1.461
Result (pCi/L, g, F):	13.064	14.005
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.854	0.884
Numerical Performance Indicator:	-3.22	-2.13
Percent Recovery:	82.49%	88.31%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

Sample Matrix Spike Control Assessment	
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):	
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:	

Duplicate Sample Assessment		Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Sample I.D.:	LCSD37503	
Duplicate Sample I.D.:	LCSD37503	
Sample Result (pCi/L, g, F):	13.064	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.854	
Sample Duplicate Result (pCi/L, g, F):	14.005	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.884	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	-1.501	
Duplicate RPD:	6.96%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment	
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:	
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:

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



**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: AAJ0319**

**October 20, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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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Attention: Mr. Joju Abraham

October 20, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-2	AAJ0319-01	Ground Water	10/09/17 15:10	10/10/17 13:55
BGWA-6	AAJ0319-02	Ground Water	10/09/17 16:15	10/10/17 13:55
BGWA-28	AAJ0319-03	Ground Water	10/09/17 16:19	10/10/17 13:55



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 Atlanta GA, 30339

October 20, 2017

Attention: Mr. Joju Abraham

Report No.: AAJ0319

Project: CCR Event

Client ID: BGWA-2

Lab Number ID: AAJ0319-01

Date/Time Sampled: 10/9/2017 3:10:00PM

Date/Time Received: 10/10/2017 1:55:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	150	25	10	mg/L	SM 2540 C		1	10/13/17 13:20	10/13/17 13:20	7100400	JPT
<b>Inorganic Anions</b>											
Chloride	1.9	0.25	0.02	mg/L	EPA 300.0		1	10/15/17 10:10	10/15/17 13:26	7100429	RLC
Fluoride	0.11	0.30	0.03	mg/L	EPA 300.0	J	1	10/15/17 10:10	10/15/17 13:26	7100429	RLC
Sulfate	6.1	1.0	0.02	mg/L	EPA 300.0		1	10/15/17 10:10	10/15/17 13:26	7100429	RLC
<b>Metals, Total</b>											
Boron	0.0063	0.0400	0.0060	mg/L	EPA 6020B	J	1	10/16/17 18:00	10/17/17 23:55	7100469	CSW
Calcium	33.6	25.0	2.02	mg/L	EPA 6020B		50	10/16/17 18:00	10/18/17 00:01	7100469	CSW



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 20, 2017

**Report No.:** AAJ0319

**Project:** CCR Event

**Client ID:** BGWA-6

**Lab Number ID:** AAJ0319-02

**Date/Time Sampled:** 10/9/2017 4:15:00PM

**Date/Time Received:** 10/10/2017 1:55:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	253	25	10	mg/L	SM 2540 C		1	10/13/17 13:20	10/13/17 13:20	7100400	JPT
<b>Inorganic Anions</b>											
Chloride	18	0.25	0.02	mg/L	EPA 300.0		1	10/15/17 10:10	10/15/17 13:46	7100429	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/15/17 10:10	10/15/17 13:46	7100429	RLC
Sulfate	25	1.0	0.02	mg/L	EPA 300.0		1	10/15/17 10:10	10/15/17 13:46	7100429	RLC
<b>Metals, Total</b>											
Boron	0.0271	0.0400	0.0060	mg/L	EPA 6020B	J	1	10/16/17 18:00	10/18/17 00:18	7100469	CSW
Calcium	58.9	25.0	2.02	mg/L	EPA 6020B		50	10/16/17 18:00	10/18/17 00:24	7100469	CSW



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Attention: Mr. Joju Abraham

**Report No.:** AAJ0319

**Project:** CCR Event

**Client ID:** BGWA-28

**Lab Number ID:** AAJ0319-03

**Date/Time Sampled:** 10/9/2017 4:19:00PM

**Date/Time Received:** 10/10/2017 1:55:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	243	25	10	mg/L	SM 2540 C		1	10/13/17 13:20	10/13/17 13:20	7100400	JPT
<b>Inorganic Anions</b>											
Chloride	39	0.25	0.02	mg/L	EPA 300.0		1	10/15/17 10:10	10/15/17 14:07	7100429	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/15/17 10:10	10/15/17 14:07	7100429	RLC
Sulfate	25	1.0	0.02	mg/L	EPA 300.0		1	10/15/17 10:10	10/15/17 14:07	7100429	RLC
<b>Metals, Total</b>											
Boron	0.200	0.200	0.0298	mg/L	EPA 6020B		5	10/16/17 18:00	10/19/17 16:06	7100469	CSW
Calcium	58.0	25.0	2.02	mg/L	EPA 6020B		50	10/16/17 18:00	10/18/17 00:35	7100469	CSW



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**Report No.: AAJ0319**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7100400 - SM 2540 C</b>											
<b>Blank (7100400-BLK1)</b>						Prepared & Analyzed: 10/13/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7100400-BS1)</b>						Prepared & Analyzed: 10/13/17					
Total Dissolved Solids	368	25	10	mg/L	400.00		92	84-108			
<b>Duplicate (7100400-DUP1)</b>						Source: AAJ0387-04 Prepared & Analyzed: 10/13/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7100400-DUP2)</b>						Source: AAJ0389-01 Prepared & Analyzed: 10/13/17					
Total Dissolved Solids	225	25	10	mg/L		204			10	10	



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**Report No.: AAJ0319**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7100429 - EPA 300.0</b>											
<b>Blank (7100429-BLK1)</b>						Prepared & Analyzed: 10/15/17					
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 (7100429-BS1)</b>						Prepared & Analyzed: 10/15/17					
Chloride	10.9	0.25	0.02	mg/L	10.020		108	90-110			
Fluoride	9.65	0.30	0.03	mg/L	10.020		96	90-110			
Sulfate	10.6	1.0	0.02	mg/L	10.050		105	90-110			
<b>Matrix Spike (7100429-MS1)</b>						Source: AAJ0387-01 Prepared & Analyzed: 10/15/17					
Chloride	15.7	0.25	0.02	mg/L	10.020	5.87	99	90-110			
Fluoride	9.92	0.30	0.03	mg/L	10.020	ND	99	90-110			
Sulfate	91.9	1.0	0.02	mg/L	10.050	92.1	NR	90-110			QM-02
<b>Matrix Spike (7100429-MS2)</b>						Source: AAJ0387-06 Prepared & Analyzed: 10/15/17					
Chloride	15.2	0.25	0.02	mg/L	10.020	5.81	94	90-110			
Fluoride	9.93	0.30	0.03	mg/L	10.020	0.14	98	90-110			
Sulfate	86.2	1.0	0.02	mg/L	10.050	84.8	14	90-110			QM-02
<b>Matrix Spike Dup (7100429-MSD1)</b>						Source: AAJ0387-01 Prepared & Analyzed: 10/15/17					
Chloride	15.7	0.25	0.02	mg/L	10.020	5.87	98	90-110	0.08	15	
Fluoride	9.99	0.30	0.03	mg/L	10.020	ND	100	90-110	0.7	15	
Sulfate	92.0	1.0	0.02	mg/L	10.050	92.1	NR	90-110	0.04	15	QM-02





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October 20, 2017

**Report No.: AAJ0319**

**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 7100469 - EPA 3005A**

**Blank (7100469-BLK1)**

Prepared: 10/16/17 Analyzed: 10/17/17

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 (7100469-BS1)**

Prepared: 10/16/17 Analyzed: 10/17/17

Antimony	0.101	0.0030	0.0006	mg/L	0.10000		101	80-120			
Arsenic	0.0990	0.0050	0.0005	mg/L	0.10000		99	80-120			
Barium	0.0974	0.0100	0.0004	mg/L	0.10000		97	80-120			
Beryllium	0.102	0.0030	0.00009	mg/L	0.10000		102	80-120			
Cadmium	0.105	0.0010	0.0001	mg/L	0.10000		105	80-120			
Chromium	0.106	0.0100	0.0005	mg/L	0.10000		106	80-120			
Cobalt	0.0998	0.0100	0.0003	mg/L	0.10000		100	80-120			
Copper	0.0994	0.0250	0.0003	mg/L	0.10000		99	80-120			
Lead	0.0974	0.0050	0.00007	mg/L	0.10000		97	80-120			
Nickel	0.0990	0.0100	0.0005	mg/L	0.10000		99	80-120			
Selenium	0.0994	0.0100	0.0018	mg/L	0.10000		99	80-120			
Silver	0.0981	0.0100	0.0002	mg/L	0.10000		98	80-120			
Thallium	0.100	0.0010	0.00005	mg/L	0.10000		100	80-120			
Vanadium	0.104	0.0100	0.0012	mg/L	0.10000		104	80-120			
Zinc	0.106	0.0100	0.0012	mg/L	0.10000		106	80-120			
Lithium	0.105	0.0500	0.0015	mg/L	0.10000		105	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

October 20, 2017

**Report No.: AAJ0319**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7100469 - EPA 3005A</b>											
<b>Matrix Spike (7100469-MS1)</b>			<b>Source: AAJ0319-03</b>				<b>Prepared: 10/16/17 Analyzed: 10/17/17</b>				
Antimony	0.101	0.0030	0.0006	mg/L	0.10000	ND	101	75-125			
Arsenic	0.102	0.0050	0.0005	mg/L	0.10000	0.0007	102	75-125			
Barium	0.391	0.0100	0.0004	mg/L	0.10000	0.178	213	75-125			
Beryllium	0.106	0.0030	0.00009	mg/L	0.10000	ND	106	75-125			
Cadmium	0.105	0.0010	0.0001	mg/L	0.10000	ND	105	75-125			
Chromium	0.106	0.0100	0.0005	mg/L	0.10000	ND	106	75-125			
Cobalt	0.0977	0.0100	0.0003	mg/L	0.10000	ND	98	75-125			
Copper	0.0986	0.0250	0.0003	mg/L	0.10000	ND	99	75-125			
Lead	0.0956	0.0050	0.00007	mg/L	0.10000	ND	96	75-125			
Nickel	0.0985	0.0100	0.0005	mg/L	0.10000	ND	99	75-125			
Selenium	0.101	0.0100	0.0018	mg/L	0.10000	0.0018	99	75-125			
Silver	0.0975	0.0100	0.0002	mg/L	0.10000	ND	98	75-125			
Thallium	0.100	0.0010	0.00005	mg/L	0.10000	ND	100	75-125			
Vanadium	0.109	0.0100	0.0012	mg/L	0.10000	ND	109	75-125			
Zinc	0.105	0.0100	0.0012	mg/L	0.10000	ND	105	75-125			
Lithium	0.109	0.0500	0.0015	mg/L	0.10000	ND	109	75-125			
<b>Matrix Spike Dup (7100469-MSD1)</b>			<b>Source: AAJ0319-03</b>				<b>Prepared: 10/16/17 Analyzed: 10/17/17</b>				
Antimony	0.0994	0.0030	0.0006	mg/L	0.10000	ND	99	75-125	2	20	
Arsenic	0.100	0.0050	0.0005	mg/L	0.10000	0.0007	99	75-125	2	20	
Barium	0.380	0.0100	0.0004	mg/L	0.10000	0.178	203	75-125	3	20	
Beryllium	0.104	0.0030	0.00009	mg/L	0.10000	ND	104	75-125	2	20	
Cadmium	0.101	0.0010	0.0001	mg/L	0.10000	ND	101	75-125	4	20	
Chromium	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125	2	20	
Cobalt	0.0966	0.0100	0.0003	mg/L	0.10000	ND	97	75-125	1	20	
Copper	0.0947	0.0250	0.0003	mg/L	0.10000	ND	95	75-125	4	20	
Lead	0.0942	0.0050	0.00007	mg/L	0.10000	ND	94	75-125	2	20	
Nickel	0.0983	0.0100	0.0005	mg/L	0.10000	ND	98	75-125	0.2	20	
Selenium	0.102	0.0100	0.0018	mg/L	0.10000	0.0018	100	75-125	1	20	
Silver	0.0963	0.0100	0.0002	mg/L	0.10000	ND	96	75-125	1	20	
Thallium	0.0980	0.0010	0.00005	mg/L	0.10000	ND	98	75-125	2	20	
Vanadium	0.105	0.0100	0.0012	mg/L	0.10000	ND	105	75-125	4	20	
Zinc	0.101	0.0100	0.0012	mg/L	0.10000	ND	101	75-125	4	20	
Lithium	0.107	0.0500	0.0015	mg/L	0.10000	ND	107	75-125	1	20	



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

October 20, 2017

**Report No.: AAJ0319**

**Metals, Total - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7100469 - EPA 3005A</b>											
<b>Post Spike (7100469-PS1)</b>			<b>Source: AAJ0319-03</b>			<b>Prepared: 10/16/17 Analyzed: 10/17/17</b>					
Antimony	99.8			ug/L	100.00	0.0209	100	80-120			
Arsenic	104			ug/L	100.00	0.685	103	80-120			
Barium	401			ug/L	100.00	178	223	80-120			
Beryllium	105			ug/L	100.00	-0.0006	105	80-120			
Cadmium	103			ug/L	100.00	0.0001	103	80-120			
Chromium	103			ug/L	100.00	0.370	103	80-120			
Cobalt	98.7			ug/L	100.00	0.0057	99	80-120			
Copper	96.8			ug/L	100.00	0.248	97	80-120			
Lead	93.6			ug/L	100.00	0.0214	94	80-120			
Nickel	100			ug/L	100.00	0.207	100	80-120			
Selenium	102			ug/L	100.00	1.77	100	80-120			
Silver	99.6			ug/L	100.00	-0.0007	100	80-120			
Thallium	97.5			ug/L	100.00	0.0090	97	80-120			
Vanadium	106			ug/L	100.00	0.478	105	80-120			
Zinc	103			ug/L	100.00	0.797	103	80-120			
Lithium	108			ug/L	100.00	0.260	108	80-120			



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2480 Maner Road  
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Attention: Mr. Joju Abraham

October 20, 2017

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## Legend

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### 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

**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:					ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION			
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					PRESERVATION:											CONTAINER TYPE		PRESERVATION			
Southern Consulting Services					CONTAINER TYPE: P 1 P 1										A B I D N U M B E R	P - PLASTIC		1 - HCl, ≤6°C			
241 Ralph McGill Blvd SE 81065 Atlanta, GA 30308					# of											A - AMBER GLASS		2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C			
REPORT TO:			CC:		C O N T A I N E R S ↓										G - CLEAR GLASS		3 - HNO <sub>3</sub>				
Tom Abraham			Mama Padilla												V - VOA VIAL		4 - NaOH, ≤6°C				
REQUESTED COMPLETION DATE:			PO #:		Methods: App. III EPA 6020 C.I.F. 801 EPA 200 TDS 82525402										S - STERILE		5 - NaOH/ZnAc, ≤6°C				
GR10084198			GR10084198												O - OTHER		6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C				
PROJECT NAME/STATE:					↓										*MATRIX CODES:						
Plant Based Auto Prod CCR															DW - DRINKING WATER		S - SOIL				
PROJECT #:					↓										WW - WASTEWATER		SL - SLUDGE				
															GW - GROUNDWATER		SD - SOLID				
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of															
10/9/17	1510	GW		X	RGWA-2	2	1	1													
10/9/17	1615	GW		X	RGWA-6	2	1	1													
10/9/17	1619	GW		X	RGWA-2B	2	1	1													
SAMPLED BY AND TITLE:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:					FOR LAB USE ONLY	
Mike Naven					10/9/17 @ 1641															LAB #: AAJ0319	
RECEIVED BY:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:					Entered into LIMS:	
Mike Naven					10/10/17 1109															Tracking #: MR	
RECEIVED BY LAB:					DATE/TIME:					SAMPLE SHIPPED VIA:					CLIENT OTHER FS						
Pace					10/10/17 1355					UPS FED-EX USPS COURIER					Pace						
Checked: No NA					Temperature: Min: 0.2 Max:					Custody Seal: Intact Broken Not Present N/A					# of Coolers					Cooler ID:	

Page 12 of 14



Sample Condition Upon Receipt

Client Name: GVA Power Project # AAJQ319

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

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

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

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used IR-4 Type of Ice: Wet Blue None  Samples on ice, cooling process has begun

Cooler Temperature 0.2 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 8°C

Comments: Date and Initials of person examining contents: 10/10/17 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 type="checkbox"/> Yes <input checked="" 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 checked="" 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>GVA</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 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: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Field Data Required? Y / N

Person Contacted: \_\_\_\_\_

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: 10/12/2017 2:24:31PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 10/10/17 13:55

**Work Order:** AAJ0319

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 3

**#Containers:** 6

**Minimum Temp(C):** 0.2

**Maximum Temp(C):** 0.2

**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:**



**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: AAJ0490**

**November 02, 2017**

**Project: CCR Event**

**Project #:Plant Bowen**

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 "Betsy McDaniel". The signature is written over a horizontal line.

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

Georgia Power  
2480 Maner Road  
Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 2017

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
BGWA-26	AAJ0490-01	Ground Water	10/10/17 09:50	10/13/17 16:45
BGWC-30	AAJ0490-02	Ground Water	10/10/17 11:10	10/13/17 16:45
BGWC-8	AAJ0490-03	Ground Water	10/10/17 13:24	10/13/17 16:45
BGWC-9	AAJ0490-04	Ground Water	10/10/17 14:38	10/13/17 16:45
FBL101017	AAJ0490-05	Water	10/10/17 14:51	10/13/17 16:45
EQBL101017	AAJ0490-06	Water	10/10/17 14:55	10/13/17 16:45
BGWA-29	AAJ0490-07	Ground Water	10/10/17 09:40	10/13/17 16:45
BGWA-27	AAJ0490-08	Ground Water	10/10/17 10:45	10/13/17 16:45
BGWC-12	AAJ0490-09	Ground Water	10/10/17 13:35	10/13/17 16:45
Dup-1	AAJ0490-10	Ground Water	10/10/17 00:00	10/13/17 16:45
BGWC-16	AAJ0490-11	Ground Water	10/11/17 09:40	10/13/17 16:45
BGWC-17	AAJ0490-12	Ground Water	10/11/17 10:33	10/13/17 16:45
BGWC-7	AAJ0490-13	Ground Water	10/11/17 12:10	10/13/17 16:45
BGWC-19	AAJ0490-14	Ground Water	10/11/17 13:20	10/13/17 16:45
BGWC-18	AAJ0490-15	Ground Water	10/11/17 13:04	10/13/17 16:45
BGWC-25	AAJ0490-16	Ground Water	10/11/17 15:08	10/13/17 16:45
BGWC-20	AAJ0490-17	Ground Water	10/11/17 15:36	10/13/17 16:45
FBL101117	AAJ0490-18	Water	10/11/17 15:50	10/13/17 16:45
EQBL101117	AAJ0490-19	Water	10/11/17 15:53	10/13/17 16:45
BGWC-10	AAJ0490-20	Ground Water	10/11/17 11:25	10/13/17 16:45
BGWC-24	AAJ0490-21	Ground Water	10/11/17 15:00	10/13/17 16:45
BGWC-23	AAJ0490-22	Ground Water	10/11/17 16:00	10/13/17 16:45
Dup-2	AAJ0490-23	Ground Water	10/11/17 00:00	10/13/17 16:45
BGWC-14	AAJ0490-24	Ground Water	10/12/17 08:58	10/13/17 16:45
BGWC-21	AAJ0490-25	Ground Water	10/12/17 09:28	10/13/17 16:45
BGWC-22	AAJ0490-26	Ground Water	10/12/17 10:26	10/13/17 16:45
FBL101217	AAJ0490-27	Water	10/12/17 10:54	10/13/17 16:45
EQBL101217	AAJ0490-28	Water	10/12/17 11:00	10/13/17 16:45
Dup-3	AAJ0490-29	Ground Water	10/12/17 00:00	10/13/17 16:45



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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWA-26

**Lab Number ID:** AAJ0490-01

**Date/Time Sampled:** 10/10/2017 9:50:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	197	25	10	mg/L	SM 2540 C		1	10/16/17 18:30	10/16/17 18:30	7100447	JPT
<b>Inorganic Anions</b>											
Chloride	5.4	0.25	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 15:18	7100519	RLC
Fluoride	0.20	0.30	0.03	mg/L	EPA 300.0	J	1	10/18/17 10:04	10/19/17 15:18	7100519	RLC
Sulfate	40	1.0	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 15:18	7100519	RLC
<b>Metals, Total</b>											
Boron	0.0094	0.0400	0.0060	mg/L	EPA 6020B	J	1	10/19/17 15:10	10/24/17 11:22	7100546	KLH
Calcium	25.7	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 11:28	7100546	KLH



**PACE ANALYTICAL SERVICES, LLC.**

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Georgia Power  
 2480 Maner Road  
 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-30

**Lab Number ID:** AAJ0490-02

**Date/Time Sampled:** 10/10/2017 11:10:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1990	25	10	mg/L	SM 2540 C		1	10/16/17 18:30	10/16/17 18:30	7100447	JPT
<b>Inorganic Anions</b>											
Chloride	730	25	2.4	mg/L	EPA 300.0		100	10/18/17 10:04	10/24/17 06:36	7100519	RLC
Fluoride	0.35	0.30	0.03	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 15:39	7100519	RLC
Sulfate	420	100	1.7	mg/L	EPA 300.0		100	10/18/17 10:04	10/24/17 06:36	7100519	RLC
<b>Metals, Total</b>											
Boron	17.0	2.00	0.298	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 11:58	7100546	KLH
Calcium	339	125	10.1	mg/L	EPA 6020B		250	10/19/17 15:10	10/26/17 16:05	7100546	KLH



**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

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-8

**Lab Number ID:** AAJ0490-03

**Date/Time Sampled:** 10/10/2017 1:24:00PM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	178	25	10	mg/L	SM 2540 C		1	10/16/17 18:30	10/16/17 18:30	7100447	JPT
<b>Inorganic Anions</b>											
Chloride	1.9	0.25	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 15:59	7100519	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 15:59	7100519	RLC
Sulfate	30	1.0	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 15:59	7100519	RLC
<b>Metals, Total</b>											
Boron	0.0515	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 12:04	7100546	KLH
Calcium	36.9	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 12:10	7100546	KLH



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-9

**Lab Number ID:** AAJ0490-04

**Date/Time Sampled:** 10/10/2017 2:38:00PM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	376	25	10	mg/L	SM 2540 C		1	10/16/17 18:30	10/16/17 18:30	7100447	JPT
<b>Inorganic Anions</b>											
Chloride	35	0.25	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 16:20	7100519	RLC
Fluoride	0.61	0.30	0.03	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 16:20	7100519	RLC
Sulfate	110	10	0.17	mg/L	EPA 300.0		10	10/18/17 10:04	10/24/17 06:57	7100519	RLC
<b>Metals, Total</b>											
Boron	0.619	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 12:15	7100546	KLH
Calcium	61.7	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 12:21	7100546	KLH



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.: AAJ0490**

**Project: CCR Event**

**Client ID: FBL101017**

**Lab Number ID: AAJ0490-05**

**Date/Time Sampled: 10/10/2017 2:51:00PM**

**Date/Time Received: 10/13/2017 4:45:00PM**

**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	10/16/17 18:30	10/16/17 18:30	7100447	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 16:41	7100519	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 16:41	7100519	RLC
Sulfate	ND	1.0	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 16:41	7100519	RLC
<b>Metals, Total</b>											
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 12:27	7100546	KLH
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 12:27	7100546	KLH



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Attention: Mr. Joju Abraham

November 02, 2017

Report No.: AAJ0490

Project: CCR Event

Client ID: EQBL101017

Lab Number ID: AAJ0490-06

Date/Time Sampled: 10/10/2017 2:55:00PM

Date/Time Received: 10/13/2017 4:45:00PM

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	10/16/17 18:30	10/16/17 18:30	7100447	JPT
<b>Inorganic Anions</b>											
Chloride	ND	0.25	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 17:01	7100519	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 17:01	7100519	RLC
Sulfate	ND	1.0	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 17:01	7100519	RLC
<b>Metals, Total</b>											
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 12:32	7100546	KLH
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 12:32	7100546	KLH



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November 02, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWA-29

**Lab Number ID:** AAJ0490-07

**Date/Time Sampled:** 10/10/2017 9:40:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	93	25	10	mg/L	SM 2540 C		1	10/16/17 18:30	10/16/17 18:30	7100447	JPT
<b>Inorganic Anions</b>											
Chloride	1.7	0.25	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 17:22	7100519	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 17:22	7100519	RLC
Sulfate	3.3	1.0	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 17:22	7100519	RLC
<b>Metals, Total</b>											
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 12:38	7100546	KLH
Calcium	4.09	1.00	0.404	mg/L	EPA 6020B		10	10/19/17 15:10	10/24/17 12:44	7100546	KLH





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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWA-27

**Lab Number ID:** AAJ0490-08

**Date/Time Sampled:** 10/10/2017 10:45:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	221	25	10	mg/L	SM 2540 C		1	10/16/17 18:30	10/16/17 18:30	7100447	JPT
<b>Inorganic Anions</b>											
Chloride	25	0.25	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 18:24	7100519	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 18:24	7100519	RLC
Sulfate	15	1.0	0.02	mg/L	EPA 300.0		1	10/18/17 10:04	10/19/17 18:24	7100519	RLC
<b>Metals, Total</b>											
Boron	0.0433	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 13:11	7100546	KLH
Calcium	42.8	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/27/17 16:10	7100546	KLH



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-12

**Lab Number ID:** AAJ0490-09

**Date/Time Sampled:** 10/10/2017 1:35:00PM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	534	25	10	mg/L	SM 2540 C		1	10/16/17 18:30	10/16/17 18:30	7100447	JPT
<b>Inorganic Anions</b>											
Chloride	38	0.25	0.02	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 16:09	7100614	RLC
Fluoride	0.08	0.30	0.03	mg/L	EPA 300.0	J	1	10/19/17 19:57	10/24/17 16:09	7100614	RLC
Sulfate	210	10	0.17	mg/L	EPA 300.0		10	10/19/17 19:57	10/24/17 09:04	7100614	RLC
<b>Metals, Total</b>											
Boron	0.908	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 13:22	7100546	KLH
Calcium	93.0	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 13:28	7100546	KLH



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** Dup-1

**Lab Number ID:** AAJ0490-10

**Date/Time Sampled:** 10/10/2017 12:00:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	91	25	10	mg/L	SM 2540 C		1	10/16/17 18:30	10/16/17 18:30	7100447	JPT
<b>Inorganic Anions</b>											
Chloride	1.8	0.25	0.02	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 16:30	7100614	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 16:30	7100614	RLC
Sulfate	3.5	1.0	0.02	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 16:30	7100614	RLC
<b>Metals, Total</b>											
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 13:34	7100546	KLH
Calcium	0.402	0.100	0.0404	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 13:39	7100546	KLH



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-16

**Lab Number ID:** AAJ0490-11

**Date/Time Sampled:** 10/11/2017 9:40:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	588	25	10	mg/L	SM 2540 C		1	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	36	0.25	0.02	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 16:51	7100614	RLC
Fluoride	0.29	0.30	0.03	mg/L	EPA 300.0	J	1	10/19/17 19:57	10/24/17 16:51	7100614	RLC
Sulfate	270	10	0.17	mg/L	EPA 300.0		10	10/19/17 19:57	10/24/17 09:25	7100614	RLC
<b>Metals, Total</b>											
Boron	1.36	0.200	0.0298	mg/L	EPA 6020B		5	10/19/17 15:10	10/26/17 16:16	7100546	KLH
Calcium	109	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 13:51	7100546	KLH



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-17

**Lab Number ID:** AAJ0490-12

**Date/Time Sampled:** 10/11/2017 10:33:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	403	25	10	mg/L	SM 2540 C		1	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	45	0.25	0.02	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 19:20	7100614	RLC
Fluoride	0.64	0.30	0.03	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 19:20	7100614	RLC
Sulfate	120	10	0.17	mg/L	EPA 300.0		10	10/19/17 19:57	10/24/17 09:46	7100614	RLC
<b>Metals, Total</b>											
Boron	1.37	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 13:56	7100546	KLH
Calcium	67.3	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 14:02	7100546	KLH



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November 02, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-7

**Lab Number ID:** AAJ0490-13

**Date/Time Sampled:** 10/11/2017 12:10:00PM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	887	25	10	mg/L	SM 2540 C		1	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	12	0.25	0.02	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 19:41	7100614	RLC
Fluoride	0.10	0.30	0.03	mg/L	EPA 300.0	J	1	10/19/17 19:57	10/24/17 19:41	7100614	RLC
Sulfate	480	50	0.85	mg/L	EPA 300.0		50	10/19/17 19:57	10/24/17 10:08	7100614	RLC
<b>Metals, Total</b>											
Boron	1.72	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 14:19	7100546	KLH
Calcium	137	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 14:25	7100546	KLH



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November 02, 2017

Attention: Mr. Joju Abraham

Report No.: AAJ0490

Project: CCR Event

Client ID: BGWC-19

Lab Number ID: AAJ0490-14

Date/Time Sampled: 10/11/2017 1:20:00PM

Date/Time Received: 10/13/2017 4:45:00PM

Matrix: Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	287	25	10	mg/L	SM 2540 C		1	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	19	0.25	0.02	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 20:02	7100614	RLC
Fluoride	0.11	0.30	0.03	mg/L	EPA 300.0	J	1	10/19/17 19:57	10/24/17 20:02	7100614	RLC
Sulfate	93	10	0.17	mg/L	EPA 300.0		10	10/19/17 19:57	10/24/17 10:29	7100614	RLC
<b>Metals, Total</b>											
Boron	0.594	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 14:31	7100546	KLH
Calcium	57.3	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 14:36	7100546	KLH



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-18

**Lab Number ID:** AAJ0490-15

**Date/Time Sampled:** 10/11/2017 1:04:00PM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	334	25	10	mg/L	SM 2540 C		1	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	24	0.25	0.02	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 20:23	7100614	RLC
Fluoride	0.14	0.30	0.03	mg/L	EPA 300.0	J	1	10/19/17 19:57	10/24/17 20:23	7100614	RLC
Sulfate	83	5.0	0.08	mg/L	EPA 300.0		5	10/19/17 19:57	10/24/17 10:50	7100614	RLC
<b>Metals, Total</b>											
Boron	0.889	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 14:42	7100546	KLH
Calcium	67.0	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 14:48	7100546	KLH





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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-25

**Lab Number ID:** AAJ0490-16

**Date/Time Sampled:** 10/11/2017 3:08:00PM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	199	25	10	mg/L	SM 2540 C		1	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	4.1	0.25	0.02	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 20:44	7100614	RLC
Fluoride	0.11	0.30	0.03	mg/L	EPA 300.0	J	1	10/19/17 19:57	10/24/17 20:44	7100614	RLC
Sulfate	12	1.0	0.02	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 20:44	7100614	RLC
<b>Metals, Total</b>											
Boron	0.0141	0.0400	0.0060	mg/L	EPA 6020B	J	1	10/19/17 15:10	10/26/17 16:22	7100546	KLH
Calcium	41.1	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 14:59	7100546	KLH



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-20

**Lab Number ID:** AAJ0490-17

**Date/Time Sampled:** 10/11/2017 3:36:00PM

**Date/Time Received:** 10/13/2017 4:45:00PM

**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		1	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	130	12	1.2	mg/L	EPA 300.0		50	10/19/17 19:57	10/24/17 11:11	7100614	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 21:06	7100614	RLC
Sulfate	550	50	0.85	mg/L	EPA 300.0		50	10/19/17 19:57	10/24/17 11:11	7100614	RLC
<b>Metals, Total</b>											
Boron	3.54	2.00	0.298	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 15:11	7100546	KLH
Calcium	222	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 15:11	7100546	KLH



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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** FBL101117

**Lab Number ID:** AAJ0490-18

**Date/Time Sampled:** 10/11/2017 3:50:00PM

**Date/Time Received:** 10/13/2017 4:45:00PM

**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	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	0.12	0.25	0.02	mg/L	EPA 300.0	J	1	10/19/17 19:57	10/24/17 21:48	7100614	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 21:48	7100614	RLC
Sulfate	0.25	1.0	0.02	mg/L	EPA 300.0	J	1	10/19/17 19:57	10/24/17 21:48	7100614	RLC
<b>Metals, Total</b>											
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 15:41	7100546	KLH
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 15:41	7100546	KLH



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Attention: Mr. Joju Abraham

November 02, 2017

Report No.: AAJ0490

Project: CCR Event

Client ID: EQBL101117

Lab Number ID: AAJ0490-19

Date/Time Sampled: 10/11/2017 3:53:00PM

Date/Time Received: 10/13/2017 4:45:00PM

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	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	0.06	0.25	0.02	mg/L	EPA 300.0	J	1	10/19/17 19:57	10/24/17 22:09	7100614	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 22:09	7100614	RLC
Sulfate	0.03	1.0	0.02	mg/L	EPA 300.0	J	1	10/19/17 19:57	10/24/17 22:09	7100614	RLC
<b>Metals, Total</b>											
Boron	ND	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 15:47	7100546	KLH
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 15:47	7100546	KLH



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-10

**Lab Number ID:** AAJ0490-20

**Date/Time Sampled:** 10/11/2017 11:25:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	343	25	10	mg/L	SM 2540 C		1	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	24	0.25	0.02	mg/L	EPA 300.0		1	10/19/17 19:57	10/24/17 22:30	7100614	RLC
Fluoride	0.07	0.30	0.03	mg/L	EPA 300.0	J	1	10/19/17 19:57	10/24/17 22:30	7100614	RLC
Sulfate	110	10	0.17	mg/L	EPA 300.0		10	10/19/17 19:57	10/24/17 11:32	7100614	RLC
<b>Metals, Total</b>											
Boron	0.486	0.0400	0.0060	mg/L	EPA 6020B		1	10/19/17 15:10	10/24/17 15:53	7100546	KLH
Calcium	55.7	25.0	2.02	mg/L	EPA 6020B		50	10/19/17 15:10	10/24/17 15:59	7100546	KLH



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November 02, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-24

**Lab Number ID:** AAJ0490-21

**Date/Time Sampled:** 10/11/2017 3:00:00PM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	4920	25	10	mg/L	SM 2540 C		1	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	1600	25	2.4	mg/L	EPA 300.0		100	10/23/17 09:23	10/25/17 02:51	7100650	RLC
Fluoride	1.8	0.30	0.03	mg/L	EPA 300.0		1	10/23/17 09:23	10/24/17 01:44	7100650	RLC
Sulfate	510	100	1.7	mg/L	EPA 300.0		100	10/23/17 09:23	10/25/17 02:51	7100650	RLC
<b>Metals, Total</b>											
Boron	31.7	10.0	1.49	mg/L	EPA 6020B		250	10/18/17 09:05	11/01/17 22:10	7100508	CSW
Calcium	1310	125	10.1	mg/L	EPA 6020B		250	10/18/17 09:05	11/01/17 22:10	7100508	CSW



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November 02, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-23

**Lab Number ID:** AAJ0490-22

**Date/Time Sampled:** 10/11/2017 4:00:00PM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	1780	25	10	mg/L	SM 2540 C		1	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	510	25	2.4	mg/L	EPA 300.0		100	10/23/17 09:23	10/25/17 03:13	7100650	RLC
Fluoride	0.09	0.30	0.03	mg/L	EPA 300.0	J	1	10/23/17 09:23	10/24/17 02:25	7100650	RLC
Sulfate	510	100	1.7	mg/L	EPA 300.0		100	10/23/17 09:23	10/25/17 03:13	7100650	RLC
<b>Metals, Total</b>											
Boron	7.18	2.00	0.298	mg/L	EPA 6020B		50	10/18/17 09:05	11/01/17 22:16	7100508	CSW
Calcium	438	25.0	2.02	mg/L	EPA 6020B		50	10/18/17 09:05	10/20/17 21:14	7100508	CSW



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** Dup-2

**Lab Number ID:** AAJ0490-23

**Date/Time Sampled:** 10/11/2017 12:00:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	329	25	10	mg/L	SM 2540 C		1	10/17/17 18:30	10/17/17 18:30	7100487	JPT
<b>Inorganic Anions</b>											
Chloride	24	0.25	0.02	mg/L	EPA 300.0		1	10/23/17 09:23	10/24/17 02:45	7100650	RLC
Fluoride	0.09	0.30	0.03	mg/L	EPA 300.0	J	1	10/23/17 09:23	10/24/17 02:45	7100650	RLC
Sulfate	110	10	0.17	mg/L	EPA 300.0		10	10/23/17 09:23	10/25/17 03:35	7100650	RLC
<b>Metals, Total</b>											
Boron	0.506	0.400	0.0595	mg/L	EPA 6020B		10	10/18/17 09:05	11/01/17 22:22	7100508	CSW
Calcium	61.0	25.0	2.02	mg/L	EPA 6020B		50	10/18/17 09:05	10/20/17 21:25	7100508	CSW





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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-14

**Lab Number ID:** AAJ0490-24

**Date/Time Sampled:** 10/12/2017 8:58:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	603	25	10	mg/L	SM 2540 C		1	10/18/17 18:15	10/18/17 18:15	7100531	JPT
<b>Inorganic Anions</b>											
Chloride	37	0.25	0.02	mg/L	EPA 300.0		1	10/23/17 09:23	10/24/17 04:29	7100650	RLC
Fluoride	0.08	0.30	0.03	mg/L	EPA 300.0	J	1	10/23/17 09:23	10/24/17 04:29	7100650	RLC
Sulfate	250	10	0.17	mg/L	EPA 300.0		10	10/23/17 09:23	10/25/17 03:56	7100650	RLC
<b>Metals, Total</b>											
Boron	0.897	0.400	0.0595	mg/L	EPA 6020B		10	10/18/17 09:05	11/01/17 22:28	7100508	CSW
Calcium	112	25.0	2.02	mg/L	EPA 6020B		50	10/18/17 09:05	10/20/17 21:37	7100508	CSW



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-21

**Lab Number ID:** AAJ0490-25

**Date/Time Sampled:** 10/12/2017 9:28:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	245	25	10	mg/L	SM 2540 C		1	10/18/17 18:15	10/18/17 18:15	7100531	JPT
<b>Inorganic Anions</b>											
Chloride	4.8	0.25	0.02	mg/L	EPA 300.0		1	10/23/17 09:23	10/24/17 04:50	7100650	RLC
Fluoride	0.12	0.30	0.03	mg/L	EPA 300.0	J	1	10/23/17 09:23	10/24/17 04:50	7100650	RLC
Sulfate	48	1.0	0.02	mg/L	EPA 300.0		1	10/23/17 09:23	10/24/17 04:50	7100650	RLC
<b>Metals, Total</b>											
Boron	0.0494	0.0400	0.0060	mg/L	EPA 6020B		1	10/18/17 09:05	11/01/17 22:33	7100508	CSW
Calcium	43.3	25.0	2.02	mg/L	EPA 6020B		50	10/18/17 09:05	10/20/17 21:48	7100508	CSW



**PACE ANALYTICAL SERVICES, LLC.**

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November 02, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** BGWC-22

**Lab Number ID:** AAJ0490-26

**Date/Time Sampled:** 10/12/2017 10:26:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2500	25	10	mg/L	SM 2540 C		1	10/18/17 18:15	10/18/17 18:15	7100531	JPT
<b>Inorganic Anions</b>											
Chloride	700	25	2.4	mg/L	EPA 300.0		100	10/23/17 09:23	10/25/17 04:18	7100650	RLC
Fluoride	0.31	0.30	0.03	mg/L	EPA 300.0		1	10/23/17 09:23	10/24/17 05:11	7100650	RLC
Sulfate	780	100	1.7	mg/L	EPA 300.0		100	10/23/17 09:23	10/25/17 04:18	7100650	RLC
<b>Metals, Total</b>											
Boron	12.7	10.0	1.49	mg/L	EPA 6020B		250	10/18/17 09:05	11/01/17 22:39	7100508	CSW
Calcium	515	125	10.1	mg/L	EPA 6020B		250	10/18/17 09:05	11/01/17 22:39	7100508	CSW



**PACE ANALYTICAL SERVICES, LLC.**

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November 02, 2017

Attention: Mr. Joju Abraham

Report No.: AAJ0490

Project: CCR Event

Client ID: FBL101217

Lab Number ID: AAJ0490-27

Date/Time Sampled: 10/12/2017 10:54:00AM

Date/Time Received: 10/13/2017 4:45:00PM

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	10/18/17 18:15	10/18/17 18:15	7100531	JPT
<b>Inorganic Anions</b>											
Chloride	0.27	0.25	0.02	mg/L	EPA 300.0		1	10/23/17 09:23	10/24/17 05:32	7100650	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/23/17 09:23	10/24/17 05:32	7100650	RLC
Sulfate	0.48	1.0	0.02	mg/L	EPA 300.0	J	1	10/23/17 09:23	10/24/17 05:32	7100650	RLC
<b>Metals, Total</b>											
Boron	0.0205	0.0400	0.0060	mg/L	EPA 6020B	J	1	10/18/17 09:05	10/20/17 22:17	7100508	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	10/18/17 09:05	10/20/17 22:17	7100508	CSW



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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** EQBL101217

**Lab Number ID:** AAJ0490-28

**Date/Time Sampled:** 10/12/2017 11:00:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**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	10/18/17 18:15	10/18/17 18:15	7100531	JPT
<b>Inorganic Anions</b>											
Chloride	0.07	0.25	0.02	mg/L	EPA 300.0	J	1	10/23/17 09:23	10/24/17 05:54	7100650	RLC
Fluoride	ND	0.30	0.03	mg/L	EPA 300.0		1	10/23/17 09:23	10/24/17 05:54	7100650	RLC
Sulfate	0.07	1.0	0.02	mg/L	EPA 300.0	J	1	10/23/17 09:23	10/24/17 05:54	7100650	RLC
<b>Metals, Total</b>											
Boron	0.0167	0.0400	0.0060	mg/L	EPA 6020B	J	1	10/18/17 09:05	10/20/17 22:22	7100508	CSW
Calcium	ND	0.500	0.0404	mg/L	EPA 6020B		1	10/18/17 09:05	10/20/17 22:22	7100508	CSW



**PACE ANALYTICAL SERVICES, LLC.**

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November 02, 2017

Attention: Mr. Joju Abraham

**Report No.:** AAJ0490

**Project:** CCR Event

**Client ID:** Dup-3

**Lab Number ID:** AAJ0490-29

**Date/Time Sampled:** 10/12/2017 12:00:00AM

**Date/Time Received:** 10/13/2017 4:45:00PM

**Matrix:** Ground Water

Analyte	Result	RL	MDL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
<b>General Chemistry</b>											
Total Dissolved Solids	2480	25	10	mg/L	SM 2540 C		1	10/18/17 18:15	10/18/17 18:15	7100531	JPT
<b>Inorganic Anions</b>											
Chloride	670	25	2.4	mg/L	EPA 300.0		100	10/23/17 09:23	10/25/17 06:07	7100650	IC2
Fluoride	0.19	0.30	0.03	mg/L	EPA 300.0	J	1	10/23/17 09:23	10/24/17 06:15	7100650	RLC
Sulfate	750	100	1.7	mg/L	EPA 300.0		100	10/23/17 09:23	10/25/17 06:07	7100650	IC2
<b>Metals, Total</b>											
Boron	12.4	10.0	1.49	mg/L	EPA 6020B		250	10/18/17 09:05	11/01/17 22:45	7100508	CSW
Calcium	526	125	10.1	mg/L	EPA 6020B		250	10/18/17 09:05	11/01/17 22:45	7100508	CSW



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.: AAJ0490**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7100447 - SM 2540 C</b>											
<b>Blank (7100447-BLK1)</b>						Prepared & Analyzed: 10/16/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7100447-BS1)</b>						Prepared & Analyzed: 10/16/17					
Total Dissolved Solids	384	25	10	mg/L	400.00		96	84-108			
<b>Duplicate (7100447-DUP1)</b>						Source: AAJ0389-11 Prepared & Analyzed: 10/16/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7100447-DUP2)</b>						Source: AAJ0483-01 Prepared & Analyzed: 10/16/17					
Total Dissolved Solids	69	25	10	mg/L		68			1	10	
<b>Batch 7100487 - SM 2540 C</b>											
<b>Blank (7100487-BLK1)</b>						Prepared & Analyzed: 10/17/17					
Total Dissolved Solids	ND	25	10	mg/L							
<b>LCS (7100487-BS1)</b>						Prepared & Analyzed: 10/17/17					
Total Dissolved Solids	379	25	10	mg/L	400.00		95	84-108			
<b>Duplicate (7100487-DUP1)</b>						Source: AAJ0490-13 Prepared & Analyzed: 10/17/17					
Total Dissolved Solids	890	25	10	mg/L		887			0.3	10	
<b>Duplicate (7100487-DUP2)</b>						Source: AAJ0490-19 Prepared & Analyzed: 10/17/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Batch 7100531 - SM 2540 C</b>											
<b>Blank (7100531-BLK1)</b>						Prepared & Analyzed: 10/18/17					
Total Dissolved Solids	ND	25	10	mg/L							



**PACE ANALYTICAL SERVICES, LLC.**

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Attention: Mr. Joju Abraham

November 02, 2017

**Report No.: AAJ0490**

**General Chemistry - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7100531 - SM 2540 C</b>											
<b>LCS (7100531-BS1)</b>						Prepared & Analyzed: 10/18/17					
Total Dissolved Solids	402	25	10	mg/L	400.00		100	84-108			
<b>Duplicate (7100531-DUP1)</b>						Source: AAJ0483-11 Prepared & Analyzed: 10/18/17					
Total Dissolved Solids	ND	25	10	mg/L		ND				10	
<b>Duplicate (7100531-DUP2)</b>						Source: AAJ0490-25 Prepared & Analyzed: 10/18/17					
Total Dissolved Solids	247	25	10	mg/L		245			0.8	10	





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 Atlanta GA, 30339

Attention: Mr. Joju Abraham

November 02, 2017

**Report No.: AAJ0490**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7100519 - EPA 300.0</b>											
<b>Blank (7100519-BLK1)</b>						Prepared: 10/18/17 Analyzed: 10/19/17					
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 (7100519-BS1)</b>						Prepared: 10/18/17 Analyzed: 10/19/17					
Chloride	10.7	0.25	0.02	mg/L	10.020		107	90-110			
Fluoride	10.7	0.30	0.03	mg/L	10.020		107	90-110			
Sulfate	10.5	1.0	0.02	mg/L	10.050		104	90-110			
<b>Matrix Spike (7100519-MS1)</b>						Source: AAJ0490-07 Prepared: 10/18/17 Analyzed: 10/19/17					
Chloride	12.3	0.25	0.02	mg/L	10.020	1.74	105	90-110			
Fluoride	10.8	0.30	0.03	mg/L	10.020	ND	107	90-110			
Sulfate	13.3	1.0	0.02	mg/L	10.050	3.26	100	90-110			
<b>Matrix Spike Dup (7100519-MSD1)</b>						Source: AAJ0490-07 Prepared: 10/18/17 Analyzed: 10/19/17					
Chloride	12.3	0.25	0.02	mg/L	10.020	1.74	105	90-110	0.09	15	
Fluoride	10.8	0.30	0.03	mg/L	10.020	ND	108	90-110	0.2	15	
Sulfate	13.4	1.0	0.02	mg/L	10.050	3.26	100	90-110	0.1	15	
<b>Batch 7100614 - EPA 300.0</b>											
<b>Blank (7100614-BLK1)</b>						Prepared: 10/19/17 Analyzed: 10/24/17					
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 (7100614-BS1)</b>						Prepared: 10/19/17 Analyzed: 10/24/17					
Chloride	10.4	0.25	0.02	mg/L	10.020		104	90-110			
Fluoride	10.5	0.30	0.03	mg/L	10.020		105	90-110			
Sulfate	10.4	1.0	0.02	mg/L	10.050		103	90-110			



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**Report No.: AAJ0490**

**Inorganic Anions - Quality Control**

Analyte	Result	RL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 7100614 - EPA 300.0</b>											
<b>Matrix Spike (7100614-MS1)</b>			<b>Source: AAJ0490-11RE1</b>			Prepared: 10/19/17 Analyzed: 10/24/17					
Chloride	43.5	0.25	0.02	mg/L	10.020	36.3	72	90-110			QM-02
Fluoride	10.9	0.30	0.03	mg/L	10.020	0.29	106	90-110			
Sulfate	198	1.0	0.02	mg/L	10.050	207	NR	90-110			QM-02
<b>Matrix Spike (7100614-MS2)</b>			<b>Source: AAJ0490-17RE1</b>			Prepared: 10/19/17 Analyzed: 10/24/17					
Chloride	111	0.25	0.02	mg/L	10.020	113	NR	90-110			QM-02
Fluoride	10.9	0.30	0.03	mg/L	10.020	ND	109	90-110			
Sulfate	312	1.0	0.02	mg/L	10.050	329	NR	90-110			QM-02
<b>Matrix Spike Dup (7100614-MSD1)</b>			<b>Source: AAJ0490-11RE1</b>			Prepared: 10/19/17 Analyzed: 10/24/17					
Chloride	43.6	0.25	0.02	mg/L	10.020	36.3	72	90-110	0.06	15	QM-02
Fluoride	11.0	0.30	0.03	mg/L	10.020	0.29	107	90-110	0.3	15	
Sulfate	198	1.0	0.02	mg/L	10.050	207	NR	90-110	0.01	15	QM-02
<b>Batch 7100650 - EPA 300.0</b>											
<b>Blank (7100650-BLK1)</b>									Prepared & Analyzed: 10/23/17		
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 (7100650-BS1)</b>									Prepared & Analyzed: 10/23/17		
Chloride	10.4	0.25	0.02	mg/L	10.020		103	90-110			
Fluoride	10.2	0.30	0.03	mg/L	10.020		102	90-110			
Sulfate	10.3	1.0	0.02	mg/L	10.050		103	90-110			
<b>Matrix Spike (7100650-MS1)</b>			<b>Source: AAJ0483-03</b>			Prepared & Analyzed: 10/23/17					
Chloride	12.2	0.25	0.02	mg/L	10.020	1.56	106	90-110			
Fluoride	11.8	0.30	0.03	mg/L	10.020	0.10	117	90-110			QM-05
Sulfate	111	1.0	0.02	mg/L	10.050	114	NR	90-110			QM-02



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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 7100650 - EPA 300.0</b>											
<b>Matrix Spike (7100650-MS2)</b>			<b>Source: AAJ0490-21</b>			Prepared: 10/23/17 Analyzed: 10/24/17					
Chloride	424	0.25	0.02	mg/L	10.020	596	NR	90-110			QM-02
Fluoride	10.7	0.30	0.03	mg/L	10.020	1.84	88	90-110			QM-02
Sulfate	366	1.0	0.02	mg/L	10.050	387	NR	90-110			QM-02
<b>Matrix Spike Dup (7100650-MSD1)</b>			<b>Source: AAJ0483-03</b>			Prepared & Analyzed: 10/23/17					
Chloride	12.1	0.25	0.02	mg/L	10.020	1.56	106	90-110	0.4	15	
Fluoride	11.9	0.30	0.03	mg/L	10.020	0.10	118	90-110	1	15	QM-05
Sulfate	111	1.0	0.02	mg/L	10.050	114	NR	90-110	0.4	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 7100508 - EPA 3005A**

**Blank (7100508-BLK1)**

Prepared: 10/18/17 Analyzed: 10/20/17

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 (7100508-BS1)**

Prepared: 10/18/17 Analyzed: 10/20/17

Antimony	0.109	0.0030	0.0006	mg/L	0.10000		109	80-120			
Arsenic	0.106	0.0050	0.0005	mg/L	0.10000		106	80-120			
Barium	0.106	0.0100	0.0004	mg/L	0.10000		106	80-120			
Beryllium	0.110	0.0030	0.00009	mg/L	0.10000		110	80-120			
Cadmium	0.105	0.0010	0.0001	mg/L	0.10000		105	80-120			
Chromium	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Cobalt	0.105	0.0100	0.0003	mg/L	0.10000		105	80-120			
Copper	0.106	0.0250	0.0003	mg/L	0.10000		106	80-120			
Lead	0.103	0.0050	0.00007	mg/L	0.10000		103	80-120			
Nickel	0.105	0.0100	0.0005	mg/L	0.10000		105	80-120			
Selenium	0.105	0.0100	0.0018	mg/L	0.10000		105	80-120			
Silver	0.105	0.0100	0.0002	mg/L	0.10000		105	80-120			
Thallium	0.104	0.0010	0.00005	mg/L	0.10000		104	80-120			
Vanadium	0.106	0.0100	0.0012	mg/L	0.10000		106	80-120			
Zinc	0.106	0.0100	0.0012	mg/L	0.10000		106	80-120			
Lithium	0.111	0.0500	0.0015	mg/L	0.10000		111	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
<b>Batch 7100508 - EPA 3005A</b>											
<b>Matrix Spike (7100508-MS1)</b>			<b>Source: AAJ0483-02</b>			<b>Prepared: 10/18/17 Analyzed: 10/20/17</b>					
Antimony	0.111	0.0030	0.0006	mg/L	0.10000	ND	111	75-125			
Arsenic	0.112	0.0050	0.0005	mg/L	0.10000	0.0031	109	75-125			
Barium	0.145	0.0100	0.0004	mg/L	0.10000	0.0429	102	75-125			
Beryllium	0.0971	0.0030	0.00009	mg/L	0.10000	ND	97	75-125			
Cadmium	0.102	0.0010	0.0001	mg/L	0.10000	0.0006	101	75-125			
Chromium	0.109	0.0100	0.0005	mg/L	0.10000	ND	109	75-125			
Cobalt	0.106	0.0100	0.0003	mg/L	0.10000	0.0017	104	75-125			
Copper	0.0977	0.0250	0.0003	mg/L	0.10000	0.0005	97	75-125			
Lead	0.0923	0.0050	0.00007	mg/L	0.10000	ND	92	75-125			
Nickel	0.103	0.0100	0.0005	mg/L	0.10000	0.0043	99	75-125			
Selenium	0.168	0.0100	0.0018	mg/L	0.10000	0.0594	109	75-125			
Silver	0.0963	0.0100	0.0002	mg/L	0.10000	ND	96	75-125			
Thallium	0.0956	0.0010	0.00005	mg/L	0.10000	ND	96	75-125			
Vanadium	0.113	0.0100	0.0012	mg/L	0.10000	ND	113	75-125			
Zinc	0.112	0.0100	0.0012	mg/L	0.10000	0.0078	104	75-125			
Lithium	0.129	0.0500	0.0015	mg/L	0.10000	0.0331	96	75-125			
<b>Matrix Spike Dup (7100508-MSD1)</b>			<b>Source: AAJ0483-02</b>			<b>Prepared: 10/18/17 Analyzed: 10/20/17</b>					
Antimony	0.112	0.0030	0.0006	mg/L	0.10000	ND	112	75-125	2	20	
Arsenic	0.114	0.0050	0.0005	mg/L	0.10000	0.0031	111	75-125	2	20	
Barium	0.146	0.0100	0.0004	mg/L	0.10000	0.0429	103	75-125	1	20	
Beryllium	0.0982	0.0030	0.00009	mg/L	0.10000	ND	98	75-125	1	20	
Cadmium	0.102	0.0010	0.0001	mg/L	0.10000	0.0006	102	75-125	0.9	20	
Chromium	0.108	0.0100	0.0005	mg/L	0.10000	ND	108	75-125	0.7	20	
Cobalt	0.108	0.0100	0.0003	mg/L	0.10000	0.0017	107	75-125	3	20	
Copper	0.0977	0.0250	0.0003	mg/L	0.10000	0.0005	97	75-125	0.009	20	
Lead	0.0924	0.0050	0.00007	mg/L	0.10000	ND	92	75-125	0.1	20	
Nickel	0.105	0.0100	0.0005	mg/L	0.10000	0.0043	100	75-125	2	20	
Selenium	0.169	0.0100	0.0018	mg/L	0.10000	0.0594	110	75-125	0.7	20	
Silver	0.0968	0.0100	0.0002	mg/L	0.10000	ND	97	75-125	0.5	20	
Thallium	0.0960	0.0010	0.00005	mg/L	0.10000	ND	96	75-125	0.4	20	
Vanadium	0.113	0.0100	0.0012	mg/L	0.10000	ND	113	75-125	0.4	20	
Zinc	0.111	0.0100	0.0012	mg/L	0.10000	0.0078	103	75-125	0.5	20	
Lithium	0.126	0.0500	0.0015	mg/L	0.10000	0.0331	93	75-125	2	20	



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**Report No.: AAJ0490**

**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 7100508 - EPA 3005A**

<b>Post Spike (7100508-PS1)</b>		<b>Source: AAJ0483-02</b>			<b>Prepared: 10/18/17 Analyzed: 10/20/17</b>						
Antimony	108			ug/L	100.00	0.117	108	80-120			
Arsenic	109			ug/L	100.00	3.11	106	80-120			
Barium	146			ug/L	100.00	42.9	103	80-120			
Beryllium	97.0			ug/L	100.00	0.0803	97	80-120			
Cadmium	100			ug/L	100.00	0.578	100	80-120			
Chromium	105			ug/L	100.00	0.357	105	80-120			
Cobalt	105			ug/L	100.00	1.68	103	80-120			
Copper	97.7			ug/L	100.00	0.548	97	80-120			
Lead	90.2			ug/L	100.00	0.0502	90	80-120			
Nickel	105			ug/L	100.00	4.34	100	80-120			
Selenium	163			ug/L	100.00	59.4	103	80-120			
Silver	96.5			ug/L	100.00	0.0050	96	80-120			
Thallium	93.0			ug/L	100.00	0.0199	93	80-120			
Vanadium	111			ug/L	100.00	0.784	110	80-120			
Zinc	109			ug/L	100.00	7.76	101	80-120			
Lithium	132			ug/L	100.00	33.1	99	80-120			

**Batch 7100546 - EPA 3005A**

<b>Blank (7100546-BLK1)</b>					<b>Prepared: 10/19/17 Analyzed: 10/24/17</b>						
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	0.0013	0.0100	0.0012	mg/L							J
Zinc	ND	0.0100	0.0012	mg/L							
Lithium	ND	0.0500	0.0015	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 7100546 - EPA 3005A**

**LCS (7100546-BS1)**

Prepared: 10/19/17 Analyzed: 10/24/17

Antimony	0.108	0.0030	0.0006	mg/L	0.10000		108	80-120			
Arsenic	0.101	0.0050	0.0005	mg/L	0.10000		101	80-120			
Barium	0.104	0.0100	0.0004	mg/L	0.10000		104	80-120			
Beryllium	0.101	0.0030	0.00009	mg/L	0.10000		101	80-120			
Cadmium	0.106	0.0010	0.0001	mg/L	0.10000		106	80-120			
Chromium	0.108	0.0100	0.0005	mg/L	0.10000		108	80-120			
Cobalt	0.108	0.0100	0.0003	mg/L	0.10000		108	80-120			
Copper	0.107	0.0250	0.0003	mg/L	0.10000		107	80-120			
Lead	0.0986	0.0050	0.00007	mg/L	0.10000		99	80-120			
Nickel	0.107	0.0100	0.0005	mg/L	0.10000		107	80-120			
Selenium	0.102	0.0100	0.0018	mg/L	0.10000		102	80-120			
Silver	0.104	0.0100	0.0002	mg/L	0.10000		104	80-120			
Thallium	0.101	0.0010	0.00005	mg/L	0.10000		101	80-120			
Vanadium	0.107	0.0100	0.0012	mg/L	0.10000		107	80-120			
Zinc	0.104	0.0100	0.0012	mg/L	0.10000		104	80-120			
Lithium	0.103	0.0500	0.0015	mg/L	0.10000		103	80-120			

**Matrix Spike (7100546-MS1)**

Source: AAJ0490-01

Prepared: 10/19/17 Analyzed: 10/24/17

Antimony	0.107	0.0030	0.0006	mg/L	0.10000	ND	107	75-125			
Arsenic	0.0997	0.0050	0.0005	mg/L	0.10000	0.0016	98	75-125			
Barium	0.146	0.0100	0.0004	mg/L	0.10000	0.0439	102	75-125			
Beryllium	0.0939	0.0030	0.00009	mg/L	0.10000	ND	94	75-125			
Cadmium	0.101	0.0010	0.0001	mg/L	0.10000	ND	101	75-125			
Chromium	0.104	0.0100	0.0005	mg/L	0.10000	ND	104	75-125			
Cobalt	0.105	0.0100	0.0003	mg/L	0.10000	ND	105	75-125			
Copper	0.0991	0.0250	0.0003	mg/L	0.10000	ND	99	75-125			
Lead	0.0963	0.0050	0.00007	mg/L	0.10000	ND	96	75-125			
Nickel	0.102	0.0100	0.0005	mg/L	0.10000	ND	102	75-125			
Selenium	0.0975	0.0100	0.0018	mg/L	0.10000	ND	98	75-125			
Silver	0.101	0.0100	0.0002	mg/L	0.10000	ND	101	75-125			
Thallium	0.0992	0.0010	0.00005	mg/L	0.10000	ND	99	75-125			
Vanadium	0.103	0.0100	0.0012	mg/L	0.10000	ND	103	75-125			
Zinc	0.103	0.0100	0.0012	mg/L	0.10000	0.0017	102	75-125			
Lithium	0.0991	0.0500	0.0015	mg/L	0.10000	ND	99	75-125			



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**Report No.: AAJ0490**

**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 7100546 - EPA 3005A**

**Matrix Spike Dup (7100546-MSD1)**

**Source: AAJ0490-01**

Prepared: 10/19/17 Analyzed: 10/24/17

Antimony	0.105	0.0030	0.0006	mg/L	0.10000	ND	105	75-125	2	20	
Arsenic	0.103	0.0050	0.0005	mg/L	0.10000	0.0016	102	75-125	4	20	
Barium	0.143	0.0100	0.0004	mg/L	0.10000	0.0439	99	75-125	2	20	
Beryllium	0.0936	0.0030	0.00009	mg/L	0.10000	ND	94	75-125	0.3	20	
Cadmium	0.104	0.0010	0.0001	mg/L	0.10000	ND	104	75-125	2	20	
Chromium	0.103	0.0100	0.0005	mg/L	0.10000	ND	103	75-125	1	20	
Cobalt	0.0994	0.0100	0.0003	mg/L	0.10000	ND	99	75-125	6	20	
Copper	0.100	0.0250	0.0003	mg/L	0.10000	ND	100	75-125	0.9	20	
Lead	0.0964	0.0050	0.00007	mg/L	0.10000	ND	96	75-125	0.09	20	
Nickel	0.101	0.0100	0.0005	mg/L	0.10000	ND	101	75-125	0.6	20	
Selenium	0.0971	0.0100	0.0018	mg/L	0.10000	ND	97	75-125	0.4	20	
Silver	0.0990	0.0100	0.0002	mg/L	0.10000	ND	99	75-125	2	20	
Thallium	0.0986	0.0010	0.00005	mg/L	0.10000	ND	99	75-125	0.6	20	
Vanadium	0.104	0.0100	0.0012	mg/L	0.10000	ND	104	75-125	1	20	
Zinc	0.102	0.0100	0.0012	mg/L	0.10000	0.0017	101	75-125	0.8	20	
Lithium	0.0949	0.0500	0.0015	mg/L	0.10000	ND	95	75-125	4	20	

**Post Spike (7100546-PS1)**

**Source: AAJ0490-01**

Prepared: 10/19/17 Analyzed: 10/24/17

Antimony	97.8			ug/L	100.00	0.162	98	80-120			
Arsenic	101			ug/L	100.00	1.63	100	80-120			
Barium	143			ug/L	100.00	43.9	99	80-120			
Beryllium	94.8			ug/L	100.00	0.0031	95	80-120			
Cadmium	100			ug/L	100.00	-0.0176	100	80-120			
Chromium	104			ug/L	100.00	0.173	104	80-120			
Cobalt	101			ug/L	100.00	0.0236	101	80-120			
Copper	97.5			ug/L	100.00	0.124	97	80-120			
Lead	94.3			ug/L	100.00	0.0537	94	80-120			
Nickel	99.5			ug/L	100.00	0.0866	99	80-120			
Selenium	93.2			ug/L	100.00	-0.696	93	80-120			
Silver	98.9			ug/L	100.00	0.0026	99	80-120			
Thallium	97.7			ug/L	100.00	0.0108	98	80-120			
Vanadium	104			ug/L	100.00	0.159	103	80-120			
Zinc	102			ug/L	100.00	1.66	100	80-120			
Lithium	98.6			ug/L	100.00	1.24	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

November 02, 2017

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## Legend

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### 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

- 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:		ANALYSIS REQUESTED										CONTAINER TYPE	PRESERVATION		
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:		CONTAINER TYPE:	PRESERVATION:												
Southern Company Services		P	3	7								P - PLASTIC	1 - HCl, ≤6°C		
241 Raven McO'Brien Blvd SE B10185		# of										A - AMBER GLASS	2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C		
Atlanta, GA 30308		CONTAINERS										G - CLEAR GLASS	3 - HNO <sub>3</sub>		
REPORT TO: Soju Abraham	CC: Maria Padilla											V - VOA VIAL	4 - NaOH, ≤6°C		
REQUESTED COMPLETION DATE:	PO #: GPL 10684198											S - STERILE	5 - NaOH/ZnAc, ≤6°C		
PROJECT NAME/STATE:												O - OTHER	6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C		
Plant Bowen - Ash Pond CCR													7 - ≤6°C not frozen		
PROJECT #:												*MATRIX CODES:			
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION									DW - DRINKING WATER	S - SOIL
														WW - WASTEWATER	SL - SLUDGE
10/10/17	0950	GW	X		BGWA-26	2	1	1						GW - GROUNDWATER	SD - SOLID
10/10/17	1110	GW	X		BGWL-30	2	1	1						SW - SURFACE WATER	A - AIR
10/10/17	1324	GW	X		BGWL-8	2	1	1						ST - STORM WATER	L - LIQUID
10/10/17	1438	GW	X		BGWL-9	2	1	1						W - WATER	P - PRODUCT
10/10/17	1451	W	X		FBL101017	2	1	1						REMARKS/ADDITIONAL INFORMATION	
10/10/17	1455	W	X		EQBL101017	2	1	1							
10/10/17	0940	GW	X		BGWA-29	2	1	1							
10/10/17	1045	GW	X		BGWA-27	2	1	1							
10/10/17	1335	GW	X		BGWL-12	2	1	1							
10/10/17		GW	X		DUP-1	2	1	1							
SAMPLED BY AND TITLE:		DATE/TIME:	RELINQUISHED BY:		DATE/TIME:	FOR LAB USE ONLY									
Robert Mull/Kern Steadman/Michael B. Khan		1610 10/10/17	[Signature]		10/13/17 1323	LAB #:		AAJ0490							
RECEIVED BY: Mike Nouri		DATE/TIME:	RELINQUISHED BY:		DATE/TIME:	Entered into LIMS:		MR							
10/13/17 1645		DATE/TIME:	RELINQUISHED BY:		DATE/TIME:	Tracking #:									
RECEIVED BY LAB: [Signature]		DATE/TIME:	SAMPLE SHIPPED VIA:		DATE/TIME:										
10/13/17 1645		DATE/TIME:	UPS FED-EX USPS COURIER CLIENT OTHER FS		DATE/TIME:										
Checked: [Signature]		Temperature:	Custody Seal:		DATE/TIME:										
es No NA Yes No NA		Min: 0.1 Max:	Intact Broken Not Present N/A		DATE/TIME:										

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 2

CLIENT NAME:					ANALYSIS REQUESTED										L A B I D N U M B E R	CONTAINER TYPE		PRESERVATION						
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:		PRESERVATION:		# of		C O N T A I N E R S		P - PLASTIC			1 - HCl, ≤6°C								
Southern Company Services					P	P																		
241 Ralph McGill Blvd SE 310185 Atlanta, GA 30308					3	7																		
REPORT TO: Joia Abraham			CC: Maura Padilla																					
REQUESTED COMPLETION DATE:			PO #:																					
PROJECT NAME/STATE: Plant Bowen - Ash Pond CCR																								
PROJECT #:																								
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION																			
10/11/17	0940	GW		X	B6WL-16	2		1	1										11					
10/11/17	1033	GW		X	B6WL-17	2		1	1										12					
10/11/17	1210	GW		X	B6WL-7	2		1	1										13					
10/11/17	1320	GW		X	B6WL-19	2		1	1										14					
10/11/17	1304	GW		X	B6WL-18	2		1	1										15					
10/11/17	1508	GW		X	B6WL-25	2		1	1										16					
10/11/17	1536	GW		X	B6WL-20	2		1	1										17					
10/11/17	1550	W		X	FBL101117	2		1	1										18					
10/11/17	1553	W		X	EDBL101117	2		1	1										19					
10/11/17	1125	GW		X	B6WL-10	2		1	1										20					
10/11/17	1500	GW		X	B6WL-24	2		1	1										21					
10/11/17	1600	GW		X	B6WL-23	2		1	1										22					
SAMPLED BY AND TITLE: Robert Mull/Kenn Stedman/Michael Padilla					DATE/TIME: 10/11/17 1627					RELINQUISHED BY: <i>[Signature]</i>					DATE/TIME: 10/13/17 1323					FOR LAB USE ONLY LAB #: AAJ0490 <i>[Signature]</i>				
RECEIVED BY: Miller Nguyen					DATE/TIME: 10/13/17 1323					RELINQUISHED BY:					DATE/TIME:					Entered into LIMS:				
RECEIVED BY LAB: <i>[Signature]</i>					DATE/TIME: 10/13/17 1645					SAMPLE SHIPPED VIA: UPS FED-EX USPS COURIER CLIENT OTHER FS					Custody Seal: Intact Broken Not Present N/A					Cooler ID:				
Checked: es No NA					Temperature: Min: 0.1 Max:					Cooler ID:														

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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: 2 OF 2

CLIENT NAME:					ANALYSIS REQUESTED										LAB ID NUMBER	CONTAINER TYPE		PRESERVATION				
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					CONTAINER TYPE:		PRESERVATION:															
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	# of																
10/11/17	—	GW		X	DUP-Z	2	1	1														
CLIENT NAME: <u>Southern Company Services</u> CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER: <u>211 Ralph McGill Blvd SE 1310185</u> <u>Atlanta, GA 30308</u> REPORT TO: <u>Seju Abraham</u> CC: <u>Maria Patilla</u> REQUESTED COMPLETION DATE: _____ PO #: <u>GPC1068419R</u> PROJECT NAME/STATE: <u>Plant Bowen - Ash Pond CCR</u> PROJECT #: _____					CONTAINER TYPE: <u>P</u> <u>P</u> PRESERVATION: <u>3</u> <u>7</u> # of C O N T A I N E R S ↓ <u>Metals App. III EPA 6020</u> <u>Cl. F. 504 EPA 300</u> <u>TDS 501540C</u>										P - PLASTIC A - AMBER GLASS G - CLEAR GLASS V - VOA VIAL S - STERILE O - OTHER	1 - HCl, ≤6°C 2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C 3 - HNO <sub>3</sub> 4 - NaOH, ≤6°C 5 - NaOH/ZnAc, ≤6°C 6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C 7 - ≤6°C not frozen						
*MATRIX CODES: DW - DRINKING WATER S - SOIL WW - WASTEWATER SL - SLUDGE GW - GROUNDWATER SD - SOLID SW - SURFACE WATER A - AIR ST - STORM WATER L - LIQUID W - WATER P - PRODUCT																						
REMARKS/ADDITIONAL INFORMATION																						
SAMPLED BY AND TITLE: <u>Robert Hill/Kevin Stephenson/Michael Franklin</u>					DATE/TIME: <u>10/11/17 1627</u>					RELINQUISHED BY: <u>[Signature]</u>					DATE/TIME: <u>10/13/17 1323</u>			FOR LAB USE ONLY LAB #: <u>AAJ0490</u> <u>MR</u>				
RECEIVED BY: <u>Mike Nguyen</u>					DATE/TIME: <u>10/13/17 1323</u>					RELINQUISHED BY:					DATE/TIME:			Entered into LIMS:				
RECEIVED BY LAB: <u>Maalman</u>					DATE/TIME: <u>10/13/17 1645</u>					SAMPLE SHIPPED VIA: UPS FED-EX USPS <u>COURIER</u> <u>Pace</u> CLIENT OTHER FS					Tracking #:							
Checked: (Yes) No NA (Yes) No NA					Temperature: Min <u>0.1</u> Max _____					Custody Seal: Intact Broken Not Present N/A					# of Coolers:			Cooler ID:				

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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:					ANALYSIS REQUESTED					LAB ID NUMBER	CONTAINER TYPE		PRESERVATION						
CLIENT ADDRESS/PHONE NUMBER/FAX NUMBER:					PRESERVATION:						CONTAINER TYPE		PRESERVATION						
Southern Company Services					3 7					LAB ID NUMBER	P - PLASTIC		1 - HCl, ≤6°C						
241 Ralph McGill Blvd SE B10185					# of						A - AMBER GLASS		2 - H <sub>2</sub> SO <sub>4</sub> , ≤6°C						
Atlanta, GA 30308					CONTAINERS ↓ Metals App. III EPA 6020 C.F.S. EPA 300 TDS SM 1540C					G - CLEAR GLASS		3 - HNO <sub>3</sub>							
REPORT TO: Joie Abraham										CC: Maria Pabilla		V - VOA VIAL		4 - NaOH, ≤6°C					
REQUESTED COMPLETION DATE:					PO #: 6PL10684198					S - STERILE		5 - NaOH/ZnAc, ≤6°C							
PROJECT NAME/STATE:										O - OTHER		6 - Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> , ≤6°C							
Plant Bowen - Ash Pond CCR												7 - ≤6°C not frozen							
PROJECT #:										<u>MATRIX CODES:</u>									
Collection DATE	Collection TIME	MATRIX CODE*	C O M P	G R A B	SAMPLE IDENTIFICATION	↓						DW - DRINKING WATER	S - SOIL						
10/12/17	0858	GW		X	B6WL-14	2	1	1				WW - WASTEWATER	SL - SLUDGE						
10/12/17	0928	GW		X	B6WL-21	2	1	1				GW - GROUNDWATER	SD - SOLID						
10/12/17	1026	GW		X	B6WL-22	2	1	1				SW - SURFACE WATER	A - AIR						
10/12/17	1054	W		X	FBL101217	2	1	1				ST - STORM WATER	L - LIQUID						
10/12/17	1100	W		X	EQBL101217	2	1	1				W - WATER	P - PRODUCT						
10/12/17	—	GW		X	DUP-3	2	1	1				REMARKS/ADDITIONAL INFORMATION							
SAMPLED BY AND TITLE:					DATE/TIME:					RELINQUISHED BY:					DATE/TIME:				
Robert Hill/Kevin Stephenson					10/12/17 1215					[Signature]					10/13/17 1323				
RECEIVED BY: M. Ise Nguyen					DATE/TIME: 10/13/17 1323					RELINQUISHED BY:					DATE/TIME:				
RECEIVED BY LAB: [Signature]					DATE/TIME: 10/13/17 1645					SAMPLE SHIPPED VIA:					FOR LAB USE ONLY				
Checked: [Signature]					Temperature: Min. 0.1 Max.					UPS FED-EX USPS COURIER CLIENT OTHER FS					LAB #: AAJ 0490 MK				
Ice: [Signature]					Custody Seal: Intact Broken Not Present N/A					# of Coolers					Entered into LIMS: [Signature]				
Yes No NA					Cooler ID:					Tracking #:									

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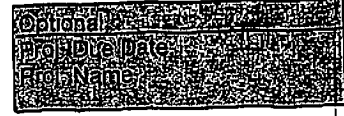
Sample Condition Upon Receipt

Client Name: GIA power Project # AAJ0490

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

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

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



Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used IR-4

Cooler Temperature 0.1

Temp should be above freezing to 6°C

Type of Ice:  Wet  Blue  None

Biological Tissue is Frozen: Yes No

Samples on ice, cooling process has begun

Date and Initials of person examining contents: 10/13/17 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: <u>GIW</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)



**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: 10/16/2017 12:25:50PM**

**Attn:** Mr. Joju Abraham

**Client:** Georgia Power

**Project:** CCR Event

**Date Received:** 10/13/17 16:45

**Work Order:** AAJ0490

**Logged In By:** Mohammad M. Rahman

**OBSERVATIONS**

**#Samples:** 29

**#Containers:** 58

**Minimum Temp(C):** 0.1

**Maximum Temp(C):** 0.1

**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:**

## Field Sampling Data

---



Product Name: Low-Flow System

Date: 2016-06-03 10:16:05

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED Micropurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 90 ft

Pump placement from TOC 84.60 ft

Well Information:

Well ID BGWA-3  
Well diameter 2 in  
Well Total Depth 89.60 ft  
Screen Length 10 ft  
Depth to Water 46.00 ft

Pumping Information:

Final Pumping Rate 155 mL/min  
Total System Volume 0.591708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 9.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	09:58:04	2640.06	18.68	7.51	728.95	5.05	46.04	2.62	43.52
Last 5	10:02:04	2880.06	18.77	7.52	727.29	5.75	46.04	2.56	43.50
Last 5	10:06:04	3120.06	18.86	7.52	723.16	4.75	46.04	2.56	43.69
Last 5	10:10:04	3360.06	18.95	7.52	722.84	4.43	46.04	2.55	43.97
Last 5	10:14:04	3600.06	19.08	7.52	720.77	4.20	46.04	2.59	43.60
Variance 0			0.09	0.00	-4.14			0.00	0.19
Variance 1			0.09	-0.00	-0.31			-0.01	0.28
Variance 2			0.14	0.01	-2.07			0.03	-0.37

Notes

Grab Samples  
BGWA-3  
Inorganics  
BGWA-3  
Metals  
BGWA-3  
Radium

Product Name: Low-Flow System

Date: 2016-06-03 09:57:36

Project Information:

Operator Name Forrest Howard  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMote 20/20we

Pump Information:

Pump Model/Type QED SamplePro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 70 ft

Pump placement from TOC 64.25 ft

Well Information:

Well ID BGWA-5  
Well diameter 2 in  
Well Total Depth 69.25 ft  
Screen Length 10 ft  
Depth to Water 41.82 ft

Pumping Information:

Final Pumping Rate 170 mL/min  
Total System Volume 0.5024396 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.08 in  
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:34:10	240.03	19.51	7.36	1031.92	2.58	41.85	3.84	97.31
Last 5	09:38:10	480.02	19.59	7.35	1031.49	1.75	41.85	3.81	90.25
Last 5	09:42:10	720.02	19.72	7.37	1032.04	1.55	41.90	3.80	85.90
Last 5	09:46:10	960.02	19.68	7.37	1029.93	1.39	41.90	3.78	83.28
Last 5	09:50:10	1200.02	19.69	7.37	1027.58	1.46	41.89	3.78	81.64
Variance 0			0.13	0.01	0.55			-0.01	-4.34
Variance 1			-0.04	0.00	-2.10			-0.02	-2.62
Variance 2			0.01	0.00	-2.35			-0.01	-1.64

Notes

First day of Sampling the Ash Pond.  
Very cooperative well. Ash pond dup-1 taken.

Grab Samples

BGWA-5  
Metals  
BGWA-5  
Inorganics

BGWA-5  
Radium  
Dup-1  
Metals  
Dup-1  
Inorganics  
Dup-1  
Radium



Product Name: Low-Flow System

Date: 2016-06-06 10:46:32

Project Information:

Operator Name Forrest Howard  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMote 20/20we

Pump Information:

Pump Model/Type QED SamplePro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 60 ft

Pump placement from TOC 54.20 ft

Well Information:

Well ID BGWA-1  
Well diameter 2 in  
Well Total Depth 59.20 ft  
Screen Length 10 ft  
Depth to Water 38.12 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.4578054 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 16 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:20:51	300.03	20.03	7.01	592.47	0.94	38.26	1.05	63.57
Last 5	10:25:51	600.02	19.47	7.01	590.58	1.25	38.26	1.09	63.01
Last 5	10:30:51	900.01	19.44	7.01	589.60	0.39	38.26	1.14	63.53
Last 5	10:35:51	1200.01	19.64	7.00	590.19	0.41	38.26	1.15	63.58
Last 5	10:40:51	1500.01	19.81	7.01	589.49	0.62	38.26	1.16	62.94
Variance 0			-0.03	0.00	-0.98			0.05	0.52
Variance 1			0.20	-0.01	0.59			0.01	0.05
Variance 2			0.17	0.01	-0.70			0.01	-0.64

Notes

Well looked iffy for turbidity after probe came up dirty when tagging total depth however sampling was easy.

Grab Samples

BGWA-1  
Metals  
BGWA-1  
Inorganics  
BGWA-1  
Radium

Product Name: Low-Flow System

Date: 2016-06-06 10:52:26

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED Micropurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 94 ft

Pump placement from TOC 85.20 ft

Well Information:

Well ID BGWA-2  
Well diameter 2 in  
Well Total Depth 90.20 ft  
Screen Length 10 ft  
Depth to Water 48.72 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.6095617 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.12 in  
Total Volume Pumped 17.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	10:30:10	4080.05	18.50	7.72	364.17	7.07	48.73	0.44	-85.98
Last 5	10:38:10	4560.05	18.61	7.70	369.23	5.97	48.73	0.64	-78.68
Last 5	10:42:10	4800.09	18.79	7.70	365.96	4.83	48.73	0.68	-77.63
Last 5	10:46:10	5040.09	18.80	7.70	366.00	4.75	48.73	0.73	-76.37
Last 5	10:50:10	5280.09	18.81	7.69	368.94	4.67	48.73	0.84	-72.66
Variance 0			0.17	-0.00	-3.27			0.04	1.05
Variance 1			0.01	-0.00	0.04			0.05	1.26
Variance 2			0.02	-0.01	2.94			0.12	3.71

Notes

Grab Samples  
BGWA-2  
Inorganics  
BGWA-2  
Metals  
BGWA-2  
Radium

Product Name: Low-Flow System

Date: 2016-06-06 16:05:59

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Ponds  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449622  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED Micropurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 79 ft

Pump placement from TOC 74 ft

Well Information:

Well ID BGWA-4  
Well diameter 2 in  
Well Total Depth 79.29 ft  
Screen Length 10 ft  
Depth to Water 50.64 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.5426105 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 12.6 in  
Total Volume Pumped 23.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	15:39:36	6723.98	19.27	7.54	996.28	5.31	51.68	0.12	-153.88
Last 5	15:43:36	6963.98	19.06	7.54	1001.51	5.16	51.69	0.12	-152.32
Last 5	15:47:36	7203.99	19.18	7.54	1002.77	4.93	51.70	0.13	-151.68
Last 5	15:51:36	7443.98	19.28	7.54	1004.84	4.77	51.69	0.13	-151.77
Last 5	15:55:36	7683.98	19.31	7.54	1011.38	4.74	51.69	0.13	-151.54
Variance 0			0.13	-0.00	1.26			0.00	0.65
Variance 1			0.10	-0.00	2.08			0.00	-0.09
Variance 2			0.03	-0.00	6.54			0.01	0.23

Notes

Pre-purged 7.75 liters.

Grab Samples

BGWA-4  
Metals  
BGWA-4  
Inorganics  
BGWA-4  
Radium

Product Name: Low-Flow System

Date: 2016-06-06 10:01:54

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Ponds  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449622  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED Micropurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 63 ft

Pump placement from TOC 58 ft

Well Information:

Well ID BGWA-6  
Well diameter 2 in  
Well Total Depth 63.66 ft  
Screen Length 10 ft  
Depth to Water 35.31 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.4711957 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:40:23	480.56	19.06	7.28	495.53	6.81	35.35	0.24	-7.16
Last 5	09:44:23	720.56	19.02	7.29	493.85	5.93	35.35	0.20	-8.84
Last 5	09:48:23	960.56	19.08	7.29	493.23	4.42	35.35	0.17	-10.14
Last 5	09:52:23	1200.56	19.14	7.30	491.00	3.64	35.35	0.15	-11.60
Last 5	09:56:23	1440.56	19.08	7.30	488.35	3.47	35.35	0.13	-12.15
Variance 0			0.07	0.00	-0.62			-0.03	-1.31
Variance 1			0.05	0.01	-2.23			-0.02	-1.46
Variance 2			-0.06	0.00	-2.65			-0.02	-0.55

Notes

Pre-purged 1.5 liters. DO was <.5 = stable.

Grab Samples

BGWA-6  
Metals  
BGWA-6  
Inorganics  
BGWA-6  
Radium

Product Name: Low-Flow System

Date: 2016-06-06 13:38:05

Project Information:

Operator Name Forrest Howard  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMote 20/20we

Pump Information:

Pump Model/Type QED SamplePro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 65 ft

Pump placement from TOC 59.15 ft

Well Information:

Well ID BGWC-9  
Well diameter 2 in  
Well Total Depth 64.15 ft  
Screen Length 10 ft  
Depth to Water 33.15 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.4801225 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 0.6 in  
Total Volume Pumped 8.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:11:50	1200.02	19.68	7.35	566.68	4.24	33.20	0.09	-158.22
Last 5	13:16:50	1500.02	19.50	7.39	576.55	3.16	33.20	0.09	-152.85
Last 5	13:21:50	1800.02	19.59	7.43	582.17	3.04	33.21	0.08	-152.66
Last 5	13:26:50	2100.00	19.60	7.45	586.79	2.70	33.20	0.09	-150.71
Last 5	13:31:50	2400.00	19.46	7.46	591.68	2.38	33.20	0.09	-149.06
Variance 0			0.09	0.04	5.62			-0.01	0.19
Variance 1			0.01	0.02	4.62			0.01	1.94
Variance 2			-0.14	0.01	4.89			0.00	1.66

Notes

Cooperative well.

Grab Samples

BGWC-9  
Metals  
BGWC-9  
Radium  
BGWC-9  
Inorganics



Product Name: Low-Flow System

Date: 2016-06-06 14:52:58

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED Micropurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 81 ft

Pump placement from TOC 72.30 ft

Well Information:

Well ID BGWC-11  
Well diameter 2 in  
Well Total Depth 77.30 ft  
Screen Length 10 ft  
Depth to Water 27.52 ft

Pumping Information:

Final Pumping Rate 175 mL/min  
Total System Volume 0.5515373 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 48.84 in  
Total Volume Pumped 10.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	14:34:02	3121.05	19.32	7.71	471.17	1.12	31.71	0.04	-105.29
Last 5	14:38:02	3361.05	19.61	7.70	470.39	1.22	31.84	0.03	-111.46
Last 5	14:42:02	3601.05	20.55	7.71	470.87	1.21	31.71	0.04	-119.09
Last 5	14:46:02	3841.05	20.49	7.73	467.88	1.95	31.65	0.04	-122.39
Last 5	14:50:02	4081.05	20.60	7.73	467.53	0.78	31.59	0.04	-127.12
Variance 0			0.94	0.01	0.48			0.01	-7.63
Variance 1			-0.06	0.02	-2.99			-0.00	-3.30
Variance 2			0.11	0.01	-0.35			0.00	-4.73

Notes

Grab Samples  
BGWC-11  
Inorganics  
BGWC-11  
Metals  
BGWC-11  
Radium

Product Name: Low-Flow System

Date: 2016-06-07 15:27:49

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED Micropurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 94 ft

Pump placement from TOC 85.35 ft

Well Information:

Well ID BGWC-7  
Well diameter 2 in  
Well Total Depth 90.35 ft  
Screen Length 10 ft  
Depth to Water 47.80 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.6095617 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 396.12 in  
Total Volume Pumped 25.7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	15:08:05	14403.17	22.15	7.20	967.29	4.61	80.11	0.05	-131.79
Last 5	15:12:05	14643.17	22.33	7.20	964.18	4.92	80.58	0.05	-128.14
Last 5	15:16:05	14883.17	21.54	7.21	968.91	4.90	80.71	0.05	-120.58
Last 5	15:20:05	15123.21	21.18	7.21	969.26	4.99	80.79	0.05	-114.93
Last 5	15:24:05	15363.21	21.55	7.21	962.68	5.03	80.81	0.05	-109.87
Variance 0			-0.80	0.01	4.73			0.00	7.56
Variance 1			-0.36	0.00	0.34			0.00	5.65
Variance 2			0.38	0.00	-6.57			0.00	5.05

Notes

Water Level dropped below screen. Performed complete evacuation.  
Samples will be taken within 24 hours.

Product Name: Low-Flow System

Date: 2016-06-07 09:43:53

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED Micropurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 83 ft

Pump placement from TOC 75.20 ft

Well Information:

Well ID BGWC-8  
Well diameter 2 in  
Well Total Depth 80.20 ft  
Screen Length 10 ft  
Depth to Water 49.19 ft

Pumping Information:

Final Pumping Rate 125 mL/min  
Total System Volume 0.5604641 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	09:26:01	480.02	19.59	7.52	343.83	11.30	49.19	0.51	68.75
Last 5	09:30:01	720.02	19.61	7.53	343.66	3.31	49.19	0.43	55.12
Last 5	09:34:01	960.02	19.60	7.53	345.46	2.25	49.19	0.39	47.52
Last 5	09:38:01	1200.02	19.71	7.54	346.67	2.39	49.19	0.39	43.23
Last 5	09:42:01	1440.02	19.71	7.55	347.55	1.91	49.19	0.41	40.39
Variance 0			-0.01	0.01	1.80			-0.04	-7.60
Variance 1			0.10	0.01	1.21			0.00	-4.30
Variance 2			0.00	0.01	0.88			0.02	-2.84

Notes

Grab Samples  
BGWC-8  
Inorganics  
BGWC-8  
Metals  
BGWC-8  
Radium

Product Name: Low-Flow System

Date: 2016-06-07 12:35:31

Project Information:

Operator Name Forrest Howard  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMote 20/20we

Pump Information:

Pump Model/Type QED SamplePro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 63 ft

Pump placement from TOC 57.50 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 62.50 ft  
Screen Length 10 ft  
Depth to Water 30.13 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.4711957 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 111.24 in  
Total Volume Pumped 8.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:05:04	600.02	18.66	7.32	540.32	2.53	37.35	0.25	-169.42
Last 5	12:10:04	900.02	19.23	7.40	534.32	2.13	37.90	0.28	-165.74
Last 5	12:15:04	1200.02	19.33	7.43	532.45	2.27	38.70	0.29	-163.37
Last 5	12:20:04	1500.01	19.41	7.46	531.61	2.23	39.18	0.34	-157.96
Last 5	12:25:04	1800.01	19.50	7.49	533.39	2.04	39.74	0.43	-152.00
Variance 0			0.09	0.03	-1.87			0.00	2.38
Variance 1			0.09	0.02	-0.83			0.06	5.41
Variance 2			0.09	0.03	1.78			0.09	5.96

Notes

Chemistry was quick to stabilize. Pumping rate decreased to counteract excessive drawdown.

Grab Samples

BGWC-10

Metals

BGWC-10

Inorganics

BGWC-10

Radium

Product Name: Low-Flow System

Date: 2016-06-07 17:37:34

Project Information:

Operator Name Forrest Howard  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMote 20/20we

Pump Information:

Pump Model/Type QED SamplePro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 79 ft

Pump placement from TOC 74.55 ft

Well Information:

Well ID BGWC-12  
Well diameter 2 in  
Well Total Depth 79.55 ft  
Screen Length 10 ft  
Depth to Water 42.22 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.5426105 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 7.56 in  
Total Volume Pumped 32 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	17:14:55	9603.91	19.24	7.56	794.20	5.81	41.85	1.39	51.10
Last 5	17:18:55	9843.91	19.37	7.56	795.07	58.70	41.85	1.40	51.08
Last 5	17:22:55	10083.91	19.62	7.56	796.81	5.11	41.90	1.39	52.17
Last 5	17:26:55	10323.91	19.50	7.56	796.78	4.91	41.85	1.39	52.42
Last 5	17:30:55	10563.91	19.29	7.56	796.01	4.93	41.85	1.39	52.89
Variance 0			0.25	0.00	1.75			-0.01	1.09
Variance 1			-0.12	-0.00	-0.04			0.00	0.25
Variance 2			-0.21	0.00	-0.77			-0.00	0.46

Notes

Turbidity had a downward trend but fluctuated when under 10 NTU. Finally dropped below 5 just before 3 hour mark

Grab Samples

BGWC-12

Metals

BGWC-12

Inorganics

BGWC-12

Radium

Product Name: Low-Flow System

Date: 2016-06-07 10:20:03

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449622  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type GeoTech Peristaltic  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 49 ft

Pump placement from TOC 44 ft

Well Information:

Well ID BGWC-16  
Well diameter 2 in  
Well Total Depth 49.30 ft  
Screen Length 10 ft  
Depth to Water 16.44 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.3087077 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.28 in  
Total Volume Pumped 5.04 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:58:06	720.60	19.40	6.98	822.46	0.50	16.59	0.10	95.82
Last 5	10:02:06	960.60	19.33	6.98	823.16	0.48	16.61	0.09	92.27
Last 5	10:06:06	1200.60	19.37	6.98	824.34	0.40	16.62	0.08	86.80
Last 5	10:10:06	1440.60	19.46	6.98	823.17	0.47	16.62	0.07	85.89
Last 5	10:14:06	1680.60	19.50	6.99	820.37	0.40	16.63	0.07	82.92
Variance 0			0.05	0.00	1.18			-0.01	-5.47
Variance 1			0.09	-0.00	-1.18			-0.01	-0.91
Variance 2			0.04	0.00	-2.80			-0.00	-2.98

Notes

Pre-purged 4 liters. Peristaltic pump used.

Grab Samples

BGWC-16

Metals

BGWC-16

Inorganics

BGWC-16

Radium

Dup-2  
Metals  
Dup-2  
Inorganics  
Dup-2  
Radium



Product Name: Low-Flow System

Date: 2016-06-07 16:30:39

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449622  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type GeoTech Peristaltic  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 69 ft

Pump placement from TOC 64 ft

Well Information:

Well ID BGWC-17  
Well diameter 2 in  
Well Total Depth 69.70 ft  
Screen Length 10 ft  
Depth to Water 15.34 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.3979762 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.6 in  
Total Volume Pumped 32 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	16:07:55	9607.18	20.08	7.41	557.86	6.14	15.39	0.09	92.81
Last 5	16:11:55	9847.18	20.17	7.42	550.47	5.91	15.39	0.09	92.82
Last 5	16:15:55	10087.18	19.64	7.42	551.94	4.57	15.39	0.07	93.02
Last 5	16:19:55	10327.18	19.73	7.42	552.37	4.93	15.39	0.07	92.28
Last 5	16:23:55	10567.25	19.57	7.41	552.95	4.85	15.39	0.07	92.44
Variance 0			-0.53	0.00	1.47			-0.02	0.20
Variance 1			0.09	-0.00	0.43			-0.00	-0.73
Variance 2			-0.16	-0.00	0.58			-0.00	0.16

Notes

Pre-purged 12 liters.

Grab Samples

BGWC-17

Metals

BGWC-17

Inorganics

BGWC-17

Radium



Product Name: Low-Flow System

Date: 2016-06-08 13:07:07

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED Micropurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 91 ft

Pump placement from TOC 85.35 ft

Well Information:

Well ID BGWC-7  
Well diameter 2 in  
Well Total Depth 90.35 ft  
Screen Length 10 ft  
Depth to Water 68.94 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.5961715 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 38.16 in  
Total Volume Pumped 2.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:47:01	720.02	21.00	6.96	1067.24	1.19	70.48	0.95	-50.18
Last 5	12:51:01	960.02	20.92	6.97	1066.37	1.13	70.93	0.77	-49.41
Last 5	12:55:01	1200.03	20.90	6.98	1067.28	0.60	71.33	0.66	-48.80
Last 5	12:59:01	1440.02	20.90	6.99	1065.17	0.51	71.73	0.57	-48.25
Last 5	13:03:01	1680.02	20.76	7.00	1063.39	0.56	72.12	0.51	-47.97
Variance 0			-0.02	0.01	0.91			-0.11	0.61
Variance 1			0.00	0.01	-2.11			-0.09	0.56
Variance 2			-0.15	0.01	-1.79			-0.05	0.28

Notes

Post complete evacuation

Grab Samples

BGWC-7  
Inorganics  
BGWC-7  
Metals  
BGWC-7  
Radium

Product Name: Low-Flow System

Date: 2016-06-08 15:23:13

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED Micropurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 75 ft

Pump placement from TOC 68.70 ft

Well Information:

Well ID BGWC-13  
Well diameter 2 in  
Well Total Depth 73.70 ft  
Screen Length 10 ft  
Depth to Water 66.83 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.5247567 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 25.92 in  
Total Volume Pumped 2.64 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	15:04:16	480.02	21.50	7.16	982.57	1.45	67.99	2.24	61.83
Last 5	15:08:16	720.03	21.25	7.15	985.11	1.40	68.25	2.29	55.77
Last 5	15:12:16	960.03	21.22	7.13	989.02	2.60	68.51	2.50	56.81
Last 5	15:16:16	1200.03	21.35	7.13	999.84	2.33	68.76	2.53	57.39
Last 5	15:20:16	1440.03	21.13	7.13	1001.19	2.08	68.99	2.22	55.65
Variance 0			-0.03	-0.02	3.91			0.21	1.04
Variance 1			0.13	-0.00	10.82			0.03	0.58
Variance 2			-0.22	0.00	1.35			-0.31	-1.74

Notes

Water level started below the top of the screen and dropped below the top of the pump  
Complete evacuation performed, samples to be collected within 24 hours.

Grab Samples

Product Name: Low-Flow System

Date: 2016-06-08 09:51:39

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449622  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type GeoTech Peristaltic  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 39 ft

Pump placement from TOC 34 ft

Well Information:

Well ID BGWC-18  
Well diameter 2 in  
Well Total Depth 39.00 ft  
Screen Length 10 ft  
Depth to Water 14.33 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.2640735 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.72 in  
Total Volume Pumped 4.32 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	09:31:23	480.03	17.95	6.92	672.86	7.16	14.39	0.10	101.58
Last 5	09:35:23	720.03	17.99	6.92	671.42	5.87	14.39	0.10	93.17
Last 5	09:39:23	960.02	18.04	6.92	670.62	4.86	14.39	0.10	88.43
Last 5	09:43:23	1200.02	18.12	6.92	671.85	4.48	14.39	0.09	83.03
Last 5	09:47:23	1440.03	18.17	6.93	666.56	4.73	14.39	0.08	78.16
Variance 0			0.05	0.00	-0.80			-0.00	-4.73
Variance 1			0.09	0.00	1.22			-0.01	-5.40
Variance 2			0.04	0.00	-5.28			-0.01	-4.87

Notes

Pre-purged 2.25 liters.

Grab Samples

BGWC-18

Metals

BGWC-18

Inorganics

BGWC-18

Radium

Product Name: Low-Flow System

Date: 2016-06-08 12:02:33

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449622  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type GeoTech Peristaltic  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 55 ft

Pump placement from TOC 49.90 ft

Well Information:

Well ID BGWC-19  
Well diameter 2 in  
Well Total Depth 54.90 ft  
Screen Length 10 ft  
Depth to Water 15.85 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3354883 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.16 in  
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	11:44:17	240.03	19.12	6.58	504.03	2.07	16.03	0.47	116.59
Last 5	11:48:17	480.11	19.14	6.58	504.18	1.89	16.03	0.47	115.16
Last 5	11:52:17	720.11	19.16	6.58	505.15	1.80	16.03	0.46	114.19
Last 5	11:56:17	960.11	19.24	6.58	502.48	1.61	16.03	0.45	113.75
Last 5	12:00:17	1200.11	19.19	6.58	501.52	1.42	16.03	0.45	113.48
Variance 0			0.02	0.00	0.97			-0.00	-0.97
Variance 1			0.08	0.00	-2.67			-0.01	-0.45
Variance 2			-0.05	-0.00	-0.96			-0.00	-0.27

Notes

Pre-purged 7 liters.

Grab Samples

BGWC-19

Metals

BGWC-19

Inorganics

BGWC-19

Radium

Product Name: Low-Flow System

Date: 2016-06-08 12:55:12

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364456  
Turbidity Make/Model LaMotte 20-20

Pump Information:

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

Pump placement from TOC 45.0 ft

Well Information:

Well ID BGWC-20  
Well diameter 2 in  
Well Total Depth 49.90 ft  
Screen Length 10 ft  
Depth to Water 15.60 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.322098 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 139.08 in  
Total Volume Pumped 10.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:34:30	3119.99	20.93	7.43	1413.27	0.37	26.58	1.69	-93.99
Last 5	12:38:30	3359.99	20.70	7.44	1402.94	0.45	26.82	1.63	-96.58
Last 5	12:42:30	3599.99	20.60	7.45	1414.79	0.30	27.02	1.58	-99.01
Last 5	12:46:30	3839.99	20.96	7.45	1417.74	0.64	27.14	1.52	-102.44
Last 5	12:50:31	4080.99	20.80	7.45	1416.14	0.10	27.19	1.48	-103.35
Variance 0			-0.10	0.01	11.85			-0.04	-2.43
Variance 1			0.36	0.00	2.95			-0.06	-3.43
Variance 2			-0.17	0.00	-1.60			-0.04	-0.91

Notes

Drawdown stabilized at 27.19'.

Grab Samples

BGWC-20

Metals

BGWC-20

Inorganics

BGWC-20

Radium

Product Name: Low-Flow System

Date: 2016-06-08 15:10:29

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364456  
Turbidity Make/Model LaMotte 20-20

Pump Information:

Pump Model/Type GeoPump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 56.0 ft

Pump placement from TOC 48.5 ft

Well Information:

Well ID BGWC-21  
Well diameter 2 in  
Well Total Depth 53.55 ft  
Screen Length 10 ft  
Depth to Water 21.88 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.3399517 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.03 in  
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:49:20	1680.02	21.61	7.90	464.99	1.39	21.90	0.42	-97.30
Last 5	14:53:20	1920.02	22.08	7.90	458.06	1.05	21.90	0.41	-100.47
Last 5	14:57:20	2160.02	21.89	7.90	457.15	0.95	21.91	0.37	-105.96
Last 5	15:01:22	2402.02	21.86	7.89	455.12	0.90	21.91	0.33	-106.28
Last 5	15:05:21	2641.97	21.98	7.88	457.12	1.07	21.91	0.32	-110.00
Variance 0			-0.18	0.00	-0.91			-0.04	-5.49
Variance 1			-0.03	-0.01	-2.03			-0.04	-0.32
Variance 2			0.12	-0.01	2.00			-0.01	-3.72

Notes

No issues

Grab Samples

BGWC-21

Metals

BGWC-21

Inorganics

BGWC-21

Radium

Product Name: Low-Flow System

Date: 2016-06-08 13:38:44

Project Information:

Operator Name Forrest Howard  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMote 20/20we

Pump Information:

Pump Model/Type QED SamplePro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 43 ft

Pump placement from TOC 38.19 ft

Well Information:

Well ID BGWC-22  
Well diameter 2 in  
Well Total Depth 43.19 ft  
Screen Length 10 ft  
Depth to Water 27.54 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.3819272 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 8.52 in  
Total Volume Pumped 8.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:15:54	240.11	20.00	7.09	2282.10	1.32	28.15	0.41	-76.66
Last 5	13:19:54	480.02	19.95	7.09	2271.97	1.52	28.30	0.38	-77.07
Last 5	13:23:54	720.02	19.99	7.09	2282.72	0.72	28.30	0.31	-77.75
Last 5	13:27:54	960.02	20.03	7.09	2286.63	0.51	28.30	0.25	-78.74
Last 5	13:31:54	1200.02	20.00	7.10	2288.43	0.48	28.25	0.22	-78.82
Variance 0			0.04	-0.00	10.75			-0.07	-0.68
Variance 1			0.04	-0.00	3.92			-0.06	-1.00
Variance 2			-0.04	0.00	1.80			-0.03	-0.08

Notes

Low turbidity, water level and chemistry stabilized quickly. Abnormally high conductivity might be of analytical interest. Easily sampled well.

Grab Samples

BGWC-22

Metals

BGWC-22

Inorganics

BGWC-22

Radium

Product Name: Low-Flow System

Date: 2016-06-08 15:16:45

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449622  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type GeoTech Peristaltic  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 59 ft

Pump placement from TOC 53.55 ft

Well Information:

Well ID BGWC-25  
Well diameter 2 in  
Well Total Depth 58.55 ft  
Screen Length 10 ft  
Depth to Water 18.13 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.3533419 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 105.72 in  
Total Volume Pumped 7.84 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	14:53:17	2407.16	20.57	7.91	277.80	3.51	26.52	0.91	-168.90
Last 5	14:57:17	2647.16	20.17	7.92	279.78	3.21	26.68	0.81	-170.34
Last 5	15:01:17	2887.16	20.17	7.93	285.17	2.97	26.87	0.76	-174.73
Last 5	15:05:21	3131.16	20.19	7.94	291.29	2.70	26.94	0.67	-177.02
Last 5	15:09:21	3371.16	20.07	7.95	289.87	2.32	27.03	0.62	-176.92
Variance 0			-0.00	0.01	5.40			-0.06	-4.39
Variance 1			0.02	0.01	6.12			-0.09	-2.30
Variance 2			-0.12	0.00	-1.42			-0.05	0.10

Notes

Pre-purged 6 liters.

Grab Samples

BGWC-25

Metals

BGWC-25

Inorganics

BGWC-25

Radium



Product Name: Low-Flow System

Date: 2016-06-09 12:06:09

Project Information:

Operator Name Forrest Howard  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364456  
Turbidity Make/Model LaMote 20/20we

Pump Information:

Pump Model/Type QED SamplePro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 90 ft

Pump placement from TOC 84.00 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 89.00 ft  
Screen Length 10 ft  
Depth to Water 70.00 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.591708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 168 in  
Total Volume Pumped 15.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:42:59	3600.00	19.01	7.57	638.47	2.05	81.30	0.25	-152.02
Last 5	11:46:59	3840.00	18.99	7.53	661.22	0.30	81.35	0.19	-143.28
Last 5	11:51:02	4083.01	18.96	7.55	688.79	0.25	82.34	0.18	-147.06
Last 5	11:55:02	4323.00	19.00	7.59	701.38	0.00	83.50	0.16	-155.51
Last 5	11:59:04	4565.00	18.88	7.60	709.14	--	83.50	0.16	-158.90
Variance 0			-0.03	0.02	27.58			-0.01	-3.78
Variance 1			0.04	0.04	12.58			-0.02	-8.45
Variance 2			-0.12	0.01	7.76			0.00	-3.40

Notes

19 ft of water. Well just next to busy construction road.  
Water level never stabilized, drew down into screen. Complete evacuation performed. No samples taken with low flow. Will return within 24 hrs to sample. All parameters look stabilized and turbidity was sub 5 for the duration of pumping.

Grab Samples



Product Name: Low-Flow System

Date: 2016-06-09 10:48:03

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED Micropurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 78 ft

Pump placement from TOC 69.95 ft

Well Information:

Well ID BGWC-15  
Well diameter 2 in  
Well Total Depth 74.95 ft  
Screen Length 10 ft  
Depth to Water 65.06 ft

Pumping Information:

Final Pumping Rate 115 mL/min  
Total System Volume 0.538147 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 37.08 in  
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	10:28:53	2881.05	20.92	7.01	1453.34	1.81	67.22	0.98	-45.06
Last 5	10:32:53	3121.05	20.99	7.00	1452.11	1.64	67.37	0.85	-50.56
Last 5	10:36:53	3361.05	20.32	6.97	1438.06	1.15	67.60	0.67	-59.53
Last 5	10:40:53	3601.05	19.86	6.93	1449.31	0.95	67.86	0.51	-70.62
Last 5	10:44:53	3841.05	20.45	6.93	1440.01	0.84	68.15	0.44	-77.52
Variance 0			-0.67	-0.03	-14.05			-0.19	-8.97
Variance 1			-0.46	-0.04	11.24			-0.16	-11.10
Variance 2			0.59	-0.01	-9.30			-0.07	-6.90

Notes

Water level started in screen. Performing complete evacuation  
Samples to be taken within 24 hours

Grab Samples

Product Name: Low-Flow System

Date: 2016-06-09 11:42:48

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449622  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED Micropurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 51 ft

Pump placement from TOC 46.29 ft

Well Information:

Well ID BGWC-23  
Well diameter 2 in  
Well Total Depth 51.29 ft  
Screen Length 10 ft  
Depth to Water 31.18 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.4176346 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 15.81 in  
Total Volume Pumped 12.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	11:22:02	6000.60	20.08	7.30	2100.61	5.19	32.41	0.10	-74.33
Last 5	11:26:02	6240.60	20.06	7.30	2109.83	4.66	32.45	0.08	-73.08
Last 5	11:30:02	6480.60	20.13	7.30	2123.62	4.97	32.48	0.09	-72.11
Last 5	11:34:02	6720.60	20.21	7.30	2118.88	4.93	32.49	0.08	-72.88
Last 5	11:38:02	6960.60	20.30	7.30	2136.25	4.78	32.49	0.08	-70.54
Variance 0			0.06	-0.00	13.79			0.00	0.96
Variance 1			0.08	0.00	-4.74			-0.00	-0.76
Variance 2			0.09	-0.00	17.37			-0.00	2.34

Notes

Pre-purged 1.5 liters.

Grab Samples

BGWC-23

Metals

BGWC-23

Inorganics

BGWC-23

Radium

Product Name: Low-Flow System

Date: 2016-06-09 11:09:21

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 20-20

Pump Information:

Pump Model/Type GeoPump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 69 ft

Pump placement from TOC 62 ft

Well Information:

Well ID BGWC-24  
Well diameter 2 in  
Well Total Depth 66.27 ft  
Screen Length 10 ft  
Depth to Water 10.74 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.3979762 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 86.52 in  
Total Volume Pumped 10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:45:53	2880.00	20.64	6.89	5197.18	1.48	17.41	0.09	-74.29
Last 5	10:49:53	3120.00	20.75	6.85	5404.45	0.92	17.57	0.11	-68.22
Last 5	10:53:53	3360.00	20.86	6.84	5438.87	0.79	17.70	0.10	-64.10
Last 5	10:57:59	3606.00	20.99	6.84	5442.19	1.38	17.78	0.10	-63.30
Last 5	11:01:59	3846.00	20.85	6.83	5492.76	0.82	17.95	0.10	-60.30
Variance 0			0.12	-0.01	34.43			-0.01	4.12
Variance 1			0.13	-0.00	3.31			-0.01	0.80
Variance 2			-0.15	-0.01	50.57			0.00	3.00

Notes

Drawdown stabilized at 17.95 ft btoc. Collected DUP-3.

Grab Samples

BGWC-24

Metals

BGWC-24

Inorganics

BGWC-24

Radium

DUP-3  
Metals  
DUP-3  
Inorganics  
DUP-3  
Radium



Product Name: Low-Flow System

Date: 2016-08-09 10:35:24

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 59 ft

Pump placement from TOC 54.02 ft

Well Information:

Well ID BGWA-1  
Well diameter 2 in  
Well Total Depth 59.02 ft  
Screen Length 10 ft  
Depth to Water 39.19 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.453342 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 5.04 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:15:25	1200.02	22.11	6.97	715.56	7.01	39.21	1.03	93.55
Last 5	10:19:25	1440.02	21.92	6.97	715.56	6.12	39.21	1.06	89.32
Last 5	10:23:25	1680.02	21.64	6.98	712.63	4.87	39.21	1.04	85.95
Last 5	10:27:25	1920.02	21.29	6.97	713.21	4.46	39.21	1.08	84.14
Last 5	10:31:25	2160.04	21.28	6.97	712.27	4.16	39.21	1.08	82.87
Variance 0			-0.28	0.00	-2.94			-0.02	-3.37
Variance 1			-0.34	-0.00	0.59			0.04	-1.81
Variance 2			-0.01	-0.00	-0.95			-0.00	-1.26

Notes

Pre-purged 3 liters.

Grab Samples

BGWA-1  
Metals  
BGWA-1  
Inorganics  
BGWA-1  
Radium

Product Name: Low-Flow System

Date: 2016-08-09 11:28:56

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 90.00 ft

Pump placement from TOC 84.00 ft

Well Information:

Well ID BGWA-2  
Well diameter 2.0 in  
Well Total Depth 89.00 ft  
Screen Length 10 ft  
Depth to Water 50.21 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.591708 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 19.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:03:43	4199.96	19.77	7.72	341.69	4.96	50.25	0.66	-78.58
Last 5	11:08:43	4499.96	19.77	7.72	341.23	5.09	50.25	0.70	-77.51
Last 5	11:13:43	4799.96	20.15	7.72	340.16	5.18	50.25	0.77	-74.53
Last 5	11:18:43	5099.91	20.25	7.72	339.50	4.83	50.25	0.83	-69.81
Last 5	11:23:43	5399.91	20.16	7.72	339.43	4.94	50.25	0.90	-66.75
Variance 0			0.38	-0.00	-1.08			0.08	2.98
Variance 1			0.10	0.00	-0.66			0.06	4.72
Variance 2			-0.09	-0.00	-0.07			0.07	3.06

Notes

Beginning of July August sampling round of Ash Pond  
Turbidity trended downward for 2 hours.

Grab Samples

BGWA-2  
Metals  
BGWA-2  
Inorganics



BGWA-2  
Radium



Product Name: Low-Flow System

Date: 2016-08-09 13:51:34

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 90 ft

Pump placement from TOC 84.36 ft

Well Information:

Well ID BGWA-3  
Well diameter 2.0 in  
Well Total Depth 89.36 ft  
Screen Length 10 ft  
Depth to Water 47.66 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.591708 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 14 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:28:12	300.03	19.53	7.46	646.90	11.20	47.68	3.91	44.98
Last 5	13:33:12	600.02	19.38	7.51	648.19	3.91	47.68	3.95	46.14
Last 5	13:38:12	900.02	19.29	7.54	650.02	3.24	47.68	3.91	46.87
Last 5	13:43:12	1200.02	19.21	7.55	652.95	3.39	47.68	3.90	47.26
Last 5									
Variance 0			-0.14	0.05	1.29			0.04	1.17
Variance 1			-0.10	0.04	1.83			-0.04	0.73
Variance 2			-0.07	0.01	2.93			-0.00	0.39

Notes

Turbidity trended downward quickly. Water level was close to stagnate. Cooperative well.

Grab Samples

BGWA-3  
Metals  
BGWA-3  
Inorganics  
BGWA-3  
Radium

Product Name: Low-Flow System

Date: 2016-08-09 14:09:02

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Sample Pro  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 74.05 ft

Well Information:

Well ID BGWA-4  
Well diameter 2 in  
Well Total Depth 79.05 ft  
Screen Length 10 ft  
Depth to Water 51.98 ft

Pumping Information:

Final Pumping Rate 115 mL/min  
Total System Volume 0.5470738 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 11.76 in  
Total Volume Pumped 11.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:50:01	4799.98	20.93	7.56	1037.73	5.01	52.96	0.08	-145.36
Last 5	13:54:01	5039.98	21.06	7.56	1044.64	5.18	52.96	0.08	-144.04
Last 5	13:58:01	5279.98	21.16	7.56	1051.49	4.47	52.96	0.08	-142.23
Last 5	14:02:01	5519.98	21.26	7.57	1059.23	4.86	52.96	0.08	-141.05
Last 5	14:06:01	5759.98	21.24	7.57	1065.22	4.11	52.96	0.08	-139.44
Variance 0			0.10	0.00	6.85			-0.00	1.81
Variance 1			0.10	0.00	7.74			0.00	1.18
Variance 2			-0.02	0.00	5.99			0.00	1.61

Notes

Grab Samples  
BGWA-4  
Inorganics  
BGWA-4  
Metals  
BGWA-4  
Radium

Product Name: Low-Flow System

Date: 2016-08-10 12:25:20

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 64 ft

Pump placement from TOC 58.46 ft

Well Information:

Well ID BGWA-6  
Well diameter 2.0 in  
Well Total Depth 63.46 ft  
Screen Length 10 ft  
Depth to Water 36.73 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.4756591 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 1.44 in  
Total Volume Pumped 11.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:58:22	300.09	18.99	7.42	498.23	3.19	36.90	0.08	-22.22
Last 5	12:03:21	600.01	19.06	7.42	497.26	2.84	36.85	0.08	-20.88
Last 5	12:08:21	900.01	19.06	7.41	496.69	2.64	36.85	0.08	-20.15
Last 5	12:13:21	1200.01	19.13	7.42	496.12	3.27	36.85	0.09	-19.53
Last 5	12:18:21	1500.01	19.04	7.41	496.92	2.05	36.85	0.09	-18.60
Variance 0			-0.00	-0.01	-0.56			0.00	0.73
Variance 1			0.07	0.00	-0.58			0.01	0.62
Variance 2			-0.09	-0.00	0.80			0.00	0.93

Notes

Low turbidity and stable drawdown. Cooperative well.

Grab Samples

BGWA-6  
Inorganics  
BGWA-6  
Metals  
BGWA-6  
Radium

Product Name: Low-Flow System

Date: 2016-08-10 14:00:41

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 91 ft

Pump placement from TOC 85.19 ft

Well Information:

Well ID BGWC-7  
Well diameter 2 in  
Well Total Depth 90.19 ft  
Screen Length 10 ft  
Depth to Water 46.94 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.5961715 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 462.12 in  
Total Volume Pumped 35 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	13:39:44	15603.02	19.10	7.04	1139.46	5.30	83.27	0.16	-121.45
Last 5	13:43:44	15843.02	19.19	7.03	1149.91	3.27	83.91	0.09	-121.43
Last 5	13:47:44	16083.02	19.34	7.03	1159.45	2.71	84.44	0.08	-122.71
Last 5	13:51:44	16323.02	19.32	7.03	1146.22	2.67	85.14	0.07	-123.36
Last 5	13:55:44	16563.02	19.42	7.02	1133.50	1.81	85.45	0.07	-117.17
Variance 0			0.15	-0.00	9.54			-0.01	-1.28
Variance 1			-0.02	0.00	-13.24			-0.01	-0.65
Variance 2			0.10	-0.01	-12.72			-0.00	6.19

Notes

Pre-purged 1.25 liters. Water level never stabilized. Complete evacuation method was initiated. Samples will be taken 8/11/16.

Grab Samples

- BGWC-7
- Inorganics
- BGWC-7
- Metals
- BGWC-7
- Radium

Product Name: Low-Flow System

Date: 2016-08-10 09:51:40

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Sample Pro  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 82 ft

Pump placement from TOC 74.99 ft

Well Information:

Well ID BGWC-8  
Well diameter 2 in  
Well Total Depth 79.99 ft  
Screen Length 10 ft  
Depth to Water 48.78 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.5560007 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 5.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:34:01	1200.02	19.68	7.62	342.54	7.02	48.78	2.50	88.45
Last 5	09:38:01	1440.02	19.73	7.63	343.77	5.59	48.78	2.50	87.63
Last 5	09:42:01	1680.02	19.78	7.65	344.40	4.82	48.78	2.48	86.15
Last 5	09:46:01	1920.02	19.66	7.65	345.82	3.78	48.78	2.50	85.39
Last 5	09:50:01	2160.02	19.77	7.66	347.10	4.18	48.78	2.50	84.74
Variance 0			0.05	0.01	0.63			-0.02	-1.47
Variance 1			-0.12	0.01	1.42			0.03	-0.76
Variance 2			0.11	0.01	1.28			-0.00	-0.65

Notes

Grab Samples  
BGWC-8  
Inorganics  
BGWC-8  
Metals  
BGWC-8  
Radium

Product Name: Low-Flow System

Date: 2016-08-10 09:51:40

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Sample Pro  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 82 ft

Pump placement from TOC 74.99 ft

Well Information:

Well ID BGWC-8  
Well diameter 2 in  
Well Total Depth 79.99 ft  
Screen Length 10 ft  
Depth to Water 48.78 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.5560007 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 5.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:34:01	1200.02	19.68	7.62	342.54	7.02	48.78	2.50	88.45
Last 5	09:38:01	1440.02	19.73	7.63	343.77	5.59	48.78	2.50	87.63
Last 5	09:42:01	1680.02	19.78	7.65	344.40	4.82	48.78	2.48	86.15
Last 5	09:46:01	1920.02	19.66	7.65	345.82	3.78	48.78	2.50	85.39
Last 5	09:50:01	2160.02	19.77	7.66	347.10	4.18	48.78	2.50	84.74
Variance 0			0.05	0.01	0.63			-0.02	-1.47
Variance 1			-0.12	0.01	1.42			0.03	-0.76
Variance 2			0.11	0.01	1.28			-0.00	-0.65

Notes

Grab Samples  
BGWC-8  
Inorganics  
BGWC-8  
Metals  
BGWC-8  
Radium

Product Name: Low-Flow System

Date: 2016-08-11 12:02:03

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 64 ft

Pump placement from TOC 58.95 ft

Well Information:

Well ID BGWC-9  
Well diameter 2 in  
Well Total Depth 63.95 ft  
Screen Length 10 ft  
Depth to Water 33.80 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.4756591 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 3.36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	11:43:38	720.02	21.99	7.51	610.13	5.46	33.82	0.16	-118.40
Last 5	11:47:38	960.02	22.34	7.50	614.05	5.04	33.82	0.14	-121.20
Last 5	11:51:38	1200.02	22.94	7.51	617.95	4.01	33.82	0.13	-122.21
Last 5	11:55:38	1440.02	22.49	7.51	616.86	4.06	33.82	0.13	-121.32
Last 5	11:59:38	1680.02	22.62	7.51	620.57	3.52	33.82	0.12	-122.37
Variance 0			0.60	0.00	3.90			-0.00	-1.01
Variance 1			-0.45	0.01	-1.09			-0.01	0.90
Variance 2			0.13	-0.01	3.71			-0.00	-1.05

Notes

Pre-purged 3 liters.

Grab Samples

BGWC-9  
Inorganics  
BGWC-9  
Metals  
BGWC-9  
Radium



Product Name: Low-Flow System

Date: 2016-08-11 14:01:06

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 29 ft

Pump placement from TOC 72.12 ft

Well Information:

Well ID BGWC-11  
Well diameter 2 in  
Well Total Depth 77.12 ft  
Screen Length 10 ft  
Depth to Water 28.22 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.3194393 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 23.04 in  
Total Volume Pumped 3.12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	13:41:03	480.03	21.55	7.57	480.73	4.92	29.76	0.19	-197.80
Last 5	13:45:03	720.03	21.90	7.56	480.37	4.15	29.85	0.17	-205.22
Last 5	13:49:03	960.03	21.81	7.57	479.64	4.48	29.95	0.15	-209.72
Last 5	13:53:03	1200.02	22.01	7.57	480.13	3.78	30.04	0.12	-214.39
Last 5	13:57:03	1440.02	21.99	7.58	478.22	3.87	30.13	0.11	-216.55
Variance 0			-0.09	0.00	-0.72			-0.02	-4.49
Variance 1			0.20	0.00	0.49			-0.03	-4.67
Variance 2			-0.02	0.01	-1.91			-0.01	-2.17

Notes

Pre-purged 1.5 liters.

Grab Samples

BGWC-11  
Inorganics  
BGWC-11  
Metals  
BGWC-11  
Radium

Product Name: Low-Flow System

Date: 2016-08-11 11:02:11

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

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

Pump placement from TOC 44.25 ft

Well Information:

Well ID BGWC-16  
Well diameter 2.0 in  
Well Total Depth 49.25 ft  
Screen Length 10 ft  
Depth to Water 16.17 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3131711 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 14.04 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:40:47	300.08	20.77	6.92	835.37	1.18	17.35	0.12	87.18
Last 5	10:45:47	600.02	20.90	6.93	835.47	1.63	17.33	0.11	83.92
Last 5	10:50:47	900.02	20.73	6.94	828.40	0.87	17.34	0.11	81.45
Last 5	10:55:47	1200.00	21.53	6.93	831.86	0.85	17.34	0.09	79.81
Last 5									
Variance 0			0.13	0.01	0.10			-0.01	-3.26
Variance 1			-0.17	0.01	-7.06			-0.00	-2.47
Variance 2			0.80	-0.01	3.46			-0.01	-1.65

Notes

Peristaltic pump  
Although well appeared very dirty during water level sweep the peristaltic pump makes sampling easy. Low turbidity.

Grab Samples  
BGWC-16  
Inorganics  
BGWC-16  
Metals

BGWC-16  
Radium



Product Name: Low-Flow System

Date: 2016-08-11 12:44:21

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Geopump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 69.00 ft

Pump placement from TOC 63.30 ft

Well Information:

Well ID BGWC-17  
Well diameter 2.0 in  
Well Total Depth 68.30 ft  
Screen Length 10 ft  
Depth to Water 15.86 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.3979762 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.72 in  
Total Volume Pumped 7.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:20:54	240.09	21.35	7.40	592.74	1.62	15.92	0.18	70.27
Last 5	12:24:54	480.02	21.17	7.40	593.23	4.43	15.92	0.16	67.95
Last 5	12:28:54	720.02	20.77	7.40	590.86	2.52	15.92	0.13	66.42
Last 5	12:32:54	960.02	20.84	7.39	594.04	2.62	15.92	0.14	65.07
Last 5	12:36:54	1200.02	20.77	7.39	593.79	3.02	15.92	0.13	64.16
Variance 0			-0.40	0.00	-2.37			-0.03	-1.53
Variance 1			0.07	-0.01	3.19			0.00	-1.34
Variance 2			-0.07	-0.00	-0.25			-0.00	-0.91

Notes

Peristaltic pump  
Cooperative well, peristaltic pump.

Grab Samples

BGWC-17  
Inorganics  
BGWC-17  
Metals

BGWC-17  
Radium



Product Name: Low-Flow System

Date: 2016-08-12 13:06:01

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 78 ft

Pump placement from TOC 73.09 ft

Well Information:

Well ID BGWC-12  
Well diameter 2 in  
Well Total Depth 78.09 ft  
Screen Length 10 ft  
Depth to Water 42.03 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.538147 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3.12 in  
Total Volume Pumped 22.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	12:46:02	10802.05	22.62	7.48	784.37	8.60	42.29	1.35	52.14
Last 5	12:50:02	11042.05	22.21	7.47	784.96	8.21	42.29	1.35	52.35
Last 5	12:54:02	11282.05	22.19	7.47	786.70	8.27	42.29	1.37	52.16
Last 5	12:58:02	11522.05	22.80	7.47	786.76	7.78	42.28	1.35	52.02
Last 5	13:02:02	11762.05	22.22	7.47	784.91	7.96	42.28	1.35	52.71
Variance 0			-0.02	-0.01	1.75			0.02	-0.19
Variance 1			0.61	0.00	0.05			-0.02	-0.14
Variance 2			-0.58	0.00	-1.85			-0.00	0.69

Notes

Pre-purged 3 liters. Turbidity did not drop below 5 NTU. 3 hours after stabilization, turbidity reached ~8 NTU.

Grab Samples

BGWC-12  
Inorganics  
BGWC-12  
Metals  
BGWC-12  
Radium

Product Name: Low-Flow System

Date: 2016-08-12 09:51:34

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Geopump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 39.00 ft

Pump placement from TOC 32.90 ft

Well Information:

Well ID BGWC-18  
Well diameter 2.0 in  
Well Total Depth 37.90 ft  
Screen Length 10 ft  
Depth to Water 14.69 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.2640735 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.6 in  
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:28:40	240.04	21.04	6.99	573.63	5.26	14.73	0.13	107.34
Last 5	09:32:40	480.01	21.01	6.99	569.74	3.60	14.73	0.13	99.50
Last 5	09:36:40	720.02	21.12	6.99	568.84	4.31	14.73	0.12	95.13
Last 5	09:40:40	960.01	21.26	6.99	568.65	2.82	14.74	0.12	90.61
Last 5	09:44:40	1200.01	20.95	6.98	568.15	2.51	14.74	0.11	86.09
Variance 0			0.11	-0.00	-0.90			-0.01	-4.37
Variance 1			0.14	-0.00	-0.18			0.00	-4.52
Variance 2			-0.31	-0.00	-0.50			-0.01	-4.52

Notes

Peristaltic pump  
Minimal drawdown. Good turbidity. Dup 2 and extra radium filled

Grab Samples

BGWC-18

Metals

BGWC-18

Inorganics

BGWC-18  
Radium  
Dup-2  
Metals  
Dup-2  
Inorganics  
Dup-2  
Radium  
BGWC-18  
Extra Radium





Product Name: Low-Flow System

Date: 2016-08-12 12:11:10

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Geopump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 56 ft

Pump placement from TOC 49.9 ft

Well Information:

Well ID BGWC-19  
Well diameter 2.0 in  
Well Total Depth 54.90 ft  
Screen Length 10 ft  
Depth to Water 16.64 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3399517 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3.24 in  
Total Volume Pumped 9.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:50:10	480.02	21.61	6.60	568.87	0.57	16.91	0.09	174.95
Last 5	11:54:10	720.02	21.53	6.60	567.62	0.42	16.91	0.08	176.57
Last 5	11:58:10	960.02	21.58	6.59	569.57	0.90	16.91	0.08	178.88
Last 5	12:02:10	1200.02	20.55	6.60	566.45	1.99	16.91	0.07	181.93
Last 5	12:06:10	1440.02	20.85	6.59	569.68	1.43	16.91	0.07	174.50
Variance 0			0.05	-0.00	1.95			-0.01	2.30
Variance 1			-1.03	0.00	-3.13			-0.00	3.05
Variance 2			0.30	-0.01	3.23			-0.00	-7.43

Notes

Peristaltic pump  
Minimal drawdown. Low turbidity

Grab Samples

BGWC-19  
Metals  
BGWC-19  
Inorganics

BGWC-19  
Radium



Product Name: Low-Flow System

Date: 2016-08-12 14:52:41

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

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

Pump placement from TOC 44.93 ft

Well Information:

Well ID BGWC-20  
Well diameter 2.0 in  
Well Total Depth 49.93 ft  
Screen Length 10 ft  
Depth to Water 15.67 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.3131711 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 164.76 in  
Total Volume Pumped 20.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:30:13	2400.02	21.71	7.11	1389.18	1.85	28.25	0.09	-167.35
Last 5	14:34:13	2640.02	21.98	7.13	1410.66	1.49	28.70	0.09	-170.69
Last 5	14:38:13	2880.02	21.64	7.14	1424.93	1.68	29.10	0.09	-171.30
Last 5	14:42:13	3120.02	22.11	7.16	1425.76	1.65	29.20	0.09	-173.02
Last 5	14:46:13	3359.96	22.33	7.18	1436.93	1.15	29.40	0.09	-174.76
Variance 0			-0.33	0.01	14.27			0.01	-0.60
Variance 1			0.47	0.02	0.83			-0.00	-1.73
Variance 2			0.22	0.02	11.17			-0.01	-1.73

Notes

Peristaltic pump  
Turbidity good. Large amount of drawdown before stabilization.

Grab Samples

BGWC-20

Metals

BGWC-20

Inorganics

BGWC-20  
Radium



Product Name: Low-Flow System

Date: 2016-08-15 15:20:11

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 63 ft

Pump placement from TOC 57.35 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 62.35 ft  
Screen Length 10 ft  
Depth to Water 32.27 ft

Pumping Information:

Final Pumping Rate 105 mL/min  
Total System Volume 0.4711957 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 24.25 in  
Total Volume Pumped 20.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	14:54:55	12491.05	22.17	7.52	539.87	3.68	51.20	0.03	-178.69
Last 5	14:58:55	12731.02	21.34	7.52	539.61	3.05	51.42	0.03	-176.68
Last 5	15:02:55	12971.00	20.93	7.53	539.00	2.81	51.97	0.03	-174.71
Last 5	15:06:55	13211.00	20.57	7.51	538.55	3.77	52.70	0.02	-170.23
Last 5	15:10:55	13451.00	20.65	7.51	539.61	3.94	53.45	0.01	-169.33
Variance 0			-0.41	0.00	-0.61			-0.00	1.97
Variance 1			-0.36	-0.01	-0.45			-0.01	4.48
Variance 2			0.08	-0.00	1.06			-0.00	0.90

Notes

Pre-purged 2.5 liters. Water level did not stabilize. Water level dropped below 1 foot above screen. Complete evacuation method was initiated. Samples to be taken on 8/16.

Grab Samples

BGWC-10

Inorganics

BGWC-10

Metals

BGWC-10  
Radium



Product Name: Low-Flow System

Date: 2016-08-15 12:00:34

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Geopump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 59.00 ft

Pump placement from TOC 53.55 ft

Well Information:

Well ID BGWC-25  
Well diameter 2.0 in  
Well Total Depth 58.55 ft  
Screen Length 10 ft  
Depth to Water 18.45 ft

Pumping Information:

Final Pumping Rate 170 mL/min  
Total System Volume 0.3533419 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 129.6 in  
Total Volume Pumped 11.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:31:17	2999.97	22.61	7.65	330.52	2.06	28.15	0.68	-142.81
Last 5	11:36:17	3299.97	21.98	7.66	314.06	2.21	29.00	0.83	-130.49
Last 5	11:41:17	3599.97	23.36	7.64	355.79	1.35	29.10	0.34	-161.52
Last 5	11:46:18	3900.97	23.36	7.66	356.01	1.18	29.20	0.27	-164.53
Last 5	11:51:18	4200.97	22.60	7.66	362.05	0.93	29.25	0.28	-160.81
Variance 0			1.39	-0.02	41.72			-0.49	-31.04
Variance 1			0.00	0.02	0.23			-0.07	-3.01
Variance 2			-0.76	0.00	6.03			0.01	3.72

Notes

Peristaltic pump  
drawdown was not stable for first hour of low flow however stabilized quickly at the limit of peristaltic range

Grab Samples

BGWC-25  
Metals  
BGWC-25  
Inorganics

BGWC-25  
Radium





Product Name: Low-Flow System

Date: 2016-08-16 11:43:49

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 74 ft

Pump placement from TOC 72 ft

Well Information:

Well ID BGWC-13  
Well diameter 2 in  
Well Total Depth 73.53 ft  
Screen Length 10 ft  
Depth to Water 69.55 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.5202934 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 29.88 in  
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	11:23:24	3122.04	23.90	7.11	998.48	1.93	71.66	0.77	-31.76
Last 5	11:27:24	3362.03	24.15	7.08	991.44	1.74	71.78	0.69	-68.59
Last 5	11:31:24	3602.04	23.99	7.04	990.10	2.34	71.89	0.60	-94.93
Last 5	11:35:24	3842.04	23.50	7.02	987.06	3.03	71.97	0.55	-105.58
Last 5	11:39:24	4082.03	23.42	7.02	984.36	3.11	72.04	0.50	-113.47
Variance 0			-0.16	-0.04	-1.34			-0.09	-26.34
Variance 1			-0.49	-0.02	-3.04			-0.06	-10.65
Variance 2			-0.08	-0.01	-2.69			-0.05	-7.89

Notes

Water level starts below screen. Complete evacuation method initiated. Pumped well till it yielded no water.

Grab Samples

No samples collected. Not enough water.

Product Name: Low-Flow System

Date: 2016-08-16 14:55:18

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 89 ft

Pump placement from TOC 84 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 89.00 ft  
Screen Length 10 ft  
Depth to Water 72.66 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.5872446 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 143.28 in  
Total Volume Pumped 15.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	14:32:25	5769.01	20.30	7.21	756.16	0.65	82.44	1.43	-54.44
Last 5	14:36:25	6009.01	20.25	7.22	747.90	0.78	83.12	0.55	-72.03
Last 5	14:40:25	6249.01	20.14	7.24	751.42	0.84	83.60	0.22	-89.53
Last 5	14:44:25	6489.01	20.07	7.25	749.11	0.87	84.29	0.13	-108.29
Last 5	14:48:25	6729.02	19.90	7.23	750.21	1.42	84.69	0.12	-135.37
Variance 0			-0.11	0.02	3.52			-0.33	-17.51
Variance 1			-0.07	0.01	-2.31			-0.09	-18.76
Variance 2			-0.17	-0.02	1.10			-0.01	-27.07

Notes

Pre-purged 1.5 liters. Water level dropped below 1 foot above screen. Complete evacuation method initiated. Samples will be taken 8/17.

Grab Samples

BGWC-14  
Inorganics  
BGWC-14  
Metals  
BGWC-14  
Radium

Product Name: Low-Flow System

Date: 2016-08-18 10:59:22

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 74 ft

Pump placement from TOC 72.05 ft

Well Information:

Well ID BGWC-15  
Well diameter 2 in  
Well Total Depth 73.55 ft  
Screen Length 10 ft  
Depth to Water 58.74 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.5202934 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 39.6 in  
Total Volume Pumped 4.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:40:39	2160.02	22.07	6.75	1487.25	12.40	71.56	0.89	-88.49
Last 5	10:44:39	2400.02	22.31	6.73	1485.53	5.52	71.92	0.57	-109.55
Last 5	10:48:39	2640.03	22.35	6.74	1474.51	3.99	72.04	0.43	-119.61
Last 5	10:52:39	2880.03	22.43	6.78	1451.95	3.02	72.04	0.32	-126.73
Last 5	10:56:39	3120.03	22.00	6.81	1431.82	2.30	72.04	0.25	-134.06
Variance 0			0.05	0.02	-11.02			-0.14	-10.06
Variance 1			0.07	0.03	-22.56			-0.11	-7.11
Variance 2			-0.42	0.03	-20.13			-0.07	-7.33

Notes

Pre-purged 1 liter. Water level began below 1 foot below well screen. Complete evacuation method initiated. Well pumped dry

Grab Samples

Not enough water to sample

Product Name: Low-Flow System

Date: 2016-08-18 10:33:12

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Geopump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 56 ft

Pump placement from TOC 0 ft

Well Information:

Well ID BGWC-21  
Well diameter 2 in  
Well Total Depth 53.55 ft  
Screen Length 10 ft  
Depth to Water 19.54 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.3399517 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 4.08 in  
Total Volume Pumped 4.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:14:06	1680.89	22.28	7.88	439.59	0.91	19.85	0.68	33.35
Last 5	10:18:06	1920.89	22.33	7.87	436.98	0.78	19.86	0.54	30.11
Last 5	10:22:06	2160.89	22.38	7.86	439.23	1.08	19.86	0.42	26.90
Last 5	10:26:06	2400.89	22.47	7.86	438.87	0.92	19.87	0.36	21.95
Last 5	10:30:06	2640.89	22.31	7.86	439.41	0.97	19.88	0.36	18.83
Variance 0			0.05	-0.01	2.25			-0.12	-3.22
Variance 1			0.09	-0.00	-0.36			-0.06	-4.95
Variance 2			-0.15	-0.00	0.54			-0.01	-3.12

Notes

Grab Samples  
BGWC-21  
Inorganics  
Dup-3  
Inorganics  
BGWC-21  
Metals

Dup-3  
Metals  
BGWC-21  
Radium  
BGWC-21  
2nd Radium  
Dup-3  
Radium

Product Name: Low-Flow System

Date: 2016-08-18 12:07:43

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 44 ft

Pump placement from TOC 38.20 ft

Well Information:

Well ID BGWC-22  
Well diameter 2 in  
Well Total Depth 43.20 ft  
Screen Length 10 ft  
Depth to Water 27.41 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.3863906 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 5.28 in  
Total Volume Pumped 3.36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	11:49:45	720.02	22.98	7.12	2479.62	2.05	27.82	0.27	-85.30
Last 5	11:53:45	960.02	22.73	7.11	2481.22	2.03	27.83	0.25	-84.87
Last 5	11:57:45	1200.02	22.59	7.11	2484.03	1.54	27.84	0.25	-82.83
Last 5	12:01:45	1440.02	22.88	7.11	2486.87	1.31	27.84	0.23	-80.29
Last 5	12:05:45	1680.02	23.02	7.10	2488.33	1.40	27.85	0.21	-79.07
Variance 0			-0.14	-0.00	2.81			0.00	2.04
Variance 1			0.29	-0.00	2.84			-0.02	2.53
Variance 2			0.14	-0.00	1.45			-0.02	1.23

Notes

Pre-purged 1 liter.

Grab Samples

BGWC-22  
Inorganics  
BGWC-22  
Metals  
BGWC-22  
Radium

Product Name: Low-Flow System

Date: 2016-08-18 13:56:40

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 52 ft

Pump placement from TOC 46.30 ft

Well Information:

Well ID BGWC-23  
Well diameter 2 in  
Well Total Depth 52.30 ft  
Screen Length 10 ft  
Depth to Water 31.11 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.422098 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 21.84 in  
Total Volume Pumped 3.12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	13:39:06	480.03	22.81	7.29	1986.20	4.69	32.80	0.21	-141.21
Last 5	13:43:06	720.02	22.53	7.29	2018.26	4.51	32.86	0.18	-138.73
Last 5	13:47:06	960.02	22.62	7.28	2055.56	4.31	32.89	0.17	-136.71
Last 5	13:51:06	1200.02	22.04	7.29	2087.40	3.47	32.91	0.16	-134.05
Last 5	13:55:06	1440.02	21.86	7.27	2106.44	3.15	32.93	0.15	-133.35
Variance 0			0.09	-0.01	37.31			-0.01	2.02
Variance 1			-0.58	0.00	31.83			-0.01	2.66
Variance 2			-0.17	-0.02	19.04			-0.02	0.70

Notes

Pre-purged 1.75 liters.

Grab Samples

BGWC-23  
Inorganics  
BGWC-23  
Metals  
BGWC-23  
Radium

Product Name: Low-Flow System

Date: 2016-08-18 13:58:48

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Geopump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 61.25 ft

Pump placement from TOC 0 ft

Well Information:

Well ID BGWC-24  
Well diameter 2 in  
Well Total Depth 66.25 ft  
Screen Length 10 ft  
Depth to Water 9.82 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.3633847 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 80.64 in  
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	13:40:04	3840.05	22.84	6.93	5553.77	2.94	16.06	0.17	-29.20
Last 5	13:44:04	4080.05	22.80	6.91	5609.76	2.36	16.20	0.16	-27.50
Last 5	13:48:04	4320.05	22.79	6.90	5653.56	2.14	16.36	0.15	-25.96
Last 5	13:52:04	4560.05	22.61	6.88	5722.53	3.14	16.45	0.15	-24.50
Last 5	13:56:04	4800.05	22.58	6.88	5747.97	2.32	16.54	0.14	-23.06
Variance 0			-0.02	-0.01	43.80			-0.01	1.54
Variance 1			-0.18	-0.02	68.96			-0.00	1.46
Variance 2			-0.03	-0.00	25.45			-0.01	1.43

Notes

Grab Samples  
BGWC-24  
Inorganics  
BGWC-24  
Metals  
BGWC-24  
Radium



Product Name: Low-Flow System

Date: 2016-08-19 11:58:17

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 77.00 ft

Pump placement from TOC 71.20 ft

Well Information:

Well ID BGWA-26  
Well diameter 2.0 in  
Well Total Depth 76.20 ft  
Screen Length 10 ft  
Depth to Water 59.04 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.5336836 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 6.72 in  
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:37:23	240.09	19.30	8.04	350.54	6.41	58.34	8.48	25.98
Last 5	11:41:22	480.02	19.21	8.10	345.05	3.91	58.45	8.33	19.65
Last 5	11:45:22	720.02	19.17	8.13	343.20	3.96	58.60	8.32	15.30
Last 5	11:49:22	960.02	19.39	8.14	342.34	3.33	58.57	8.26	13.24
Last 5	11:53:22	1200.02	19.39	8.17	340.27	3.52	58.60	8.18	12.32
Variance 0			-0.04	0.04	-1.85			-0.01	-4.35
Variance 1			0.22	0.01	-0.86			-0.05	-2.06
Variance 2			0.00	0.02	-2.07			-0.09	-0.92

Notes

First attempt at sampling BGWA-26. Well was developed earlier this week.  
Low turbidity, light drawdown. Easily sampled well.

Grab Samples

BGWA-26  
Metals

BGWA-26  
Inorganics

BGWA-26  
Radium



Product Name: Low-Flow System

Date: 2016-08-19 12:49:37

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Sample Pro  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 97 ft

Pump placement from TOC 89.70 ft

Well Information:

Well ID BGWA-27  
Well diameter 2 in  
Well Total Depth 94.70 ft  
Screen Length 10 ft  
Depth to Water 65.50 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.622952 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.92 in  
Total Volume Pumped 9.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:32:02	3840.36	22.04	7.80	407.92	6.14	65.65	4.04	72.94
Last 5	12:36:02	4080.36	21.73	7.80	408.57	5.73	65.66	4.06	73.37
Last 5	12:40:02	4320.36	21.99	7.79	408.81	4.78	65.66	4.12	73.32
Last 5	12:44:02	4560.26	21.88	7.79	408.06	4.79	65.66	4.11	73.77
Last 5	12:48:02	4800.27	21.80	7.80	408.60	4.71	65.66	4.13	73.81
Variance 0			0.26	-0.01	0.24			0.06	-0.05
Variance 1			-0.11	0.00	-0.75			-0.01	0.45
Variance 2			-0.08	0.00	0.54			0.02	0.04

Notes

Grab Samples  
BGWA-27  
Inorganics  
BGWA-27  
Metals  
BGWA-27  
Radium

Product Name: Low-Flow System

Date: 2016-08-19 10:08:09

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Sample Pro  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 90 ft

Pump placement from TOC 82.70 ft

Well Information:

Well ID BGWA-28  
Well diameter 2 in  
Well Total Depth 87.70 ft  
Screen Length 10 ft  
Depth to Water 67.43 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.591708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.16 in  
Total Volume Pumped 5.72 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:50:01	2160.66	19.86	7.73	446.76	5.86	67.61	1.79	68.00
Last 5	09:54:01	2400.65	19.81	7.74	448.05	5.20	67.61	1.69	66.20
Last 5	09:58:01	2640.65	19.95	7.75	449.25	3.89	67.61	1.67	64.02
Last 5	10:02:01	2880.65	20.03	7.77	449.02	3.31	67.61	1.69	61.10
Last 5	10:06:01	3120.65	20.35	7.80	449.15	2.80	67.61	1.80	58.26
Variance 0			0.14	0.00	1.21			-0.01	-2.18
Variance 1			0.08	0.02	-0.24			0.02	-2.92
Variance 2			0.32	0.03	0.13			0.11	-2.84

Notes

Grab Samples  
BGWA-28  
Inorganics  
BGWA-28  
Metals  
BGWA-28  
Radium

Product Name: Low-Flow System

Date: 2016-08-22 15:42:05

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 77.00 ft

Pump placement from TOC 71.20 ft

Well Information:

Well ID BGWA-26  
Well diameter 2.0 in  
Well Total Depth 76.20 ft  
Screen Length 10 ft  
Depth to Water 58.90 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.5336836 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 6.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:26:09	240.02	20.70	7.87	367.80	3.01	58.90	0.35	161.78
Last 5	15:30:09	480.02	20.79	7.89	358.89	1.72	58.90	0.32	135.03
Last 5	15:34:09	720.02	20.71	7.91	352.42	1.87	58.90	0.29	118.24
Last 5	15:38:09	960.02	20.55	7.93	349.35	1.85	58.90	0.28	139.55
Last 5									
Variance 0			0.10	0.02	-8.91			-0.03	-26.75
Variance 1			-0.08	0.02	-6.47			-0.03	-16.79
Variance 2			-0.16	0.02	-3.07			-0.02	21.31

Notes

Resample of Inorganics. Original Inorganics bottle arrived at the lab too hot.  
Drawdown was actually 0. Turbidity very low. Only Inorganics bottle filled.

Grab Samples  
BGWA-26  
Inorganics

Product Name: Low-Flow System

Date: 2016-08-22 14:31:07

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 98.00 ft

Pump placement from TOC 89.70 ft

Well Information:

Well ID BGWA-27  
Well diameter 2.0 in  
Well Total Depth 94.70 ft  
Screen Length 10 ft  
Depth to Water 65.42 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.6274155 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 3.6 in  
Total Volume Pumped 8.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:06:27	1800.02	20.55	7.75	399.52	7.52	65.71	4.56	283.46
Last 5	14:11:27	2100.02	20.42	7.74	402.75	8.16	65.71	4.62	277.47
Last 5	14:16:27	2399.94	20.55	7.74	401.14	5.66	65.71	4.57	261.51
Last 5	14:21:27	2699.94	20.60	7.73	399.89	4.95	65.71	4.50	259.39
Last 5	14:26:27	2999.94	20.65	7.73	398.65	4.72	65.71	4.47	277.19
Variance 0			0.14	-0.00	-1.61			-0.06	-15.96
Variance 1			0.05	-0.00	-1.24			-0.06	-2.12
Variance 2			0.06	-0.01	-1.24			-0.03	17.79

Notes

Resample of BGWA-27 inorganics. Original bottle did not make it to the lab with the appropriate temperature. This sample will replace the original. Resample for inorganics went smooth. Only one bottle filled.

Grab Samples  
BGWA-27  
Inorganics

Product Name: Low-Flow System

Date: 2016-08-22 14:42:23

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Sample Pro  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 90 ft

Pump placement from TOC 82.70 ft

Well Information:

Well ID BGWA-28  
Well diameter 2 in  
Well Total Depth 87.70 ft  
Screen Length 10 ft  
Depth to Water 67.35 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.591708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3 in  
Total Volume Pumped 4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:24:01	960.02	20.07	7.63	438.08	6.29	67.59	1.02	84.27
Last 5	14:28:01	1200.02	19.96	7.65	439.88	5.32	67.60	1.00	81.18
Last 5	14:32:01	1440.02	19.95	7.67	438.94	3.89	67.60	0.95	77.18
Last 5	14:36:01	1680.02	20.04	7.70	440.61	3.91	67.60	1.03	72.34
Last 5	14:40:01	1919.95	19.81	7.72	438.65	2.97	67.60	1.12	68.91
Variance 0			-0.01	0.02	-0.93			-0.05	-3.99
Variance 1			0.08	0.03	1.67			0.09	-4.84
Variance 2			-0.23	0.03	-1.96			0.09	-3.43

Notes

Grab Samples  
BGWA-28  
Inorganics

Product Name: Low-Flow System

Date: 2016-08-22 10:25:08

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 102 ft

Pump placement from TOC 95.10 ft

Well Information:

Well ID BGWA-29  
Well diameter 2.0 in  
Well Total Depth 100.10 ft  
Screen Length 10 ft  
Depth to Water 42.26 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.6452692 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:56:28	300.03	19.57	7.89	248.64	6.67	42.28	4.79	93.18
Last 5	10:01:28	600.02	19.75	7.90	247.55	4.60	42.28	4.74	128.83
Last 5	10:06:28	900.02	19.80	7.91	246.28	4.25	42.28	4.84	200.46
Last 5	10:11:28	1200.02	20.06	7.91	244.75	3.94	42.28	4.84	292.56
Last 5	10:16:28	1500.02	20.10	7.91	245.56	3.26	42.28	4.88	387.75
Variance 0			0.06	0.01	-1.27			0.10	71.64
Variance 1			0.25	0.00	-1.53			0.01	92.10
Variance 2			0.04	0.00	0.81			0.04	95.18

Notes

Brand new well. Developed 8/19/16. First attempt at sampling.  
Turbidity started at 69.7 Ina preliminary reading but dropped very quickly. No problems during low flow. Cooperative well.

Grab Samples  
BGWA-29  
Metals  
BGWA-29  
inorganics



BGWA-29  
Radium



Product Name: Low-Flow System

Date: 2016-10-03 13:02:44

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364456  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 59 ft

Pump placement from TOC 54.20 ft

Well Information:

Well ID BGWA-1  
Well diameter 2 in  
Well Total Depth 59.20 ft  
Screen Length 10 ft  
Depth to Water 41.25 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.453342 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.6 in  
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	12:45:03	240.11	21.50	7.05	872.82	3.21	41.30	1.04	591.67
Last 5	12:49:03	480.02	21.32	7.04	873.21	2.94	41.30	1.10	581.72
Last 5	12:53:03	720.02	21.30	7.04	871.80	2.30	41.30	1.08	588.20
Last 5	12:57:03	960.02	21.10	7.04	869.79	2.09	41.30	1.09	601.70
Last 5	13:01:03	1200.02	21.32	7.04	873.02	1.99	41.30	1.09	613.12
Variance 0			-0.02	-0.00	-1.41			-0.02	6.48
Variance 1			-0.21	0.00	-2.00			0.01	13.50
Variance 2			0.23	-0.00	3.23			-0.00	11.42

Notes

Pre-purged 3.25 liters.

Grab Samples

BGWA-1  
Inorganics  
BGWA-1  
Metals  
BGWA-1  
Radium

Product Name: Low-Flow System

Date: 2016-10-03 11:38:51

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 90.2 ft

Pump placement from TOC 84.2 ft

Well Information:

Well ID BGWA-2  
Well diameter 2.0 in  
Well Total Depth 89.2 ft  
Screen Length 10 ft  
Depth to Water 51.99 ft

Pumping Information:

Final Pumping Rate 175 mL/min  
Total System Volume 0.5926007 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 14 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:15:04	4501.00	20.01	7.72	336.40	5.01	51.99	0.21	-112.00
Last 5	11:20:04	4801.00	19.96	7.73	335.37	4.98	51.99	0.24	-108.70
Last 5	11:25:04	5101.00	20.23	7.73	335.55	5.77	51.99	0.28	-106.53
Last 5	11:30:04	5401.00	20.19	7.74	335.72	4.37	51.99	0.32	-104.64
Last 5	11:35:04	5700.95	20.32	7.74	335.41	4.76	51.99	0.34	-104.58
Variance 0			0.26	0.01	0.18			0.04	2.17
Variance 1			-0.03	0.01	0.18			0.04	1.89
Variance 2			0.13	0.00	-0.31			0.03	0.05

Notes

Drawdown was 0. Turbidity starts high but trends downward nicely.

Grab Samples

BGWA-2  
Inorganics  
BGWA-2  
Metals  
BGWA-2  
Radium

Product Name: Low-Flow System

Date: 2016-10-03 10:28:26

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463072  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Sample Pro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 92 ft

Pump placement from TOC 84.58 ft

Well Information:

Well ID BGWA-3  
Well diameter 2 in  
Well Total Depth 89.58 ft  
Screen Length 10 ft  
Depth to Water 48.68 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.6006349 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 8.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:10:01	2400.02	20.00	7.55	677.25	7.36	48.68	3.57	53.04
Last 5	10:14:01	2640.02	20.04	7.56	677.72	5.77	48.68	3.73	52.33
Last 5	10:18:01	2880.01	20.21	7.56	674.91	4.37	48.68	3.74	51.73
Last 5	10:22:01	3120.01	20.21	7.56	675.12	4.57	48.68	3.80	52.91
Last 5	10:26:01	3360.01	20.21	7.56	675.86	2.63	48.68	3.80	52.46
Variance 0			0.17	0.00	-2.82			0.01	-0.60
Variance 1			-0.00	0.00	0.21			0.06	1.18
Variance 2			0.00	0.00	0.75			0.00	-0.45

Notes

Grab Samples  
BGWA-3  
Inorganics  
Dup-1  
Inorganics  
BGWA-3  
Metals

Dup-1  
Metals  
BGWA-3  
Radium  
BGWA-3  
2nd Radium  
Dup-1  
Radium

Product Name: Low-Flow System

Date: 2016-10-03 14:00:35

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463072  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Sample Pro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 82 ft

Pump placement from TOC 74.22 ft

Well Information:

Well ID BGWA-4  
Well diameter 2 in  
Well Total Depth 79.22 ft  
Screen Length 10 ft  
Depth to Water 53.02 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.5560007 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 12.96 in  
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	13:42:06	3120.01	20.12	7.66	1087.51	5.88	54.10	0.13	-168.99
Last 5	13:46:06	3360.01	20.08	7.66	1095.85	5.69	54.10	0.13	-164.43
Last 5	13:50:06	3600.01	20.04	7.66	1104.77	4.91	54.10	0.14	-160.18
Last 5	13:54:06	3840.01	20.08	7.66	1109.67	4.61	54.10	0.14	-156.29
Last 5	13:58:06	4080.01	20.08	7.65	1118.18	4.05	54.10	0.15	-152.71
Variance 0			-0.03	-0.00	8.91			0.01	4.25
Variance 1			0.03	-0.00	4.91			0.00	3.89
Variance 2			0.01	-0.01	8.50			0.00	3.58

Notes

Grab Samples  
BGWA-4  
Inorganics  
BGWA-4  
Metals  
BGWA-4  
Radium

Product Name: Low-Flow System

Date: 2016-10-03 13:48:42

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 71.0 ft

Pump placement from TOC 64.10 ft

Well Information:

Well ID BGWA-5  
Well diameter 2.0 in  
Well Total Depth 69.10 ft  
Screen Length 10 ft  
Depth to Water 44.50 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.5069031 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.06 in  
Total Volume Pumped 4.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:31:44	240.03	21.89	7.50	1219.07	4.15	44.50	3.39	57.28
Last 5	13:35:44	480.03	21.61	7.46	1220.01	2.57	44.55	3.33	79.17
Last 5	13:39:44	720.03	21.53	7.44	1221.06	2.20	44.55	3.26	98.55
Last 5	13:43:44	960.02	21.53	7.43	1219.25	1.99	44.55	3.23	114.81
Last 5									
Variance 0			-0.28	-0.04	0.95			-0.06	21.89
Variance 1			-0.08	-0.02	1.05			-0.07	19.38
Variance 2			-0.00	-0.01	-1.81			-0.03	16.26

Notes

Easily sampled well.

Grab Samples

BGWA-5  
Inorganics  
BGWA-5  
Metals  
BGWA-5  
Radium

Product Name: Low-Flow System

Date: 2016-10-04 10:01:58

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 64.00 ft

Pump placement from TOC 58.69 ft

Well Information:

Well ID BGWA-6  
Well diameter 2.0 in  
Well Total Depth 63.69 ft  
Screen Length 10 ft  
Depth to Water 38.54 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.4756591 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 1.68 in  
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:42:10	300.09	18.13	7.25	482.89	4.70	38.68	0.12	5.96
Last 5	09:47:09	600.03	18.14	7.26	482.65	3.58	38.68	0.12	2.36
Last 5	09:52:09	900.02	18.14	7.27	482.62	3.00	38.68	0.12	-2.45
Last 5	09:57:09	1200.03	18.15	7.26	482.06	2.61	38.68	0.11	-7.93
Last 5									
Variance 0			0.01	0.01	-0.24			0.00	-3.60
Variance 1			-0.00	0.00	-0.04			-0.00	-4.81
Variance 2			0.00	-0.00	-0.55			-0.00	-5.48

Notes

Cooperative well

Grab Samples

BGWA-6  
Inorganics  
BGWA-6  
Metals  
BGWA-6  
Radium



Product Name: Low-Flow System

Date: 2016-10-04 10:53:43

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 80 ft

Pump placement from TOC 71.06 ft

Well Information:

Well ID BGWA-26  
Well diameter 2 in  
Well Total Depth 76.21 ft  
Screen Length 10 ft  
Depth to Water 60.21 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.5470738 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.56 in  
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:34:36	1920.02	19.59	7.52	394.86	0.80	60.30	0.13	46.24
Last 5	10:38:36	2160.02	19.59	7.59	392.96	0.67	60.30	0.13	39.74
Last 5	10:42:36	2400.02	19.62	7.65	387.96	0.55	60.31	0.12	32.54
Last 5	10:46:36	2640.02	19.71	7.70	381.11	0.47	60.31	0.11	26.36
Last 5	10:50:36	2880.02	19.82	7.75	375.74	0.44	60.34	0.11	20.51
Variance 0			0.02	0.07	-5.00			-0.01	-7.20
Variance 1			0.09	0.04	-6.85			-0.00	-6.18
Variance 2			0.11	0.05	-5.37			-0.01	-5.85

Notes

Pump activated at 160 mL/min at 0947.  
Flow rate reduced to 130 mL/min at 1007.

**Sample time 1100.**

Grab Samples

BGWA-26  
Metals

BGWA-26  
Inorganics

BGWA-26  
Radium



Product Name: Low-Flow System

Date: 2016-10-04 11:56:13

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 96.00 ft

Pump placement from TOC 89.75 ft

Well Information:

Well ID BGWA-27  
Well diameter 2.0 in  
Well Total Depth 94.75 ft  
Screen Length 10 ft  
Depth to Water 66.89 ft

Pumping Information:

Final Pumping Rate 175 mL/min  
Total System Volume 0.6184887 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 2.52 in  
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:31:11	600.03	19.88	7.56	403.60	7.30	67.05	5.15	151.42
Last 5	11:36:11	900.01	19.81	7.54	403.08	6.13	67.10	5.16	140.89
Last 5	11:41:11	1200.01	19.68	7.53	401.64	5.10	67.10	5.12	112.77
Last 5	11:46:11	1500.01	19.60	7.52	401.73	4.23	67.10	5.07	88.93
Last 5	11:51:13	1802.01	19.75	7.53	401.28	3.70	67.10	5.01	75.89
Variance 0			-0.13	-0.02	-1.44			-0.04	-28.11
Variance 1			-0.08	-0.00	0.09			-0.05	-23.84
Variance 2			0.15	0.00	-0.46			-0.06	-13.04

Notes

Cooperative well

Grab Samples

BGWA-27

Metals

BGWA-27

Inorganics

BGWA-27

Radium

Product Name: Low-Flow System

Date: 2016-10-04 13:22:20

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463072  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Sample Pro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 90 ft

Pump placement from TOC 83.49 ft

Well Information:

Well ID BGWA-28  
Well diameter 2 in  
Well Total Depth 88.49 ft  
Screen Length 10 ft  
Depth to Water 68.61 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.591708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.4 in  
Total Volume Pumped 12.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:04:02	5520.01	22.21	7.68	445.61	1.04	68.81	2.46	-83.21
Last 5	13:08:02	5760.01	22.23	7.68	446.76	0.96	68.81	2.62	-77.29
Last 5	13:12:02	6000.01	22.20	7.68	446.24	0.82	68.81	2.62	-78.97
Last 5	13:16:02	6240.01	22.30	7.69	445.54	0.92	68.81	2.65	-79.72
Last 5	13:20:02	6479.98	22.17	7.68	445.10	1.05	68.81	2.67	-78.21
Variance 0			-0.03	-0.00	-0.52			0.01	-1.68
Variance 1			0.10	0.00	-0.70			0.02	-0.75
Variance 2			-0.13	-0.00	-0.44			0.02	1.51

Notes

DO was rising and took some time to stabilize

Grab Samples

BGWA-28

Inorganics

BGWA-20

Metals

BGWA-20

Radium

Product Name: Low-Flow System

Date: 2016-10-04 13:15:32

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 104 ft

Pump placement from TOC 96.21 ft

Well Information:

Well ID BGWA-29  
Well diameter 2 in  
Well Total Depth 100.10 ft  
Screen Length 10 ft  
Depth to Water 43.62 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.654196 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.01 in  
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:53:37	1680.02	18.98	7.61	217.61	6.60	43.63	6.21	36.89
Last 5	12:57:37	1920.02	18.97	7.68	217.18	4.79	43.64	6.40	37.33
Last 5	13:01:37	2160.02	19.01	7.72	216.91	4.82	43.63	6.47	37.04
Last 5	13:05:37	2400.02	19.05	7.78	216.54	3.99	43.63	6.46	36.64
Last 5	13:09:37	2640.02	18.97	7.81	215.81	4.32	43.63	6.51	36.49
Variance 0			0.04	0.04	-0.28			0.07	-0.29
Variance 1			0.04	0.06	-0.37			-0.01	-0.40
Variance 2			-0.08	0.03	-0.73			0.05	-0.14

Notes

Pump activated at 180 mL/min at 1210.  
Sample time 1320.

Grab Samples

BGWA-29

Metals

BGWA-29

Inorganics

BGWA-29  
Radium



Product Name: Low-Flow System

Date: 2016-10-04 14:23:16

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 81.00 ft

Pump placement from TOC 75.20 ft

Well Information:

Well ID BGWC-8  
Well diameter 2.0 in  
Well Total Depth 80.20 ft  
Screen Length 10 ft  
Depth to Water 51.01 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.5515373 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 0.96 in  
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:03:14	300.09	19.93	7.60	345.14	13.70	51.09	3.11	85.37
Last 5	14:08:14	600.03	19.84	7.58	346.73	5.95	51.05	3.05	51.76
Last 5	14:13:14	900.02	19.84	7.56	350.38	4.05	51.09	2.96	39.55
Last 5	14:18:14	1200.02	19.57	7.57	352.36	3.28	51.09	2.90	35.99
Last 5									
Variance 0			-0.09	-0.02	1.59			-0.06	-33.61
Variance 1			0.00	-0.01	3.65			-0.09	-12.21
Variance 2			-0.27	0.00	1.98			-0.06	-3.56

Notes

Cooperative well

Grab Samples

BGWC-8  
Inorganocs  
BGWC-8  
Metals  
BGWC-8  
Radium

Product Name: Low-Flow System

Date: 2016-10-05 12:46:25

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 92.00 ft

Pump placement from TOC 85.3 ft

Well Information:

Well ID BGWC-7  
Well diameter 2.0 in  
Well Total Depth 90.38 ft  
Screen Length 10 ft  
Depth to Water 49.14 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.6006349 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 421.08 in  
Total Volume Pumped 44 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:19:57	9615.95	19.19	6.86	1185.60	1.87	83.57	0.02	-81.60
Last 5	12:23:57	9855.95	19.20	6.87	1184.96	1.26	84.16	0.02	-81.34
Last 5	12:27:57	10095.94	19.68	6.88	1190.97	1.50	84.25	0.94	-74.59
Last 5	12:31:57	10335.94	22.08	6.93	1199.22	1.00	84.24	1.60	-67.00
Last 5	12:35:57	10575.94	23.72	6.96	1191.74	1.00	84.23	3.31	-57.72
Variance 0			0.48	0.02	6.00			0.92	6.75
Variance 1			2.40	0.04	8.25			0.65	7.60
Variance 2			1.64	0.03	-7.48			1.71	9.28

Notes

Well has needed to be completely evacuated the past two sampling rounds.  
Water level drawdown was about a foot every four minutes while pumping at 150ml/min and about half a foot while at 100ml/min. Completely evacuated. Will return tomorrow to grasp samples.  
Inorganics, Metals and radium bottles all collected.



Grab Samples



Product Name: Low-Flow System

Date: 2016-10-05 14:25:16

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 66.00 ft

Pump placement from TOC 59.13 ft

Well Information:

Well ID BGWC-9  
Well diameter 2.0 in  
Well Total Depth 64.13 ft  
Screen Length 10 ft  
Depth to Water 34.81 ft

Pumping Information:

Final Pumping Rate 175 mL/min  
Total System Volume 0.4845859 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.08 in  
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:02:45	240.09	19.96	7.41	627.91	5.75	34.90	0.18	-110.03
Last 5	14:06:45	480.02	20.00	7.40	634.70	5.11	34.90	0.18	-99.99
Last 5	14:10:45	720.02	19.66	7.38	640.02	4.13	34.90	0.15	-91.77
Last 5	14:14:45	960.02	19.61	7.37	644.52	4.01	34.90	0.18	-82.91
Last 5	14:18:45	1200.02	19.73	7.37	648.23	3.33	34.90	0.15	-75.27
Variance 0			-0.34	-0.02	5.31			-0.03	8.23
Variance 1			-0.05	-0.01	4.50			0.03	8.86
Variance 2			0.13	0.00	3.72			-0.03	7.64

Notes

Cooperative well. Dup-2 taken

Grab Samples

BGWC-9

Inorganics

Dup-2

Inorganics

BGWC-9

Metals

BGWC-9  
Radium  
Dup-2  
Radium  
Dup-2  
Metals  
BGWC-9  
Extra rad



Product Name: Low-Flow System

Date: 2016-10-05 14:54:51

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364456  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 77 ft

Pump placement from TOC 72.30 ft

Well Information:

Well ID BGWC-11  
Well diameter 2 in  
Well Total Depth 77.30 ft  
Screen Length 10 ft  
Depth to Water 29.17 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.5336836 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 28.32 in  
Total Volume Pumped 5.04 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	14:35:01	1200.03	21.25	7.64	499.33	1.98	31.27	0.70	-112.43
Last 5	14:39:02	1441.03	21.78	7.64	498.86	1.88	31.32	0.59	-106.01
Last 5	14:43:12	1691.03	21.45	7.65	498.78	1.76	31.38	0.48	-105.82
Last 5	14:47:12	1931.03	21.40	7.66	499.21	2.44	31.47	0.39	-105.07
Last 5	14:51:12	2171.03	21.30	7.66	498.32	1.99	31.53	0.34	-100.20
Variance 0			-0.33	0.01	-0.08			-0.11	0.19
Variance 1			-0.05	0.01	0.43			-0.09	0.75
Variance 2			-0.11	0.01	-0.88			-0.05	4.87

Notes

Pre-purged 1 liter.

Grab Samples

BGWC-11  
Inorganics  
BGWC-11  
Metals  
BGWC-11  
Radium

Product Name: Low-Flow System

Date: 2016-10-06 14:40:43

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364456  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 63 ft

Pump placement from TOC 57.54 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 62.54 ft  
Screen Length 10 ft  
Depth to Water 32.94 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.4711957 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 227.4 in  
Total Volume Pumped 20.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	14:20:53	10328.09	20.21	7.57	577.76	2.26	49.97	0.31	-81.17
Last 5	14:24:53	10568.09	20.47	7.57	574.61	2.30	50.46	0.30	-83.56
Last 5	14:28:53	10808.09	19.85	7.58	580.60	2.34	50.94	0.33	-81.24
Last 5	14:32:53	11048.09	19.89	7.58	579.48	2.30	51.62	0.33	-84.02
Last 5	14:36:54	11289.09	19.81	7.58	579.41	2.20	51.89	0.33	-83.59
Variance 0			-0.63	0.01	5.99			0.03	2.32
Variance 1			0.04	-0.00	-1.13			0.00	-2.77
Variance 2			-0.09	0.01	-0.07			-0.00	0.43

Notes

Pre-purged 1.5 liters. Water level never stabilized. Water level dropped below 1 ft above the screen. Complete evacuation method was initiated. Samples to be taken 10/7

Grab Samples

Product Name: Low-Flow System

Date: 2016-10-06 14:48:46

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type QED samplepro  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 79.00 ft

Pump placement from TOC 73.3 ft

Well Information:

Well ID BGWC-12  
Well diameter 2.0 in  
Well Total Depth 78.3 ft  
Screen Length 10 ft  
Depth to Water 42.67 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.5426105 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 7.2 in  
Total Volume Pumped 44 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:21:05	11100.93	21.44	7.26	777.67	11.40	43.30	2.26	30.72
Last 5	14:26:05	11400.86	21.57	7.27	776.04	11.00	43.20	2.15	34.01
Last 5	14:31:07	11702.86	21.61	7.26	777.20	8.29	43.20	2.03	41.44
Last 5	14:36:07	12002.86	21.69	7.27	777.37	8.37	43.20	1.91	51.54
Last 5	14:41:07	12302.86	22.05	7.26	772.60	7.76	43.20	1.83	57.55
Variance 0			0.04	-0.00	1.16			-0.12	7.44
Variance 1			0.08	0.00	0.18			-0.12	10.09
Variance 2			0.35	-0.01	-4.77			-0.08	6.01

Notes

Well has a history of going 3 hours to 10ntu.  
Trolled for full 3 hours. Final turbidity was 7.76 NTU.

Grab Samples

BGWC-12  
Inorganics  
BGWC-12  
Metals

BGWC-12  
Radium



Product Name: Low-Flow System

Date: 2016-10-06 16:41:13

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364456  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 89 ft

Pump placement from TOC 84.80 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 89.00 ft  
Screen Length 10 ft  
Depth to Water 77.44 ft

Pumping Information:

Final Pumping Rate 320 mL/min  
Total System Volume 0.5872446 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 88.2 in  
Total Volume Pumped 15.36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	16:19:11	1920.03	18.69	7.28	829.68	1.45	82.19	4.37	143.42
Last 5	16:23:11	2160.03	18.69	7.30	845.87	0.99	82.98	3.02	145.94
Last 5	16:27:11	2400.03	18.73	7.30	859.17	1.20	83.61	2.87	131.37
Last 5	16:31:11	2640.03	18.83	7.30	868.49	1.01	84.43	3.24	111.31
Last 5	16:35:11	2880.03	18.87	7.30	873.86	1.02	84.80	3.17	89.79
Variance 0			0.04	-0.00	13.30			-0.15	-14.58
Variance 1			0.09	-0.00	9.32			0.37	-20.06
Variance 2			0.05	0.00	5.37			-0.07	-21.52

Notes

Pre-purged 0 liters. Complete evacuation method initiated. Water level fell below 1 ft above the screen. Samples to be taken 10/7.

Grab Samples

BGWC-14  
Inorganics  
BGWC-14  
Metals



Product Name: Low-Flow System

Date: 2016-10-07 10:44:16

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 56 ft

Pump placement from TOC 45 ft

Well Information:

Well ID BGWC-16  
Well diameter 2 in  
Well Total Depth 49.25 ft  
Screen Length 10 ft  
Depth to Water 17.81 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.4399517 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.56 in  
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:25:14	720.02	18.61	6.56	893.57	3.70	17.94	0.17	135.10
Last 5	10:29:14	960.02	18.61	6.65	891.12	1.96	17.94	0.15	133.97
Last 5	10:33:14	1200.02	18.59	6.71	888.90	1.26	17.94	0.13	133.81
Last 5	10:37:14	1440.02	18.70	6.76	887.18	0.98	17.94	0.12	132.86
Last 5	10:41:14	1680.02	18.70	6.79	887.51	0.99	17.94	0.12	132.92
Variance 0			-0.02	0.06	-2.22			-0.02	-0.16
Variance 1			0.11	0.05	-1.72			-0.01	-0.95
Variance 2			0.00	0.03	0.33			-0.00	0.06

Notes

Pump activated at 180 mL/min at 1001.  
Pump used to sample actually GeoPump peristaltic: 0 internal volume. Sample time 1050.

Grab Samples

BGWC-16

Metals

BGWC-16

Inorganics

BGWC-16  
Radium



Product Name: Low-Flow System

Date: 2016-10-07 10:38:37

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 457516  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Geopump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 69 ft

Pump placement from TOC 0 ft

Well Information:

Well ID BGWC-17  
Well diameter 2 in  
Well Total Depth 68.20 ft  
Screen Length 10 ft  
Depth to Water 16.57 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.3979762 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:20:12	480.02	19.32	7.33	667.81	0.69	16.59	0.29	104.94
Last 5	10:24:12	720.02	19.50	7.33	666.92	1.07	16.59	0.25	89.14
Last 5	10:28:12	960.02	19.55	7.33	665.91	0.88	16.59	0.22	77.03
Last 5	10:32:12	1200.02	19.55	7.33	665.16	1.24	16.59	0.21	71.38
Last 5	10:36:12	1440.02	19.85	7.33	664.19	1.30	16.59	0.19	64.47
Variance 0			0.05	-0.00	-1.01			-0.03	-12.11
Variance 1			-0.00	0.00	-0.76			-0.00	-5.65
Variance 2			0.30	0.00	-0.96			-0.02	-6.90

Notes

Grab Samples  
BGWC-17  
Inorganics  
Dup-3  
Inorganics  
BGWC-17  
Metals

Dup-3  
Metals  
BGWC-17  
Radium  
BGWC-17  
2nd Radium  
Dup-3  
Radium



Product Name: Low-Flow System

Date: 2016-10-07 12:15:29

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

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

Pump placement from TOC 32 ft

Well Information:

Well ID BGWC-18  
Well diameter 2 in  
Well Total Depth 37.75 ft  
Screen Length 10 ft  
Depth to Water 15.31 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.2774638 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.6 in  
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:56:56	960.02	19.35	6.69	784.15	3.64	15.36	0.13	133.45
Last 5	12:00:56	1200.03	19.64	6.76	779.46	3.53	15.35	0.11	133.13
Last 5	12:04:56	1440.03	19.60	6.82	781.55	2.87	15.36	0.11	132.54
Last 5	12:08:56	1680.02	19.50	6.87	778.25	2.30	15.36	0.10	132.14
Last 5	12:12:56	1920.02	19.46	6.91	782.31	2.05	15.36	0.10	131.87
Variance 0			-0.04	0.06	2.09			-0.00	-0.59
Variance 1			-0.10	0.05	-3.30			-0.01	-0.40
Variance 2			-0.04	0.03	4.06			0.00	-0.27

Notes

Pump activated at 180 mL/min @ 1127.  
Sample time 1220.

Grab Samples

BGWC-18

Metals

BGWC-18

Inorganics

BGWC-18  
Radium



Product Name: Low-Flow System

Date: 2016-10-07 12:44:45

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 457516  
Turbidity Make/Model LaMotte 2020we

Pump Information:

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

Pump placement from TOC 0 ft

Well Information:

Well ID BGWC-19  
Well diameter 2 in  
Well Total Depth 55.88 ft  
Screen Length 10 ft  
Depth to Water 17.16 ft

Pumping Information:

Final Pumping Rate 115 mL/min  
Total System Volume 0.3354883 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.8 in  
Total Volume Pumped 3.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:26:42	720.02	21.33	6.77	705.96	0.80	17.31	0.29	66.57
Last 5	12:30:42	960.02	21.64	6.77	710.23	1.03	17.31	0.32	63.60
Last 5	12:34:42	1200.02	21.93	6.77	711.14	0.73	17.31	0.32	61.77
Last 5	12:38:42	1440.02	21.72	6.76	712.16	0.80	17.31	0.31	61.05
Last 5	12:42:42	1680.02	21.55	6.77	715.72	0.85	17.31	0.31	59.72
Variance 0			0.29	-0.00	0.91			-0.00	-1.83
Variance 1			-0.21	-0.01	1.01			-0.00	-0.72
Variance 2			-0.17	0.00	3.56			-0.01	-1.33

Notes

Grab Samples  
BGWC-19  
Inorganics  
BGWC-19  
Metals  
BGWC-19  
Radium

Product Name: Low-Flow System

Date: 2016-10-10 12:55:42

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364456  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 73 ft

Pump placement from TOC 72.14 ft

Well Information:

Well ID BGWC-15  
Well diameter 2 in  
Well Total Depth 73.54 ft  
Screen Length 10 ft  
Depth to Water 70.37 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.51583 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 20.76 in  
Total Volume Pumped 3.36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:36:32	720.02	20.62	6.92	1390.32	7.23	71.40	2.40	40.30
Last 5	12:40:32	960.02	20.61	6.93	1389.57	6.38	71.65	2.46	25.66
Last 5	12:44:32	1200.02	20.61	6.94	1388.27	5.68	71.80	2.24	-5.25
Last 5	12:48:32	1440.02	20.52	6.95	1387.98	4.52	71.92	2.03	-26.27
Last 5	12:52:32	1680.04	20.60	6.97	1385.96	4.04	72.10	1.65	-40.57
Variance 0			0.00	0.01	-1.30			-0.22	-30.91
Variance 1			-0.09	0.01	-0.29			-0.21	-21.02
Variance 2			0.08	0.02	-2.02			-0.38	-14.31

Notes

Pre-purged 0 liters. Water level started below 1ft above well screen. Complete evacuation method initialized. Samples to be taken 10/11/2016.

Grab Samples

Well did not recharge after complete evacuation method. Brad Filipovich notified that samples could not be obtained.



Product Name: Low-Flow System

Date: 2016-10-10 11:11:12

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Geopump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 46 ft

Pump placement from TOC 44.93 ft

Well Information:

Well ID BGWC-20  
Well diameter 2.0 in  
Well Total Depth 49.93 ft  
Screen Length 10 ft  
Depth to Water 16.02 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.3953174 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 162.96 in  
Total Volume Pumped 19 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:47:25	3600.98	19.35	6.58	1476.87	2.15	29.01	0.09	-170.22
Last 5	10:51:25	3840.98	19.37	6.59	1473.30	0.83	29.18	0.09	-165.43
Last 5	10:55:25	4080.98	19.44	6.62	1471.95	0.94	29.32	0.09	-161.90
Last 5	10:59:25	4320.99	19.50	6.64	1467.66	0.90	29.50	0.09	-158.02
Last 5	11:03:25	4560.98	19.57	6.66	1465.96	0.89	29.61	0.09	-153.83
Variance 0			0.07	0.03	-1.34			-0.00	3.53
Variance 1			0.06	0.02	-4.29			0.00	3.88
Variance 2			0.07	0.02	-1.70			-0.00	4.19

Notes

Peristaltic pump.  
Drawdown is excessive but stabilizes just above 30 ft

Grab Samples

BGWC-20  
Inorganics  
BGWC-20  
Metals

BGWC-20  
Radium



Product Name: Low-Flow System

Date: 2016-10-10 13:41:49

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 457516  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Geopump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 54 ft

Pump placement from TOC 0 ft

Well Information:

Well ID BGWC-21  
Well diameter 2 in  
Well Total Depth 53.55 ft  
Screen Length 10 ft  
Depth to Water 23.79 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.3310249 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.4 in  
Total Volume Pumped 3.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:24:01	960.02	20.52	7.98	428.71	1.11	23.99	0.51	-2.85
Last 5	13:28:01	1200.02	20.48	7.97	429.94	0.86	23.99	0.39	-6.10
Last 5	13:32:01	1440.02	20.39	7.97	432.69	0.83	23.99	0.41	-10.41
Last 5	13:36:01	1680.01	20.40	7.97	430.82	0.53	23.99	0.39	-14.34
Last 5	13:40:01	1920.01	20.48	7.96	433.75	0.57	23.99	0.38	-18.46
Variance 0			-0.09	0.00	2.74			0.01	-4.30
Variance 1			0.01	-0.00	-1.87			-0.01	-3.94
Variance 2			0.08	-0.01	2.94			-0.01	-4.11

Notes

Grab Samples  
BGWC-21  
Radium  
BGWC-21  
Metals  
BGWC-21  
Radium

Product Name: Low-Flow System

Date: 2016-10-10 11:35:06

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020 WE

Pump Information:

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

Pump placement from TOC 38.7 ft

Well Information:

Well ID BGWC-22  
Well diameter 2 in  
Well Total Depth 43.20 ft  
Screen Length 10 ft  
Depth to Water 28.04 ft

Pumping Information:

Final Pumping Rate 350 mL/min  
Total System Volume 0.3997809 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 20.4 in  
Total Volume Pumped 15 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:16:46	1206.02	18.74	6.57	2528.75	0.72	29.74	0.06	133.19
Last 5	11:20:46	1446.02	18.67	6.64	2537.76	0.54	29.73	0.06	129.14
Last 5	11:24:46	1686.02	18.63	6.70	2537.92	0.56	29.73	0.05	126.00
Last 5	11:28:46	1926.02	18.61	6.75	2541.38	0.68	29.73	0.05	122.03
Last 5	11:32:46	2166.02	18.62	6.77	2543.36	0.54	29.74	0.05	119.36
Variance 0			-0.04	0.06	0.15			-0.00	-3.14
Variance 1			-0.01	0.04	3.46			-0.00	-3.97
Variance 2			0.01	0.02	1.98			-0.00	-2.67

Notes

Pump activated at 350 mL/min @ 1057.  
Sample time 1140.

Grab Samples

BGWC-22

Metals

BGWC-22

Inorganics

BGWC-22  
Radium



Product Name: Low-Flow System

Date: 2016-10-10 10:05:16

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364456  
Turbidity Make/Model LaMotte 20/20

Pump Information:

Pump Model/Type QED MicroPurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 52 ft

Pump placement from TOC 46.30 ft

Well Information:

Well ID BGWC-23  
Well diameter 2 in  
Well Total Depth 51.30 ft  
Screen Length 10 ft  
Depth to Water 31.39 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.422098 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 16.44 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:47:01	240.19	18.43	7.32	2123.18	4.67	32.73	0.17	-121.42
Last 5	09:51:01	480.03	18.51	7.33	2147.03	4.34	32.74	0.16	-118.11
Last 5	09:55:01	720.03	18.51	7.34	2162.34	3.97	32.75	0.15	-115.39
Last 5	09:59:01	960.02	18.60	7.35	2184.51	3.67	32.75	0.15	-112.23
Last 5	10:03:01	1200.02	18.78	7.35	2201.38	3.20	32.76	0.13	-109.97
Variance 0			-0.01	0.01	15.32			-0.01	2.72
Variance 1			0.10	0.01	22.16			-0.01	3.16
Variance 2			0.18	0.00	16.87			-0.01	2.27

Notes

Pre-purged 2 liters.

Grab Samples

BGWC-23

Inorganics

BGWC-23

Metals

BGWC-23

Radium

Product Name: Low-Flow System

Date: 2016-10-10 11:36:52

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 457516  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Geopump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 66 ft

Pump placement from TOC 0 ft

Well Information:

Well ID BGWC-24  
Well diameter 2 in  
Well Total Depth 66.30 ft  
Screen Length 10 ft  
Depth to Water 10.61 ft

Pumping Information:

Final Pumping Rate 115 mL/min  
Total System Volume 0.3845859 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 52.8 in  
Total Volume Pumped 10.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:18:01	4080.02	21.85	6.99	4958.11	0.55	14.40	0.17	30.80
Last 5	11:22:01	4320.02	21.74	6.97	5095.99	1.14	14.76	0.15	29.98
Last 5	11:26:01	4560.02	22.33	6.95	5191.52	1.39	14.76	0.19	28.28
Last 5	11:30:01	4800.02	22.38	6.92	5262.70	1.01	14.87	0.19	26.34
Last 5	11:34:01	5040.02	22.15	6.95	5196.90	1.08	15.01	0.18	25.90
Variance 0			0.59	-0.02	95.53			0.04	-1.70
Variance 1			0.05	-0.03	71.18			0.00	-1.94
Variance 2			-0.23	0.03	-65.80			-0.01	-0.44

Notes

Missed data entries because the battery for the peristaltic pump ran out

From 1110 to 1122 pump rate was 200 mL/min because I had to run the pump off my car battery while waiting for Kevin to bring an extra Peristaltic battery

Grab Samples

BGWC-24

Inorganics

BGWC-24

Metals

BGWC-24

Radium

Product Name: Low-Flow System

Date: 2016-10-10 13:44:27

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte2020we

Pump Information:

Pump Model/Type Geopump  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 59.00 ft

Pump placement from TOC 53.55 ft

Well Information:

Well ID BGWC-25  
Well diameter 2.0 in  
Well Total Depth 58.55 ft  
Screen Length 10 ft  
Depth to Water 18.9 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.453342 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 124.8 in  
Total Volume Pumped 14.7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:22:28	1920.02	21.00	7.26	372.58	3.55	28.45	0.10	-145.63
Last 5	13:26:28	2160.02	21.16	7.26	373.19	3.23	28.70	0.09	-145.37
Last 5	13:30:28	2400.02	21.17	7.26	373.98	3.25	29.00	0.10	-146.19
Last 5	13:34:28	2640.05	21.08	7.26	372.23	2.88	29.20	0.08	-145.39
Last 5	13:38:30	2882.03	20.64	7.26	373.07	2.66	29.30	0.09	-143.94
Variance 0			0.01	-0.00	0.79			0.01	-0.82
Variance 1			-0.09	0.00	-1.76			-0.01	0.81
Variance 2			-0.44	-0.01	0.85			0.00	1.44

Notes

Drawdown is problematic however stabilizes just under 30ft.

Grab Samples

BGWC-25  
Inorganics  
BGWC-25  
Metals  
BGWC-25  
Radium



Product Name: Low-Flow System

Date: 2016-11-29 14:21:43

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED dedicated pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 60 ft

Pump placement from TOC 54.20 ft

Well Information:

Well ID BGWA-1  
Well diameter 2 in  
Well Total Depth 59.20 ft  
Screen Length 10 ft  
Depth to Water 42.52 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.4578054 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 3.92 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	14:04:03	720.03	20.75	7.04	1105.97	3.65	42.52	0.78	3.62
Last 5	14:08:03	960.03	20.70	7.05	1109.16	3.02	42.52	0.79	6.01
Last 5	14:12:06	1203.03	20.74	7.06	1110.49	2.99	42.52	0.79	8.29
Last 5	14:16:06	1443.03	20.40	7.05	1110.62	2.64	42.52	0.81	10.62
Last 5	14:20:06	1683.03	20.60	7.05	1111.66	2.36	42.52	0.80	11.36
Variance 0			0.04	0.00	1.33			0.00	2.28
Variance 1			-0.35	-0.01	0.12			0.01	2.33
Variance 2			0.20	0.01	1.04			-0.00	0.74

Notes

Pre-purged 3.25L.

Grab Samples

BGWA-1  
Inorganics  
BGWA-1  
Metals  
BGWA-1  
Radium

Product Name: Low-Flow System

Date: 2016-11-29 12:17:30

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 89 ft

Pump placement from TOC 84.21 ft

Well Information:

Well ID BGWA-2  
Well diameter 2 in  
Well Total Depth 89.21 ft  
Screen Length 10 ft  
Depth to Water 53.43 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.8822446 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 3.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:00:02	480.03	19.64	7.67	324.87	6.35	53.43	0.39	-134.31
Last 5	12:04:02	720.02	19.70	7.69	326.15	5.72	53.42	0.39	-134.37
Last 5	12:08:02	960.40	19.95	7.72	326.07	4.89	53.43	0.40	-134.38
Last 5	12:12:02	1200.40	20.28	7.73	325.50	4.71	53.42	0.41	-133.95
Last 5	12:16:02	1440.41	20.57	7.74	326.08	4.56	53.43	0.41	-133.13
Variance 0			0.25	0.03	-0.08			0.00	-0.00
Variance 1			0.33	0.01	-0.56			0.01	0.43
Variance 2			0.29	0.01	0.57			0.00	0.82

Notes

Pre-purged 4.25L.

Grab Samples

- BGWA-2  
Inorganics
- BGWA-2  
Metals
- BGWA-2  
Radium

Product Name: Low-Flow System

Date: 2016-11-29 12:52:55

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Cells 1&2  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 202we

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 82 ft

Pump placement from TOC 74.23 ft

Well Information:

Well ID BGWA-4  
Well diameter 2 in  
Well Total Depth 79.23 ft  
Screen Length 10 ft  
Depth to Water 54.32 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.5560007 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 10.68 in  
Total Volume Pumped 7.04 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 10%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:34:03	2640.08	20.57	7.58	1084.27	5.52	55.21	0.12	-157.41
Last 5	12:38:03	2880.08	20.57	7.58	1088.72	5.12	55.21	0.12	-155.83
Last 5	12:42:03	3120.07	20.52	7.58	1093.82	4.54	55.21	0.12	-153.89
Last 5	12:46:03	3360.07	20.67	7.58	1097.68	4.43	55.21	0.12	-151.90
Last 5	12:50:03	3600.08	20.66	7.58	1100.96	3.97	55.21	0.12	-149.85
Variance 0			-0.05	0.00	5.10			-0.00	1.94
Variance 1			0.14	-0.00	3.86			-0.00	1.99
Variance 2			-0.01	0.00	3.27			0.00	2.04

Notes

Prepurged 2 L because turbidity was high

Grab Samples

BGWA-4  
Inorganics  
Dup-1  
Inorganics  
BGWA-4  
Metals

Dup-1  
Metals  
BGWA-4  
Radium  
BGWA-4  
2nd Radium  
Dup-1  
Radium

Product Name: Low-Flow System

Date: 2016-11-30 10:15:10

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 90 ft

Pump placement from TOC 84.55 ft

Well Information:

Well ID BGWA-3  
Well diameter 2 in  
Well Total Depth 89.55 ft  
Screen Length 10 ft  
Depth to Water 49.84 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.591708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 5.04 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	09:58:02	720.02	18.48	7.46	698.46	7.44	49.85	3.73	51.42
Last 5	10:02:02	960.02	18.48	7.48	696.48	5.14	49.85	3.78	46.40
Last 5	10:06:02	1200.02	18.47	7.48	696.24	4.93	49.84	3.77	42.82
Last 5	10:10:02	1440.08	18.57	7.49	696.00	4.26	49.85	3.80	41.26
Last 5	10:14:05	1683.04	18.57	7.50	695.37	3.89	49.85	3.82	39.89
Variance 0			-0.00	0.01	-0.24			-0.01	-3.58
Variance 1			0.10	0.01	-0.24			0.03	-1.56
Variance 2			-0.00	0.01	-0.63			0.01	-1.37

Notes

Pre-purged 4.25L

Grab Samples

BGWA-3  
Inorganics  
BGWA-3  
Metals  
BGWA-3  
Radium

Product Name: Low-Flow System

Date: 2016-11-30 11:11:26

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 202we

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 73 ft

Pump placement from TOC 64.28 ft

Well Information:

Well ID BGWA-5  
Well diameter 2 in  
Well Total Depth 69.28 ft  
Screen Length 10 ft  
Depth to Water 45.85 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.51583 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 3.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 10%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:54:02	480.02	19.28	7.25	1282.67	13.10	45.85	3.44	54.28
Last 5	10:58:02	720.02	19.27	7.25	1283.79	6.49	45.85	3.34	48.01
Last 5	11:02:02	960.02	19.24	7.26	1283.61	3.67	45.85	3.28	43.89
Last 5	11:06:02	1200.02	19.24	7.26	1281.97	2.47	45.85	3.24	40.41
Last 5	11:10:02	1440.02	19.25	7.27	1282.11	2.07	45.85	3.20	38.49
Variance 0			-0.03	0.01	-0.18			-0.06	-4.12
Variance 1			-0.00	0.00	-1.63			-0.03	-3.48
Variance 2			0.01	0.01	0.14			-0.04	-1.92

Notes

Grab Samples  
BGWA-5  
Inorganics  
BGWA-5  
Metals  
BGWA-5  
Radium

Product Name: Low-Flow System

Date: 2016-12-01 09:41:26

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 64 ft

Pump placement from TOC 58.66 ft

Well Information:

Well ID BGWA-6  
Well diameter 2 in  
Well Total Depth 63.66 ft  
Screen Length 10 ft  
Depth to Water 39.88 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.770659 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.36 in  
Total Volume Pumped 4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:24:02	480.06	16.34	7.30	497.97	4.07	39.92	0.73	-34.72
Last 5	09:28:02	720.06	16.43	7.32	498.03	3.45	39.91	0.65	-33.49
Last 5	09:32:02	960.06	16.43	7.33	497.60	3.09	39.91	0.60	-33.81
Last 5	09:36:02	1200.06	16.47	7.35	497.26	2.87	39.91	0.56	-34.97
Last 5	09:40:06	1444.06	16.51	7.36	497.10	2.54	39.91	0.51	-35.46
Variance 0			-0.00	0.01	-0.43			-0.06	-0.32
Variance 1			0.05	0.02	-0.34			-0.04	-1.17
Variance 2			0.04	0.01	-0.16			-0.05	-0.48

Notes

Pre-purged 4 liters.

Grab Samples

BGWA-6  
Inorganics  
BGWA-6  
Metals  
BGWA-6  
Radium

Product Name: Low-Flow System

Date: 2016-12-01 11:38:22

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 76 ft

Pump placement from TOC 71.22 ft

Well Information:

Well ID BGWA-26  
Well diameter 2 in  
Well Total Depth 76.22 ft  
Screen Length 10 ft  
Depth to Water 60.99 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.8242202 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.96 in  
Total Volume Pumped 3.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	11:20:01	240.03	16.56	7.97	429.33	0.98	61.07	0.38	-124.17
Last 5	11:24:01	480.05	16.56	8.04	426.07	1.09	61.07	0.34	-132.47
Last 5	11:28:01	720.02	16.43	8.07	422.66	0.94	61.08	0.33	-138.75
Last 5	11:32:01	960.02	16.40	8.09	419.14	0.94	61.07	0.33	-142.84
Last 5	11:36:01	1200.02	16.29	8.11	416.65	0.90	61.07	0.32	-146.76
Variance 0			-0.13	0.03	-3.41			-0.01	-6.28
Variance 1			-0.03	0.03	-3.52			-0.00	-4.09
Variance 2			-0.10	0.01	-2.50			-0.01	-3.91

Notes

Pre-purged 5 liters.

Grab Samples

BGWA-26

Inorganics

BGWA-26

Metals

BGWA-26

Radium



Product Name: Low-Flow System

Date: 2016-12-01 11:58:07

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 202we

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 98 ft

Pump placement from TOC 89.70 ft

Well Information:

Well ID BGWA-27  
Well diameter 2 in  
Well Total Depth 94.70 ft  
Screen Length 10 ft  
Depth to Water 67.55 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.6274155 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.88 in  
Total Volume Pumped 4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 10%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:40:14	960.02	17.10	7.59	405.63	7.13	67.78	5.22	40.35
Last 5	11:44:14	1200.05	17.37	7.59	405.15	5.91	67.78	5.23	36.57
Last 5	11:48:14	1440.05	17.48	7.59	404.71	4.17	67.79	5.25	34.85
Last 5	11:52:14	1680.05	17.59	7.59	403.85	3.47	67.79	5.27	34.83
Last 5	11:56:14	1920.05	17.72	7.58	403.99	3.16	67.79	5.27	34.85
Variance 0			0.11	-0.00	-0.44			0.03	-1.72
Variance 1			0.11	0.00	-0.85			0.02	-0.03
Variance 2			0.13	-0.01	0.14			-0.00	0.02

Notes

Grab Samples  
BGWA-27  
Inorganics  
BGWA-27  
Metals  
BGWA-27  
Radium

Product Name: Low-Flow System

Date: 2016-12-01 14:01:01

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 202we

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 91 ft

Pump placement from TOC 82.65 ft

Well Information:

Well ID BGWA-28  
Well diameter 2 in  
Well Total Depth 87.65 ft  
Screen Length 10 ft  
Depth to Water 69.49 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.5961715 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3.48 in  
Total Volume Pumped 18.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 10%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:42:02	2880.06	16.65	7.60	436.54	0.62	69.78	3.00	-66.88
Last 5	13:46:02	3120.07	16.79	7.59	438.38	0.53	69.78	3.16	-65.64
Last 5	13:50:02	3360.06	17.33	7.59	431.58	0.60	69.78	3.25	-63.55
Last 5	13:54:02	3600.06	17.72	7.59	430.13	0.52	69.78	3.36	-61.44
Last 5	13:58:02	3840.07	17.67	7.59	427.56	0.56	69.78	3.41	-59.53
Variance 0			0.54	-0.00	-6.80			0.09	2.10
Variance 1			0.39	-0.00	-1.45			0.11	2.10
Variance 2			-0.05	-0.00	-2.57			0.05	1.91

Notes

Grab Samples  
BGWA-28  
Inorganics  
Dup-2  
Inorganics  
BGWA-28  
Metals

Dup-2  
Metals  
BGWA-28  
Radium  
Dup-2  
Radium



Product Name: Low-Flow System

Date: 2016-12-01 13:48:48

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 100 ft

Pump placement from TOC 95.13 ft

Well Information:

Well ID BGWA-29  
Well diameter 2 in  
Well Total Depth 100.13 ft  
Screen Length 10 ft  
Depth to Water 44.91 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.9313423 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.36 in  
Total Volume Pumped 3.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	13:30:54	240.03	17.32	8.01	243.61	2.28	44.94	5.50	11.55
Last 5	13:34:54	480.02	17.37	8.06	237.88	2.03	44.94	5.76	11.70
Last 5	13:38:54	720.03	17.52	8.08	235.45	1.63	44.94	6.05	12.45
Last 5	13:42:54	960.03	17.59	8.07	232.81	1.51	44.94	6.23	13.68
Last 5	13:46:54	1200.03	17.66	8.06	229.52	1.46	44.94	6.46	14.39
Variance 0			0.16	0.02	-2.43			0.28	0.75
Variance 1			0.07	-0.00	-2.64			0.18	1.23
Variance 2			0.07	-0.01	-3.29			0.23	0.71

Notes

Pre-purged 1.75 liters.

Grab Samples

BGWA-29  
Inorganics  
BGWA-29  
Metals  
BGWA-29  
Radium

Product Name: Low-Flow System

Date: 2016-12-02 09:39:40

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 75.01 ft

Well Information:

Well ID BGWC-8  
Well diameter 2 in  
Well Total Depth 80.01 ft  
Screen Length 10 ft  
Depth to Water 50.55 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.8420739 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 4.32 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:22:03	480.03	16.69	7.66	350.63	7.71	50.54	4.12	37.86
Last 5	09:26:03	720.03	16.70	7.67	351.46	6.18	50.55	4.04	35.27
Last 5	09:30:03	960.03	16.75	7.67	351.81	4.84	50.55	4.01	33.01
Last 5	09:34:03	1200.03	16.83	7.66	351.70	4.01	50.55	3.95	31.79
Last 5	09:38:06	1443.03	16.89	7.67	351.98	3.36	50.55	3.92	30.64
Variance 0			0.05	0.00	0.34			-0.03	-2.27
Variance 1			0.08	-0.01	-0.10			-0.06	-1.22
Variance 2			0.06	0.01	0.28			-0.03	-1.15

Notes

Pre-purged 2.25 liters.

Grab Samples

BGWC-8  
Inorganics  
BGWC-8  
Metals  
BGWC-8  
Radium

Product Name: Low-Flow System

Date: 2016-12-02 11:41:44

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 202we

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 82 ft

Pump placement from TOC 72.27 ft

Well Information:

Well ID BGWC-11  
Well diameter 2 in  
Well Total Depth 77.27 ft  
Screen Length 10 ft  
Depth to Water 29.79 ft

Pumping Information:

Final Pumping Rate 115 mL/min  
Total System Volume 0.5560007 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 33.36 in  
Total Volume Pumped 4.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 10%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:24:03	1200.02	16.47	7.52	450.17	1.40	32.16	0.30	-132.65
Last 5	11:28:03	1440.02	16.83	7.53	450.88	1.26	32.28	0.28	-141.76
Last 5	11:32:03	1680.02	16.96	7.54	451.46	0.96	32.37	0.28	-147.87
Last 5	11:36:03	1920.02	17.10	7.55	448.06	0.98	32.47	0.28	-151.24
Last 5	11:40:03	2160.02	17.05	7.55	448.03	1.03	32.57	0.24	-154.46
Variance 0			0.14	0.00	0.59			-0.01	-6.11
Variance 1			0.13	0.01	-3.41			-0.00	-3.37
Variance 2			-0.04	0.00	-0.03			-0.04	-3.22

Notes

Grab Samples  
BGWC-11  
Inorganics  
BGWC-11  
Metals  
BGWC-11  
Radium

Product Name: Low-Flow System

Date: 2016-12-05 12:44:04

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 202we

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 95 ft

Pump placement from TOC 85.35 ft

Well Information:

Well ID BGWC-7  
Well diameter 2 in  
Well Total Depth 90.35 ft  
Screen Length 10 ft  
Depth to Water 49.23 ft

Pumping Information:

Final Pumping Rate 125 mL/min  
Total System Volume 0.9090251 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 362.04 in  
Total Volume Pumped 23.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 10%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:26:05	10320.18	16.42	7.15	1160.50	2.56	77.50	0.36	-53.52
Last 5	12:30:05	10560.18	16.40	7.15	1159.56	2.76	77.99	0.39	-51.24
Last 5	12:34:05	10800.18	16.31	7.15	1160.75	2.80	78.49	0.41	-51.86
Last 5	12:38:05	11040.18	16.28	7.15	1159.03	2.68	78.94	0.48	-49.24
Last 5	12:42:05	11280.18	16.25	7.16	1160.10	2.97	79.40	0.55	-48.53
Variance 0			-0.09	-0.00	1.18			0.02	-0.62
Variance 1			-0.03	0.01	-1.72			0.07	2.62
Variance 2			-0.04	0.00	1.08			0.08	0.70

Notes

Water level dropped within 1 ft of the screen. Performing complete evacuation

Grab Samples

Product Name: Low-Flow System

Date: 2016-12-05 10:57:08

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 64 ft

Pump placement from TOC 58.94 ft

Well Information:

Well ID BGWC-9  
Well diameter 2 in  
Well Total Depth 63.94 ft  
Screen Length 10 ft  
Depth to Water 34.95 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.5056591 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.12 in  
Total Volume Pumped 4.48 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:40:00	720.05	16.11	7.40	699.49	4.41	34.96	0.24	-106.28
Last 5	10:44:00	960.05	16.22	7.41	701.28	3.89	34.96	0.23	-105.84
Last 5	10:48:00	1200.04	16.15	7.42	701.57	3.76	34.96	0.22	-104.08
Last 5	10:52:00	1440.05	16.23	7.42	702.11	3.33	34.96	0.21	-103.73
Last 5	10:56:00	1680.04	16.29	7.42	702.49	3.24	34.96	0.20	-106.79
Variance 0			-0.07	0.01	0.29			-0.02	1.76
Variance 1			0.08	0.00	0.54			-0.01	0.34
Variance 2			0.06	0.00	0.38			-0.01	-3.06

Notes

Pre-purged 7.25 liters

Grab Samples

BGWC-9  
Inorganics  
BGWC-9  
Metals  
BGWC-9  
Radium



Product Name: Low-Flow System

Date: 2016-12-05 16:27:53

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 78 ft

Pump placement from TOC 73.06 ft

Well Information:

Well ID BGWC-12  
Well diameter 2 in  
Well Total Depth 78.06 ft  
Screen Length 10 ft  
Depth to Water 42.14 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.833147 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 4.44 in  
Total Volume Pumped 34.56 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	16:09:02	10561.95	16.38	7.59	791.23	9.11	42.51	1.54	3.09
Last 5	16:13:02	10801.95	16.46	7.58	790.42	8.99	42.51	1.54	3.30
Last 5	16:17:02	11041.95	16.40	7.59	790.76	8.74	42.51	1.54	3.08
Last 5	16:21:02	11281.95	16.48	7.58	791.93	8.91	42.51	1.55	3.35
Last 5	16:25:02	11521.95	16.43	7.58	790.87	8.54	42.51	1.53	3.48
Variance 0			-0.06	0.00	0.34			0.00	-0.22
Variance 1			0.08	-0.00	1.17			0.01	0.27
Variance 2			-0.06	0.00	-1.06			-0.02	0.13

Notes

Pre-purged 8 liters. Turbidity did not drop below 5 NTU. Samples taken 3 hours after Stabilization with turbidity of 8.54 NTU.

Grab Samples

BGWC-12  
Inorganics  
BGWC-12  
Metals  
BGWC-12  
Radium

Product Name: Low-Flow System

Date: 2016-12-06 15:22:35

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 202we

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 66 ft

Pump placement from TOC 57.52 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 62.52 ft  
Screen Length 10 ft  
Depth to Water 32.56 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.779586 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 190.44 in  
Total Volume Pumped 19 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 10%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:04:06	9840.13	16.05	7.43	576.26	0.82	47.83	0.62	-119.40
Last 5	15:08:06	10080.13	16.09	7.43	576.36	0.84	47.98	0.51	-120.42
Last 5	15:12:06	10320.19	16.07	7.44	574.99	0.89	48.14	0.49	-120.92
Last 5	15:16:06	10560.19	15.89	7.44	574.61	0.82	48.29	0.51	-119.62
Last 5	15:20:06	10800.20	15.93	7.44	575.00	0.79	48.43	0.51	-120.55
Variance 0			-0.02	0.00	-1.38			-0.01	-0.49
Variance 1			-0.18	0.00	-0.38			0.02	1.29
Variance 2			0.04	-0.00	0.39			-0.00	-0.92

Notes

Grab Samples  
BGWC-10  
Inorganics  
BGWC-10  
Metals  
BGWC-10  
Radium

Product Name: Low-Flow System

Date: 2016-12-06 10:41:43

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 49 ft

Pump placement from TOC 43.99 ft

Well Information:

Well ID BGWC-16  
Well diameter 2 in  
Well Total Depth 48.99 ft  
Screen Length 10 ft  
Depth to Water 16.32 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.7037078 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 3.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:24:07	240.16	16.64	6.95	980.99	2.64	16.33	0.32	30.20
Last 5	10:28:07	480.03	16.57	6.95	980.26	1.80	16.33	0.31	27.78
Last 5	10:32:07	720.03	16.67	6.95	980.81	1.45	16.33	0.36	26.32
Last 5	10:36:07	960.02	16.70	6.96	981.41	1.18	16.32	0.36	25.14
Last 5	10:40:07	1200.02	16.56	6.95	981.83	1.08	16.32	0.35	24.25
Variance 0			0.10	-0.00	0.55			0.05	-1.47
Variance 1			0.02	0.01	0.60			-0.01	-1.18
Variance 2			-0.13	-0.01	0.42			-0.01	-0.89

Notes

Pre-purged 2.75 liters.

Grab Samples

BGWC-16

Inorganics

BGWC-16

Metals

BGWC-16

Radium

Product Name: Low-Flow System

Date: 2016-12-06 12:56:54

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 68 ft

Pump placement from TOC 63.10 ft

Well Information:

Well ID BGWC-17  
Well diameter 2 in  
Well Total Depth 68.10 ft  
Screen Length 10 ft  
Depth to Water 15.04 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.7885128 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 3.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:38:04	240.10	17.10	7.40	671.45	8.02	15.04	0.20	18.87
Last 5	12:42:04	480.03	17.10	7.40	672.08	6.77	15.04	0.20	18.50
Last 5	12:46:04	720.02	17.10	7.41	672.58	4.79	15.04	0.21	18.12
Last 5	12:50:04	960.02	17.09	7.40	671.32	4.17	15.04	0.22	18.04
Last 5	12:54:04	1200.02	17.08	7.40	671.80	--	--	0.20	17.80
Variance 0			0.00	0.00	0.50			0.01	-0.38
Variance 1			-0.01	-0.00	-1.26			0.01	-0.08
Variance 2			-0.01	0.00	0.48			-0.01	-0.24

Notes

Pre-purged 7 liters.

Grab Samples

BGWC-17  
Inorganics  
BGWC-17  
Metals  
BGWC-17  
Radium

Product Name: Low-Flow System

Date: 2016-12-06 16:45:27

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 38 ft

Pump placement from TOC 32.82 ft

Well Information:

Well ID BGWC-18  
Well diameter 2 in  
Well Total Depth 37.82 ft  
Screen Length 10 ft  
Depth to Water 14.23 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.6546101 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 8.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	16:26:12	2400.02	16.92	7.05	829.13	5.48	14.24	0.18	-10.44
Last 5	16:30:12	2640.02	16.96	7.06	828.99	5.12	14.24	0.18	-10.62
Last 5	16:34:12	2880.02	17.01	7.05	828.03	4.90	14.25	0.18	-10.39
Last 5	16:38:12	3120.02	17.03	7.06	828.72	4.87	14.24	0.20	-10.42
Last 5	16:42:12	3360.02	17.05	7.06	828.75	4.85	14.24	0.18	-11.01
Variance 0			0.04	-0.01	-0.96			-0.01	0.24
Variance 1			0.02	0.02	0.69			0.02	-0.03
Variance 2			0.02	-0.00	0.03			-0.02	-0.59

Notes

Pre-purged 17 liters.

Grab Samples

BGWC-18  
Radium

BGWC-18  
Inorganics  
BGWC-18  
Metals



Product Name: Low-Flow System

Date: 2016-12-07 15:09:37

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 89 ft

Pump placement from TOC 83.88 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.88 ft  
Screen Length 10 ft  
Depth to Water 76.12 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.8822446 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 93.12 in  
Total Volume Pumped 10.25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	14:46:03	960.03	18.26	7.27	843.98	1.03	79.59	3.68	4.78
Last 5	14:50:03	1200.06	18.01	7.29	849.25	0.95	80.19	4.24	8.68
Last 5	14:54:03	1440.06	18.08	7.29	858.46	1.06	80.65	4.46	10.15
Last 5	14:58:03	1680.06	17.72	7.31	853.75	1.96	80.65	5.31	14.92
Last 5	15:02:03	1920.06	17.66	7.32	856.73	1.55	80.65	4.39	13.26
Variance 0			0.07	-0.00	9.21			0.21	1.47
Variance 1			-0.36	0.02	-4.71			0.85	4.77
Variance 2			-0.06	0.01	2.98			-0.92	-1.67

Notes

Pre-purged .75 liters. Water level dropped below 1 ft above top of screen. Complete Evacuation Method initiated. Top of pump: 80.65.

Grab Samples

Product Name: Low-Flow System

Date: 2016-12-07 16:03:41

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 74 ft

Pump placement from TOC 72.80 ft

Well Information:

Well ID BGWC-15  
Well diameter 2 in  
Well Total Depth 73.30 ft  
Screen Length 10 ft  
Depth to Water 70.89 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.5502933 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 22.92 in  
Total Volume Pumped 1.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	15:54:02	240.03	17.68	6.83	1349.98	12.50	71.29	3.18	-70.27
Last 5	15:58:02	480.03	17.71	6.85	1344.25	9.05	71.44	3.95	-36.99
Last 5	16:02:02	720.03	17.59	6.87	1348.32	6.22	71.44	4.12	-27.22
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			0.03	0.02	-5.73			0.78	33.28
Variance 2			-0.12	0.02	4.07			0.17	9.78

Notes

Complete Evacuation Method initiated. Water level started in the screen.

Grab Samples



Product Name: Low-Flow System

Date: 2016-12-07 10:01:47

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 55 ft

Pump placement from TOC 49.70 ft

Well Information:

Well ID BGWC-19  
Well diameter 2 in  
Well Total Depth 54.70 ft  
Screen Length 10 ft  
Depth to Water 14.31 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.7304883 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.4 in  
Total Volume Pumped 3.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:44:06	240.03	16.99	6.64	514.32	1.21	14.51	2.08	69.78
Last 5	09:48:06	480.02	17.23	6.65	511.45	1.14	14.51	2.09	66.79
Last 5	09:52:06	720.02	17.45	6.64	511.55	1.26	14.51	2.00	64.80
Last 5	09:56:06	960.02	17.56	6.63	512.60	1.14	14.51	1.92	65.42
Last 5	10:00:06	1200.02	17.59	6.63	513.49	1.18	14.51	1.85	60.86
Variance 0			0.22	-0.01	0.10			-0.09	-1.99
Variance 1			0.11	-0.00	1.04			-0.07	0.62
Variance 2			0.03	0.00	0.89			-0.08	-4.56

Notes

Pre-purged 2.75 liters.

Grab Samples

BGWC-19  
Inorganics  
BGWC-19  
Metals  
BGWC-19  
Radium

Product Name: Low-Flow System

Date: 2016-12-07 12:19:27

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 50 ft

Pump placement from TOC 44.74 ft

Well Information:

Well ID BGWC-20  
Well diameter 2 in  
Well Total Depth 49.74 ft  
Screen Length 10 ft  
Depth to Water 15.20 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.7081711 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 76.2 in  
Total Volume Pumped 4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:00:26	1440.08	19.19	7.26	1505.84	2.31	21.34	0.20	-233.17
Last 5	12:04:26	1680.08	19.23	7.31	1517.35	1.99	21.38	0.25	-240.14
Last 5	12:08:28	1922.08	19.47	7.37	1512.96	2.12	21.45	0.21	-246.53
Last 5	12:12:28	2162.08	19.55	7.42	1508.76	1.99	21.51	0.20	-250.58
Last 5	12:16:28	2402.08	19.42	7.46	1511.52	2.12	21.55	0.20	-254.52
Variance 0			0.24	0.06	-4.39			-0.03	-6.39
Variance 1			0.07	0.05	-4.20			-0.01	-4.05
Variance 2			-0.13	0.04	2.76			-0.00	-3.94

Notes

Pre-purged 4.5 liters.

Grab Samples

BGWC-20

Inorganics

BGWC-20

Metals

BGWC-20

Radium

Product Name: Low-Flow System

Date: 2016-12-07 16:18:07

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 202we

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 55 ft

Pump placement from TOC 46.30 ft

Well Information:

Well ID BGWC-23  
Well diameter 2 in  
Well Total Depth 51.30 ft  
Screen Length 10 ft  
Depth to Water 41.32 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.7304883 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 20.04 in  
Total Volume Pumped 21.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 10%	+/- 5		+/- 10%	+/- 1000%
Last 5	16:00:11	9360.13	17.32	7.21	2294.43	5.49	33.42	0.20	-86.55
Last 5	16:04:11	9600.13	16.74	7.22	2294.32	5.07	33.30	0.16	-84.60
Last 5	16:08:11	9840.19	16.58	7.22	2340.79	4.84	33.14	0.16	-80.78
Last 5	16:12:11	10080.19	16.83	7.23	2360.00	4.48	33.03	0.17	-80.51
Last 5	16:16:11	10320.19	16.96	7.23	2370.62	4.50	32.99	0.18	-80.05
Variance 0			-0.16	0.00	46.47			0.00	3.82
Variance 1			0.25	0.01	19.21			0.01	0.27
Variance 2			0.14	0.00	10.62			0.02	0.46

Notes

Grab Samples  
BGWC-23  
Inorganics  
BGWC-23  
Metals  
BGWC-23  
Radium

Product Name: Low-Flow System

Date: 2016-12-07 12:08:06

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 202we

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 69 ft

Pump placement from TOC 60.25 ft

Well Information:

Well ID BGWC-24  
Well diameter 2 in  
Well Total Depth 65.25 ft  
Screen Length 10 ft  
Depth to Water 10.44 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.7929762 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 53.64 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 10%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:50:11	2640.02	19.26	6.93	3321.04	1.54	14.44	0.17	25.65
Last 5	11:54:11	2880.02	19.41	6.92	3376.30	2.02	14.63	0.16	24.30
Last 5	11:58:11	3120.02	19.35	6.92	3434.16	1.68	14.72	0.16	23.12
Last 5	12:02:11	3360.14	19.25	6.92	3490.15	1.94	14.82	0.15	22.42
Last 5	12:06:16	3605.12	19.41	6.91	3566.15	1.83	14.91	0.14	21.42
Variance 0			-0.06	-0.00	57.87			-0.00	-1.18
Variance 1			-0.11	-0.01	55.99			-0.00	-0.70
Variance 2			0.17	-0.01	76.00			-0.02	-1.00

Notes

Grab Samples  
BGWC-24  
Inorganics  
BGWC-24  
Metals  
BGWC-24  
Radium

Product Name: Low-Flow System

Date: 2016-12-08 13:17:55

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 54 ft

Pump placement from TOC 48.57 ft

Well Information:

Well ID BGWC-21  
Well diameter 2 in  
Well Total Depth 53.57 ft  
Screen Length 10 ft  
Depth to Water 22.34 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.7260249 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.88 in  
Total Volume Pumped 3.36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Last 5	13:00:03	480.03	17.00	7.82	441.86	3.08	22.55	0.25	-150.94
Last 5	13:04:03	720.03	16.81	7.81	442.42	2.74	22.56	0.28	-148.13
Last 5	13:08:03	960.03	16.77	7.83	441.46	2.70	22.57	0.28	-147.59
Last 5	13:12:03	1200.03	16.60	7.81	445.29	2.59	22.58	0.29	-146.75
Last 5	13:16:03	1440.03	16.73	7.82	446.17	2.55	22.58	0.28	-146.57
Variance 0			-0.04	0.02	-0.97			0.00	0.54
Variance 1			-0.17	-0.02	3.83			0.01	0.84
Variance 2			0.12	0.01	0.89			-0.01	0.18

Notes

Pre-purged 6.25 liters.

Grab Samples

BGWC-21

Inorganics

BGWC-21

Metals

BGWC-21

Radium

Product Name: Low-Flow System

Date: 2016-12-08 10:22:41

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020e

Pump Information:

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

Pump placement from TOC 38.00 ft

Well Information:

Well ID BGWC-22  
Well diameter 2 in  
Well Total Depth 43.00 ft  
Screen Length 10 ft  
Depth to Water 27.94 ft

Pumping Information:

Final Pumping Rate 170 mL/min  
Total System Volume 0.6769272 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 5.4 in  
Total Volume Pumped 4.08 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 10		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:04:05	480.03	15.42	6.87	2866.15	0.78	28.40	0.49	-79.49
Last 5	10:08:05	720.03	15.39	6.91	2864.20	0.73	28.39	0.39	-78.69
Last 5	10:12:05	960.03	15.40	6.92	2862.61	0.61	28.40	0.33	-78.92
Last 5	10:16:05	1200.03	15.66	6.93	2868.24	0.52	28.40	0.30	-79.14
Last 5	10:20:05	1440.03	15.53	6.94	2860.46	0.48	28.39	0.26	-78.98
Variance 0			0.01	0.02	-1.59			-0.07	-0.23
Variance 1			0.26	0.01	5.62			-0.03	-0.22
Variance 2			-0.14	0.01	-7.77			-0.03	0.16

Notes

Pre-purged 2 liters.

Grab Samples

BGWC-22

Inorganics

BGWC-22

Metals

BGWC-22

Radium

Dup-3  
Inorganics  
Dup-3  
Metals  
Dup-3  
Radium



Product Name: Low-Flow System

Date: 2016-12-08 15:54:24

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 202we

Pump Information:

Pump Model/Type QED  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 62 ft

Pump placement from TOC 53.55 ft

Well Information:

Well ID BGWC-25  
Well diameter 2 in  
Well Total Depth 58.55 ft  
Screen Length 10 ft  
Depth to Water 18.59 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.7617322 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 129.24 in  
Total Volume Pumped 42 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 10%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:36:10	17280.25	15.48	7.55	383.55	11.10	29.22	0.18	-137.96
Last 5	15:40:10	17520.25	15.35	7.54	384.01	11.10	29.23	0.16	-138.38
Last 5	15:44:10	17760.30	15.34	7.55	382.51	10.89	29.27	0.17	-137.05
Last 5	15:48:10	18000.30	15.24	7.55	383.31	10.21	29.32	0.17	-136.92
Last 5	15:52:10	18240.30	14.97	7.55	385.44	9.98	29.36	0.17	-137.19
Variance 0			-0.02	0.01	-1.50			0.00	1.33
Variance 1			-0.10	-0.00	0.79			0.01	0.13
Variance 2			-0.27	-0.00	2.14			-0.00	-0.27

Notes

Turbidity below 10 NTU

Grab Samples

BGWC-25  
Inorganics  
BGWC-25  
Metals  
BGWC-25  
Radium



Product Name: Low-Flow System

Date: 2017-01-10 10:14:25

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .25 in  
Tubing Length 100 ft

Pump placement from TOC 95.10 ft

Well Information:

Well ID BGWA-29  
Well diameter 2 in  
Well Total Depth 100.10 ft  
Screen Length 10 ft  
Depth to Water 38.12 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 1.450273 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 3.36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:56:34	720.02	14.55	7.87	207.82	1.16	38.14	7.43	9.59
Last 5	10:00:34	960.02	14.62	7.91	208.20	1.10	38.14	7.53	7.45
Last 5	10:04:34	1200.02	14.79	7.93	207.68	1.08	38.14	7.61	6.16
Last 5	10:08:36	1442.02	14.85	7.95	207.73	0.87	38.14	7.70	5.08
Last 5	10:12:36	1682.02	14.79	7.97	206.90	1.03	38.14	7.68	4.32
Variance 0			0.17	0.02	-0.51			0.08	-1.28
Variance 1			0.05	0.02	0.04			0.09	-1.08
Variance 2			-0.06	0.02	-0.82			-0.02	-0.77

Notes

Pre-purged 4.5 liters

Grab Samples

BGWA-29

Metals

BGWA-29

Inorganics

BGWA-29

Radium

Product Name: Low-Flow System

Date: 2017-01-23 16:48:33

Project Information:

Operator Name Forrest Howard  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter 0.25 in  
Tubing Length 61.00 ft

Pump placement from TOC 56.05 ft

Well Information:

Well ID BGWA-30  
Well diameter 2.0 in  
Well Total Depth 61.05 ft  
Screen Length 10 ft  
Depth to Water 1.98 ft

Pumping Information:

Final Pumping Rate 300 mL/min  
Total System Volume 1.073817 L  
Calculated Sample Rate 300 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 28 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	16:13:39	6602.61	20.00	7.39	3088.17	6.20	2.02	0.25	21.95
Last 5	16:18:39	6902.61	19.95	7.39	3091.20	7.33	2.02	0.17	21.89
Last 5	16:23:39	7202.61	19.99	7.39	3092.56	5.59	2.02	0.15	21.44
Last 5	16:28:39	7502.61	19.95	7.40	3093.46	7.74	2.02	0.20	21.52
Last 5	16:33:39	7802.61	19.97	7.39	3096.57	4.88	--	0.17	21.94
Variance 0			0.04	0.00	1.35			-0.02	-0.45
Variance 1			-0.04	0.01	0.90			0.05	0.08
Variance 2			0.02	-0.01	3.11			-0.03	0.42

Notes

DTW is truly 1.98 ft. Turbidity initially high because dedicated pump was just placed prior to lowflow. turbidity was hight but went downward slowly.

Grab Samples

BGWA-30

Inorganics

BGWA-30

Metala

BGWA-30  
Radium



Product Name: Low-Flow System

Date: 2017-02-07 09:55:44

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 365491  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .25 in  
Tubing Length 62 ft

Pump placement from TOC 56.03 ft

Well Information:

Well ID BGWA-30  
Well diameter 2 in  
Well Total Depth 61.03 ft  
Screen Length 10 ft  
Depth to Water 2.81 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 1.08347 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.12 in  
Total Volume Pumped 3.36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:38:22	480.02	16.82	7.33	2933.99	4.52	2.82	0.24	116.67
Last 5	09:42:22	720.02	16.88	7.33	2933.78	4.07	2.82	0.26	114.93
Last 5	09:46:22	960.02	16.84	7.34	2933.52	3.93	2.82	0.26	113.15
Last 5	09:50:22	1200.02	16.91	7.35	2933.05	3.69	2.82	0.26	111.65
Last 5	09:54:22	1440.02	16.96	7.35	2928.76	3.19	2.82	0.26	110.27
Variance 0			-0.04	0.01	-0.26			0.00	-1.78
Variance 1			0.07	0.01	-0.48			0.00	-1.50
Variance 2			0.05	0.01	-4.28			-0.01	-1.38

Notes

Pre-purged 5 liters

Grab Samples

BGWA-30

Inorganics

BGWA-30

Metals

BGWA-30

Radium

Product Name: Low-Flow System

Date: 2017-02-13 13:47:39

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 456959  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Micro Purge  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 94 ft

Pump placement from TOC 84 ft

Well Information:

Well ID BGWA-2  
Well diameter 2 in  
Well Total Depth 89.02 ft  
Screen Length 10 ft  
Depth to Water 43.31 ft

Pumping Information:

Final Pumping Rate 450 mL/min  
Total System Volume 0.9045618 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 11.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	13:25:39	480.03	17.54	7.22	353.43	1.59	43.32	0.31	-19.12
Last 5	13:29:39	720.02	17.47	7.45	352.44	1.71	43.32	0.17	-30.95
Last 5	13:33:39	960.02	17.44	7.56	354.25	0.98	43.31	0.21	-41.52
Last 5	13:37:39	1200.02	17.40	7.61	357.21	1.06	43.31	0.27	-50.33
Last 5	13:41:39	1440.03	17.37	7.63	359.87	1.17	43.31	0.33	-56.82
Variance 0			-0.03	0.11	1.81			0.04	-10.56
Variance 1			-0.04	0.05	2.96			0.06	-8.82
Variance 2			-0.03	0.02	2.66			0.06	-6.49

Notes

Start pump @ 10 mL/min @ 1300.  
Flow increased to 450 mL/min at 1320. Sample time 1400. Double radium volume collected.

Grab Samples

BGWA-2  
Metals  
BGWA-2  
Inorganics

BGWA-2  
Radium  
DUP-1  
Metals  
DUP-1  
Inorganics  
DUP-1  
Radium

Product Name: Low-Flow System

Date: 2017-02-13 15:29:31

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 465016  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Micopurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 92 ft

Pump placement from TOC 82.50 ft

Well Information:

Well ID BGWA-28  
Well diameter 2 in  
Well Total Depth 87.50 ft  
Screen Length 10 ft  
Depth to Water 65.23 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.8956349 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3.6 in  
Total Volume Pumped 10.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:11:04	2880.02	17.27	7.55	428.54	0.94	65.53	3.64	-25.31
Last 5	15:15:05	3121.02	17.45	7.54	428.13	0.85	65.53	3.84	-24.34
Last 5	15:19:05	3361.02	17.49	7.54	428.10	0.96	65.53	4.00	-23.76
Last 5	15:23:05	3601.02	17.48	7.55	426.79	0.82	65.53	4.10	-23.16
Last 5	15:27:05	3841.03	17.48	7.54	427.32	0.94	65.53	4.21	-22.48
Variance 0			0.04	-0.00	-0.02			0.15	0.58
Variance 1			-0.01	0.01	-1.31			0.10	0.60
Variance 2			-0.00	-0.00	0.52			0.11	0.68

Notes

Grab Samples  
BGWA-28  
Inorganics  
BGWA-28  
Metals  
BGWA-28  
Radium

Product Name: Low-Flow System

Date: 2017-02-14 10:42:10

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 465016  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Micopurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 97 ft

Pump placement from TOC 89.18 ft

Well Information:

Well ID BGWA-27  
Well diameter 2 in  
Well Total Depth 94.18 ft  
Screen Length 10 ft  
Depth to Water 63.36 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.917952 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.2 in  
Total Volume Pumped 3.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:24:03	960.02	16.19	7.50	396.19	1.50	63.46	4.71	74.45
Last 5	10:28:03	1200.02	16.33	7.53	396.63	1.47	63.46	4.84	72.07
Last 5	10:32:03	1440.02	16.51	7.54	397.41	1.16	63.46	4.93	70.34
Last 5	10:36:03	1680.02	16.55	7.56	395.16	0.98	63.46	4.92	69.50
Last 5	10:40:03	1920.02	16.47	7.55	396.45	0.79	63.46	4.96	67.88
Variance 0			0.18	0.01	0.78			0.09	-1.72
Variance 1			0.04	0.02	-2.25			-0.01	-0.85
Variance 2			-0.09	-0.00	1.29			0.03	-1.61

Notes

Grab Samples  
BGWA-27  
Inorganics  
BGWA-27  
Metals  
BGWA-27  
Radium



Product Name: Low-Flow System

Date: 2017-02-14 10:44:45

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 456959  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Micro Purge  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 90 ft

Pump placement from TOC 71 ft

Well Information:

Well ID BGWA-26  
Well diameter 2 in  
Well Total Depth 76.20 ft  
Screen Length 10 ft  
Depth to Water 56.92 ft

Pumping Information:

Final Pumping Rate 220 mL/min  
Total System Volume 0.886708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.52 in  
Total Volume Pumped 7.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	10:23:41	720.02	15.71	7.65	372.61	0.39	57.12	0.62	-77.96
Last 5	10:27:41	960.02	15.78	7.80	362.26	0.22	57.13	0.28	-104.02
Last 5	10:31:41	1200.02	15.84	7.87	358.04	0.24	57.13	0.23	-122.33
Last 5	10:35:41	1440.02	15.89	7.91	354.81	0.15	57.13	0.21	-134.69
Last 5	10:39:41	1680.02	15.83	7.93	352.76	0.22	57.13	0.20	-143.18
Variance 0			0.06	0.08	-4.21			-0.05	-18.31
Variance 1			0.04	0.04	-3.23			-0.02	-12.36
Variance 2			-0.05	0.02	-2.05			-0.00	-8.48

Notes

Start pump @ 80 mL/min at 1000.  
Flow increased to 220 mL/min at 1015. Sample time 1045

Grab Samples

BGWA-26  
Metals  
BGWA-26  
Inorganics

BGWA-26  
Radium



Product Name: Low-Flow System

Date: 2017-02-14 12:19:37

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 456959  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Micro Purge  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 105 ft

Pump placement from TOC 95 ft

Well Information:

Well ID BGWA-29  
Well diameter 2 in  
Well Total Depth 100.10 ft  
Screen Length 10 ft  
Depth to Water 35.65 ft

Pumping Information:

Final Pumping Rate 250 mL/min  
Total System Volume 0.9536594 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.36 in  
Total Volume Pumped 10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	11:57:54	960.02	17.02	7.79	219.44	1.41	35.68	6.53	6.39
Last 5	12:01:54	1200.02	17.04	7.86	218.51	1.50	35.69	6.85	5.53
Last 5	12:05:54	1440.02	17.06	7.88	216.71	1.14	35.68	7.01	5.55
Last 5	12:09:54	1680.02	17.14	7.89	215.51	0.94	35.68	7.13	5.98
Last 5	12:13:54	1920.02	17.27	7.89	215.41	0.76	35.69	7.21	6.33
Variance 0			0.02	0.02	-1.80			0.17	0.02
Variance 1			0.08	0.01	-1.19			0.12	0.43
Variance 2			0.13	0.00	-0.11			0.08	0.35

Notes

Start pump @ 45 mL/min at 1135.  
Increase flow to 250 mL/min at 1145. Sample time 1225.

Grab Samples

BGW-29  
Metals  
BGWA-29  
Inorganics

BGWA-29  
Radium



Product Name: Low-Flow System

Date: 2017-02-14 12:36:24

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 465016  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Micopurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 59 ft

Pump placement from TOC 58.46 ft

Well Information:

Well ID BGWA-6  
Well diameter 2 in  
Well Total Depth 63.46 ft  
Screen Length 10 ft  
Depth to Water 31.05 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.7483419 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.6 in  
Total Volume Pumped 4.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:18:05	720.02	18.36	7.39	472.01	0.70	31.10	0.68	-12.55
Last 5	12:22:05	960.02	18.12	7.38	471.82	0.88	31.10	0.51	-14.20
Last 5	12:26:05	1200.01	18.20	7.38	471.11	0.65	31.10	0.44	-14.92
Last 5	12:30:05	1440.01	18.14	7.38	471.17	0.73	31.10	0.41	-15.03
Last 5	12:34:05	1680.01	18.30	7.36	471.43	0.50	31.10	0.41	-14.32
Variance 0			0.08	-0.01	-0.71			-0.07	-0.72
Variance 1			-0.06	-0.00	0.06			-0.02	-0.11
Variance 2			0.15	-0.02	0.26			-0.00	0.70

Notes

Grab Samples  
BGWA-6  
Inorganics  
BGWA-6  
Metals  
BGWA-6  
Radium

Product Name: Low-Flow System

Date: 2017-02-14 14:01:00

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 456959  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Micro Purge  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 70 ft

Pump placement from TOC 59 ft

Well Information:

Well ID BGWC-8  
Well diameter 2 in  
Well Total Depth 63.94 ft  
Screen Length 10 ft  
Depth to Water 48.80 ft

Pumping Information:

Final Pumping Rate 330 mL/min  
Total System Volume 0.7974396 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 14.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	13:41:06	720.02	18.38	6.96	335.77	1.85	48.82	3.74	40.27
Last 5	13:45:06	960.02	18.03	7.32	342.12	1.43	48.82	3.68	35.10
Last 5	13:49:06	1200.02	17.99	7.46	345.25	1.52	48.82	3.58	32.73
Last 5	13:53:06	1440.02	18.08	7.51	347.59	1.63	48.82	3.52	31.23
Last 5	13:57:07	1681.02	18.03	7.54	349.85	1.29	48.82	3.46	29.84
Variance 0			-0.05	0.14	3.14			-0.10	-2.38
Variance 1			0.09	0.06	2.34			-0.06	-1.50
Variance 2			-0.04	0.03	2.26			-0.06	-1.39

Notes

Start pump @ 330 mL/min at 1320  
Sample time 1405.

Grab Samples

BGWC-8  
Metals  
BGWC-8  
Inorganics

BGWC-8  
Radium



Product Name: Low-Flow System

Date: 2017-03-27 09:55:48

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .25 in  
Tubing Length 61 ft

Pump placement from TOC 56.03 ft

Well Information:

Well ID BGWC-30  
Well diameter 2 in  
Well Total Depth 61.03 ft  
Screen Length 10 ft  
Depth to Water 4.19 ft

Pumping Information:

Final Pumping Rate 240 mL/min  
Total System Volume 1.073817 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.6 in  
Total Volume Pumped 5.76 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:38:12	480.02	19.41	7.44	3010.10	2.58	4.24	0.10	8.65
Last 5	09:42:12	720.02	19.48	7.46	3011.08	2.36	4.24	0.11	-0.99
Last 5	09:46:12	960.02	19.57	7.46	3012.70	1.79	4.24	0.11	-10.30
Last 5	09:50:12	1200.02	19.62	7.45	3014.27	1.79	4.24	0.12	-17.78
Last 5	09:54:12	1440.02	19.66	7.46	3014.53	1.59	4.24	0.12	-23.46
Variance 0			0.09	-0.00	1.62			0.00	-9.31
Variance 1			0.05	-0.00	1.57			0.01	-7.48
Variance 2			0.04	0.01	0.26			-0.00	-5.69

Notes

Pre-purged 5.25 liters

Grab Samples

BGWC-30

Inorganics

BGWC-30

Metals

BGWC-30

Radium



Product Name: Low-Flow System

Date: 2017-04-13 10:47:41

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 92 ft

Pump placement from TOC 84 ft

Well Information:

Well ID BGWA-2  
Well diameter 2 in  
Well Total Depth 89.02 ft  
Screen Length 10 ft  
Depth to Water 42.07 ft

Pumping Information:

Final Pumping Rate 170 mL/min  
Total System Volume 0.8956349 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	10:28:14	480.04	19.46	7.60	312.63	0.82	42.07	2.66	35.43
Last 5	10:32:14	720.07	19.19	7.51	306.68	1.85	42.07	1.49	39.94
Last 5	10:36:14	960.05	19.19	7.53	304.74	0.23	42.07	0.49	41.21
Last 5	10:40:14	1200.03	19.12	7.56	303.03	0.97	42.07	0.37	40.76
Last 5	10:44:14	1440.03	19.19	7.57	303.24	0.07	42.07	0.32	39.43
Variance 0			-0.00	0.02	-1.94			-1.00	1.26
Variance 1			-0.07	0.02	-1.71			-0.11	-0.45
Variance 2			0.07	0.02	0.21			-0.05	-1.32

Notes

Start pump @ 170 mL/min at 1022. Sample time 1050.

Grab Samples

BGWA-2  
Metals  
BGWA-2  
Inorganics  
BGWA-2  
Radium

Product Name: Low-Flow System

Date: 2017-04-13 12:06:33

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 64 ft

Pump placement from TOC 58 ft

Well Information:

Well ID BGWA-6  
Well diameter 2 in  
Well Total Depth 63.46 ft  
Screen Length 10 ft  
Depth to Water 30.27 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.770659 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.84 in  
Total Volume Pumped 4.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	11:47:40	720.03	19.95	6.93	485.76	0.05	30.34	0.64	17.23
Last 5	11:51:40	960.03	19.98	7.00	481.06	0.42	30.34	0.71	18.73
Last 5	11:55:40	1200.03	20.09	7.05	479.61	0.56	30.34	0.71	17.84
Last 5	11:59:40	1440.03	20.13	7.09	479.05	0.98	30.34	0.68	17.12
Last 5	12:03:41	1681.03	20.21	7.12	477.21	0.81	30.34	0.65	16.46
Variance 0			0.11	0.05	-1.45			0.00	-0.89
Variance 1			0.04	0.04	-0.57			-0.02	-0.72
Variance 2			0.09	0.04	-1.84			-0.04	-0.66

Notes

Start pump @ 130 mL/min at 1135. Sample time 1210.

Grab Samples

BGWA-6  
Metals  
BGWA-6  
Inorganics  
BGWA-6  
Radium

Product Name: Low-Flow System

Date: 2017-04-13 13:58:08

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 76 ft

Pump placement from TOC 71 ft

Well Information:

Well ID BGWA-26  
Well diameter 2 in  
Well Total Depth 76.20 ft  
Screen Length 10 ft  
Depth to Water 55.63 ft

Pumping Information:

Final Pumping Rate 145 mL/min  
Total System Volume 0.8242202 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.56 in  
Total Volume Pumped 7.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	13:44:50	240.11	19.63	7.58	378.07	0.29	55.76	0.29	19.13
Last 5	13:48:50	480.03	19.44	7.61	378.44	0.03	55.76	0.30	15.83
Last 5	13:52:50	720.03	19.59	7.62	379.22	0.09	55.76	0.30	12.61
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-0.19	0.03	0.37			0.00	-3.31
Variance 2			0.16	0.01	0.78			0.01	-3.22

Notes

Start pump @ 145 mL/min at 1310. First ~45 minutes of troll data lost due to iPad heat failure. Sample time 1400.

Grab Samples

BGWA-26  
Metals

BGWA-26  
Inorganics

BGWA-26  
Radium

Product Name: Low-Flow System

Date: 2017-04-14 11:04:24

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 100 ft

Pump placement from TOC 95 ft

Well Information:

Well ID BGWA-29  
Well diameter 2 in  
Well Total Depth 100.10 ft  
Screen Length 10 ft  
Depth to Water 34.90 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.9313423 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 6.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	10:48:20	240.10	19.06	7.76	199.98	0.27	34.92	7.29	53.48
Last 5	10:52:20	480.03	19.14	7.79	198.60	0.42	34.92	7.38	53.18
Last 5	10:56:20	720.03	19.24	7.82	198.56	0.34	34.92	7.47	52.88
Last 5	11:00:20	959.95	19.26	7.86	197.47	0.41	34.92	7.39	52.26
Last 5									
Variance 0			0.08	0.03	-1.38			0.09	-0.31
Variance 1			0.10	0.03	-0.04			0.10	-0.30
Variance 2			0.02	0.04	-1.09			-0.08	-0.62

Notes

Start pump @ 110 mL/min at 1005. First ~40 minutes of troll data lost due to iPad heat failure. Sample time 1105.

Grab Samples

BGWA-29

Metals

BGWA-29

Inorganics

BGWA-29

Radium

Product Name: Low-Flow System

Date: 2017-04-17 10:27:50

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 66 ft

Pump placement from TOC 56 ft

Well Information:

Well ID BGWC-30  
Well diameter 2 in  
Well Total Depth 61.03 ft  
Screen Length 10 ft  
Depth to Water 3.07 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.779586 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.36 in  
Total Volume Pumped 6.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Stabilization									
Last 5	10:07:26	960.03	19.34	6.90	2878.21	0.67	3.11	0.45	93.49
Last 5	10:11:26	1200.03	19.41	7.02	2879.63	0.75	3.11	0.33	90.94
Last 5	10:15:26	1440.03	19.46	7.10	2881.36	0.55	3.11	0.25	87.67
Last 5	10:19:26	1680.03	19.51	7.15	2882.34	0.25	3.11	0.26	85.39
Last 5	10:23:26	1920.03	19.54	7.19	2883.02	0.37	3.11	0.22	82.33
Variance 0			0.05	0.08	1.73			-0.08	-3.27
Variance 1			0.05	0.06	0.97			0.01	-2.28
Variance 2			0.04	0.04	0.68			-0.04	-3.06

Notes

Start pump @ 150 mL/min at 0952. Sample time 1035. Double radium volume collected.

Grab Samples

BGWC-30

Metals

BGWC-30

Inorganics

BGWC-30

Radium

DUP-1  
Metals  
DUP-1  
Inorganics  
BGWC-30  
Radium

Product Name: Low-Flow System

Date: 2017-04-17 12:53:51

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 70 ft

Pump placement from TOC 59 ft

Well Information:

Well ID BGWC-9  
Well diameter 2 in  
Well Total Depth 63.94 ft  
Screen Length 10 ft  
Depth to Water 31.97 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.7974396 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.2 in  
Total Volume Pumped 8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond µS/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	12:33:55	960.03	18.48	6.99	612.12	2.19	32.17	0.09	27.76
Last 5	12:37:55	1200.03	18.37	7.09	605.80	2.20	32.17	0.10	24.71
Last 5	12:41:55	1440.03	18.39	7.15	603.36	1.86	32.17	0.14	21.89
Last 5	12:45:55	1680.03	18.35	7.19	600.24	1.73	32.17	0.21	17.83
Last 5	12:49:55	1920.03	18.40	7.23	599.13	2.03	32.17	0.24	15.58
Variance 0			0.03	0.07	-2.44			0.04	-2.82
Variance 1			-0.04	0.03	-3.13			0.07	-4.06
Variance 2			0.05	0.04	-1.11			0.03	-2.25

Notes

Start pump @ 200 mL/min at 1220. Sample time 1300.

Grab Samples

BGWC-9  
Metals  
BGWC-9  
Inorganics  
BGWC-9  
Radium

Product Name: Low-Flow System

Date: 2017-04-17 14:26:01

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .25 in  
Tubing Length 90 ft

Pump placement from TOC 85.20 ft

Well Information:

Well ID BGWC-7  
Well diameter 2 in  
Well Total Depth 90.20 ft  
Screen Length 10 ft  
Depth to Water 46.18 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 1.353746 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 402.24 in  
Total Volume Pumped 18.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	14:02:19	6720.74	20.60	7.16	1161.09	5.63	78.28	0.52	56.88
Last 5	14:06:19	6960.75	20.94	7.16	1161.29	5.61	78.56	0.57	84.37
Last 5	14:10:19	7200.74	20.90	7.16	1162.78	5.57	78.94	0.60	142.11
Last 5	14:14:19	7440.74	21.20	7.16	1161.85	5.47	79.47	0.65	215.20
Last 5	14:18:19	7680.74	21.16	7.17	1156.81	5.18	79.70	0.69	291.17
Variance 0			-0.04	0.00	1.49			0.03	57.75
Variance 1			0.30	0.00	-0.93			0.05	73.09
Variance 2			-0.04	0.00	-5.04			0.04	75.97

Notes

Pre-purged 11 liters. Water level dropped below top of screen. Water level stabilization never was achieved. Complete evacuation method initiated, samples to be taken 4/17.

Grab Samples



Product Name: Low-Flow System

Date: 2017-04-17 16:22:22

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 67 ft

Pump placement from TOC 57 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 62.36 ft  
Screen Length 10 ft  
Depth to Water 29.91 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.7840493 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 204.23 in  
Total Volume Pumped 14.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	15:58:39	7474.78	21.29	7.35	532.99	0.69	44.25	0.45	-76.44
Last 5	16:02:42	7717.78	20.43	7.36	534.07	1.12	44.59	0.47	-76.96
Last 5	16:06:42	7957.78	19.91	7.36	535.06	1.66	44.93	0.48	-77.51
Last 5	16:10:42	8197.78	19.81	7.37	533.16	1.31	45.26	0.50	-78.47
Last 5	16:14:48	8443.78	20.77	7.36	531.98	1.22	45.62	0.54	-79.47
Variance 0			-0.53	-0.00	1.00			0.01	-0.55
Variance 1			-0.09	0.01	-1.90			0.01	-0.96
Variance 2			0.95	-0.01	-1.18			0.04	-1.01

Notes

Start pump @ 125 mL/min at 1355. Reduce flow to 100 mL/min at 1415. Sampling attempt terminated due to approaching end of workday & groundwater drawdown persistently > 0.4 in between readings.

Grab Samples

Product Name: Low-Flow System

Date: 2017-04-18 11:41:07

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .25 in  
Tubing Length 78 ft

Pump placement from TOC 73.06 ft

Well Information:

Well ID BGWC-12  
Well diameter 2 in  
Well Total Depth 78.06 ft  
Screen Length 10 ft  
Depth to Water 40.73 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 1.237913 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3.24 in  
Total Volume Pumped 6.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:22:05	1680.24	25.78	7.11	4.48	0.68	41.01	7.87	173.12
Last 5	11:26:05	1920.24	25.42	7.22	3.20	0.80	41.01	7.79	146.53
Last 5	11:30:05	2160.24	25.40	7.29	2.03	0.75	41.00	7.63	138.90
Last 5	11:34:05	2400.24	24.34	7.25	2.01	0.70	41.00	7.61	146.81
Last 5	11:38:05	2640.24	23.30	7.26	1.94	0.71	41.00	7.61	183.27
Variance 0			-0.02	0.07	-1.17			-0.15	-7.64
Variance 1			-1.06	-0.04	-0.02			-0.02	7.91
Variance 2			-1.04	0.01	-0.07			-0.00	36.46

Notes

Pre-purged 3.5 liters

Grab Samples

BGWC-12

Inorganics

BGWC-12

Metals

BGWC-12

Radium

Product Name: Low-Flow System

Date: 2017-04-18 12:18:33

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .25 in  
Tubing Length 78 ft

Pump placement from TOC 73.06 ft

Well Information:

Well ID BGWC-12  
Well diameter 2 in  
Well Total Depth 78.06 ft  
Screen Length 10 ft  
Depth to Water 40.73 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 1.237913 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 4.2 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:00:30	240.02	18.67	7.12	837.80	0.71	41.07	1.65	81.38
Last 5	12:04:30	480.02	18.55	7.22	837.98	0.81	41.07	1.64	79.87
Last 5	12:08:30	720.02	18.50	7.27	838.88	0.72	41.08	1.65	79.40
Last 5	12:12:30	960.02	18.47	7.29	837.73	0.82	41.08	1.65	79.93
Last 5	12:16:30	1200.02	18.41	7.31	840.12	0.81	41.08	1.66	80.56
Variance 0			-0.05	0.05	0.90			0.01	-0.47
Variance 1			-0.03	0.02	-1.15			-0.00	0.53
Variance 2			-0.06	0.02	2.39			0.01	0.63

Notes

Delete previous Troll Report. Pre-purged 10 liters.

Grab Samples

BGWC-12  
Inorganics  
BGWC-12  
Metals  
BGWC-12  
Radium

Product Name: Low-Flow System

Date: 2017-04-18 11:49:03

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 70 ft

Pump placement from TOC 57 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 62.36 ft  
Screen Length 10 ft  
Depth to Water 30.12 ft

Pumping Information:

Final Pumping Rate 85 mL/min  
Total System Volume 0.7974396 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 199.2 in  
Total Volume Pumped 15.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	11:26:14	6239.96	18.98	7.38	541.21	2.86	46.12	0.38	46.57
Last 5	11:30:15	6480.97	19.06	7.38	540.52	2.67	46.27	0.38	44.75
Last 5	11:34:15	6720.97	18.99	7.38	539.15	3.13	46.42	0.39	42.61
Last 5	11:38:15	6960.90	18.87	7.38	538.69	2.12	46.57	0.39	40.45
Last 5	11:42:15	7200.90	18.65	7.39	539.22	2.08	46.72	0.40	38.55
Variance 0			-0.07	0.01	-1.37			0.00	-2.15
Variance 1			-0.12	0.00	-0.47			0.00	-2.16
Variance 2			-0.22	0.01	0.54			0.01	-1.90

Notes

Second sampling attempt in 24 hours. Start pump @ 160 mL/min at 0945. Reduce flow to 85 mL/min at 1055. Sampling at under 100 mL/min by direct order from Pete Robinson (GPC). Sample time 1150.

Grab Samples

BGWC-10

Metals

BGWC-10

Inorganics

BGWC-10  
Radium



Product Name: Low-Flow System

Date: 2017-04-18 14:14:20

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .25 in  
Tubing Length 49 ft

Pump placement from TOC 43.99 ft

Well Information:

Well ID BGWC-16  
Well diameter 2 in  
Well Total Depth 48.99 ft  
Screen Length 10 ft  
Depth to Water 16.88 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.9579839 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.6 in  
Total Volume Pumped 3.36 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:48:06	480.02	20.28	6.91	872.16	0.44	16.93	0.40	417.42
Last 5	13:52:06	720.02	20.33	6.90	874.01	0.46	16.93	0.44	453.47
Last 5	13:56:06	960.03	20.06	6.90	872.28	0.43	16.93	0.44	482.21
Last 5	14:00:06	1200.02	20.17	6.91	872.94	0.46	16.93	0.42	500.07
Last 5	14:04:06	1440.02	19.88	6.90	873.89	0.47	16.93	0.35	514.34
Variance 0			-0.27	0.01	-1.73			-0.00	28.74
Variance 1			0.11	0.00	0.67			-0.02	17.86
Variance 2			-0.29	-0.00	0.95			-0.06	14.27

Notes

Pre-purged 2 liters.

Grab Samples

BGWC-16

Inorganics

BGWC-16

Metals

BGWC-16

Radium

Product Name: Low-Flow System

Date: 2017-04-18 14:30:13

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 80 ft

Pump placement from TOC 72 ft

Well Information:

Well ID BGWC-11  
Well diameter 2 in  
Well Total Depth 77.05 ft  
Screen Length 10 ft  
Depth to Water 26.33 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.8420739 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 49.32 in  
Total Volume Pumped 9.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	14:10:18	2884.03	20.17	7.27	436.24	0.54	30.28	0.09	-179.34
Last 5	14:14:18	3124.03	19.82	7.30	434.51	0.57	30.26	0.08	-184.72
Last 5	14:18:18	3364.03	19.64	7.32	435.13	0.28	30.33	0.09	-188.98
Last 5	14:22:18	3603.95	18.93	7.35	434.12	0.28	30.38	0.09	-190.59
Last 5	14:26:18	3843.94	18.75	7.36	435.98	0.47	30.44	0.10	-194.01
Variance 0			-0.18	0.02	0.61			0.01	-4.26
Variance 1			-0.71	0.03	-1.00			0.00	-1.61
Variance 2			-0.18	0.01	1.86			0.01	-3.42

Notes

Start pump @ 175 mL/min at 1325. Reduce flow to 85 mL/min at 1405. Increase flow to 130 mL/min at 1415. Sample time 1430.

Grab Samples

BGWC-11

Metals

BGWC-11

Inorganics

BGWC-11

Radium

Product Name: Low-Flow System

Date: 2017-04-19 09:57:03

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 70 ft

Pump placement from TOC 63 ft

Well Information:

Well ID BGWC-17  
Well diameter 2 in  
Well Total Depth 68.10 ft  
Screen Length 10 ft  
Depth to Water 15.55 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.7974396 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.12 in  
Total Volume Pumped 3.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	09:38:16	720.04	17.19	6.78	597.86	1.05	15.56	0.54	58.63
Last 5	09:42:16	960.03	17.22	6.90	597.27	1.33	15.56	0.38	54.79
Last 5	09:46:16	1200.03	17.28	6.97	597.29	1.41	15.56	0.32	52.36
Last 5	09:50:16	1440.03	17.29	7.02	597.46	1.45	15.56	0.28	51.90
Last 5	09:54:16	1680.03	17.31	7.06	597.46	1.08	15.56	0.24	49.21
Variance 0			0.05	0.07	0.01			-0.06	-2.43
Variance 1			0.01	0.06	0.17			-0.04	-0.46
Variance 2			0.03	0.04	0.00			-0.04	-2.70

Notes

Start pump @ 110 mL/min at 0927. Sample time 1000.

Grab Samples

BGWC-17

Metals

BGWC-17

Inorganics

BGWC-17

Radium



Product Name: Low-Flow System

Date: 2017-04-19 11:15:00

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 40 ft

Pump placement from TOC 33 ft

Well Information:

Well ID BGWC-18  
Well diameter 2 in  
Well Total Depth 37.82 ft  
Screen Length 10 ft  
Depth to Water 14.25 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.6635369 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 6.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	10:55:10	720.07	17.29	6.84	503.40	9.40	14.29	0.65	43.67
Last 5	10:59:10	960.04	17.54	6.79	499.06	9.77	14.29	0.61	43.20
Last 5	11:03:10	1200.03	17.38	6.78	499.25	8.04	14.29	0.60	42.89
Last 5	11:07:10	1440.03	17.34	6.76	497.72	3.97	14.29	0.59	42.37
Last 5	11:11:10	1680.03	17.39	6.75	496.67	3.66	14.29	0.59	42.14
Variance 0			-0.16	-0.02	0.19			-0.01	-0.31
Variance 1			-0.04	-0.01	-1.52			-0.01	-0.51
Variance 2			0.05	-0.01	-1.05			-0.00	-0.24

Notes

Start pump @ 340 mL/min at 1143. Decrease flow to 100 mL/min at 1153. Sample time 1120.

Grab Samples

BGWC-18

Metals

BGWC-18

Inorganics

BGWC-18

Radium

Product Name: Low-Flow System

Date: 2017-04-19 12:26:20

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .25 in  
Tubing Length 55 ft

Pump placement from TOC 49.70 ft

Well Information:

Well ID BGWC-19  
Well diameter 2 in  
Well Total Depth 54.70 ft  
Screen Length 10 ft  
Depth to Water 16.08 ft

Pumping Information:

Final Pumping Rate 300 mL/min  
Total System Volume 1.0159 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.88 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:06:05	240.06	17.19	6.38	608.76	1.27	16.33	0.85	86.00
Last 5	12:10:05	480.05	17.15	6.48	609.20	1.46	16.32	0.80	83.50
Last 5	12:14:05	720.05	17.12	6.51	609.51	0.92	16.32	0.76	83.66
Last 5	12:18:05	960.05	17.12	6.52	609.93	0.64	16.33	0.73	84.44
Last 5	12:22:07	1202.05	17.20	6.50	611.38	0.58	16.32	0.70	84.32
Variance 0			-0.03	0.03	0.31			-0.04	0.16
Variance 1			0.00	0.01	0.42			-0.04	0.78
Variance 2			0.07	-0.02	1.44			-0.03	-0.11

Notes

Pre-purged 3 liters

Grab Samples

BGWC-19  
Inorganics  
BGWC-19  
Metals  
BGWC-19  
Radium

Product Name: Low-Flow System

Date: 2017-04-19 12:55:50

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 50 ft

Pump placement from TOC 45 ft

Well Information:

Well ID BGWC-20  
Well diameter 2 in  
Well Total Depth 49.74 ft  
Screen Length 10 ft  
Depth to Water 15.51 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.7081711 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 61.68 in  
Total Volume Pumped 6.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Stabilization									
Last 5	12:34:57	1920.03	19.14	6.93	1445.00	1.49	20.00	1.21	61.82
Last 5	12:38:57	2160.03	19.05	6.96	1453.04	1.94	20.19	1.11	58.33
Last 5	12:42:57	2400.03	19.05	6.98	1462.96	1.22	20.37	1.00	54.30
Last 5	12:46:57	2640.03	19.27	7.00	1474.37	2.40	20.53	0.95	49.82
Last 5	12:50:57	2880.03	19.48	7.01	1478.90	1.14	20.65	0.82	45.10
Variance 0			0.00	0.02	9.92			-0.11	-4.03
Variance 1			0.22	0.01	11.41			-0.05	-4.48
Variance 2			0.21	0.02	4.53			-0.13	-4.73

Notes

Start pump @ 240 mL/min at 1205. Reduce flow to 100 mL/min at 1215. Sample time 1300.

Grab Samples

BGWC-20

Metals

BGWC-20

Inorganics

BGWC-20

Radium

Product Name: Low-Flow System

Date: 2017-04-19 15:05:58

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 55 ft

Pump placement from TOC 48 ft

Well Information:

Well ID BGWC-21  
Well diameter 2 in  
Well Total Depth 53.35 ft  
Screen Length 10 ft  
Depth to Water 21.48 ft

Pumping Information:

Final Pumping Rate 170 mL/min  
Total System Volume 0.7304883 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 4.44 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	14:46:13	960.03	20.57	7.19	379.89	1.16	21.85	0.35	27.19
Last 5	14:50:13	1200.03	20.57	7.28	381.61	1.10	21.85	0.30	23.59
Last 5	14:54:13	1440.03	20.62	7.34	385.27	1.19	21.85	0.27	20.20
Last 5	14:58:13	1680.03	20.70	7.38	387.61	1.30	21.85	0.22	16.41
Last 5	15:02:13	1920.03	20.63	7.42	390.39	1.55	21.85	0.22	12.99
Variance 0			0.05	0.06	3.66			-0.03	-3.39
Variance 1			0.09	0.05	2.34			-0.05	-3.78
Variance 2			-0.07	0.03	2.79			-0.00	-3.42

Notes

Start pump @ 170 mL/min at 1430. Sample time 1505.

Grab Samples

BGWC-21

Metals

BGWC-21

Inorganics

BGWC-21

Radium

Product Name: Low-Flow System

Date: 2017-04-20 10:57:25

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .25 in  
Tubing Length 59 ft

Pump placement from TOC 53.37 ft

Well Information:

Well ID BGWC-25  
Well diameter 2 in  
Well Total Depth 58.37 ft  
Screen Length 10 ft  
Depth to Water 17.30 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 1.054511 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 105 in  
Total Volume Pumped 4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:38:11	1440.60	18.81	7.56	408.22	6.62	25.96	0.58	447.80
Last 5	10:42:10	1680.60	18.86	7.55	410.20	5.42	26.00	0.51	471.11
Last 5	10:46:11	1920.60	18.96	7.57	409.09	4.98	26.03	0.47	495.24
Last 5	10:50:11	2160.60	19.03	7.57	408.79	4.62	26.05	0.42	510.70
Last 5	10:54:11	2400.60	19.21	7.58	409.20	4.14	26.05	0.40	528.91
Variance 0			0.10	0.03	-1.11			-0.04	24.13
Variance 1			0.06	-0.00	-0.30			-0.04	15.46
Variance 2			0.18	0.01	0.41			-0.03	18.21

Notes

Pre-purged 7 liters

Grab Samples

BGWC-25  
Inorganics  
BGWC-25  
Metals  
BGWC-25  
Radium

Product Name: Low-Flow System

Date: 2017-04-20 11:55:05

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 90 ft

Pump placement from TOC 83 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.08 ft  
Screen Length 10 ft  
Depth to Water 75.82 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.886708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 38.64 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	11:32:32	720.03	19.64	6.80	894.48	2.86	77.56	2.06	106.87
Last 5	11:36:32	960.03	19.71	6.92	892.49	2.71	77.98	2.02	104.33
Last 5	11:40:32	1200.03	19.88	6.98	891.12	2.63	78.45	2.19	104.24
Last 5	11:44:32	1440.03	19.95	7.02	894.47	2.79	78.83	2.27	103.45
Last 5	11:48:32	1680.03	19.95	7.05	893.04	2.68	79.09	2.35	101.97
Variance 0			0.18	0.06	-1.37			0.17	-0.09
Variance 1			0.07	0.04	3.35			0.08	-0.79
Variance 2			-0.00	0.03	-1.43			0.08	-1.48

Notes

Start pump @ 100 mL/min at 1120. Complete evacuation sampling procedure initiated due to groundwater level dropping below top of well screen.  
Pump to be run until well is dry & samples to be collected on 4/21.

Grab Samples

Product Name: Low-Flow System

Date: 2017-05-22 10:01:41

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Cells3&4  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463453  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 61 ft

Pump placement from TOC 56.03 ft

Well Information:

Well ID BGWC-30  
Well diameter 2 in  
Well Total Depth 61.03 ft  
Screen Length 10 ft  
Depth to Water 3.66 ft

Pumping Information:

Final Pumping Rate 240 mL/min  
Total System Volume 0.7572688 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.6 in  
Total Volume Pumped 4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:44:07	240.02	21.46	7.38	3208.03	1.13	3.69	0.14	113.51
Last 5	09:48:07	480.02	21.38	7.39	3211.81	1.17	3.70	0.13	102.51
Last 5	09:52:07	720.02	21.39	7.39	3212.39	0.65	3.70	0.12	94.28
Last 5	09:56:07	960.02	21.44	7.40	3212.16	0.53	3.70	0.12	89.98
Last 5	10:00:07	1200.02	21.46	7.40	3211.73	0.64	3.71	0.14	87.37
Variance 0			0.01	0.00	0.57			-0.01	-8.23
Variance 1			0.04	0.00	-0.23			0.01	-4.30
Variance 2			0.03	0.00	-0.43			0.02	-2.61

Notes

Pre-purged 3.75 liters

Grab Samples

BGWC-30  
Inorganics  
BGWC-30  
Metals  
BGWC-30  
Radium

Product Name: Low-Flow System

Date: 2017-05-25 09:55:35

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Cells3&4  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463453  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 90 ft

Pump placement from TOC 84.21 ft

Well Information:

Well ID BGWA-2  
Well diameter 2 in  
Well Total Depth 89.21 ft  
Screen Length 10 ft  
Depth to Water 41.06 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.886708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.12 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:38:01	240.08	18.04	7.80	303.66	0.10	41.07	0.45	67.14
Last 5	09:42:01	480.02	18.12	7.81	303.99	0.04	41.07	0.43	48.29
Last 5	09:46:01	720.02	18.18	7.82	303.21	0.03	41.07	0.43	40.49
Last 5	09:50:01	960.02	18.03	7.83	304.52	0.03	41.07	0.43	36.81
Last 5	09:54:01	1200.02	18.12	7.84	305.46	0.01	41.07	0.44	32.38
Variance 0			0.06	0.01	-0.78			0.00	-7.80
Variance 1			-0.15	0.01	1.31			0.00	-3.67
Variance 2			0.09	0.00	0.94			0.00	-4.43

Notes

Pre-purged 3 liters

Grab Samples

BGWA-2  
Inorganics  
BGWA-2  
Metals  
BGWA-2  
Radium



DUP-1  
Inorganics  
DUP-1  
Metals  
DUP-1  
Radium  
BGWA-2  
2nd Radium

Product Name: Low-Flow System

Date: 2017-05-25 12:30:00

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Cells3&4  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463453  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 64 ft

Pump placement from TOC 58.46 ft

Well Information:

Well ID BGWA-6  
Well diameter 2 in  
Well Total Depth 63.46 ft  
Screen Length 10 ft  
Depth to Water 29.57 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.770659 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.32 in  
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:12:09	240.14	18.88	7.44	485.19	2.21	29.67	0.69	52.57
Last 5	12:16:09	480.13	18.57	7.43	485.71	1.91	29.67	0.63	53.60
Last 5	12:20:09	720.13	18.66	7.42	484.49	2.06	29.68	0.61	50.96
Last 5	12:24:09	960.13	18.76	7.42	483.87	1.90	29.68	0.61	49.44
Last 5	12:28:09	1200.13	19.06	7.41	482.18	1.56	29.68	0.61	48.03
Variance 0			0.09	-0.01	-1.22			-0.02	-2.65
Variance 1			0.10	-0.01	-0.62			-0.00	-1.52
Variance 2			0.30	-0.01	-1.69			0.00	-1.42

Notes

Pre-purged 7 liters

Grab Samples

BGWA-6  
Inorganics  
BGWA-6  
Metals  
BGWA-6  
Radium

Product Name: Low-Flow System

Date: 2017-05-25 13:46:36

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Micropurge Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 99 ft

Pump placement from TOC 89.18 ft

Well Information:

Well ID BGWA-27  
Well diameter 2 in  
Well Total Depth 94.18 ft  
Screen Length 10 ft  
Depth to Water 61.58 ft

Pumping Information:

Final Pumping Rate 125 mL/min  
Total System Volume 0.9318789 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.64 in  
Total Volume Pumped 3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:28:02	720.03	19.61	7.48	401.66	3.68	61.79	4.27	67.91
Last 5	13:32:02	960.03	19.01	7.51	404.23	3.70	61.78	4.45	67.20
Last 5	13:36:02	1199.97	18.76	7.52	406.94	3.63	61.80	4.58	67.20
Last 5	13:40:02	1439.97	19.54	7.55	407.09	2.19	61.80	4.62	64.60
Last 5	13:44:02	1679.97	19.59	7.59	403.89	1.93	61.80	4.61	62.67
Variance 0			-0.25	0.00	2.70			0.13	-0.00
Variance 1			0.78	0.03	0.15			0.04	-2.60
Variance 2			0.05	0.04	-3.20			-0.00	-1.93

Notes

Grab Samples  
BGWA-27  
Inorganics  
BGWA-27  
Metals  
BGWA-27  
Radium

Product Name: Low-Flow System

Date: 2017-05-25 12:27:28

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Micropurge Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 92 ft

Pump placement from TOC 82.50 ft

Well Information:

Well ID BGWA-28  
Well diameter 2 in  
Well Total Depth 87.50 ft  
Screen Length 10 ft  
Depth to Water 63.76 ft

Pumping Information:

Final Pumping Rate 225 mL/min  
Total System Volume 0.9006349 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 5.28 in  
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:08:32	2159.96	17.75	7.54	459.15	0.59	64.20	3.62	61.40
Last 5	12:12:32	2399.96	17.85	7.54	457.52	0.54	64.20	3.79	60.57
Last 5	12:16:32	2639.96	17.72	7.53	457.53	0.44	64.20	3.96	61.00
Last 5	12:20:32	2879.96	17.68	7.52	457.12	0.33	64.20	4.11	61.34
Last 5	12:24:32	3119.96	17.86	7.52	457.49	0.36	64.20	4.24	60.78
Variance 0			-0.13	-0.01	0.01			0.17	0.43
Variance 1			-0.04	-0.01	-0.41			0.15	0.35
Variance 2			0.18	-0.00	0.37			0.13	-0.56

Notes

Grab Samples  
BGWA-28  
Inorganics  
BGWA-28  
Metals  
BGWA-28  
Radium

Product Name: Low-Flow System

Date: 2017-05-25 14:33:44

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Cells3&4  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463453  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 100 ft

Pump placement from TOC 95.10 ft

Well Information:

Well ID BGWA-29  
Well diameter 2 in  
Well Total Depth 100.10 ft  
Screen Length 10 ft  
Depth to Water 35.40 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.9313423 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.92 in  
Total Volume Pumped 3.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:16:18	240.02	18.99	8.18	206.29	1.06	34.56	6.00	66.82
Last 5	14:20:18	480.02	18.52	8.15	206.24	0.71	34.56	6.04	75.28
Last 5	14:24:18	720.02	18.57	8.13	204.16	0.68	34.56	6.04	81.95
Last 5	14:28:18	960.09	18.48	8.12	202.95	0.52	34.56	6.07	86.58
Last 5	14:32:18	1200.05	18.88	8.11	202.69	0.49	34.56	6.06	89.24
Variance 0			0.05	-0.02	-2.08			0.00	6.67
Variance 1			-0.09	-0.01	-1.20			0.02	4.62
Variance 2			0.40	-0.01	-0.26			-0.01	2.66

Notes

Pre-purged 2 liters

Grab Samples

BGWA-29

Inorganics

BGWA-29

Metals

BGWA-29

Radium

Product Name: Low-Flow System

Date: 2017-05-25 10:02:49

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 96 ft

Pump placement from TOC 87.58 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.08 ft  
Screen Length 10 ft  
Depth to Water 82.82 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.6184887 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 25.68 in  
Total Volume Pumped 4.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:44:09	1679.37	18.01	7.12	871.16	3.18	83.32	4.50	89.59
Last 5	09:48:09	1919.38	17.95	7.12	872.94	2.77	83.48	4.67	88.82
Last 5	09:52:09	2159.37	17.98	7.12	875.10	2.86	83.64	4.86	88.09
Last 5	09:56:09	2399.37	17.99	7.11	879.99	2.42	83.81	5.11	88.23
Last 5	10:00:09	2639.37	18.21	7.14	876.34	2.60	83.96	5.18	86.69
Variance 0			0.02	0.00	2.17			0.19	-0.73
Variance 1			0.02	-0.01	4.89			0.25	0.14
Variance 2			0.22	0.02	-3.65			0.07	-1.55

Notes

Pump is 0.5 ft off the bottom because of drawdown. Water level is initially below the top of screen.  
Water level initially 81.82 ft. Performing complete evacuation. Will collect make up Radiums in 24 hours.

Grab Samples

Product Name: Low-Flow System

Date: 2017-05-26 09:44:26

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Cells3&4  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463453  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 76 ft

Pump placement from TOC 71.20 ft

Well Information:

Well ID BGWA-26  
Well diameter 2 in  
Well Total Depth 76.20 ft  
Screen Length 10 ft  
Depth to Water 55.24 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.8242202 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.08 in  
Total Volume Pumped 3.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:26:20	240.16	17.73	7.89	371.72	0.40	55.32	0.42	78.69
Last 5	09:30:20	480.03	17.64	7.88	369.63	0.36	55.32	0.38	39.32
Last 5	09:34:20	720.02	17.63	7.87	368.42	0.33	55.33	0.34	15.33
Last 5	09:38:20	960.02	17.63	7.87	368.40	0.35	55.33	0.31	2.07
Last 5	09:42:20	1200.02	17.73	7.87	367.80	0.34	55.33	0.29	-8.21
Variance 0			-0.01	-0.01	-1.21			-0.04	-24.00
Variance 1			0.00	-0.00	-0.02			-0.03	-13.26
Variance 2			0.10	-0.00	-0.60			-0.02	-10.28

Notes

Pre-purged 4 liters

Grab Samples

BGWA-26  
Inorganics  
BGWA-26  
Metals  
BGWA-26  
Radium

Product Name: Low-Flow System

Date: 2017-05-26 11:50:50

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463453  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 46.15 ft

Well Information:

Well ID BGWC-8  
Well diameter 2 in  
Well Total Depth 80.01 ft  
Screen Length 10 ft  
Depth to Water 46.15 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.8420739 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 3.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:32:08	240.09	20.04	7.80	320.36	0.66	46.15	4.12	130.15
Last 5	11:36:08	480.03	20.19	7.78	321.20	0.64	46.15	4.04	139.65
Last 5	11:40:08	720.02	20.35	7.77	321.54	0.54	46.15	3.96	148.05
Last 5	11:44:08	960.02	20.39	7.77	321.77	0.56	46.15	3.89	161.00
Last 5	11:48:08	1200.02	20.50	7.76	324.14	0.54	46.15	3.80	158.83
Variance 0			0.16	-0.01	0.34			-0.08	8.40
Variance 1			0.04	-0.00	0.22			-0.07	12.95
Variance 2			0.11	-0.00	2.37			-0.09	-2.17

Notes

Pre-purged 4 liters

Grab Samples

BGWC-8  
Inorganics  
BGWC-8  
Metals  
BGWC-8  
Radium



Product Name: Low-Flow System

Date: 2017-05-26 10:50:17

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Micropurge Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 68 ft

Pump placement from TOC 58.94 ft

Well Information:

Well ID BGWC-9  
Well diameter 2 in  
Well Total Depth 63.94 ft  
Screen Length 10 ft  
Depth to Water 30.53 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.5235128 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:32:03	959.95	17.99	7.24	632.19	1.18	30.57	0.12	41.01
Last 5	10:36:03	1199.95	18.07	7.27	630.51	1.44	30.57	0.12	39.88
Last 5	10:40:03	1439.95	18.17	7.29	628.08	1.33	30.57	0.14	37.17
Last 5	10:44:03	1679.95	18.17	7.28	632.38	1.40	30.57	0.14	36.03
Last 5	10:48:03	1919.95	18.21	7.29	629.42	1.21	30.57	0.16	32.50
Variance 0			0.09	0.02	-2.44			0.01	-2.71
Variance 1			0.00	-0.01	4.30			-0.00	-1.14
Variance 2			0.05	0.01	-2.96			0.03	-3.53

Notes

DO stable below 0.5 mg/L

Grab Samples

- BGWC-9
  - Inorganics
- BGWC-9
  - Metals
- BGWC-9
  - Radium

Product Name: Low-Flow System

Date: 2017-05-26 12:12:28

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Micropurge Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 82 ft

Pump placement from TOC 72.05 ft

Well Information:

Well ID BGWC-11  
Well diameter 2 in  
Well Total Depth 77.05 ft  
Screen Length 10 ft  
Depth to Water 24.75 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.8560007 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 21.6 in  
Total Volume Pumped 3.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:54:06	720.03	18.79	7.33	461.52	0.30	26.11	0.30	-208.21
Last 5	11:58:08	962.03	18.87	7.33	458.74	0.53	26.24	0.28	-201.25
Last 5	12:02:08	1202.03	18.97	7.31	454.90	1.39	26.34	0.33	-192.31
Last 5	12:06:08	1442.03	18.96	7.34	452.93	0.69	26.44	0.37	-184.63
Last 5	12:10:08	1681.98	18.92	7.35	452.14	0.63	26.55	0.36	-178.18
Variance 0			0.10	-0.01	-3.84			0.06	8.93
Variance 1			-0.00	0.03	-1.97			0.03	7.69
Variance 2			-0.05	0.01	-0.79			-0.01	6.45

Notes

Grab Samples  
BGWC-11  
Inorganics  
BGWC-11  
Metals  
BGWC-11  
Radium

Product Name: Low-Flow System

Date: 2017-05-30 14:23:27

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 52 ft

Pump placement from TOC 44 ft

Well Information:

Well ID BGWC-16  
Well diameter 2 in  
Well Total Depth 48.99 ft  
Screen Length 10 ft  
Depth to Water 14.63 ft

Pumping Information:

Final Pumping Rate 600 mL/min  
Total System Volume 0.717098 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 4.2 in  
Total Volume Pumped 21 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	14:02:41	480.03	17.99	6.76	845.96	1.95	14.98	0.07	74.25
Last 5	14:06:41	720.02	17.99	6.86	843.44	1.61	14.98	0.06	69.24
Last 5	14:10:41	960.03	17.92	6.93	843.22	1.50	14.98	0.06	65.89
Last 5	14:14:41	1200.02	17.95	6.97	842.32	2.19	14.98	0.06	63.36
Last 5	14:18:41	1440.02	17.96	6.99	843.25	1.75	14.98	0.06	62.30
Variance 0			-0.06	0.06	-0.22			-0.00	-3.35
Variance 1			0.03	0.05	-0.90			-0.00	-2.52
Variance 2			0.01	0.02	0.94			0.00	-1.06

Notes

Start pump @ 600 mL/min at 1355. Sample time 1430. Double radium volume collected.

Grab Samples

BGWC-16 DUP-2  
Metals Metals  
BGWC-16 DUP-2  
Inorganics Inorganics  
BGWC-16 DUP-2  
Radium Radium  
BGWC-16  
2nd Radium

Product Name: Low-Flow System

Date: 2017-05-30 15:48:41

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 70 ft

Pump placement from TOC 63 ft

Well Information:

Well ID BGWC-17  
Well diameter 2 in  
Well Total Depth 68.10 ft  
Screen Length 10 ft  
Depth to Water 12.25 ft

Pumping Information:

Final Pumping Rate 265 mL/min  
Total System Volume 0.7974396 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 11 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	15:27:41	480.02	17.98	7.06	614.90	4.78	12.32	0.12	74.18
Last 5	15:31:41	720.02	17.85	7.28	617.56	4.96	12.32	0.07	67.05
Last 5	15:35:41	960.02	17.83	7.41	618.52	6.33	12.30	0.07	61.57
Last 5	15:39:41	1200.02	17.99	7.49	618.84	4.94	12.25	0.09	58.26
Last 5	15:43:41	1440.02	18.03	7.51	618.75	3.91	12.25	0.09	57.18
Variance 0			-0.02	0.14	0.97			-0.00	-5.49
Variance 1			0.17	0.07	0.32			0.01	-3.31
Variance 2			0.04	0.02	-0.09			0.00	-1.08

Notes

Start pump @ 550 mL/min at 1521. Reduce flow to 360 mL/min at 1533. Reduce flow to 265 mL/min at 1538. Sample time 1550.

Grab Samples

BGWC-17

Metals

BGWC-17

Inorganics

BGWC-17

Radium

Product Name: Low-Flow System

Date: 2017-06-01 14:36:27

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Micropurge Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 95 ft

Pump placement from TOC 85.20 ft

Well Information:

Well ID BGWC-7  
Well diameter 2 in  
Well Total Depth 90.20 ft  
Screen Length 10 ft  
Depth to Water 43.75 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.9140251 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 431.4 in  
Total Volume Pumped 28 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:16:20	16799.85	19.50	7.17	1117.58	0.30	74.95	0.47	-123.75
Last 5	14:20:20	17039.79	19.56	7.17	1119.91	2.48	76.15	0.39	-125.45
Last 5	14:24:20	17279.79	19.42	7.16	1121.85	0.78	77.31	0.29	-130.63
Last 5	14:28:20	17519.79	19.42	7.17	1122.61	0.32	78.60	0.28	-127.98
Last 5	14:32:20	17759.79	19.30	7.17	1122.88	0.56	79.70	0.30	-126.99
Variance 0			-0.14	-0.00	1.94			-0.10	-5.19
Variance 1			-0.01	0.00	0.76			-0.01	2.65
Variance 2			-0.12	0.00	0.27			0.02	1.00

Notes

Performing complete evacuation. Water level dropped to the top of the pump. Will sample within 24 hours. Pumprate fluctuated as water level

Grab Samples

Product Name: Low-Flow System

Date: 2017-06-01 09:21:51

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 42 ft

Pump placement from TOC 33 ft

Well Information:

Well ID BGWC-18  
Well diameter 2 in  
Well Total Depth 37.82 ft  
Screen Length 10 ft  
Depth to Water 8.99 ft

Pumping Information:

Final Pumping Rate 130 mL/min  
Total System Volume 0.6724638 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.08 in  
Total Volume Pumped 6.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	09:01:57	720.02	17.93	6.08	384.42	6.34	9.08	1.55	93.61
Last 5	09:05:57	960.02	18.35	6.18	380.35	6.08	9.05	1.49	85.58
Last 5	09:09:57	1200.02	18.59	6.20	381.59	6.02	9.07	1.45	83.54
Last 5	09:13:57	1440.02	18.61	6.21	375.07	3.96	9.08	1.44	82.28
Last 5	09:17:57	1680.02	18.61	6.18	370.91	3.33	9.08	1.45	82.73
Variance 0			0.24	0.03	1.24			-0.04	-2.04
Variance 1			0.02	0.01	-6.53			-0.01	-1.27
Variance 2			0.00	-0.03	-4.16			0.01	0.46

Notes

Start pump @ 280 mL/min at 0850. Reduce pump to 130 mL/min at 0902. Sample time 0925.

Grab Samples

BGWC-18

Metals

BGWC-18

Inorganics

BGWC-18

Radium

Product Name: Low-Flow System

Date: 2017-06-01 10:29:34

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 59 ft

Pump placement from TOC 49 ft

Well Information:

Well ID BGWC-19  
Well diameter 2 in  
Well Total Depth 54.70 ft  
Screen Length 10 ft  
Depth to Water 12.02 ft

Pumping Information:

Final Pumping Rate 330 mL/min  
Total System Volume 0.7483419 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 5.4 in  
Total Volume Pumped 8.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	10:13:28	240.15	19.10	6.19	443.15	0.90	12.41	1.41	117.88
Last 5	10:17:28	480.02	18.35	6.21	414.14	1.87	12.45	0.39	106.04
Last 5	10:21:28	720.02	18.28	6.26	408.09	0.92	12.47	0.20	99.95
Last 5	10:25:28	960.02	18.27	6.27	405.27	0.97	12.47	0.14	98.36
Last 5									
Variance 0			-0.76	0.02	-29.02			-1.02	-11.84
Variance 1			-0.06	0.05	-6.04			-0.19	-6.09
Variance 2			-0.01	0.01	-2.82			-0.06	-1.60

Notes

Start pump @ 330 mL/min at 1010. Sample time 1035.

Grab Samples

BGWC-19

Metals

BGWC-19

Inorganics

BGWC-19

Radium

Product Name: Low-Flow System

Date: 2017-06-01 11:48:00

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 55 ft

Pump placement from TOC 45 ft

Well Information:

Well ID BGWC-20  
Well diameter 2 in  
Well Total Depth 49.74 ft  
Screen Length 10 ft  
Depth to Water 12.06 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.7304883 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 69.72 in  
Total Volume Pumped 6.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	11:28:22	1440.02	20.17	7.09	1423.92	2.91	17.22	0.45	65.60
Last 5	11:32:22	1680.02	20.48	7.11	1434.48	2.45	17.40	0.44	61.18
Last 5	11:36:22	1920.02	20.48	7.12	1453.02	2.78	17.60	0.36	56.90
Last 5	11:40:22	2160.02	20.70	7.16	1448.86	1.64	17.74	0.37	52.02
Last 5	11:44:22	2400.03	20.80	7.18	1457.20	2.90	17.87	0.39	47.42
Variance 0			-0.00	0.01	18.55			-0.08	-4.28
Variance 1			0.22	0.03	-4.16			0.01	-4.88
Variance 2			0.11	0.02	8.33			0.02	-4.60

Notes

Start pump @ 330 mL/min at 1105. Reduce pump to 115 mL/min at 1113. Reduce pump to 110 mL/min at 1130. Sample time 1150.

Grab Samples

BGWC-20

Metals

BGWC-20

Inorganics

BGWC-20

Radium



Product Name: Low-Flow System

Date: 2017-06-01 15:31:35

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 57 ft

Pump placement from TOC 48 ft

Well Information:

Well ID BGWC-21  
Well diameter 2 in  
Well Total Depth 53.35 ft  
Screen Length 10 ft  
Depth to Water 14.77 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.7394151 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 6.12 in  
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	15:11:52	480.03	21.14	7.10	372.69	1.27	15.26	0.71	79.29
Last 5	15:15:52	720.02	20.78	7.37	379.10	1.06	15.26	0.51	67.42
Last 5	15:19:52	960.03	20.75	7.51	382.92	2.47	15.26	0.37	58.34
Last 5	15:23:52	1200.02	20.62	7.57	385.69	1.82	15.28	0.33	52.70
Last 5	15:27:52	1440.02	20.34	7.61	388.45	2.30	15.28	0.27	48.19
Variance 0			-0.03	0.14	3.82			-0.14	-9.08
Variance 1			-0.13	0.06	2.77			-0.05	-5.64
Variance 2			-0.28	0.04	2.76			-0.05	-4.51

Notes

Start pump @ 200 mL/min at 1505. Sample time 1540.

Grab Samples

BGWC-21

Metals

BGWC-21

Inorganics

BGWC-21

Radium

Product Name: Low-Flow System

Date: 2017-06-01 14:07:56

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 64 ft

Pump placement from TOC 53 ft

Well Information:

Well ID BGWC-25  
Well diameter 2 in  
Well Total Depth 58.37 ft  
Screen Length 10 ft  
Depth to Water 14.49 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.770659 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 59.52 in  
Total Volume Pumped 6.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	13:46:55	1200.02	19.85	7.56	382.85	6.08	18.71	1.32	31.75
Last 5	13:50:55	1440.02	20.09	7.58	384.33	3.79	18.93	1.26	28.21
Last 5	13:54:55	1680.02	20.03	7.60	387.30	4.66	19.15	1.20	24.86
Last 5	13:58:55	1920.02	20.08	7.62	389.02	4.76	19.29	1.14	22.08
Last 5	14:02:55	2160.02	20.18	7.65	391.39	4.83	19.45	1.06	18.33
Variance 0			-0.06	0.02	2.97			-0.07	-3.35
Variance 1			0.04	0.02	1.72			-0.06	-2.78
Variance 2			0.10	0.02	2.37			-0.07	-3.75

Notes

Start pump @ 330 mL/min at 1328. Reduce pump to 120 mL/min at 1335. Reduce pump to 110 mL/min at 1348. Sample time 1410.

Grab Samples

BGWC-25

Metals

BGWC-25

Inorganics

BGWC-25

Radium

Product Name: Low-Flow System

Date: 2017-06-02 12:40:49

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 66 ft

Pump placement from TOC 57 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 62.36 ft  
Screen Length 10 ft  
Depth to Water 25.29 ft

Pumping Information:

Final Pumping Rate 80 mL/min  
Total System Volume 0.779586 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 164.28 in  
Total Volume Pumped 14 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	12:14:01	9519.87	19.84	7.36	534.13	1.34	38.38	0.69	1.38
Last 5	12:18:01	9759.87	20.01	7.36	536.77	1.35	38.54	0.73	-2.03
Last 5	12:22:01	9999.87	20.26	7.40	534.17	1.33	38.70	0.77	-5.40
Last 5	12:26:01	10239.87	20.57	7.45	535.52	1.27	38.87	0.77	-10.73
Last 5	12:30:04	10482.87	20.57	7.38	536.00	1.38	38.98	0.77	-10.36
Variance 0			0.25	0.04	-2.60			0.05	-3.37
Variance 1			0.31	0.05	1.35			-0.01	-5.32
Variance 2			-0.00	-0.07	0.48			-0.00	0.37

Notes

Start pump @ 110 mL/min at 0937. Drawdown resulted in a final flow rate of 80 mL/min. Permission to sample below 100 mL/min given by Pete Robinson (GPC). Sample time 1245.

Grab Samples

BGWC-10

Metals

BGWC-10

Inorganics

BGWC-10  
Radium



Product Name: Low-Flow System

Date: 2017-06-02 12:41:59

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Micropurge Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 81 ft

Pump placement from TOC 73.06 ft

Well Information:

Well ID BGWC-12  
Well diameter 2 in  
Well Total Depth 78.06 ft  
Screen Length 10 ft  
Depth to Water 37.22 ft

Pumping Information:

Final Pumping Rate 135 mL/min  
Total System Volume 0.8515373 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 4.2 in  
Total Volume Pumped 5.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:22:34	720.03	21.15	7.39	911.01	0.37	37.54	1.93	-29.81
Last 5	12:26:34	960.03	20.84	7.38	912.07	0.40	37.56	1.88	0.98
Last 5	12:30:34	1200.03	20.95	7.37	917.65	0.40	37.57	1.82	13.54
Last 5	12:34:34	1440.03	21.29	7.37	913.47	0.42	37.57	1.76	18.85
Last 5	12:38:34	1680.03	21.32	7.36	917.14	0.48	37.57	1.76	21.00
Variance 0			0.10	-0.01	5.58			-0.06	12.57
Variance 1			0.34	-0.00	-4.18			-0.05	5.31
Variance 2			0.04	-0.01	3.67			-0.00	2.15

Notes

Grab Samples  
BGWC-12  
Inorganics  
Dup-3  
Inorganics  
BGWC-12  
Metals

Dup-3  
Metals  
BGWC-12  
Radium  
Dup-3  
Radium  
BGWC-12  
2nd Radium



Product Name: Low-Flow System

Date: 2017-06-05 10:21:45

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Micropurge Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 97 ft

Pump placement from TOC 87.75 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.08 ft  
Screen Length 10 ft  
Depth to Water 84.90 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.9229521 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 16.56 in  
Total Volume Pumped 3.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:02:29	960.05	20.57	7.19	868.11	0.99	85.75	3.27	-9.72
Last 5	10:06:29	1200.03	20.57	7.20	869.89	0.77	85.88	3.90	-4.71
Last 5	10:10:29	1440.03	20.62	7.20	872.22	0.78	86.02	4.33	1.59
Last 5	10:14:29	1680.03	20.84	7.21	872.64	0.60	86.14	4.59	5.06
Last 5	10:18:29	1919.97	20.88	7.21	870.72	0.40	86.28	4.67	7.83
Variance 0			0.04	0.01	2.33			0.43	6.30
Variance 1			0.22	0.00	0.42			0.26	3.47
Variance 2			0.04	0.00	-1.92			0.08	2.77

Notes

Will sample within 24 hours and attempt to get full suite of samples.

Grab Samples

Product Name: Low-Flow System

Date: 2017-06-05 11:17:34

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Bladder Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 82 ft

Pump placement from TOC 72.30 ft

Well Information:

Well ID BGWC-15  
Well diameter 2 in  
Well Total Depth 73.30 ft  
Screen Length 10 ft  
Depth to Water 69.97 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.5560007 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 13.44 in  
Total Volume Pumped 2.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:03:30	540.03	21.53	6.74	1241.57	9.29	70.66	4.43	41.19
Last 5	11:06:30	720.03	21.31	6.74	1246.54	7.66	70.76	4.55	42.11
Last 5	11:09:30	900.03	21.28	6.74	1252.76	6.60	70.88	4.62	42.70
Last 5	11:12:30	1080.03	21.86	6.74	1254.87	5.07	70.97	4.63	43.53
Last 5	11:15:30	1260.03	22.03	6.74	1253.57	4.79	71.09	4.60	44.09
Variance 0			-0.02	0.00	6.22			0.08	0.60
Variance 1			0.58	-0.00	2.10			0.01	0.82
Variance 2			0.17	0.00	-1.30			-0.03	0.56

Notes

Complete evacuation and will sample within 24 hours

Grab Samples



Product Name: Low-Flow System

Date: 2017-06-05 12:36:17

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Bladder Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 48.00 ft

Pump placement from TOC 38.00 ft

Well Information:

Well ID BGWC-22  
Well diameter 2 in  
Well Total Depth 43.00 ft  
Screen Length 10 ft  
Depth to Water 25.48 ft

Pumping Information:

Final Pumping Rate 175 mL/min  
Total System Volume 0.4042443 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 7.92 in  
Total Volume Pumped 5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	12:18:02	720.03	20.94	7.07	2662.75	0.34	26.10	0.52	-14.69
Last 5	12:22:02	960.03	20.66	7.07	2665.84	0.25	26.11	0.42	-14.72
Last 5	12:26:02	1199.98	20.64	7.07	2668.15	0.08	26.12	0.35	-15.53
Last 5	12:30:02	1439.98	20.57	7.07	2668.96	0.03	26.13	0.31	-16.89
Last 5	12:34:02	1679.97	20.52	7.07	2670.66	0.05	26.14	0.27	-17.93
Variance 0			-0.02	0.00	2.32			-0.07	-0.82
Variance 1			-0.06	0.00	0.81			-0.04	-1.35
Variance 2			-0.05	0.00	1.70			-0.04	-1.04

Notes

Grab Samples  
BGWC-22  
Inorganics  
BGWC-22  
Metals  
BGWC-22  
Radium

Product Name: Low-Flow System

Date: 2017-06-05 14:20:58

Project Information:

Operator Name Robert Mull  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Micropurge Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 55 ft

Pump placement from TOC 45.12 ft

Well Information:

Well ID BGWC-23  
Well diameter 2 in  
Well Total Depth 51.12 ft  
Screen Length 10 ft  
Depth to Water 29.60 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.7354883 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 18.48 in  
Total Volume Pumped 4.1 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	14:02:40	720.03	22.24	7.33	1998.47	1.13	30.98	0.49	-95.63
Last 5	14:06:40	960.03	21.47	7.33	2043.29	0.84	31.08	0.40	-91.33
Last 5	14:10:40	1200.03	21.06	7.33	2093.88	0.91	31.10	0.33	-87.67
Last 5	14:14:40	1440.03	21.37	7.32	2109.46	0.88	31.13	0.31	-87.48
Last 5	14:18:40	1680.03	21.52	7.31	2145.62	0.94	31.14	0.30	-84.05
Variance 0			-0.41	-0.00	50.59			-0.07	3.66
Variance 1			0.30	-0.01	15.58			-0.02	0.20
Variance 2			0.16	-0.01	36.16			-0.00	3.43

Notes

Grab Samples  
BGWC-23  
Inorganics  
BGWC-23  
Metals  
BGWC-23  
Radium

Product Name: Low-Flow System

Date: 2017-06-05 12:37:47

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 70 ft

Pump placement from TOC 61 ft

Well Information:

Well ID BGWC-24  
Well diameter 2 in  
Well Total Depth 66.09 ft  
Screen Length 10 ft  
Depth to Water 7.84 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.7974396 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 47.04 in  
Total Volume Pumped 6.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	12:14:28	1686.02	22.13	6.87	6434.38	0.85	11.12	0.10	-222.48
Last 5	12:18:28	1926.02	22.46	6.88	6308.81	4.90	11.29	0.10	-218.80
Last 5	12:22:28	2166.03	22.35	6.88	6290.18	1.64	11.48	0.13	-210.70
Last 5	12:26:28	2406.03	22.41	6.87	6305.16	0.83	11.63	0.14	-206.87
Last 5	12:30:28	2646.02	22.49	6.87	6342.71	2.31	11.76	0.13	-204.92
Variance 0			-0.10	-0.00	-18.63			0.04	8.11
Variance 1			0.06	-0.01	14.98			0.00	3.83
Variance 2			0.08	-0.00	37.55			-0.01	1.95

Notes

Start pump @ 140 mL/min at 1147. Reduce pump to 100 mL/min at 1212. Sample time 1240.

Grab Samples

BGWC-24

Metals

BGWC-24

Inorganics

BGWC-24

Radium

Product Name: Low-Flow System

Date: 2017-06-05 10:31:30

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463068  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type MP50  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 66 ft

Pump placement from TOC 56 ft

Well Information:

Well ID BGWC-30  
Well diameter 2 in  
Well Total Depth 61.03 ft  
Screen Length 10 ft  
Depth to Water 1.37 ft

Pumping Information:

Final Pumping Rate 230 mL/min  
Total System Volume 0.779586 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	10:09:59	480.03	22.38	7.36	3139.28	2.33	1.41	0.83	100.90
Last 5	10:13:59	720.02	22.27	7.55	3146.10	1.57	1.41	0.40	98.54
Last 5	10:17:59	960.02	22.18	7.63	3151.28	1.28	1.41	0.22	96.90
Last 5	10:21:59	1200.02	22.34	7.67	3156.42	0.87	1.41	0.15	95.85
Last 5	10:25:59	1440.02	22.28	7.69	3159.43	1.04	1.41	0.12	95.60
Variance 0			-0.09	0.08	5.18			-0.18	-1.64
Variance 1			0.16	0.04	5.14			-0.07	-1.05
Variance 2			-0.06	0.02	3.01			-0.02	-0.25

Notes

Start pump @ 230 mL/min at 1003. Sample time 1035.

Grab Samples

BGWC-30

Metals

BGWC-30

Inorganics

BGWC-30

Radium

Product Name: Low-Flow System

Date: 2017-06-14 10:22:01

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 463453  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MICROpurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 89 ft

Pump placement from TOC 87.65 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.08 ft  
Screen Length 10 ft  
Depth to Water 86.24 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.5872446 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 12 in  
Total Volume Pumped 2.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:04:08	720.02	21.47	6.82	888.02	2.10	86.78	2.55	-97.12
Last 5	10:08:08	960.02	21.28	6.90	893.09	1.73	86.91	3.24	-86.50
Last 5	10:12:09	1200.02	21.14	6.97	896.55	1.46	87.06	3.75	-76.54
Last 5	10:16:08	1440.02	21.21	7.00	898.31	1.13	87.15	3.92	-67.32
Last 5	10:20:09	1680.03	21.13	7.03	902.00	1.02	87.24	3.79	-59.40
Variance 0			-0.13	0.07	3.45			0.51	9.96
Variance 1			0.06	0.04	1.77			0.17	9.22
Variance 2			-0.08	0.03	3.69			-0.13	7.92

Notes

Pre-purged 0 liters. Complete evacuation method Initiated. Radium only samples to be taken 6/15/17.

Grab Samples

Product Name: Low-Flow System

Date: 2017-07-07 10:24:33

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 90 ft

Pump placement from TOC 84.21 ft

Well Information:

Well ID BGWA-2  
Well diameter 2 in  
Well Total Depth 89.21 ft  
Screen Length 10 ft  
Depth to Water 41.33 ft

Pumping Information:

Final Pumping Rate 240 mL/min  
Total System Volume 0.886708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.24 in  
Total Volume Pumped 4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:04:18	240.07	19.15	7.73	308.82	0.47	41.34	0.28	-15.69
Last 5	10:08:18	480.02	19.42	7.78	310.52	0.30	41.34	0.30	-23.27
Last 5	10:12:18	720.02	19.41	7.80	312.12	0.40	41.34	0.34	-28.01
Last 5	10:16:18	960.02	19.46	7.81	313.68	0.32	41.34	0.39	-32.86
Last 5	10:20:18	1200.02	19.55	7.82	314.83	0.29	41.34	0.45	-36.61
Variance 0			-0.01	0.02	1.61			0.04	-4.74
Variance 1			0.04	0.01	1.56			0.05	-4.85
Variance 2			0.09	0.01	1.14			0.06	-3.75

Notes

Pre-purged 4.25 liters

Grab Samples

BGWA-2

Inorganics

Dup-1

Inorganics

BGWA-2

Metals

Dup-1  
Metals  
BGWA-2  
Radium  
Dup-1  
Radium



Product Name: Low-Flow System

Date: 2017-07-07 13:41:33

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 64 ft

Pump placement from TOC 58.46 ft

Well Information:

Well ID BGWA-6  
Well diameter 2 in  
Well Total Depth 63.46 ft  
Screen Length 10 ft  
Depth to Water 29.08 ft

Pumping Information:

Final Pumping Rate 180 mL/min  
Total System Volume 0.770659 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.56 in  
Total Volume Pumped 3.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:24:24	240.14	21.20	7.50	507.16	0.40	29.21	0.79	-42.58
Last 5	13:28:25	480.68	20.69	7.50	507.87	0.27	29.21	0.73	-28.13
Last 5	13:32:25	720.68	20.33	7.50	508.16	0.17	29.21	0.71	-17.57
Last 5	13:36:25	960.68	20.42	7.49	507.63	0.27	29.21	0.69	-11.47
Last 5	13:40:25	1200.68	20.09	7.50	506.55	0.23	29.21	0.68	-6.82
Variance 0			-0.36	0.00	0.30			-0.02	10.56
Variance 1			0.09	-0.01	-0.53			-0.03	6.10
Variance 2			-0.33	0.00	-1.09			-0.01	4.65

Notes

Pre-purged 2 liters

Grab Samples

BGWA-6  
Inorganics  
BGWA-6  
Metals  
BGWA-6  
Radium



Product Name: Low-Flow System

Date: 2017-07-07 10:59:05

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 513028  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 92 ft

Pump placement from TOC 82.50 ft

Well Information:

Well ID BGWA-28  
Well diameter 2 in  
Well Total Depth 87.50 ft  
Screen Length 10 ft  
Depth to Water 63.57 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.8956349 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.56 in  
Total Volume Pumped 10.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:40:18	2880.43	22.09	7.57	500.68	0.02	63.73	2.77	38.85
Last 5	10:44:18	3120.43	22.12	7.57	499.49	0.06	63.73	2.92	40.21
Last 5	10:48:18	3360.43	22.17	7.57	500.42	0.03	63.72	3.05	40.54
Last 5	10:52:18	3600.43	22.20	7.58	499.90	0.08	63.71	3.15	40.35
Last 5	10:56:18	3840.43	22.53	7.58	501.49	0.13	63.70	3.24	40.81
Variance 0			0.05	0.00	0.93			0.13	0.34
Variance 1			0.02	0.00	-0.52			0.10	-0.19
Variance 2			0.33	0.00	1.59			0.09	0.45

Notes

Grab Samples  
BGWA-28  
Inorganics  
BGWA-28  
Metals  
BGWA-28  
Radium

Product Name: Low-Flow System

Date: 2017-07-10 10:36:02

Project Information:

Operator Name Brian Steele  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 81 ft

Pump placement from TOC 71.20 ft

Well Information:

Well ID BGWA-26  
Well diameter 2 in  
Well Total Depth 76.20 ft  
Screen Length 10 ft  
Depth to Water 55.39 ft

Pumping Information:

Final Pumping Rate 125 mL/min  
Total System Volume 0.8465373 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.08 in  
Total Volume Pumped 5.75 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:12:45	1681.03	19.70	7.85	388.89	0.16	55.48	0.42	-108.59
Last 5	10:16:45	1921.02	19.80	7.86	386.01	0.12	55.48	0.39	-112.07
Last 5	10:20:45	2161.03	20.04	7.85	384.16	0.19	55.48	0.36	-116.68
Last 5	10:24:45	2401.02	20.20	7.86	379.70	0.21	55.48	0.34	-118.13
Last 5	10:28:45	2641.02	20.55	7.86	378.94	0.19	55.48	0.32	-120.69
Variance 0			0.24	-0.00	-1.86			-0.03	-4.61
Variance 1			0.16	0.01	-4.46			-0.02	-1.45
Variance 2			0.35	0.00	-0.75			-0.02	-2.56

Notes

Grab Samples  
BGWA-26  
Inorganics  
BGWA-26  
Metals  
BGWA-26  
Radium

Product Name: Low-Flow System

Date: 2017-07-10 12:22:54

Project Information:

Operator Name Brian Steele  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 8 ft

Pump placement from TOC 92.18 ft

Well Information:

Well ID BGWA-27  
Well diameter 2 in  
Well Total Depth 94.18 ft  
Screen Length 10 ft  
Depth to Water 61.73 ft

Pumping Information:

Final Pumping Rate 125 mL/min  
Total System Volume 0.5207074 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.88 in  
Total Volume Pumped 4.125 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:04:02	960.02	21.33	7.72	427.30	1.35	61.97	5.19	40.30
Last 5	12:08:02	1200.02	21.59	7.71	427.72	0.86	61.97	5.16	41.01
Last 5	12:12:03	1441.12	21.66	7.71	425.08	0.88	61.97	5.09	41.69
Last 5	12:16:03	1681.12	21.78	7.71	425.96	1.00	61.97	5.13	42.06
Last 5	12:20:03	1921.12	21.82	7.71	426.84	1.01	61.97	5.18	42.79
Variance 0			0.07	0.01	-2.65			-0.07	0.68
Variance 1			0.12	-0.00	0.88			0.04	0.37
Variance 2			0.05	-0.00	0.89			0.04	0.73

Notes

Grab Samples  
BGWA-27  
Inorganics  
BGWA-27  
Metals  
BGWA-27  
Radium

Product Name: Low-Flow System

Date: 2017-07-10 14:49:07

Project Information:

Operator Name Brian Steele  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 8 ft

Pump placement from TOC 95.10 ft

Well Information:

Well ID BGWA-29  
Well diameter 2 in  
Well Total Depth 100.1 ft  
Screen Length 10 ft  
Depth to Water 34.09 ft

Pumping Information:

Final Pumping Rate 125 mL/min  
Total System Volume 0.5207074 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.36 in  
Total Volume Pumped 8.625 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:30:06	3121.00	22.36	8.13	204.24	0.43	34.11	7.83	42.76
Last 5	14:34:06	3360.97	22.47	8.12	203.23	0.39	34.11	7.77	43.10
Last 5	14:38:06	3600.97	22.31	8.12	202.17	0.47	34.11	7.71	43.82
Last 5	14:42:06	3840.84	22.19	8.13	200.78	0.42	34.11	7.78	43.79
Last 5	14:46:06	4080.84	22.18	8.12	201.99	0.36	34.11	7.95	43.47
Variance 0			-0.16	-0.01	-1.07			-0.06	0.72
Variance 1			-0.13	0.01	-1.38			0.07	-0.03
Variance 2			-0.01	-0.01	1.20			0.17	-0.33

Notes

Grab Samples  
BGWA-29  
Inorganics  
BGWA-29  
Metals  
BGWA-29  
Radium

Product Name: Low-Flow System

Date: 2017-07-10 14:36:14

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 513028  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 85 ft

Pump placement from TOC 75.01 ft

Well Information:

Well ID BGWC-8  
Well diameter 2 in  
Well Total Depth 80.01 ft  
Screen Length 10 ft  
Depth to Water 46.22 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.864391 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.12 in  
Total Volume Pumped 3.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:18:13	720.02	22.56	7.70	325.67	0.54	46.22	4.75	67.34
Last 5	14:22:13	960.02	22.72	7.70	325.60	0.18	46.23	4.70	64.77
Last 5	14:26:13	1200.02	22.79	7.70	323.53	0.25	46.23	4.67	64.07
Last 5	14:30:13	1440.02	22.90	7.70	324.69	0.19	46.23	4.64	61.43
Last 5	14:34:13	1680.02	23.01	7.70	325.30	0.16	46.23	4.62	60.50
Variance 0			0.07	0.00	-2.07			-0.04	-0.70
Variance 1			0.11	-0.00	1.16			-0.02	-2.64
Variance 2			0.11	-0.00	0.61			-0.02	-0.93

Notes

Grab Samples  
BGWC-8  
Inorganics  
BGWC-8  
Metals  
BGWC-8  
Radium

Product Name: Low-Flow System

Date: 2017-07-11 14:24:20

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Short Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 64 ft

Pump placement from TOC 59 ft

Well Information:

Well ID BGWC-9  
Well diameter 2 in  
Well Total Depth 63.94 ft  
Screen Length 10 ft  
Depth to Water 30.90 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.5056591 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.84 in  
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:00:53	720.02	19.77	7.08	636.65	2.89	30.96	0.13	-61.05
Last 5	14:04:53	960.02	19.71	7.19	617.37	0.58	30.97	0.10	-77.42
Last 5	14:08:53	1200.02	19.46	7.28	609.65	1.11	30.97	0.10	-81.55
Last 5	14:12:53	1440.02	19.50	7.32	603.33	0.97	30.97	0.12	-86.81
Last 5	14:16:53	1680.02	19.28	7.34	604.44	0.61	30.97	0.15	-91.96
Variance 0			-0.24	0.08	-7.72			0.00	-4.12
Variance 1			0.04	0.04	-6.31			0.02	-5.27
Variance 2			-0.23	0.02	1.11			0.02	-5.14

Notes

Start pump @ 200 mL/min at 1350. Sample time 1430.

Grab Samples

BGWC-9  
Inorganics  
BGWC-9  
Metals  
BGWC-9  
Radium

Product Name: Low-Flow System

Date: 2017-07-11 12:26:37

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 94 ft

Pump placement from TOC 89 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 89 ft  
Screen Length 10 ft  
Depth to Water 84.21 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.6095617 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 18.96 in  
Total Volume Pumped 2.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:02:07	902.02	20.12	6.88	885.00	3.08	85.11	0.90	-76.64
Last 5	12:05:07	1082.03	20.02	6.96	896.77	2.22	85.38	3.15	-59.16
Last 5	12:08:07	1262.02	20.13	7.00	906.01	1.97	85.52	3.92	-54.01
Last 5	12:11:07	1442.02	20.50	7.00	903.07	1.62	85.70	3.77	-56.01
Last 5	12:14:07	1622.02	20.68	6.99	899.33	1.99	85.79	3.41	-61.50
Variance 0			0.11	0.03	9.24			0.77	5.14
Variance 1			0.37	0.01	-2.94			-0.15	-1.99
Variance 2			0.18	-0.01	-3.74			-0.36	-5.50

Notes

Start pump @ 130 mL/min at 1150. Reduce flow to 100 mL/min at 1206. Complete evacuation achieved when DTW measured within 2 ft from top of pump at 1214. Samples to be collected tomorrow.

Grab Samples

Product Name: Low-Flow System

Date: 2017-07-11 10:02:52

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 62 ft

Pump placement from TOC 56 ft

Well Information:

Well ID BGWC-30  
Well diameter 2 in  
Well Total Depth 61.03 ft  
Screen Length 10 ft  
Depth to Water 1.55 ft

Pumping Information:

Final Pumping Rate 350 mL/min  
Total System Volume 0.7617322 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.72 in  
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:40:35	240.15	23.50	6.83	3147.49	1.54	1.58	0.73	87.81
Last 5	09:44:35	480.03	23.07	7.16	3170.43	1.61	1.60	0.16	82.69
Last 5	09:48:35	720.02	23.07	7.25	3180.09	1.06	1.61	0.10	79.72
Last 5	09:52:35	960.02	23.07	7.28	3180.42	1.01	1.61	0.10	77.28
Last 5	09:56:35	1200.03	23.09	7.29	3181.76	0.75	1.61	0.10	74.99
Variance 0			-0.00	0.09	9.66			-0.06	-2.97
Variance 1			-0.00	0.03	0.33			-0.00	-2.45
Variance 2			0.01	0.01	1.34			0.00	-2.28

Notes

Start pump @ 350 mL/min at 0935. Sample time 1010.

Grab Samples

BGWC-30

Inorganics

Dup-2

Inorganics

BGWC-30

Metals



Dup-2  
Metals  
BGWC-30  
Radium  
BGWC-30  
2nd Radium  
Dup-2  
Radium

Product Name: Low-Flow System

Date: 2017-07-12 15:57:30

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 62 ft

Pump placement from TOC 57 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 62.36 ft  
Screen Length 10 ft  
Depth to Water 28.93 ft

Pumping Information:

Final Pumping Rate 90 mL/min  
Total System Volume 0.7617322 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 202.56 in  
Total Volume Pumped 17 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:37:13	9145.04	21.85	7.38	533.09	0.31	45.14	1.23	-91.38
Last 5	15:41:13	9385.04	21.94	7.38	531.77	0.22	45.33	1.22	-91.10
Last 5	15:45:13	9625.04	22.17	7.37	532.92	0.40	45.51	1.17	-94.01
Last 5	15:49:13	9865.04	22.45	7.37	532.02	0.59	45.69	1.12	-95.17
Last 5	15:53:13	10105.04	22.58	7.37	533.01	0.25	45.81	1.10	-97.57
Variance 0			0.22	-0.01	1.15			-0.05	-2.90
Variance 1			0.28	-0.00	-0.90			-0.05	-1.16
Variance 2			0.13	-0.00	0.99			-0.02	-2.40

Notes

Start pump @ 115 mL/min at 1305. See MP field notes for sequence of flow rate changes. Permission obtained from Pete Robinson (GPC) to sample at 90 mL/min. Sample time 1600.

Grab Samples

BGWC-10

Inorganics

BGWC-10

Metals

BGWC-10  
Radium



Product Name: Low-Flow System

Date: 2017-07-12 11:32:25

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 94 ft

Pump placement from TOC 89 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 89 ft  
Screen Length 10 ft  
Depth to Water 85.58 ft

Pumping Information:

Final Pumping Rate 115 mL/min  
Total System Volume 0.6095617 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 22.09 in  
Total Volume Pumped 3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:14:51	180.14	25.35	6.48	795.28	1.65	86.78	3.26	76.25
Last 5	11:17:51	360.02	21.64	6.84	844.36	1.37	86.97	3.96	59.46
Last 5	11:20:51	540.02	20.84	6.95	854.09	1.70	87.14	4.16	50.78
Last 5	11:23:51	720.02	20.84	6.99	856.96	1.04	87.26	4.06	43.58
Last 5	11:26:51	900.03	20.76	7.00	857.69	0.78	87.42	3.90	37.57
Variance 0			-0.80	0.11	9.73			0.19	-8.68
Variance 1			-0.00	0.03	2.87			-0.09	-7.20
Variance 2			-0.08	0.01	0.73			-0.16	-6.01

Notes

Start pump @ 115 mL/min at 1055: samples collected immediately (Radium only).

Grab Samples

BGWC-14  
Radium

Product Name: Low-Flow System

Date: 2017-07-12 10:12:29

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 81 ft

Pump placement from TOC 73 ft

Well Information:

Well ID BGWC-15  
Well diameter 2 in  
Well Total Depth 73.30 ft  
Screen Length 10 ft  
Depth to Water 69.88 ft

Pumping Information:

Final Pumping Rate 115 mL/min  
Total System Volume 0.5515373 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 1.74 in  
Total Volume Pumped 3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:47:45	900.02	22.17	6.73	1200.28	4.96	71.16	4.78	70.80
Last 5	09:50:45	1080.03	22.86	6.73	1205.76	5.33	71.30	4.84	70.10
Last 5	09:53:45	1260.02	24.02	6.72	1207.08	4.25	71.33	4.79	73.74
Last 5	09:56:45	1440.02	24.06	6.74	1186.46	4.01	71.44	4.62	69.63
Last 5	09:59:45	1620.02	22.80	6.76	1173.35	1.82	71.62	4.16	69.23
Variance 0			1.16	-0.00	1.32			-0.05	3.64
Variance 1			0.04	0.01	-20.62			-0.18	-4.11
Variance 2			-1.26	0.02	-13.10			-0.46	-0.41

Notes

Start pump @ 170 mL/min at 0932. Reduce flow to 85 mL/min at 0942. Increase flow to 115 mL/min at 0948. Complete evacuation achieved at 1002. Samples to be collected tomorrow.

Grab Samples

Product Name: Low-Flow System

Date: 2017-07-13 14:26:12

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 513028  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 95 ft

Pump placement from TOC 85.20 ft

Well Information:

Well ID BGWC-7  
Well diameter 2 in  
Well Total Depth 90.20 ft  
Screen Length 10 ft  
Depth to Water 45.20 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.9090251 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 391.21 in  
Total Volume Pumped 25 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	14:06:02	13199.76	22.81	7.10	1120.48	0.76	75.63	0.28	-102.28
Last 5	14:10:02	13439.76	22.84	7.11	1106.96	0.50	76.11	0.29	-100.75
Last 5	14:14:02	13679.76	21.92	7.11	1118.92	0.33	76.67	0.31	-97.55
Last 5	14:18:02	13919.76	22.14	7.11	1123.65	0.66	77.25	0.34	-97.09
Last 5	14:22:02	14159.76	22.62	7.11	1105.06	1.16	77.81	0.36	-95.12
Variance 0			-0.92	-0.00	11.96			0.02	3.20
Variance 1			0.22	-0.00	4.73			0.02	0.46
Variance 2			0.48	0.01	-18.59			0.02	1.97

Notes

Continue with complete evacuation. Storm is building so stopped trolling. Will sample within 24 hours

**Fire alarms started going off at the plant.**

Grab Samples

Product Name: Low-Flow System

Date: 2017-07-13 12:09:42

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 75 ft

Well Information:

Well ID BGWC-11  
Well diameter 2 in  
Well Total Depth 77.05 ft  
Screen Length 10 ft  
Depth to Water 25.57 ft

Pumping Information:

Final Pumping Rate 190 mL/min  
Total System Volume 0.8420739 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 67.56 in  
Total Volume Pumped 8.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:44:59	480.10	18.18	7.27	446.75	0.29	29.78	0.08	-142.15
Last 5	11:48:59	720.06	18.21	7.32	445.50	0.30	30.68	0.08	-155.45
Last 5	11:52:59	960.02	18.08	7.38	445.43	0.59	31.50	0.08	-161.66
Last 5	11:56:59	1200.03	18.93	7.39	447.51	0.37	31.30	0.11	-166.17
Last 5	12:00:59	1440.02	18.97	7.42	446.27	0.79	31.20	0.10	-165.94
Variance 0			-0.13	0.06	-0.06			0.00	-6.20
Variance 1			0.84	0.02	2.08			0.03	-4.52
Variance 2			0.04	0.03	-1.25			-0.01	0.24

Notes

Start pump @ 330 mL/min at 1135. Reduce flow to 190 mL/min at 1155. Sample time 1215.

Grab Samples

BGWC-11  
Inorganics  
BGWC-11  
Metals  
BGWC-11  
Radium

Product Name: Low-Flow System

Date: 2017-07-13 13:39:35

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 73 ft

Well Information:

Well ID BGWC-12  
Well diameter 2 in  
Well Total Depth 78.06 ft  
Screen Length 10 ft  
Depth to Water 39.78 ft

Pumping Information:

Final Pumping Rate 360 mL/min  
Total System Volume 0.8420739 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 11.76 in  
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:16:38	240.16	21.20	6.94	865.39	0.62	40.27	2.17	-28.02
Last 5	13:20:38	480.03	19.33	7.12	871.32	0.88	40.51	1.69	3.75
Last 5	13:24:38	720.02	18.99	7.18	869.91	2.02	40.61	1.54	10.10
Last 5	13:28:38	960.02	18.89	7.22	873.56	1.88	40.70	1.52	13.34
Last 5	13:32:38	1200.02	18.97	7.24	878.25	2.43	40.76	1.53	15.51
Variance 0			-0.34	0.06	-1.41			-0.16	6.35
Variance 1			-0.09	0.03	3.65			-0.01	3.24
Variance 2			0.08	0.02	4.70			0.01	2.17

Notes

Start pump @ 360 mL/min at 1315. Sample time 1345.

Grab Samples

BGWC-12  
Inorganics  
BGWC-12  
Metals  
BGWC-12  
Radium



Product Name: Low-Flow System

Date: 2017-07-14 09:20:53

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 54 ft

Pump placement from TOC 44 ft

Well Information:

Well ID BGWC-16  
Well diameter 2 in  
Well Total Depth 48.99 ft  
Screen Length 10 ft  
Depth to Water 16.66 ft

Pumping Information:

Final Pumping Rate 450 mL/min  
Total System Volume 0.7260249 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3.24 in  
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:03:28	240.12	19.54	7.26	808.70	8.27	16.85	1.21	73.37
Last 5	09:07:28	480.03	18.71	7.02	819.42	8.61	16.90	0.14	64.79
Last 5	09:11:28	720.25	18.61	6.95	813.97	5.87	16.92	0.10	60.27
Last 5	09:15:28	960.26	18.68	6.93	810.31	4.04	16.93	0.10	57.68
Last 5									
Variance 0			-0.84	-0.24	10.72			-1.07	-8.58
Variance 1			-0.10	-0.07	-5.45			-0.04	-4.51
Variance 2			0.07	-0.02	-3.67			-0.01	-2.59

Notes

Start pump @ 450 mL/min at 0900. Sample time 0925.

Grab Samples

BGWC-16  
Inorganics  
BGWC-16  
Metals  
BGWC-16  
Radium

Product Name: Low-Flow System

Date: 2017-07-14 10:51:49

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 73 ft

Pump placement from TOC 63 ft

Well Information:

Well ID BGWC-17  
Well diameter 2 in  
Well Total Depth 68.10 ft  
Screen Length 10 ft  
Depth to Water 15.34 ft

Pumping Information:

Final Pumping Rate 500 mL/min  
Total System Volume 0.8108299 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.72 in  
Total Volume Pumped 9.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:30:59	240.14	19.88	7.64	581.55	0.68	15.39	0.93	65.49
Last 5	10:34:59	480.02	18.93	7.48	593.79	1.87	15.40	0.15	63.88
Last 5	10:38:59	720.02	18.72	7.42	592.07	2.65	15.40	0.09	57.85
Last 5	10:42:59	960.02	18.70	7.39	590.55	2.12	15.40	0.08	54.14
Last 5									
Variance 0			-0.95	-0.16	12.23			-0.77	-1.61
Variance 1			-0.21	-0.06	-1.71			-0.06	-6.03
Variance 2			-0.02	-0.03	-1.53			-0.00	-3.71

Notes

Start pump @ 500 mL/min at 1030. Sample time 1100.

Grab Samples

BGWC-17  
Inorganics  
BGWC-17  
Metals  
BGWC-17  
Radium

Product Name: Low-Flow System

Date: 2017-07-14 12:20:30

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 42 ft

Pump placement from TOC 33 ft

Well Information:

Well ID BGWC-18  
Well diameter 2 in  
Well Total Depth 37.82 ft  
Screen Length 10 ft  
Depth to Water 13.92 ft

Pumping Information:

Final Pumping Rate 370 mL/min  
Total System Volume 0.6724638 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.32 in  
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:57:39	480.02	20.72	7.01	3.38	6.91	13.98	1.22	83.01
Last 5	12:01:39	720.02	19.22	6.81	481.52	7.85	13.99	0.16	74.20
Last 5	12:05:39	960.02	18.93	6.72	482.38	5.97	14.01	0.15	69.36
Last 5	12:09:39	1200.02	18.72	6.70	479.61	5.32	14.02	0.15	67.43
Last 5	12:13:39	1440.02	18.62	6.68	480.03	4.79	14.03	0.15	66.30
Variance 0			-0.29	-0.09	0.86			-0.01	-4.84
Variance 1			-0.21	-0.02	-2.77			0.00	-1.93
Variance 2			-0.10	-0.02	0.42			-0.00	-1.13

Notes

Start pump @ 370 mL/min at 1150. Sample time 1225.

Grab Samples

BGWC-18  
Inorganics  
BGWC-18  
Metals  
BGWC-18  
Radium

Product Name: Low-Flow System

Date: 2017-07-14 13:41:25

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 60 ft

Pump placement from TOC 50 ft

Well Information:

Well ID BGWC-19  
Well diameter 2 in  
Well Total Depth 54.70 ft  
Screen Length 10 ft  
Depth to Water 15.90 ft

Pumping Information:

Final Pumping Rate 260 mL/min  
Total System Volume 0.7528054 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3.6 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:16:27	240.16	31.64	6.08	342.34	0.54	16.08	2.25	103.98
Last 5	13:20:27	480.03	20.66	6.45	482.33	0.75	16.16	1.00	74.93
Last 5	13:24:27	720.02	19.63	6.53	508.13	0.99	16.18	0.49	69.91
Last 5	13:28:27	960.02	19.68	6.54	516.05	0.23	16.20	0.19	66.54
Last 5	13:32:27	1200.02	19.50	6.56	519.69	0.28	16.20	0.14	64.32
Variance 0			-1.03	0.07	25.79			-0.50	-5.02
Variance 1			0.05	0.01	7.92			-0.31	-3.37
Variance 2			-0.17	0.02	3.65			-0.05	-2.22

Notes

Start pump @ 260 mL/min at 1315. Sample time 1345.

Grab Samples

BGWC-19  
Inorganics  
BGWC-19  
Metals  
BGWC-19  
Radium

Product Name: Low-Flow System

Date: 2017-07-17 15:24:59

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 513028  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 56 ft

Pump placement from TOC 46.12 ft

Well Information:

Well ID BGWC-23  
Well diameter 2 in  
Well Total Depth 51.12 ft  
Screen Length 10 ft  
Depth to Water 30.91 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.7349517 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 15.48 in  
Total Volume Pumped 3.96 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:06:48	960.88	23.11	7.34	2040.71	2.34	32.18	0.52	-86.96
Last 5	15:10:48	1200.88	23.43	7.32	2087.47	2.15	32.22	0.46	-83.82
Last 5	15:14:48	1440.88	23.37	7.31	2139.40	2.10	32.22	0.42	-80.65
Last 5	15:18:48	1680.88	23.60	7.30	2188.87	2.02	32.22	0.37	-78.28
Last 5	15:22:48	1920.88	23.93	7.30	2213.43	2.19	32.20	0.30	-77.36
Variance 0			-0.06	-0.01	51.92			-0.03	3.17
Variance 1			0.23	-0.01	49.47			-0.06	2.38
Variance 2			0.33	-0.00	24.56			-0.06	0.92

Notes

DO stable below 0.5 mg/L

Grab Samples

BGWC-23  
Inorganics  
BGWC-23  
Metals  
BGWC-23  
Radium

Product Name: Low-Flow System

Date: 2017-07-17 10:42:28

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 513028  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 71 ft

Pump placement from TOC 61.09 ft

Well Information:

Well ID BGWC-24  
Well diameter 2 in  
Well Total Depth 66.09 ft  
Screen Length 10 ft  
Depth to Water 9.75 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.8019031 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 42.96 in  
Total Volume Pumped 5.3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:24:35	2160.46	22.26	6.66	6630.87	0.21	12.86	0.25	-226.94
Last 5	10:28:35	2400.46	22.46	6.66	6645.92	0.08	13.00	0.22	-226.01
Last 5	10:32:35	2640.46	22.51	6.65	6668.17	0.14	13.12	0.20	-223.89
Last 5	10:36:35	2880.46	22.58	6.65	6699.18	0.19	13.23	0.19	-221.45
Last 5	10:40:35	3120.46	22.63	6.65	6738.10	0.13	13.33	0.18	-219.37
Variance 0			0.05	-0.00	22.25			-0.02	2.12
Variance 1			0.07	-0.00	31.00			-0.01	2.44
Variance 2			0.06	-0.00	38.92			-0.01	2.07

Notes

Grab Samples  
BGWC-24  
Inorganics  
BGWC-24  
Metals  
BGWC-24  
Radium

Product Name: Low-Flow System

Date: 2017-07-17 13:10:50

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 513028  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 63 ft

Pump placement from TOC 53.37 ft

Well Information:

Well ID BGWC-25  
Well diameter 2 in  
Well Total Depth 58.37 ft  
Screen Length 10 ft  
Depth to Water 17.22 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.7661957 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 55.44 in  
Total Volume Pumped 4.16 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:52:04	2400.06	21.11	7.72	399.12	1.20	21.42	0.80	-77.73
Last 5	12:56:04	2640.06	21.29	7.72	401.19	1.23	21.56	0.74	-82.65
Last 5	13:00:04	2880.06	21.59	7.72	402.54	1.37	21.68	0.67	-86.83
Last 5	13:04:04	3120.06	21.86	7.72	403.17	1.41	21.76	0.64	-89.80
Last 5	13:08:04	3360.06	21.81	7.73	402.30	1.59	21.84	0.61	-91.82
Variance 0			0.30	-0.00	1.35			-0.06	-4.18
Variance 1			0.26	0.00	0.63			-0.04	-2.97
Variance 2			-0.04	0.00	-0.87			-0.02	-2.02

Notes

Grab Samples  
BGWC-25  
Inorganics  
BGWC-25  
Metals  
BGWC-25  
Radium

Product Name: Low-Flow System

Date: 2017-07-18 10:22:50

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MICROPURGE  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 88 ft

Pump placement from TOC 87.75 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.08 ft  
Screen Length 10 ft  
Depth to Water 87.28 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.5827813 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 4.56 in  
Total Volume Pumped 1.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:09:14	180.03	23.61	7.06	898.30	0.44	87.41	4.90	18.15
Last 5	10:12:14	360.02	22.71	7.04	909.81	0.49	87.48	4.90	1.48
Last 5	10:15:14	540.02	22.67	7.01	906.83	0.76	87.54	4.40	-16.10
Last 5	10:18:14	720.02	22.54	6.99	908.99	0.63	87.62	3.92	-30.85
Last 5	10:21:14	900.02	22.67	6.97	902.48	0.51	87.66	3.25	-52.96
Variance 0			-0.04	-0.02	-2.98			-0.49	-17.58
Variance 1			-0.14	-0.03	2.16			-0.49	-14.75
Variance 2			0.13	-0.02	-6.51			-0.66	-22.11

Notes

Samples to be taken 7/19. Full sample suite.

Grab Samples



Product Name: Low-Flow System

Date: 2017-07-18 12:42:26

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 50 ft

Pump placement from TOC 44.74 ft

Well Information:

Well ID BGWC-20  
Well diameter 2 in  
Well Total Depth 49.74 ft  
Screen Length 10 ft  
Depth to Water 15.24 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.7081711 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 109.2 in  
Total Volume Pumped 5.02 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:22:14	1680.02	21.82	7.18	1516.23	0.93	23.80	0.15	-117.47
Last 5	12:26:14	1920.02	21.83	7.19	1517.94	1.01	23.89	0.15	-115.85
Last 5	12:30:14	2160.02	22.02	7.19	1515.66	1.19	24.07	0.16	-115.35
Last 5	12:34:14	2400.02	21.92	7.20	1514.08	1.27	24.18	0.16	-114.74
Last 5	12:38:14	2639.90	21.90	7.20	1511.03	1.28	24.34	0.17	-114.08
Variance 0			0.19	0.01	-2.27			0.01	0.50
Variance 1			-0.10	0.01	-1.59			0.00	0.61
Variance 2			-0.02	0.00	-3.04			0.01	0.66

Notes

Pre-purged 7 liters.

Grab Samples

BGWC-29  
Inorganics  
BGWC-20  
Metals  
BGWC-20  
Radium

Product Name: Low-Flow System

Date: 2017-07-18 14:38:01

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 53 ft

Pump placement from TOC 48.35 ft

Well Information:

Well ID BGWC-21  
Well diameter 2 in  
Well Total Depth 53.35 ft  
Screen Length 10 ft  
Depth to Water 21.12 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.7265614 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 4.2 in  
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:20:15	240.02	23.38	7.80	389.80	0.54	21.46	0.28	-86.72
Last 5	14:24:15	480.02	23.22	7.79	388.99	0.63	21.46	0.25	-96.63
Last 5	14:28:15	720.02	23.27	7.78	393.94	1.01	21.46	0.20	-107.74
Last 5	14:32:15	960.02	23.09	7.78	393.66	1.28	21.47	0.22	-108.59
Last 5	14:36:15	1200.02	22.87	7.77	397.63	1.41	21.47	0.26	-108.32
Variance 0			0.06	-0.01	4.94			-0.04	-11.11
Variance 1			-0.19	-0.01	-0.28			0.02	-0.85
Variance 2			-0.22	-0.00	3.97			0.03	0.27

Notes

Pre-purged 2.5 liters.

Grab Samples

BGWC-21

Inorganics

DUP-3

Inorganics

BGWC-21

Metals

DUP-3  
Metals  
BGWC-21  
Radium  
DUP-3  
Radium

Product Name: Low-Flow System

Date: 2017-07-19 11:00:50

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 43 ft

Pump placement from TOC 38.00 ft

Well Information:

Well ID BGWC-22  
Well diameter 2 in  
Well Total Depth 43.00 ft  
Screen Length 10 ft  
Depth to Water 27.02 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.6769272 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 5.76 in  
Total Volume Pumped 3.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:42:09	240.03	21.73	7.02	2894.17	0.07	27.53	0.37	-39.44
Last 5	10:46:09	480.02	21.43	6.99	2908.02	0.00	27.51	0.30	-41.33
Last 5	10:50:09	720.02	21.33	6.99	2904.72	0.01	27.51	0.27	-41.46
Last 5	10:54:09	960.02	21.39	6.98	2905.32	0.00	27.52	0.24	-41.16
Last 5	10:58:09	1200.02	21.47	6.97	2910.83	0.00	27.50	0.23	-41.33
Variance 0			-0.10	-0.01	-3.31			-0.03	-0.13
Variance 1			0.06	-0.01	0.60			-0.03	0.30
Variance 2			0.08	-0.00	5.51			-0.01	-0.18

Notes

Pre-purged 2 liters.

Grab Samples

BGWC-22

Inorganics

BGWC-22

Metals

BGWC-22

Radium

Product Name: Low-Flow System

Date: 2017-07-11 14:24:20

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Short Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 64 ft

Pump placement from TOC 59 ft

Well Information:

Well ID BGWC-9  
Well diameter 2 in  
Well Total Depth 63.94 ft  
Screen Length 10 ft  
Depth to Water 30.90 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.5056591 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.84 in  
Total Volume Pumped 7 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:00:53	720.02	19.77	7.08	636.65	2.89	30.96	0.13	-61.05
Last 5	14:04:53	960.02	19.71	7.19	617.37	0.58	30.97	0.10	-77.42
Last 5	14:08:53	1200.02	19.46	7.28	609.65	1.11	30.97	0.10	-81.55
Last 5	14:12:53	1440.02	19.50	7.32	603.33	0.97	30.97	0.12	-86.81
Last 5	14:16:53	1680.02	19.28	7.34	604.44	0.61	30.97	0.15	-91.96
Variance 0			-0.24	0.08	-7.72			0.00	-4.12
Variance 1			0.04	0.04	-6.31			0.02	-5.27
Variance 2			-0.23	0.02	1.11			0.02	-5.14

Notes

Start pump @ 200 mL/min at 1350. Sample time 1430.

Grab Samples

BGWC-9  
Inorganics  
BGWC-9  
Metals  
BGWC-9  
Radium

Product Name: Low-Flow System

Date: 2017-07-11 12:26:37

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 94 ft

Pump placement from TOC 89 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 89 ft  
Screen Length 10 ft  
Depth to Water 84.21 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.6095617 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 18.96 in  
Total Volume Pumped 2.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:02:07	902.02	20.12	6.88	885.00	3.08	85.11	0.90	-76.64
Last 5	12:05:07	1082.03	20.02	6.96	896.77	2.22	85.38	3.15	-59.16
Last 5	12:08:07	1262.02	20.13	7.00	906.01	1.97	85.52	3.92	-54.01
Last 5	12:11:07	1442.02	20.50	7.00	903.07	1.62	85.70	3.77	-56.01
Last 5	12:14:07	1622.02	20.68	6.99	899.33	1.99	85.79	3.41	-61.50
Variance 0			0.11	0.03	9.24			0.77	5.14
Variance 1			0.37	0.01	-2.94			-0.15	-1.99
Variance 2			0.18	-0.01	-3.74			-0.36	-5.50

Notes

Start pump @ 130 mL/min at 1150. Reduce flow to 100 mL/min at 1206. Complete evacuation achieved when DTW measured within 2 ft from top of pump at 1214. Samples to be collected tomorrow.

Grab Samples

Product Name: Low-Flow System

Date: 2017-07-11 10:02:52

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 62 ft

Pump placement from TOC 56 ft

Well Information:

Well ID BGWC-30  
Well diameter 2 in  
Well Total Depth 61.03 ft  
Screen Length 10 ft  
Depth to Water 1.55 ft

Pumping Information:

Final Pumping Rate 350 mL/min  
Total System Volume 0.7617322 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.72 in  
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	09:40:35	240.15	23.50	6.83	3147.49	1.54	1.58	0.73	87.81
Last 5	09:44:35	480.03	23.07	7.16	3170.43	1.61	1.60	0.16	82.69
Last 5	09:48:35	720.02	23.07	7.25	3180.09	1.06	1.61	0.10	79.72
Last 5	09:52:35	960.02	23.07	7.28	3180.42	1.01	1.61	0.10	77.28
Last 5	09:56:35	1200.03	23.09	7.29	3181.76	0.75	1.61	0.10	74.99
Variance 0			-0.00	0.09	9.66			-0.06	-2.97
Variance 1			-0.00	0.03	0.33			-0.00	-2.45
Variance 2			0.01	0.01	1.34			0.00	-2.28

Notes

Start pump @ 350 mL/min at 0935. Sample time 1010.

Grab Samples

BGWC-30

Inorganics

Dup-2

Inorganics

BGWC-30

Metals

Dup-2  
Metals  
BGWC-30  
Radium  
BGWC-30  
2nd Radium  
Dup-2  
Radium



Product Name: Low-Flow System

Date: 2017-07-12 15:57:30

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 62 ft

Pump placement from TOC 57 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 62.36 ft  
Screen Length 10 ft  
Depth to Water 28.93 ft

Pumping Information:

Final Pumping Rate 90 mL/min  
Total System Volume 0.7617322 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 202.56 in  
Total Volume Pumped 17 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:37:13	9145.04	21.85	7.38	533.09	0.31	45.14	1.23	-91.38
Last 5	15:41:13	9385.04	21.94	7.38	531.77	0.22	45.33	1.22	-91.10
Last 5	15:45:13	9625.04	22.17	7.37	532.92	0.40	45.51	1.17	-94.01
Last 5	15:49:13	9865.04	22.45	7.37	532.02	0.59	45.69	1.12	-95.17
Last 5	15:53:13	10105.04	22.58	7.37	533.01	0.25	45.81	1.10	-97.57
Variance 0			0.22	-0.01	1.15			-0.05	-2.90
Variance 1			0.28	-0.00	-0.90			-0.05	-1.16
Variance 2			0.13	-0.00	0.99			-0.02	-2.40

Notes

Start pump @ 115 mL/min at 1305. See MP field notes for sequence of flow rate changes. Permission obtained from Pete Robinson (GPC) to sample at 90 mL/min. Sample time 1600.

Grab Samples

BGWC-10

Inorganics

BGWC-10

Metals

BGWC-10  
Radium



Product Name: Low-Flow System

Date: 2017-07-12 11:32:25

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 94 ft

Pump placement from TOC 89 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 89 ft  
Screen Length 10 ft  
Depth to Water 85.58 ft

Pumping Information:

Final Pumping Rate 115 mL/min  
Total System Volume 0.6095617 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 22.09 in  
Total Volume Pumped 3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:14:51	180.14	25.35	6.48	795.28	1.65	86.78	3.26	76.25
Last 5	11:17:51	360.02	21.64	6.84	844.36	1.37	86.97	3.96	59.46
Last 5	11:20:51	540.02	20.84	6.95	854.09	1.70	87.14	4.16	50.78
Last 5	11:23:51	720.02	20.84	6.99	856.96	1.04	87.26	4.06	43.58
Last 5	11:26:51	900.03	20.76	7.00	857.69	0.78	87.42	3.90	37.57
Variance 0			-0.80	0.11	9.73			0.19	-8.68
Variance 1			-0.00	0.03	2.87			-0.09	-7.20
Variance 2			-0.08	0.01	0.73			-0.16	-6.01

Notes

Start pump @ 115 mL/min at 1055: samples collected immediately (Radium only).

Grab Samples

BGWC-14  
Radium

Product Name: Low-Flow System

Date: 2017-07-12 10:12:29

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 81 ft

Pump placement from TOC 73 ft

Well Information:

Well ID BGWC-15  
Well diameter 2 in  
Well Total Depth 73.30 ft  
Screen Length 10 ft  
Depth to Water 69.88 ft

Pumping Information:

Final Pumping Rate 115 mL/min  
Total System Volume 0.5515373 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 1.74 in  
Total Volume Pumped 3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:47:45	900.02	22.17	6.73	1200.28	4.96	71.16	4.78	70.80
Last 5	09:50:45	1080.03	22.86	6.73	1205.76	5.33	71.30	4.84	70.10
Last 5	09:53:45	1260.02	24.02	6.72	1207.08	4.25	71.33	4.79	73.74
Last 5	09:56:45	1440.02	24.06	6.74	1186.46	4.01	71.44	4.62	69.63
Last 5	09:59:45	1620.02	22.80	6.76	1173.35	1.82	71.62	4.16	69.23
Variance 0			1.16	-0.00	1.32			-0.05	3.64
Variance 1			0.04	0.01	-20.62			-0.18	-4.11
Variance 2			-1.26	0.02	-13.10			-0.46	-0.41

Notes

Start pump @ 170 mL/min at 0932. Reduce flow to 85 mL/min at 0942. Increase flow to 115 mL/min at 0948. Complete evacuation achieved at 1002. Samples to be collected tomorrow.

Grab Samples

Product Name: Low-Flow System

Date: 2017-07-13 12:09:42

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 75 ft

Well Information:

Well ID BGWC-11  
Well diameter 2 in  
Well Total Depth 77.05 ft  
Screen Length 10 ft  
Depth to Water 25.57 ft

Pumping Information:

Final Pumping Rate 190 mL/min  
Total System Volume 0.8420739 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 67.56 in  
Total Volume Pumped 8.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:44:59	480.10	18.18	7.27	446.75	0.29	29.78	0.08	-142.15
Last 5	11:48:59	720.06	18.21	7.32	445.50	0.30	30.68	0.08	-155.45
Last 5	11:52:59	960.02	18.08	7.38	445.43	0.59	31.50	0.08	-161.66
Last 5	11:56:59	1200.03	18.93	7.39	447.51	0.37	31.30	0.11	-166.17
Last 5	12:00:59	1440.02	18.97	7.42	446.27	0.79	31.20	0.10	-165.94
Variance 0			-0.13	0.06	-0.06			0.00	-6.20
Variance 1			0.84	0.02	2.08			0.03	-4.52
Variance 2			0.04	0.03	-1.25			-0.01	0.24

Notes

Start pump @ 330 mL/min at 1135. Reduce flow to 190 mL/min at 1155. Sample time 1215.

Grab Samples

BGWC-11  
Inorganics  
BGWC-11  
Metals  
BGWC-11  
Radium

Product Name: Low-Flow System

Date: 2017-07-13 13:39:35

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 73 ft

Well Information:

Well ID BGWC-12  
Well diameter 2 in  
Well Total Depth 78.06 ft  
Screen Length 10 ft  
Depth to Water 39.78 ft

Pumping Information:

Final Pumping Rate 360 mL/min  
Total System Volume 0.8420739 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 11.76 in  
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:16:38	240.16	21.20	6.94	865.39	0.62	40.27	2.17	-28.02
Last 5	13:20:38	480.03	19.33	7.12	871.32	0.88	40.51	1.69	3.75
Last 5	13:24:38	720.02	18.99	7.18	869.91	2.02	40.61	1.54	10.10
Last 5	13:28:38	960.02	18.89	7.22	873.56	1.88	40.70	1.52	13.34
Last 5	13:32:38	1200.02	18.97	7.24	878.25	2.43	40.76	1.53	15.51
Variance 0			-0.34	0.06	-1.41			-0.16	6.35
Variance 1			-0.09	0.03	3.65			-0.01	3.24
Variance 2			0.08	0.02	4.70			0.01	2.17

Notes

Start pump @ 360 mL/min at 1315. Sample time 1345.

Grab Samples

BGWC-12  
Inorganics  
BGWC-12  
Metals  
BGWC-12  
Radium

Product Name: Low-Flow System

Date: 2017-07-14 09:20:53

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 54 ft

Pump placement from TOC 44 ft

Well Information:

Well ID BGWC-16  
Well diameter 2 in  
Well Total Depth 48.99 ft  
Screen Length 10 ft  
Depth to Water 16.66 ft

Pumping Information:

Final Pumping Rate 450 mL/min  
Total System Volume 0.7260249 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3.24 in  
Total Volume Pumped 9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:03:28	240.12	19.54	7.26	808.70	8.27	16.85	1.21	73.37
Last 5	09:07:28	480.03	18.71	7.02	819.42	8.61	16.90	0.14	64.79
Last 5	09:11:28	720.25	18.61	6.95	813.97	5.87	16.92	0.10	60.27
Last 5	09:15:28	960.26	18.68	6.93	810.31	4.04	16.93	0.10	57.68
Last 5									
Variance 0			-0.84	-0.24	10.72			-1.07	-8.58
Variance 1			-0.10	-0.07	-5.45			-0.04	-4.51
Variance 2			0.07	-0.02	-3.67			-0.01	-2.59

Notes

Start pump @ 450 mL/min at 0900. Sample time 0925.

Grab Samples

BGWC-16  
Inorganics  
BGWC-16  
Metals  
BGWC-16  
Radium

Product Name: Low-Flow System

Date: 2017-07-14 10:51:49

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 73 ft

Pump placement from TOC 63 ft

Well Information:

Well ID BGWC-17  
Well diameter 2 in  
Well Total Depth 68.10 ft  
Screen Length 10 ft  
Depth to Water 15.34 ft

Pumping Information:

Final Pumping Rate 500 mL/min  
Total System Volume 0.8108299 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.72 in  
Total Volume Pumped 9.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:30:59	240.14	19.88	7.64	581.55	0.68	15.39	0.93	65.49
Last 5	10:34:59	480.02	18.93	7.48	593.79	1.87	15.40	0.15	63.88
Last 5	10:38:59	720.02	18.72	7.42	592.07	2.65	15.40	0.09	57.85
Last 5	10:42:59	960.02	18.70	7.39	590.55	2.12	15.40	0.08	54.14
Last 5									
Variance 0			-0.95	-0.16	12.23			-0.77	-1.61
Variance 1			-0.21	-0.06	-1.71			-0.06	-6.03
Variance 2			-0.02	-0.03	-1.53			-0.00	-3.71

Notes

Start pump @ 500 mL/min at 1030. Sample time 1100.

Grab Samples

BGWC-17  
Inorganics  
BGWC-17  
Metals  
BGWC-17  
Radium



Product Name: Low-Flow System

Date: 2017-07-14 12:20:30

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 42 ft

Pump placement from TOC 33 ft

Well Information:

Well ID BGWC-18  
Well diameter 2 in  
Well Total Depth 37.82 ft  
Screen Length 10 ft  
Depth to Water 13.92 ft

Pumping Information:

Final Pumping Rate 370 mL/min  
Total System Volume 0.6724638 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.32 in  
Total Volume Pumped 10 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:57:39	480.02	20.72	7.01	3.38	6.91	13.98	1.22	83.01
Last 5	12:01:39	720.02	19.22	6.81	481.52	7.85	13.99	0.16	74.20
Last 5	12:05:39	960.02	18.93	6.72	482.38	5.97	14.01	0.15	69.36
Last 5	12:09:39	1200.02	18.72	6.70	479.61	5.32	14.02	0.15	67.43
Last 5	12:13:39	1440.02	18.62	6.68	480.03	4.79	14.03	0.15	66.30
Variance 0			-0.29	-0.09	0.86			-0.01	-4.84
Variance 1			-0.21	-0.02	-2.77			0.00	-1.93
Variance 2			-0.10	-0.02	0.42			-0.00	-1.13

Notes

Start pump @ 370 mL/min at 1150. Sample time 1225.

Grab Samples

BGWC-18  
Inorganics  
BGWC-18  
Metals  
BGWC-18  
Radium

Product Name: Low-Flow System

Date: 2017-07-14 13:41:25

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 60 ft

Pump placement from TOC 50 ft

Well Information:

Well ID BGWC-19  
Well diameter 2 in  
Well Total Depth 54.70 ft  
Screen Length 10 ft  
Depth to Water 15.90 ft

Pumping Information:

Final Pumping Rate 260 mL/min  
Total System Volume 0.7528054 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3.6 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:16:27	240.16	31.64	6.08	342.34	0.54	16.08	2.25	103.98
Last 5	13:20:27	480.03	20.66	6.45	482.33	0.75	16.16	1.00	74.93
Last 5	13:24:27	720.02	19.63	6.53	508.13	0.99	16.18	0.49	69.91
Last 5	13:28:27	960.02	19.68	6.54	516.05	0.23	16.20	0.19	66.54
Last 5	13:32:27	1200.02	19.50	6.56	519.69	0.28	16.20	0.14	64.32
Variance 0			-1.03	0.07	25.79			-0.50	-5.02
Variance 1			0.05	0.01	7.92			-0.31	-3.37
Variance 2			-0.17	0.02	3.65			-0.05	-2.22

Notes

Start pump @ 260 mL/min at 1315. Sample time 1345.

Grab Samples

BGWC-19

Inorganics

BGWC-19

Metals

BGWC-19

Radium

Product Name: Low-Flow System

Date: 2017-07-26 14:36:27

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 501336  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 98 ft

Pump placement from TOC 88.5 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 89 ft  
Screen Length 10 ft  
Depth to Water 86.97 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.6274155 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 9.24 in  
Total Volume Pumped 1.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	14:17:00	180.08	28.54	6.77	842.88	2.65	87.23	6.82	106.15
Last 5	14:20:00	360.02	22.48	6.89	909.14	3.54	87.42	2.68	90.56
Last 5	14:23:00	540.02	22.10	6.94	930.56	1.96	87.54	3.76	84.15
Last 5	14:26:00	720.02	22.12	6.99	928.01	1.19	87.65	4.82	79.93
Last 5	14:29:00	900.02	21.84	7.00	923.79	0.90	0.00	5.10	74.77
Variance 0			-0.38	0.05	21.42			1.08	-6.41
Variance 1			0.02	0.05	-2.55			1.06	-4.23
Variance 2			-0.28	0.01	-4.22			0.28	-5.16

Notes

Start pump @ 100 mL/min at 1415. Complete evacuation procedure satisfied after depth to water dropped below top of pump. Samples to be collected tomorrow.

Grab Samples

Product Name: Low-Flow System

Date: 2017-07-26 14:36:27

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 501336  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 98 ft

Pump placement from TOC 88.5 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 89 ft  
Screen Length 10 ft  
Depth to Water 86.97 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.6274155 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 9.24 in  
Total Volume Pumped 1.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 10000	+/- 0.1	+/- 5%	+/- 10000		+/- 0.2	+/- 10000
Last 5	14:17:00	180.08	28.54	6.77	842.88	2.65	87.23	6.82	106.15
Last 5	14:20:00	360.02	22.48	6.89	909.14	3.54	87.42	2.68	90.56
Last 5	14:23:00	540.02	22.10	6.94	930.56	1.96	87.54	3.76	84.15
Last 5	14:26:00	720.02	22.12	6.99	928.01	1.19	87.65	4.82	79.93
Last 5	14:29:00	900.02	21.84	7.00	923.79	0.90	0.00	5.10	74.77
Variance 0			-0.38	0.05	21.42			1.08	-6.41
Variance 1			0.02	0.05	-2.55			1.06	-4.23
Variance 2			-0.28	0.01	-4.22			0.28	-5.16

Notes

Start pump @ 100 mL/min at 1415. Complete evacuation procedure satisfied after depth to water dropped below top of pump. Samples to be collected tomorrow.

Grab Samples

Product Name: Low-Flow System

Date: 2017-08-08 11:27:53

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MICROpurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 90 ft

Pump placement from TOC 87.75 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.08 ft  
Screen Length 10 ft  
Depth to Water 86.36 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.591708 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 6.36 in  
Total Volume Pumped 1.28 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:12:24	240.16	22.83	7.22	881.68	0.81	86.61	7.44	40.54
Last 5	11:16:24	480.02	22.54	7.02	885.65	2.06	86.72	2.88	-36.11
Last 5	11:20:24	720.02	22.31	6.90	882.88	1.98	86.78	1.49	-50.20
Last 5	11:24:24	960.02	22.16	6.91	884.39	1.33	86.89	2.09	-43.25
Last 5									
Variance 0			-0.29	-0.21	3.97			-4.56	-76.65
Variance 1			-0.23	-0.12	-2.76			-1.39	-14.08
Variance 2			-0.16	0.01	1.50			0.60	6.95

Notes

New sampling parameters instituted by JA. >1 well volume removed, will allow 48hrs for recharge. Will sample 8/10/17.

Grab Samples

Product Name: Low-Flow System

Date: 2017-08-09 13:23:14

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 449474  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MICROPURGE  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 72.00 ft

Well Information:

Well ID BGWC-15  
Well diameter 2 in  
Well Total Depth 73.55 ft  
Screen Length 10 ft  
Depth to Water 70.57 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.5470738 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 12.8 in  
Total Volume Pumped 2.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:03:01	480.03	24.58	6.58	1264.34	16.90	71.19	3.04	-21.99
Last 5	13:07:01	720.02	24.43	6.63	1272.45	7.23	71.33	3.41	-12.37
Last 5	13:11:01	960.02	24.33	6.66	1277.16	4.83	71.47	3.83	-2.81
Last 5	13:15:01	1200.02	24.81	6.68	1271.57	3.86	71.63	3.98	4.21
Last 5	13:19:01	1440.02	25.02	6.69	1270.97	3.01	71.72	4.06	14.06
Variance 0			-0.10	0.03	4.71			0.42	9.56
Variance 1			0.48	0.02	-5.59			0.15	7.02
Variance 2			0.21	0.02	-0.60			0.08	9.85

Notes

Pre-purged 1 liters. Water level started in the screen. Complete evacuation method initiated. Samples to be collected 8/10/17.

Grab Samples

Product Name: Low-Flow System

Date: 2017-08-23 11:00:00

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MICROPURGE  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 88 ft

Pump placement from TOC 87.08 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.08 ft  
Screen Length 10 ft  
Depth to Water 85.92 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.5827813 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 8.28 in  
Total Volume Pumped 1.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:44:07	240.16	23.75	7.08	883.00	0.72	86.43	4.72	68.79
Last 5	10:48:07	480.03	23.79	7.02	886.11	0.89	86.49	2.98	62.36
Last 5	10:52:07	720.02	23.92	7.00	888.51	0.83	86.52	3.03	58.56
Last 5	10:56:07	960.03	23.56	7.01	886.91	0.76	86.61	3.45	56.86
Last 5									
Variance 0			0.04	-0.06	3.11			-1.75	-6.44
Variance 1			0.13	-0.02	2.40			0.06	-3.80
Variance 2			-0.36	0.01	-1.60			0.42	-1.70

Notes

Pre-purged 200 ml. At the request of JA and PR, 1 well volume removed and will return to collect samples 48 hrs after completion of pumping.

Grab Samples

Product Name: Low-Flow System

Date: 2017-08-23 14:21:51

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute Environmental  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364452  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED MICROpurge  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 74 ft

Pump placement from TOC 71.73 ft

Well Information:

Well ID BGWC-15  
Well diameter 2 in  
Well Total Depth 73.55 ft  
Screen Length 10 ft  
Depth to Water 71.65 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.5202934 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 8.04 in  
Total Volume Pumped 1.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:10:50	240.03	25.80	6.82	1227.48	5.46	71.81	6.48	36.09
Last 5	14:14:50	480.63	23.98	6.80	1212.34	13.20	72.08	5.66	40.00
Last 5	14:18:50	720.64	22.20	6.82	1230.38	4.18	72.32	3.13	18.21
Last 5									
Last 5									
Variance 0			nan	nan	nan			nan	nan
Variance 1			-1.82	-0.02	-15.14			-0.83	3.91
Variance 2			-1.78	0.02	18.04			-2.53	-21.79

Notes

Pre-purged 100 ml. At the request of JA and PR, 1 well volume removed and will allow 48 for sampling.

Grab Samples



Product Name: Low-Flow System

Date: 2017-08-23 14:22:58

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 456959  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 61 ft

Pump placement from TOC 56 ft

Well Information:

Well ID BGWC-30  
Well diameter 2 in  
Well Total Depth 61.03 ft  
Screen Length 10 ft  
Depth to Water 2.60 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.7572688 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 4.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:05:02	1200.97	26.78	7.33	2951.66	0.25	2.63	0.22	75.10
Last 5	14:09:02	1440.97	26.51	7.34	2945.78	0.30	2.63	0.16	75.47
Last 5	14:13:02	1680.97	26.24	7.36	2949.98	0.49	2.63	0.13	75.75
Last 5	14:17:02	1920.97	25.92	7.36	2944.49	0.35	2.64	0.13	76.07
Last 5	14:21:02	2160.97	25.58	7.37	2953.00	0.30	2.64	0.13	76.17
Variance 0			-0.27	0.01	4.19			-0.03	0.28
Variance 1			-0.32	0.01	-5.48			-0.01	0.32
Variance 2			-0.34	0.01	8.51			0.00	0.10

Notes

Grab Samples

Product Name: Low-Flow System

Date: 2017-10-09 15:05:17

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 95 ft

Pump placement from TOC 84.21 ft

Well Information:

Well ID BGWA-2  
Well diameter 2.0 in  
Well Total Depth 89.21 ft  
Screen Length 10.0 ft  
Depth to Water 44.15 ft

Pumping Information:

Final Pumping Rate 220 mL/min  
Total System Volume 0.9090251 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.36 in  
Total Volume Pumped 8.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:45:04	240.17	20.01	7.75	310.94	0.43	44.17	0.23	0.72
Last 5	14:49:04	480.04	19.92	7.78	312.34	0.47	44.17	0.25	-1.21
Last 5	14:53:04	720.05	20.07	7.80	313.05	0.41	44.17	0.29	-3.37
Last 5	14:57:04	960.05	20.08	7.80	313.73	0.59	44.18	0.35	-4.90
Last 5	15:01:04	1200.05	20.03	7.80	314.85	0.42	44.18	0.42	-6.61
Variance 0			0.15	0.02	0.72			0.05	-2.16
Variance 1			0.01	0.01	0.67			0.05	-1.53
Variance 2			-0.05	0.00	1.12			0.07	-1.71

Notes

Start pump @ 220 mL/min at 1427. Sample time 1510.

Grab Samples

BGWA-2  
Metals  
BGWA-2  
Inorganics

Product Name: Low-Flow System

Date: 2017-10-09 16:10:14

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440279  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 70 ft

Pump placement from TOC 61.3 ft

Well Information:

Well ID BGWA-6  
Well diameter 2.0 in  
Well Total Depth 66.3 ft  
Screen Length 10.0 ft  
Depth to Water 31.61 ft

Pumping Information:

Final Pumping Rate 210 mL/min  
Total System Volume 0.7974396 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.32 in  
Total Volume Pumped 7.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	15:49:44	240.16	19.99	7.44	515.90	0.68	31.72	0.80	-3.75
Last 5	15:53:44	480.04	19.85	7.43	515.59	0.74	31.72	0.76	-4.28
Last 5	15:57:44	720.04	19.88	7.42	515.30	0.86	31.72	0.77	-4.67
Last 5	16:01:44	960.05	19.95	7.42	514.19	1.14	31.72	0.77	-5.13
Last 5	16:05:44	1200.05	19.94	7.43	512.54	1.18	31.72	0.78	-5.25
Variance 0			0.03	-0.01	-0.28			0.01	-0.39
Variance 1			0.07	-0.00	-1.11			0.01	-0.45
Variance 2			-0.01	0.00	-1.65			0.01	-0.12

Notes

Start pump @ 210 mL/min at 1534. Sample time 1615.

Grab Samples

BGWA-6  
Metals

BGWA-6  
Inorganics

Product Name: Low-Flow System

Date: 2017-10-09 16:16:55

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 92 ft

Pump placement from TOC 82.50 ft

Well Information:

Well ID BGWA-28  
Well diameter 2 in  
Well Total Depth 87.50 ft  
Screen Length 10 ft  
Depth to Water 65.64 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.8956349 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 1.56 in  
Total Volume Pumped 4.9 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:58:30	1919.85	23.32	7.50	502.52	0.15	65.77	1.87	63.07
Last 5	16:02:30	2159.85	23.64	7.50	502.93	0.14	65.77	1.97	68.99
Last 5	16:06:32	2401.86	23.67	7.50	502.70	0.12	65.77	2.06	69.68
Last 5	16:10:32	2641.85	23.39	7.51	504.64	0.07	65.77	2.16	69.23
Last 5	16:14:32	2881.85	23.14	7.51	504.24	0.10	65.77	2.24	70.89
Variance 0			0.04	0.01	-0.23			0.09	0.69
Variance 1			-0.28	0.00	1.94			0.11	-0.44
Variance 2			-0.25	0.01	-0.40			0.07	1.65

Notes

Grab Samples  
BGWA-28  
Inorganics  
BGWA-28  
Metals

Product Name: Low-Flow System

Date: 2017-10-10 10:39:56

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 456959  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 100 ft

Pump placement from TOC 89.7 ft

Well Information:

Well ID BGWA-27  
Well diameter 2.0 in  
Well Total Depth 94.7 ft  
Screen Length 10.0 ft  
Depth to Water 63.81 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.9313423 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 5.64 in  
Total Volume Pumped 200 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:20:41	720.04	18.45	7.84	437.69	5.59	64.28	4.88	61.06
Last 5	10:24:41	960.04	18.80	7.93	437.50	3.93	64.28	4.89	59.39
Last 5	10:28:41	1200.04	18.99	8.03	435.16	3.33	64.28	4.85	58.13
Last 5	10:32:41	1440.04	19.07	8.04	432.25	3.13	64.28	4.80	57.32
Last 5	10:36:41	1680.04	19.10	8.06	430.82	2.04	64.28	4.83	56.65
Variance 0			0.20	0.10	-2.34			-0.04	-1.26
Variance 1			0.07	0.02	-2.91			-0.05	-0.81
Variance 2			0.04	0.02	-1.43			0.04	-0.68

Notes

Start pump @ 200 mL/min at 1004. Sample time 1045.

Grab Samples

BGWA-27  
Metals

BGWA-27  
Inorganics

Product Name: Low-Flow System

Date: 2017-10-10 09:33:52

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 456959  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 105 ft

Pump placement from TOC 95.1 ft

Well Information:

Well ID BGWA-29  
Well diameter 2.0 in  
Well Total Depth 100.1 ft  
Screen Length 10.0 ft  
Depth to Water 36.26 ft

Pumping Information:

Final Pumping Rate 250 mL/min  
Total System Volume 0.9536594 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.84 in  
Total Volume Pumped 8.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:15:25	240.16	17.77	8.09	212.09	2.81	36.30	7.21	45.78
Last 5	09:19:25	480.04	17.81	8.12	209.66	2.51	36.30	7.55	42.03
Last 5	09:23:25	720.04	17.81	8.13	207.65	2.49	36.30	7.75	40.03
Last 5	09:27:25	960.04	17.76	8.13	206.86	1.80	36.30	7.90	39.14
Last 5	09:31:25	1200.04	17.86	8.13	205.66	1.50	36.30	7.96	39.36
Variance 0			0.00	0.01	-2.00			0.21	-2.00
Variance 1			-0.05	0.00	-0.80			0.14	-0.89
Variance 2			0.09	-0.00	-1.20			0.06	0.22

Notes

Start pump @ 250 mL/min at 0902. Sample time 0940.

Grab Samples

BGWA-29  
Metals

BGWA-29  
Inorganics

Product Name: Low-Flow System

Date: 2017-10-10 09:47:08

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 76 ft

Pump placement from TOC 71.20 ft

Well Information:

Well ID BGWA-26  
Well diameter 2 in  
Well Total Depth 76.20 ft  
Screen Length 10 ft  
Depth to Water 57.43 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.8242202 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.84 in  
Total Volume Pumped 2.88 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:28:28	480.02	19.65	7.74	450.45	0.45	57.50	0.88	55.62
Last 5	09:32:28	720.02	19.64	7.77	445.13	0.43	57.49	0.74	54.91
Last 5	09:36:28	960.02	19.68	7.79	437.54	0.13	57.50	0.66	54.02
Last 5	09:40:28	1200.03	19.76	7.80	431.65	0.14	57.50	0.60	52.98
Last 5	09:44:29	1441.02	19.75	7.81	425.74	0.12	57.50	0.56	50.89
Variance 0			0.04	0.02	-7.59			-0.08	-0.89
Variance 1			0.08	0.01	-5.89			-0.06	-1.04
Variance 2			-0.01	0.02	-5.91			-0.04	-2.09

Notes

Pre-purged 1 liter.

Grab Samples

BGWA-26

Inorganics

BGWA-26

Metals

Product Name: Low-Flow System

Date: 2017-10-10 13:30:22

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 95 ft

Pump placement from TOC 85.20 ft

Well Information:

Well ID BGWC-7  
Well diameter 2 in  
Well Total Depth 90.20 ft  
Screen Length 10 ft  
Depth to Water 48.36 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.9090251 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 379.68 in  
Total Volume Pumped 30 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:12:02	15359.86	20.73	7.05	1162.38	0.25	77.09	0.32	-35.49
Last 5	13:16:02	15599.86	20.92	7.05	1162.21	0.17	77.83	0.33	-39.74
Last 5	13:20:02	15839.86	20.74	7.05	1164.90	0.18	78.59	0.34	-44.64
Last 5	13:24:02	16079.81	20.73	7.05	1163.25	0.22	79.35	0.34	-47.01
Last 5	13:28:02	16319.81	21.22	7.05	1169.59	0.16	0.00	0.36	-48.41
Variance 0			-0.17	0.00	2.69			0.01	-4.90
Variance 1			-0.02	0.00	-1.64			0.00	-2.37
Variance 2			0.49	-0.00	6.34			0.02	-1.40

Notes

Performing complete evacuation. Final reading the water level is below the top of the pump at 79.71. Will sample within 24 hours

Grab Samples



Product Name: Low-Flow System

Date: 2017-10-10 13:23:10

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 80 ft

Pump placement from TOC 75.01 ft

Well Information:

Well ID BGWC-8  
Well diameter 2 in  
Well Total Depth 80.01 ft  
Screen Length 10 ft  
Depth to Water 49.34 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.8420739 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 2.4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:06:08	240.03	22.28	7.57	346.90	1.21	49.34	4.67	72.43
Last 5	13:10:08	480.02	21.78	7.62	346.57	1.92	49.35	4.75	71.37
Last 5	13:14:08	720.02	21.37	7.67	347.51	1.58	49.34	4.85	70.44
Last 5	13:18:08	960.02	21.48	7.71	347.62	1.12	49.34	4.88	69.53
Last 5	13:22:08	1200.02	21.28	7.72	347.92	1.18	49.34	4.88	70.57
Variance 0			-0.40	0.04	0.93			0.09	-0.93
Variance 1			0.11	0.04	0.11			0.04	-0.91
Variance 2			-0.20	0.01	0.30			0.00	1.03

Notes

Pre-purged 1 liter.

Grab Samples

BGWC-8  
Inorganics  
BGWC-8  
Metals

Product Name: Low-Flow System

Date: 2017-10-10 14:36:29

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 64 ft

Pump placement from TOC 58.94 ft

Well Information:

Well ID BGWC-9  
Well diameter 2 in  
Well Total Depth 63.94 ft  
Screen Length 10 ft  
Depth to Water 34.03 ft

Pumping Information:

Final Pumping Rate 160 mL/min  
Total System Volume 0.770659 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.6 in  
Total Volume Pumped 3.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:18:45	240.02	20.48	7.29	694.10	2.31	34.08	0.18	51.57
Last 5	14:22:45	480.02	19.99	7.25	687.51	0.60	34.09	0.15	37.81
Last 5	14:26:46	720.90	19.91	7.25	677.20	1.21	34.08	0.13	27.43
Last 5	14:30:46	960.90	19.77	7.28	674.85	1.00	34.08	0.12	19.41
Last 5	14:34:46	1200.90	19.92	7.28	676.04	0.96	34.08	0.12	12.26
Variance 0			-0.09	0.01	-10.30			-0.02	-10.38
Variance 1			-0.13	0.02	-2.36			-0.01	-8.02
Variance 2			0.15	0.01	1.19			-0.00	-7.15

Notes

Pre-purged 2 liters.

Grab Samples

BGWC-9

Inorganics

BGWC-9

Metals

Product Name: Low-Flow System

Date: 2017-10-10 13:34:29

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 456959  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 85 ft

Pump placement from TOC 73.3 ft

Well Information:

Well ID BGWC-12  
Well diameter 2.0 in  
Well Total Depth 78.3 ft  
Screen Length 10.0 ft  
Depth to Water 41.77 ft

Pumping Information:

Final Pumping Rate 285 mL/min  
Total System Volume 0.864391 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 9.84 in  
Total Volume Pumped 12 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	13:12:12	240.20	19.11	7.48	800.88	1.72	42.55	1.32	30.99
Last 5	13:16:12	480.04	19.06	7.48	806.24	2.05	42.55	1.32	33.31
Last 5	13:20:12	720.03	19.06	7.47	810.31	2.05	42.55	1.32	34.79
Last 5	13:24:12	960.03	19.27	7.46	814.66	2.03	42.59	1.34	36.10
Last 5	13:28:12	1200.04	19.67	7.46	815.77	2.36	42.59	1.33	37.20
Variance 0			0.00	-0.00	4.07			0.00	1.48
Variance 1			0.21	-0.01	4.36			0.02	1.30
Variance 2			0.41	0.00	1.11			-0.01	1.10

Notes

Start pump @ 285 mL/min at 1255. Sample time 1335.

Grab Samples

BGWC-12  
Metals

BGWC-12  
Inorganics

Product Name: Low-Flow System

Date: 2017-10-10 11:10:08

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 61 ft

Pump placement from TOC 56.03 ft

Well Information:

Well ID BGWC-30  
Well diameter 2 in  
Well Total Depth 61.03 ft  
Screen Length 10 ft  
Depth to Water 2.97 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.7572688 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:52:50	240.03	23.96	7.33	2987.26	0.98	2.97	0.56	74.26
Last 5	10:56:51	480.99	23.84	7.33	2982.99	0.56	2.97	0.50	73.86
Last 5	11:00:51	720.99	23.84	7.34	2968.65	0.27	2.97	0.36	73.54
Last 5	11:04:51	960.99	23.88	7.34	2966.57	0.25	2.97	0.27	73.31
Last 5	11:08:51	1200.99	24.04	7.34	2963.07	0.18	2.97	0.24	73.12
Variance 0			0.00	0.01	-14.34			-0.14	-0.32
Variance 1			0.04	0.00	-2.08			-0.09	-0.23
Variance 2			0.15	0.00	-3.50			-0.03	-0.19

Notes

Pre-purged 1 liter.

Grab Samples

BGWC-30

Inorganics

BGWC-30

Metals

Product Name: Low-Flow System

Date: 2017-10-11 11:22:45

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 456959  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 67 ft

Pump placement from TOC 57.36 ft

Well Information:

Well ID BGWC-10  
Well diameter 2 in  
Well Total Depth 62.36 ft  
Screen Length 10.0 ft  
Depth to Water 31.84 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.7840493 L  
Calculated Sample Rate 180 sec  
Stabilization Drawdown 192.48 in  
Total Volume Pumped 15 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	11:07:03	180.16	19.95	7.36	559.95	0.80	47.38	0.44	-64.00
Last 5	11:10:03	360.04	20.13	7.36	561.33	0.91	47.52	0.43	-65.73
Last 5	11:13:03	540.04	20.26	7.37	560.42	0.96	47.65	0.43	-67.31
Last 5	11:16:03	720.04	20.27	7.37	559.48	1.07	47.76	0.43	-69.00
Last 5	11:19:03	900.04	20.30	7.37	560.12	0.63	47.88	0.42	-70.76
Variance 0			0.13	0.00	-0.91			-0.00	-1.58
Variance 1			0.01	0.01	-0.94			-0.00	-1.69
Variance 2			0.04	0.00	0.64			-0.00	-1.75

Notes

Start pump @ 230 mL/min at 0908. See MP field notes for sequence of flow reductions. Sample time 1125.

Grab Samples

BGWC-10

Metals

BGWC-10

Inorganics

DUP-2

Metals

DUP-2  
Inorganics



Product Name: Low-Flow System

Date: 2017-10-11 15:57:55

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 456959  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 55 ft

Pump placement from TOC 46.3 ft

Well Information:

Well ID BGWC-23  
Well diameter 2.0 in  
Well Total Depth 51.3 ft  
Screen Length 10.0 ft  
Depth to Water 31.10 ft

Pumping Information:

Final Pumping Rate 170 mL/min  
Total System Volume 0.7304883 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 27.72 in  
Total Volume Pumped 6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	15:36:34	480.04	20.21	7.00	2210.72	1.46	32.91	0.56	-47.95
Last 5	15:40:34	720.04	20.13	7.01	2282.13	1.40	33.11	0.40	-47.79
Last 5	15:44:34	960.04	20.13	7.03	2351.93	1.32	33.30	0.33	-46.55
Last 5	15:48:34	1200.03	20.21	7.04	2403.70	1.11	33.38	0.25	-47.07
Last 5	15:52:34	1440.04	20.22	7.05	2445.25	1.07	33.41	0.21	-47.55
Variance 0			0.00	0.02	69.79			-0.07	1.24
Variance 1			0.08	0.01	51.77			-0.08	-0.52
Variance 2			0.01	0.01	41.55			-0.05	-0.48

Notes

Start pump @ 170 mL/min at 1524. Sample time 1600.

Grab Samples

BGWC-23

Metals

BGWC-23

Inorganics

Product Name: Low-Flow System

Date: 2017-10-11 14:55:17

Project Information:

Operator Name Michael Patinkin  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 456959  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter 0.17 in  
Tubing Length 72 ft

Pump placement from TOC 61.09 ft

Well Information:

Well ID BGWC-24  
Well diameter 2.0 in  
Well Total Depth 66.09 ft  
Screen Length 10.0 ft  
Depth to Water 10.09 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.8063664 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 174.6 in  
Total Volume Pumped 28 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	14:33:03	240.15	22.22	6.66	6273.39	1.24	27.18	0.08	-264.35
Last 5	14:37:02	480.04	22.23	6.63	6780.24	0.94	26.44	0.10	-253.43
Last 5	14:41:02	720.04	22.35	6.61	7054.31	0.80	26.01	0.15	-241.38
Last 5	14:45:03	961.04	22.49	6.60	7171.03	0.58	25.36	0.17	-236.38
Last 5	14:49:03	1201.04	22.56	6.60	7241.67	0.30	24.64	0.18	-234.50
Variance 0			0.13	-0.02	274.07			0.05	12.05
Variance 1			0.14	-0.01	116.72			0.02	5.00
Variance 2			0.07	-0.00	70.65			0.01	1.88

Notes

Start pump @ 350 mL/min at 1307. See MP field notes for sequence of flow reductions. Sample time 1500.

Grab Samples

BGWC-24

Metals

BGWC-24

Inorganics



Product Name: Low-Flow System

Date: 2017-10-11 10:25:28

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 88 ft

Pump placement from TOC 83.08 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.08 ft  
Screen Length 10 ft  
Depth to Water 82.25 ft

Pumping Information:

Final Pumping Rate 140 mL/min  
Total System Volume 0.5827813 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 35.04 in  
Total Volume Pumped 6.72 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:04:03	1920.42	19.04	7.14	929.97	0.82	84.24	7.44	92.71
Last 5	10:08:03	2160.42	19.06	7.14	932.64	0.62	84.53	7.48	92.46
Last 5	10:12:03	2400.42	19.11	7.14	934.41	0.66	84.68	7.50	92.35
Last 5	10:16:03	2640.42	19.15	7.15	933.92	0.61	84.90	7.49	92.22
Last 5	10:20:03	2880.42	19.24	7.15	933.00	0.60	85.17	7.48	91.67
Variance 0			0.05	0.00	1.77			0.02	-0.12
Variance 1			0.04	0.00	-0.49			-0.01	-0.13
Variance 2			0.09	0.00	-0.92			-0.01	-0.55

Notes

Water level started below top of screen. Complete evacuation method initiated. Samples to be collected 48 hrs after Troll completion.

Grab Samples

Product Name: Low-Flow System

Date: 2017-10-11 09:36:49

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 50 ft

Pump placement from TOC 43.16 ft

Well Information:

Well ID BGWC-16  
Well diameter 2 in  
Well Total Depth 48.16 ft  
Screen Length 10 ft  
Depth to Water 17.51 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.7081711 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.72 in  
Total Volume Pumped 4.35 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:18:46	719.65	19.56	6.82	865.74	0.69	17.56	0.28	92.90
Last 5	09:22:46	959.65	19.61	6.79	866.50	0.40	17.56	0.26	96.13
Last 5	09:26:46	1199.65	19.61	6.79	866.29	0.50	17.57	0.25	97.34
Last 5	09:30:46	1439.65	19.59	6.78	866.47	0.14	17.57	0.24	98.37
Last 5	09:34:46	1679.69	19.64	6.78	866.81	0.08	17.57	0.25	99.19
Variance 0			-0.01	-0.01	-0.21			-0.01	1.20
Variance 1			-0.01	-0.01	0.18			-0.00	1.04
Variance 2			0.05	-0.00	0.34			0.01	0.82

Notes

Grab Samples  
BGWC-16  
Inorganics  
BGWC-16  
Metals

Product Name: Low-Flow System

Date: 2017-10-11 10:31:15

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 70 ft

Pump placement from TOC 63.10 ft

Well Information:

Well ID BGWC-17  
Well diameter 2 in  
Well Total Depth 68.10 ft  
Screen Length 10 ft  
Depth to Water 16.24 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.7974396 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.36 in  
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	10:13:01	240.13	19.66	7.29	640.25	0.16	16.25	0.38	-30.71
Last 5	10:17:01	480.03	19.52	7.29	645.17	0.21	16.26	0.24	30.96
Last 5	10:21:01	720.03	19.51	7.30	646.60	0.55	16.27	0.22	63.10
Last 5	10:25:01	960.03	19.67	7.30	645.12	0.57	16.27	0.20	75.44
Last 5	10:29:01	1200.03	19.64	7.30	647.09	0.47	16.27	0.17	82.65
Variance 0			-0.02	0.01	1.43			-0.01	32.14
Variance 1			0.16	-0.00	-1.48			-0.02	12.35
Variance 2			-0.03	-0.00	1.97			-0.03	7.21

Notes

Grab Samples  
BGWC-17  
Inorganics  
BGWC-17  
Metals

Product Name: Low-Flow System

Date: 2017-10-11 13:01:08

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 38 ft

Pump placement from TOC 32.82 ft

Well Information:

Well ID BGWC-18  
Well diameter 2 in  
Well Total Depth 37.82 ft  
Screen Length 10 ft  
Depth to Water 14.91 ft

Pumping Information:

Final Pumping Rate 200 mL/min  
Total System Volume 0.6546101 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 0.48 in  
Total Volume Pumped 4 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:44:09	240.03	20.08	7.06	589.70	1.29	14.94	0.34	94.55
Last 5	12:48:09	480.14	19.81	7.03	594.02	1.40	14.95	0.22	93.90
Last 5	12:52:09	720.14	19.68	7.02	594.11	1.89	14.94	0.18	92.80
Last 5	12:56:09	960.14	19.57	7.00	594.13	1.41	14.95	0.16	91.64
Last 5	13:00:09	1200.14	19.56	7.00	594.56	1.66	14.95	0.15	90.84
Variance 0			-0.13	-0.01	0.09			-0.05	-1.10
Variance 1			-0.11	-0.02	0.02			-0.02	-1.16
Variance 2			-0.01	-0.01	0.43			-0.01	-0.80

Notes

Pre-purged 2 liters.

Grab Samples

BGWC-18

Inorganics

BGWC-18

Metals

Product Name: Low-Flow System

Date: 2017-10-11 13:16:50

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 58 ft

Pump placement from TOC 49.70 ft

Well Information:

Well ID BGWC-19  
Well diameter 2 in  
Well Total Depth 54.70 ft  
Screen Length 10 ft  
Depth to Water 16.00 ft

Pumping Information:

Final Pumping Rate 175 mL/min  
Total System Volume 0.7438785 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 2.64 in  
Total Volume Pumped 4.2 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	12:59:02	479.96	20.59	6.67	505.99	0.05	16.20	0.41	131.62
Last 5	13:03:02	719.96	20.54	6.61	507.14	0.06	16.21	0.37	147.41
Last 5	13:07:02	959.96	20.46	6.59	506.18	0.05	16.21	0.34	161.11
Last 5	13:11:02	1199.96	20.42	6.57	506.28	0.05	16.22	0.30	173.92
Last 5	13:15:02	1439.96	20.46	6.56	505.85	0.02	16.22	0.29	187.20
Variance 0			-0.08	-0.02	-0.96			-0.04	13.69
Variance 1			-0.04	-0.02	0.10			-0.03	12.81
Variance 2			0.04	-0.01	-0.42			-0.02	13.28

Notes

Grab Samples  
BGWC-19  
Inorganics  
BGWC-19  
Metals

Product Name: Low-Flow System

Date: 2017-10-11 15:33:21

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Dedicated  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 50 ft

Pump placement from TOC 44.74 ft

Well Information:

Well ID BGWC-20  
Well diameter 2 in  
Well Total Depth 49.74 ft  
Screen Length 10 ft  
Depth to Water 15.60 ft

Pumping Information:

Final Pumping Rate 120 mL/min  
Total System Volume 0.7081711 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 109.2 in  
Total Volume Pumped 11.52 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	15:14:49	4800.28	20.58	7.08	1516.63	0.42	24.11	0.17	1.36
Last 5	15:18:49	5040.28	20.61	7.08	1515.55	0.44	24.29	0.16	-1.87
Last 5	15:22:49	5280.28	20.53	7.09	1515.32	0.35	24.44	0.16	-4.82
Last 5	15:26:49	5520.28	20.70	7.09	1514.44	0.34	24.58	0.15	-7.91
Last 5	15:30:49	5760.28	20.66	7.10	1515.97	0.37	24.70	0.17	-10.53
Variance 0			-0.08	0.01	-0.22			-0.00	-2.95
Variance 1			0.17	0.00	-0.88			-0.01	-3.09
Variance 2			-0.04	0.01	1.53			0.03	-2.62

Notes

Pre-purged 1 liter.

Grab Samples

BGWC-20

Inorganics

BGWC-20

Metals

Product Name: Low-Flow System

Date: 2017-10-11 15:05:58

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 62 ft

Pump placement from TOC 53.37 ft

Well Information:

Well ID BGWC-25  
Well diameter 2 in  
Well Total Depth 58.37 ft  
Screen Length 10 ft  
Depth to Water 18.15 ft

Pumping Information:

Final Pumping Rate 110 mL/min  
Total System Volume 0.7617322 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 52.2 in  
Total Volume Pumped 6.6 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	14:48:01	2639.97	21.17	7.48	394.34	0.26	21.85	0.13	-100.29
Last 5	14:52:01	2879.98	21.43	7.49	393.30	0.27	22.05	0.13	-101.77
Last 5	14:56:01	3119.98	21.22	7.49	393.67	0.24	22.20	0.14	-101.40
Last 5	15:00:01	3359.98	21.18	7.49	393.07	0.31	22.35	0.15	-100.79
Last 5	15:04:01	3599.98	20.99	7.50	393.51	0.24	22.50	0.15	-100.15
Variance 0			-0.21	0.01	0.37			0.01	0.37
Variance 1			-0.04	-0.00	-0.60			0.01	0.61
Variance 2			-0.19	0.01	0.44			0.00	0.64

Notes

Water level drawdown stable with 0.3 ft drawdown

Grab Samples

BGWC-25  
Inorganics  
BGWC-25  
Metals

Product Name: Low-Flow System

Date: 2017-10-12 09:52:28

Project Information:

Operator Name Kevin Stephenson  
Company Name Resolute  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 440275  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type QED Bladder  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 88 ft

Pump placement from TOC 87.01 ft

Well Information:

Well ID BGWC-14  
Well diameter 2 in  
Well Total Depth 88.08 ft  
Screen Length 10 ft  
Depth to Water 85.75 ft

Pumping Information:

Final Pumping Rate 100 mL/min  
Total System Volume 0.5827813 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 16.2 in  
Total Volume Pumped 2.8 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:34:08	720.07	18.53	7.14	906.92	0.54	86.44	5.79	91.10
Last 5	09:38:07	960.07	18.50	7.13	913.27	0.89	86.57	5.75	89.67
Last 5	09:42:08	1200.07	18.51	7.13	921.31	0.54	86.82	6.07	89.29
Last 5	09:46:07	1440.07	18.46	7.11	920.99	1.38	86.96	6.11	87.86
Last 5	09:50:07	1680.07	18.52	7.11	924.95	1.51	87.10	6.15	87.39
Variance 0			0.01	-0.00	8.04			0.32	-0.38
Variance 1			-0.05	-0.01	-0.32			0.04	-1.43
Variance 2			0.06	-0.01	3.96			0.04	-0.47

Notes

Secondary Troll report following complete evacuation and sample grab.

Grab Samples

BGWC-14

Inorganics

BGWC-14

Metals



Product Name: Low-Flow System

Date: 2017-10-12 09:25:55

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 58 ft

Pump placement from TOC 48.35 ft

Well Information:

Well ID BGWC-21  
Well diameter 2 in  
Well Total Depth 53.35 ft  
Screen Length 10 ft  
Depth to Water 22.40 ft

Pumping Information:

Final Pumping Rate 150 mL/min  
Total System Volume 0.7438785 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 3.36 in  
Total Volume Pumped 3 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
Stabilization			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Last 5	09:08:03	240.11	19.51	7.60	385.51	0.34	22.63	0.78	-85.46
Last 5	09:12:03	480.03	19.21	7.62	381.87	0.47	22.66	0.36	-33.25
Last 5	09:16:03	720.03	19.06	7.64	386.74	0.85	22.68	0.29	-29.21
Last 5	09:20:03	960.03	19.03	7.64	389.72	0.81	22.68	0.25	-50.43
Last 5	09:24:03	1200.03	19.04	7.65	391.33	0.53	22.68	0.22	-68.39
Variance 0			-0.15	0.02	4.86			-0.07	4.03
Variance 1			-0.03	0.00	2.99			-0.04	-21.22
Variance 2			0.00	0.01	1.61			-0.03	-17.96

Notes

DO stable below 0.5 mg/L

Grab Samples

BGWC-21  
Inorganics  
BGWC-21  
Metals

Product Name: Low-Flow System

Date: 2017-10-12 10:24:59

Project Information:

Operator Name Robert Mull  
Company Name Resolute Env  
Project Name Ash Pond  
Site Name Plant Bowen  
Latitude 0° 0' 0"  
Longitude 0° 0' 0"  
Sonde SN 364455  
Turbidity Make/Model LaMotte 2020we

Pump Information:

Pump Model/Type Dedicated Pump  
Tubing Type LDPE  
Tubing Diameter .17 in  
Tubing Length 47 ft

Pump placement from TOC 38.00 ft

Well Information:

Well ID BGWC-22  
Well diameter 2 in  
Well Total Depth 43.00 ft  
Screen Length 10 ft  
Depth to Water 27.57 ft

Pumping Information:

Final Pumping Rate 125 mL/min  
Total System Volume 0.6947809 L  
Calculated Sample Rate 240 sec  
Stabilization Drawdown 5.16 in  
Total Volume Pumped 3.5 L

Low-Flow Sampling Stabilization Summary

	Time	Elapsed	Temp C	pH	SpCond $\mu$ S/cm	Turb NTU	DTW ft	RDO mg/L	ORP mV
			+/- 1000%	+/- 0.1	+/- 5%	+/- 5		+/- 10%	+/- 1000%
Stabilization									
Last 5	10:02:07	480.03	19.57	7.01	3197.26	0.48	28.00	0.79	21.80
Last 5	10:06:07	720.03	19.57	6.98	3209.07	0.52	28.00	0.59	30.90
Last 5	10:10:07	960.03	19.53	6.97	3212.98	0.28	28.00	0.48	34.85
Last 5	10:14:07	1199.97	19.56	6.96	3216.52	0.11	28.00	0.38	37.97
Last 5	10:22:07	1679.97	19.58	6.95	3220.64	0.20	28.00	0.31	41.60
Variance 0			-0.04	-0.01	3.91			-0.12	3.95
Variance 1			0.04	-0.01	3.54			-0.10	3.12
Variance 2			0.02	-0.01	4.12			-0.07	3.63

Notes

DO stable below 0.5 mg/L

Grab Samples

BGWC-22

Inorganics

DUP-3

Inorganics

BGWC-22

Metals

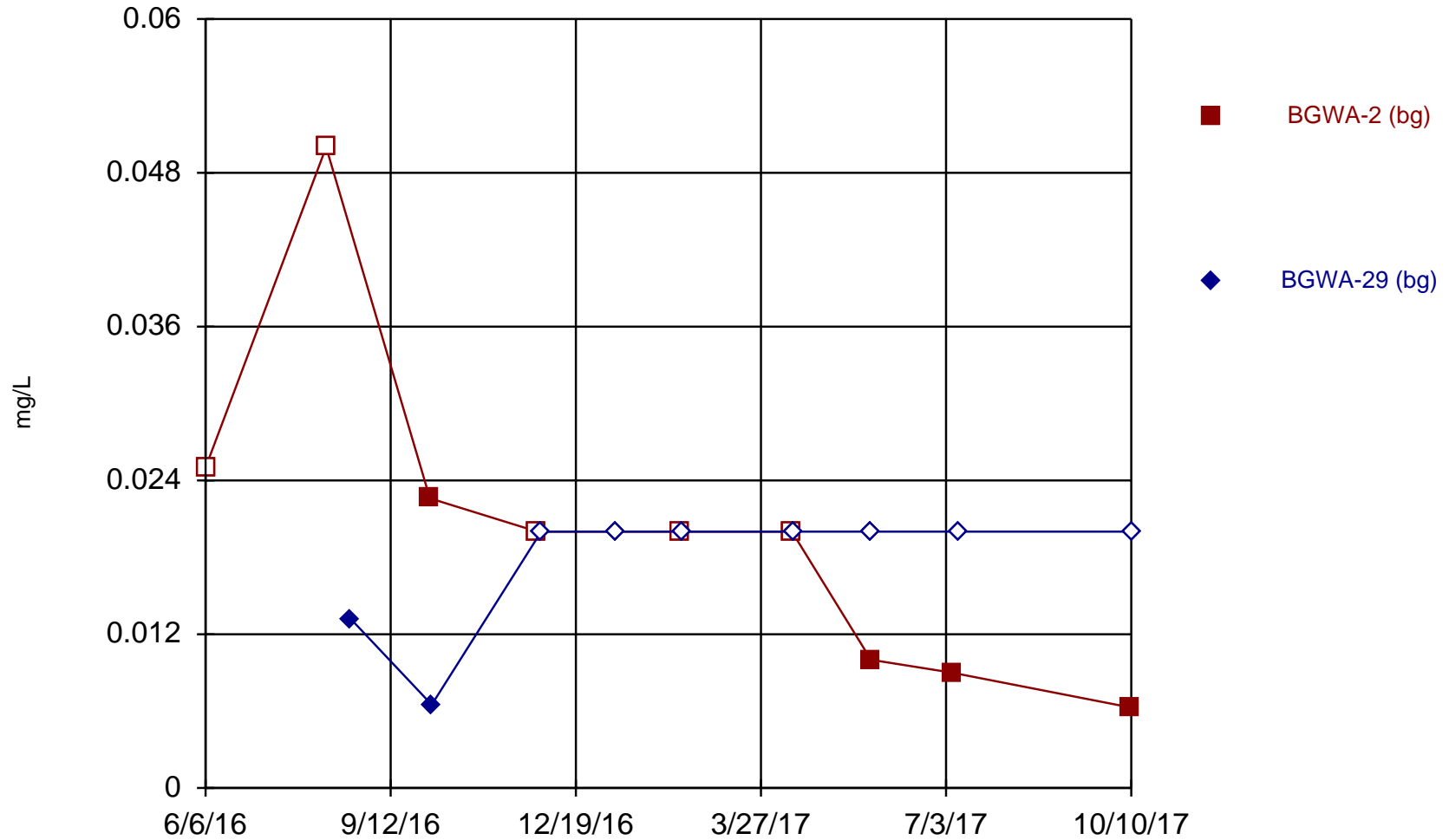
DUP-3  
Metals



Appendix C  
Statistical Analysis

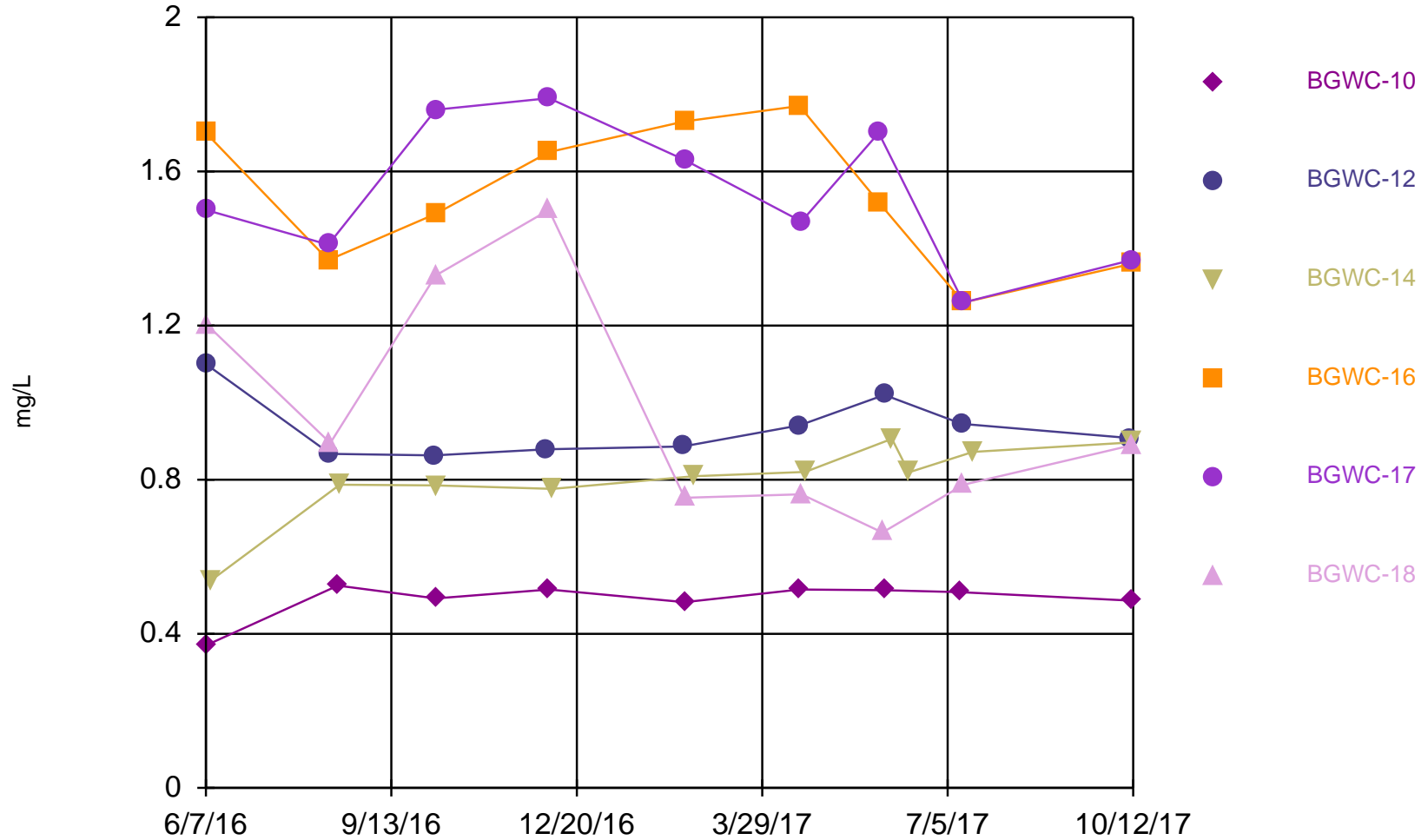
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### Time Series



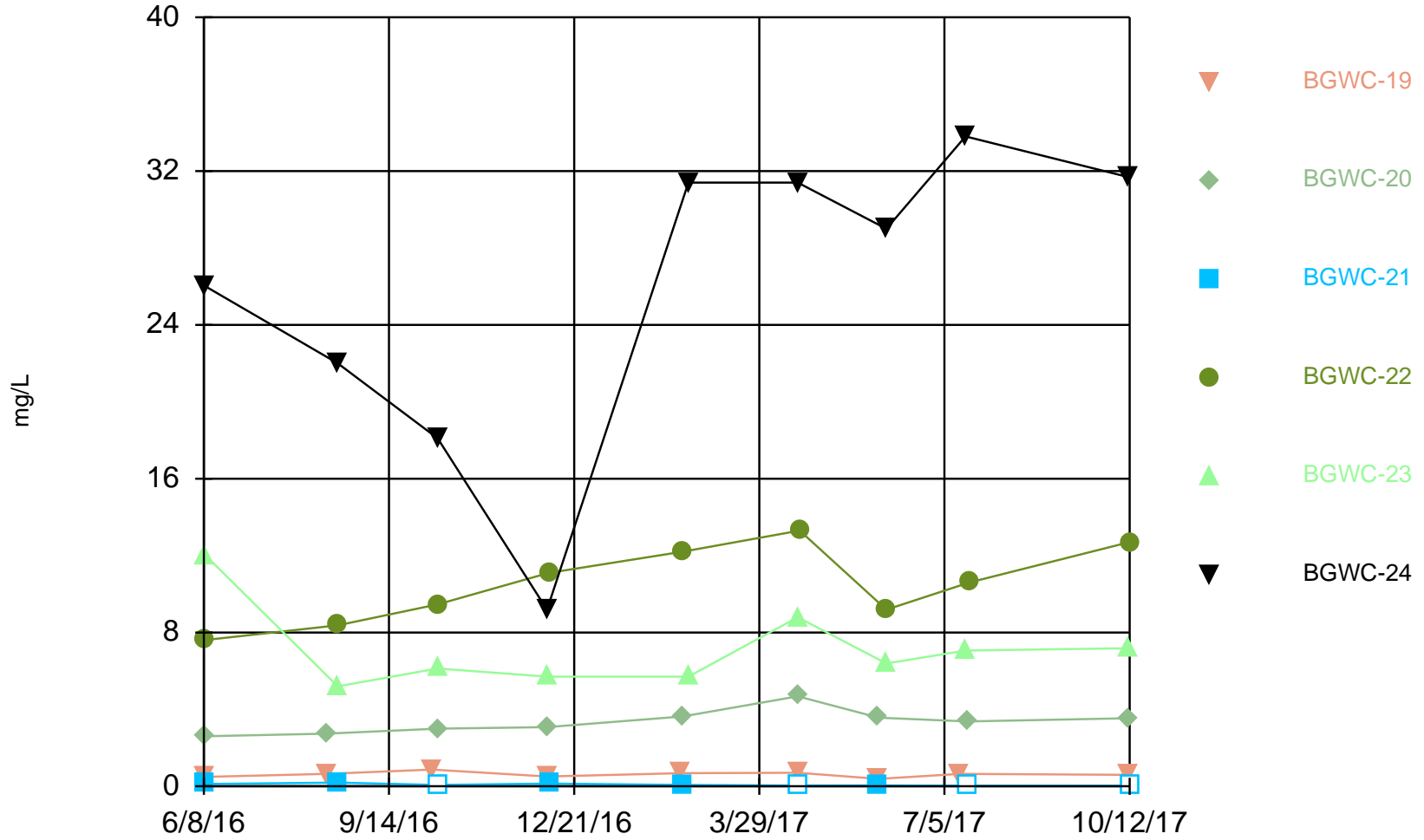
Constituent: Boron Analysis Run 1/25/2018 4:13 PM View: BGWA-2, BGWA-29 only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



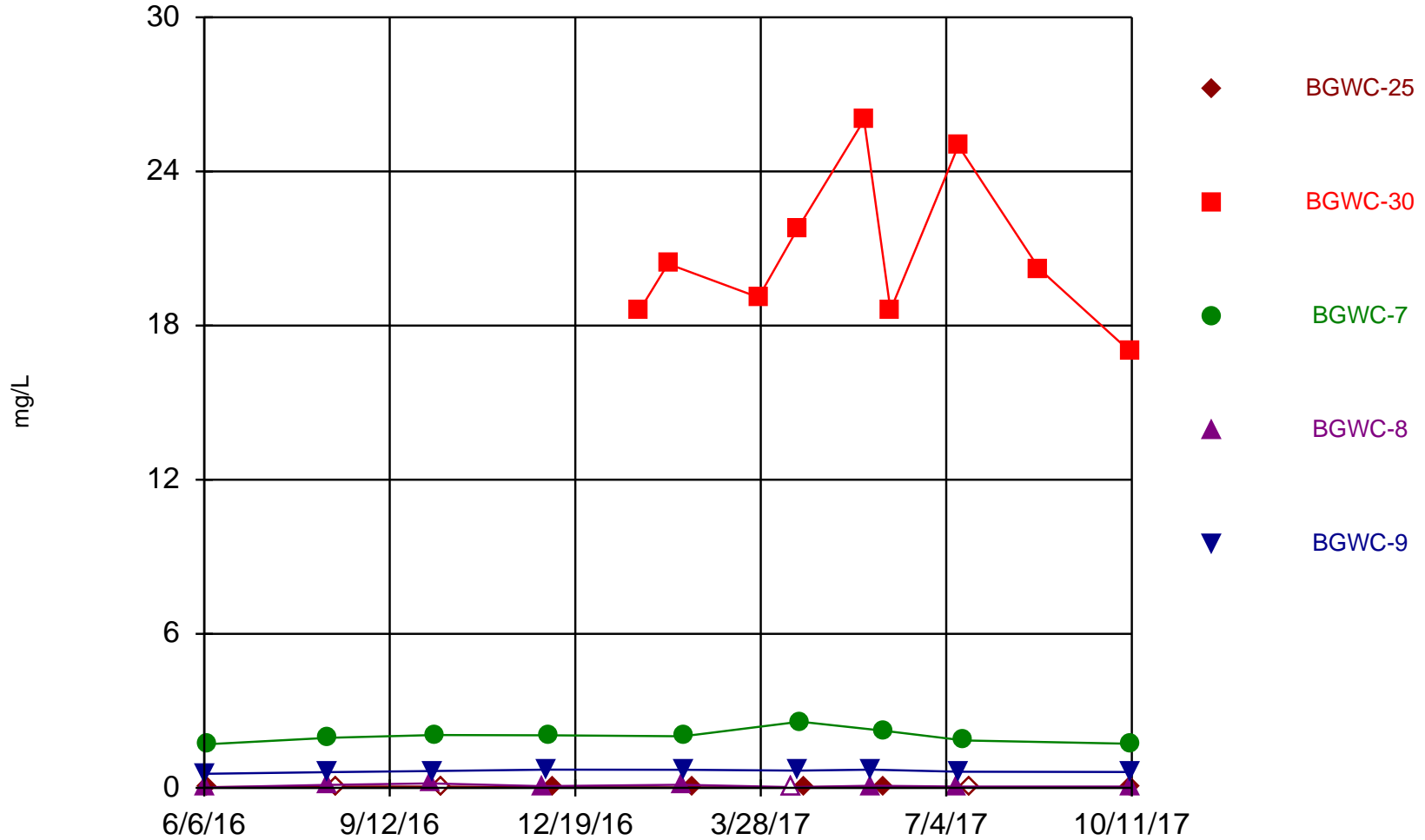
Constituent: Boron Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



Constituent: Boron Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

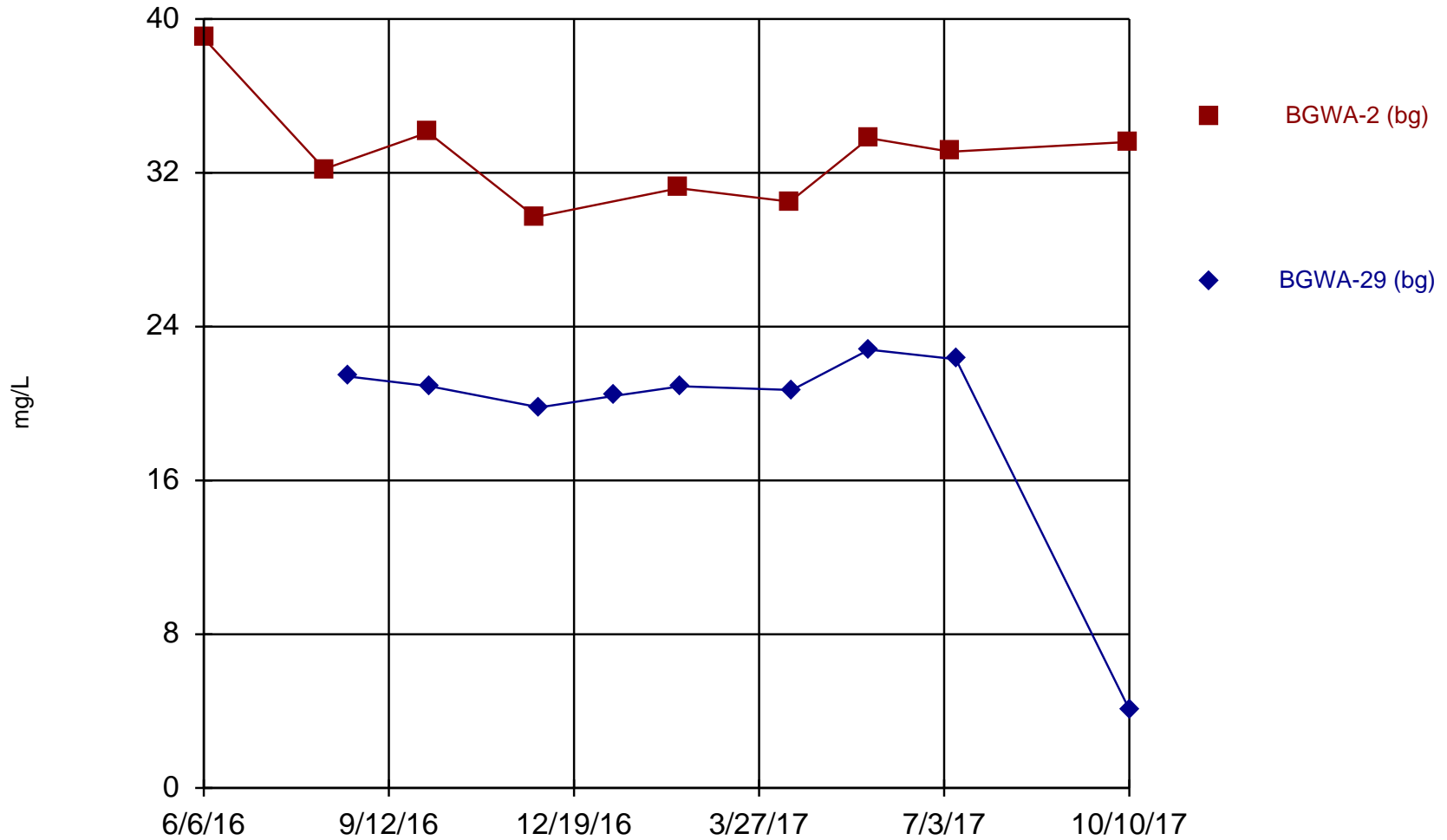
### Time Series



Constituent: Boron Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

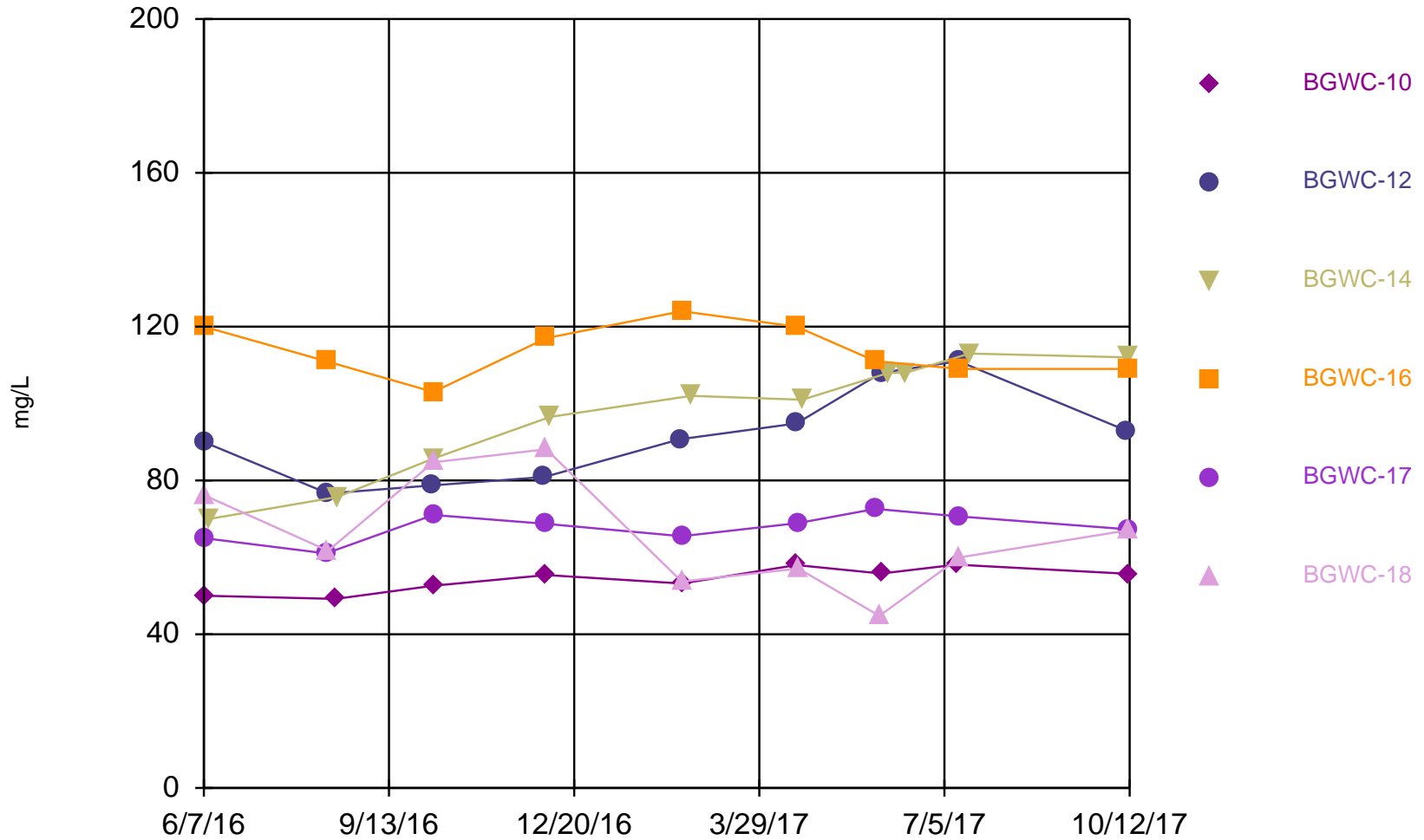


### Time Series



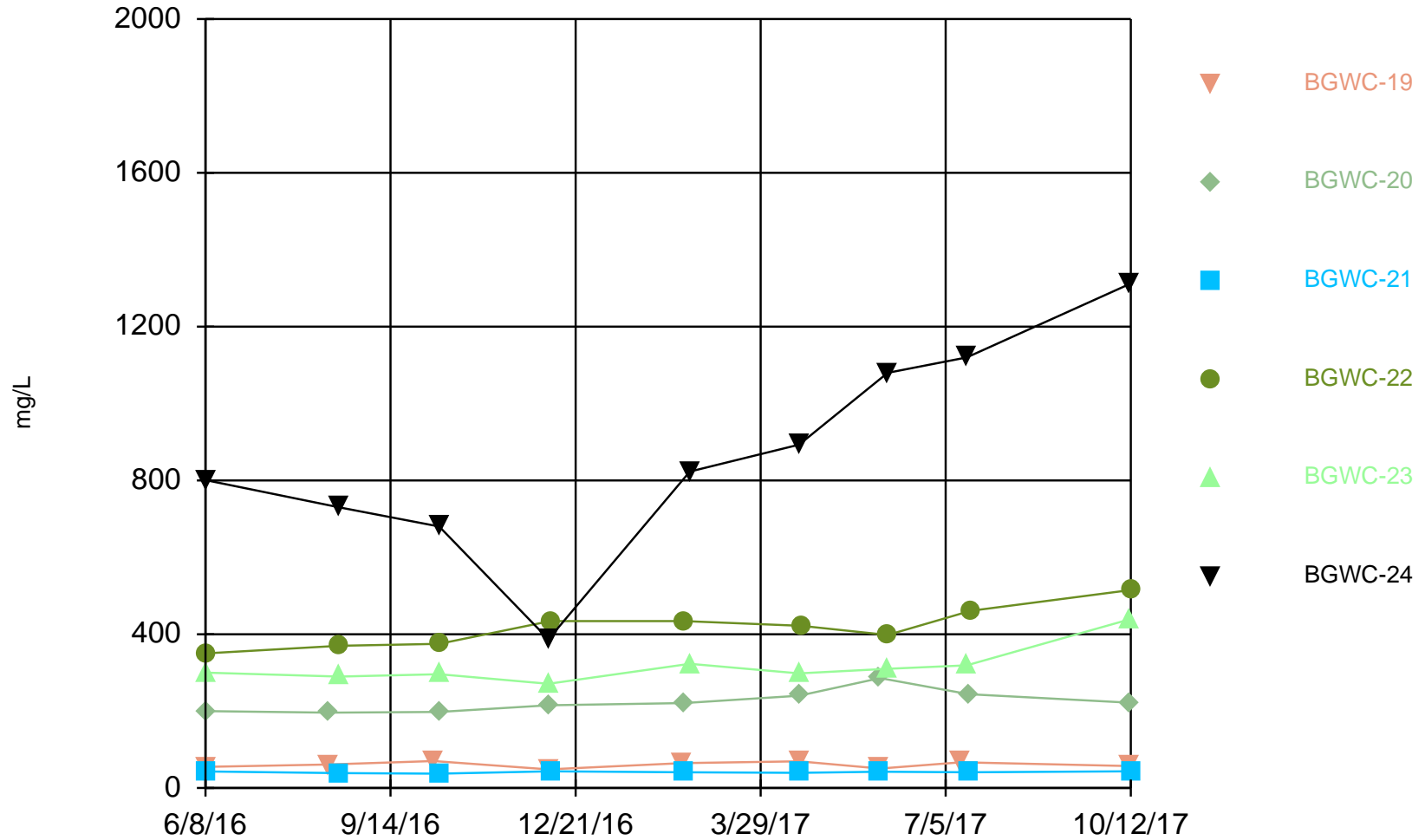
Constituent: Calcium Analysis Run 1/25/2018 4:13 PM View: BGWA-2, BGWA-29 only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



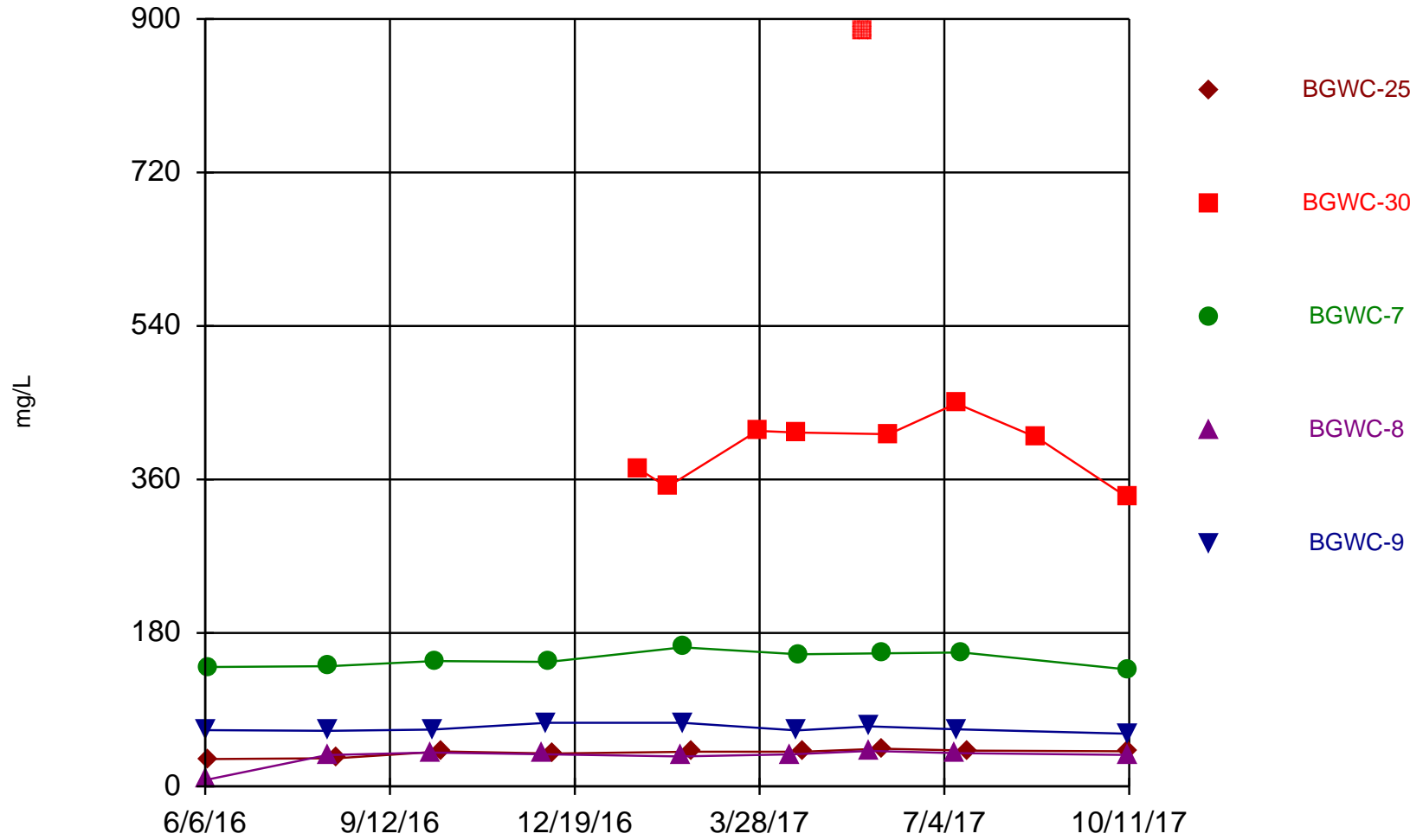
Constituent: Calcium Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



Constituent: Calcium Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

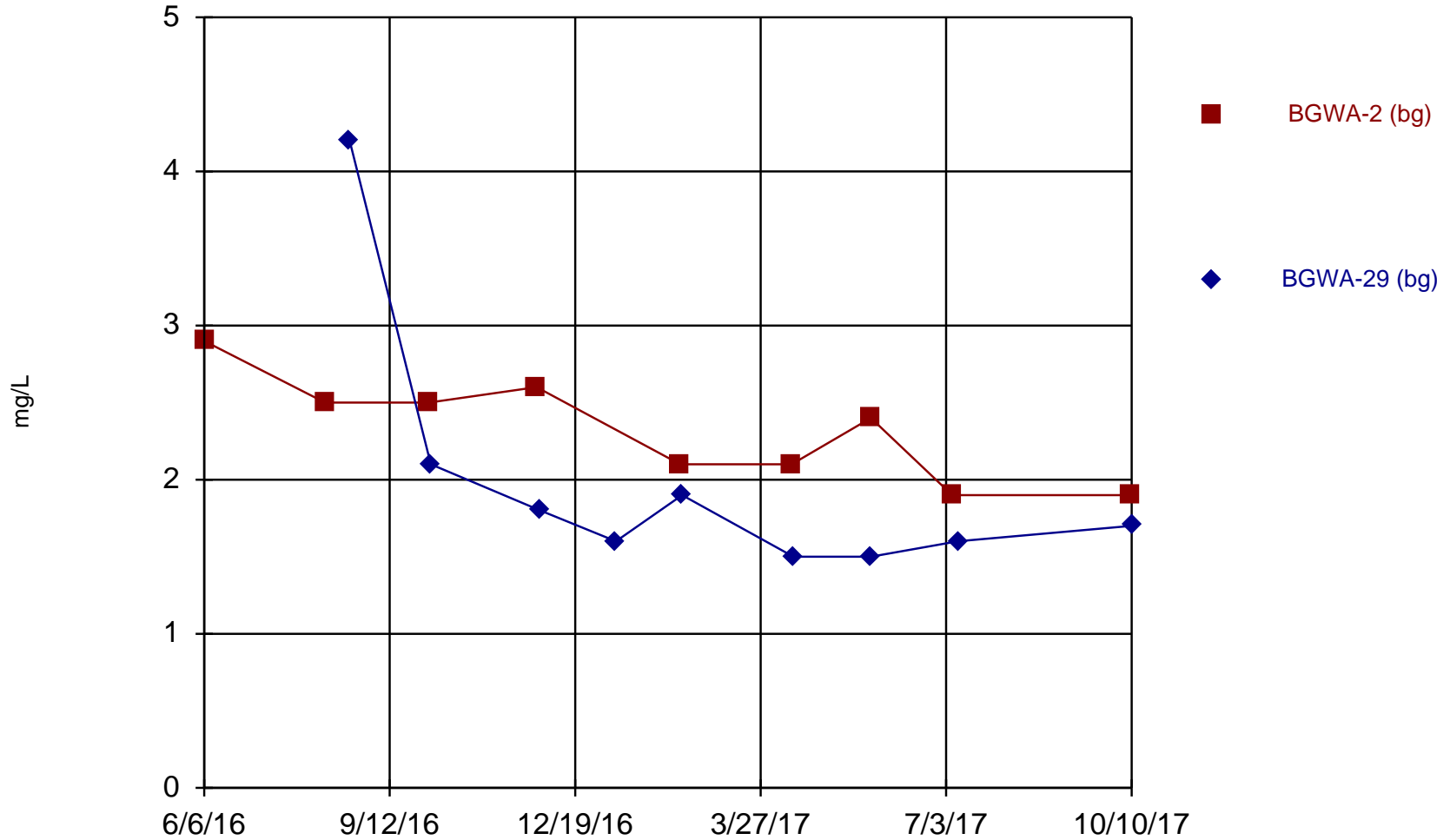
### Time Series



Constituent: Calcium Analysis Run 1/25/2018 4:15 PM View: Compliance only

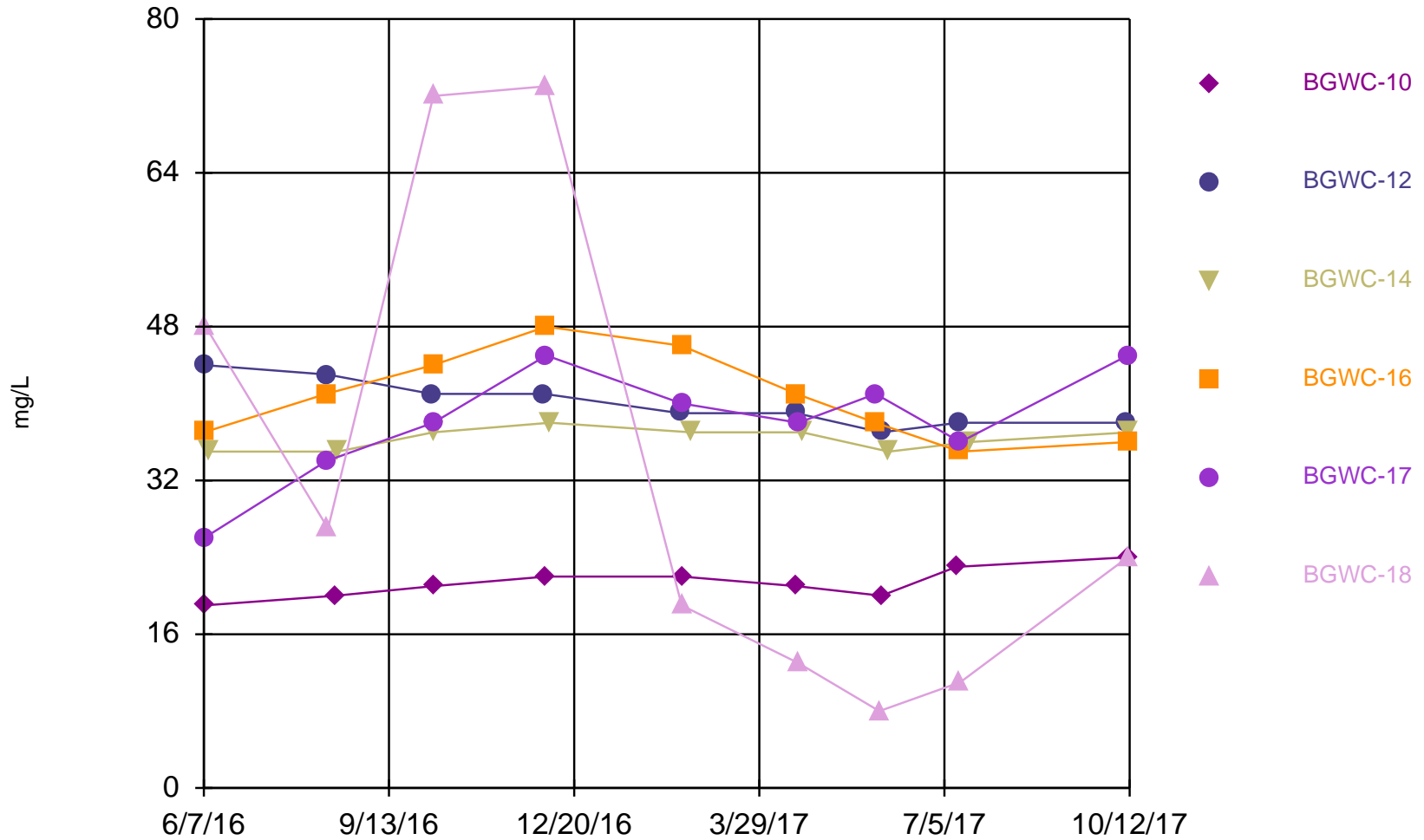
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



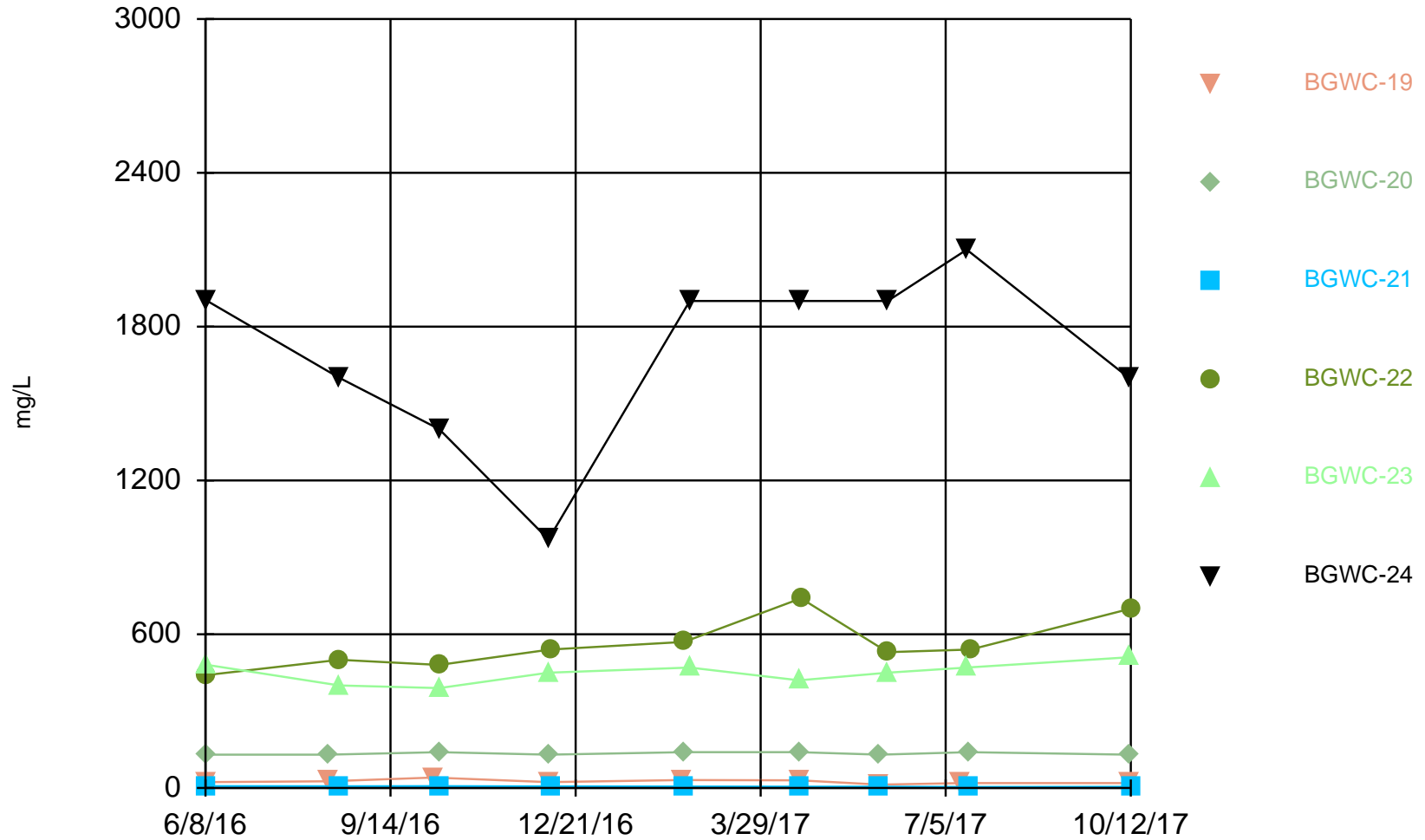
Constituent: Chloride Analysis Run 1/25/2018 4:13 PM View: BGWA-2, BGWA-29 only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



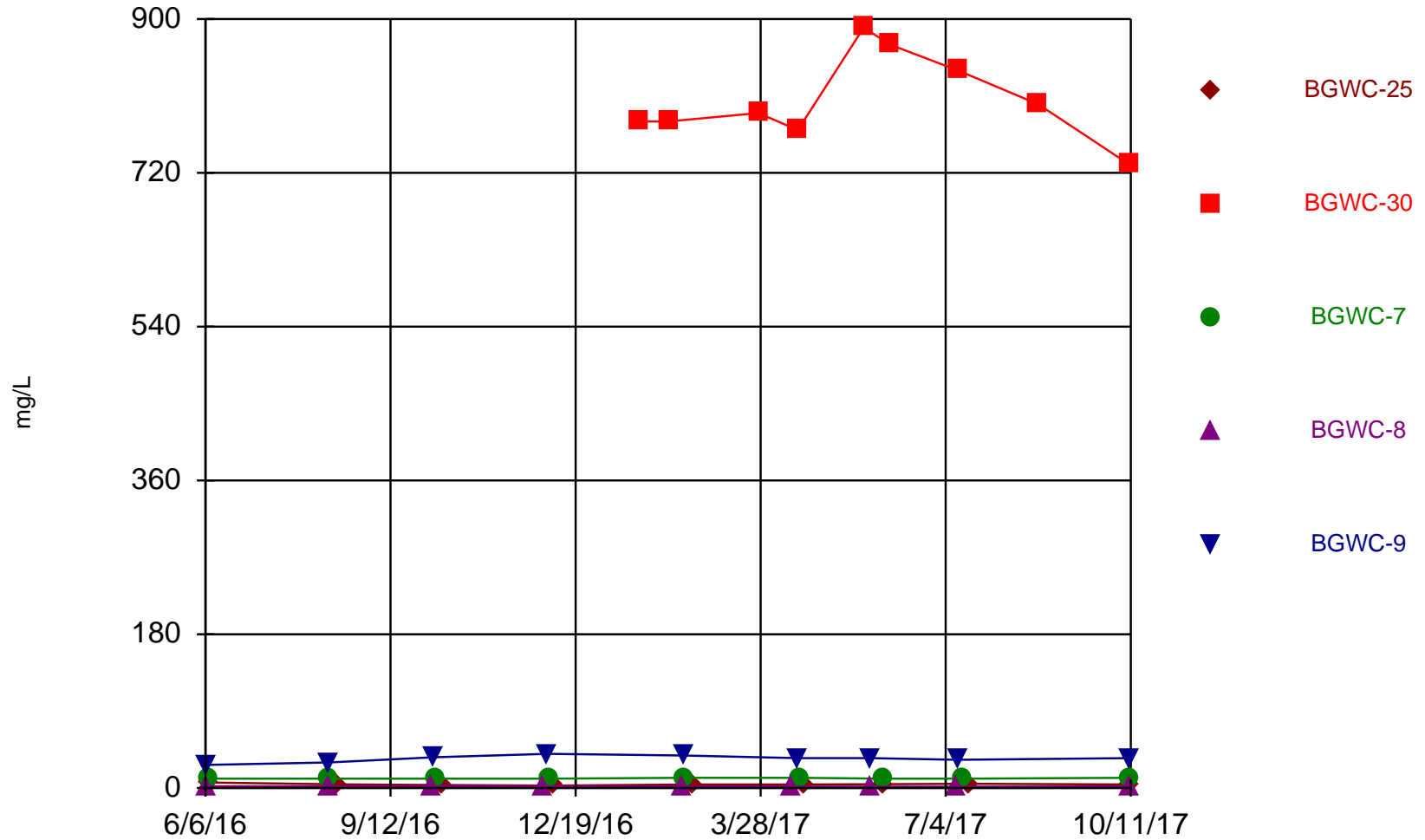
Constituent: Chloride Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



Constituent: Chloride Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series

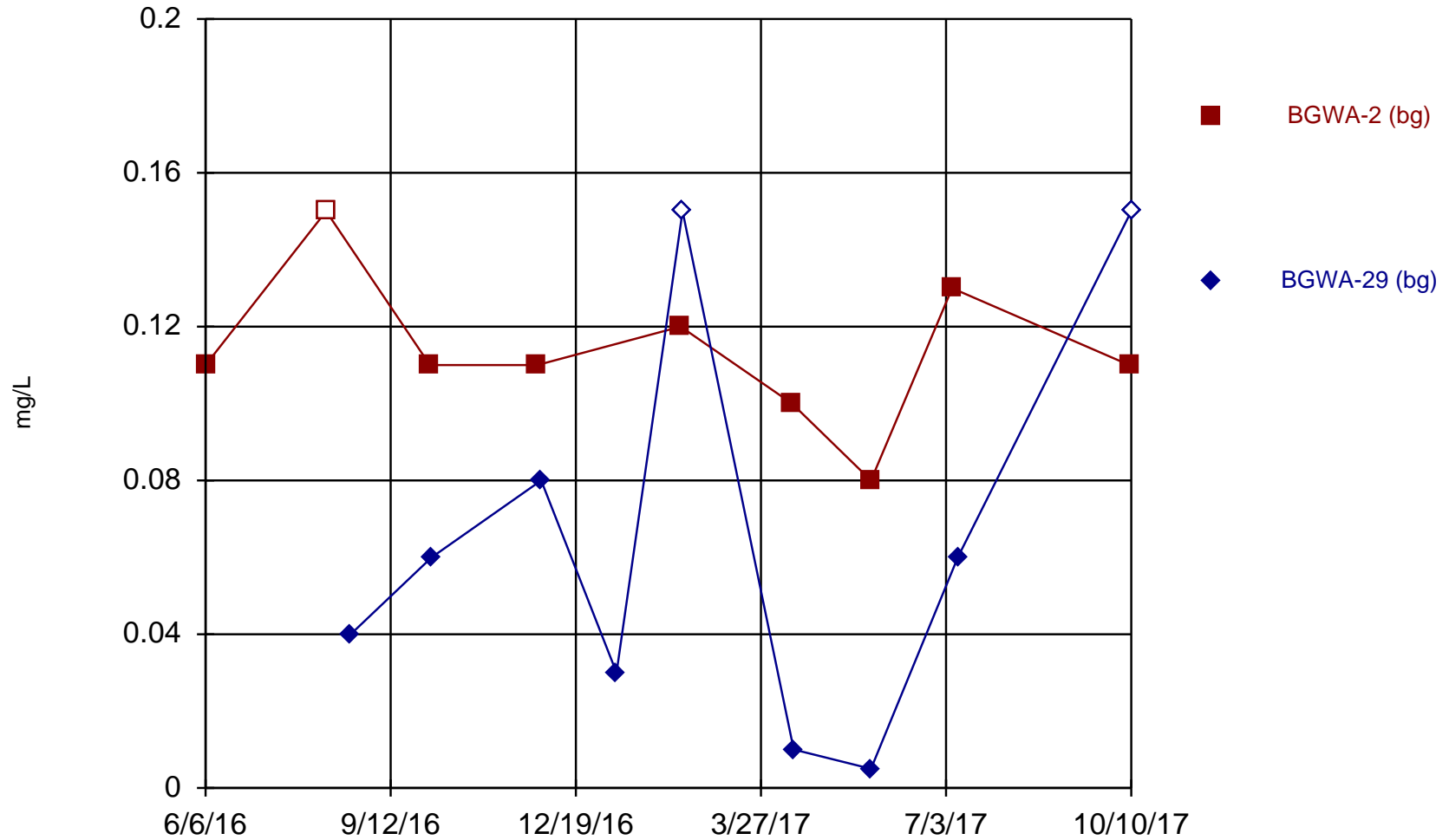


Constituent: Chloride Analysis Run 1/25/2018 4:15 PM View: Compliance only

Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

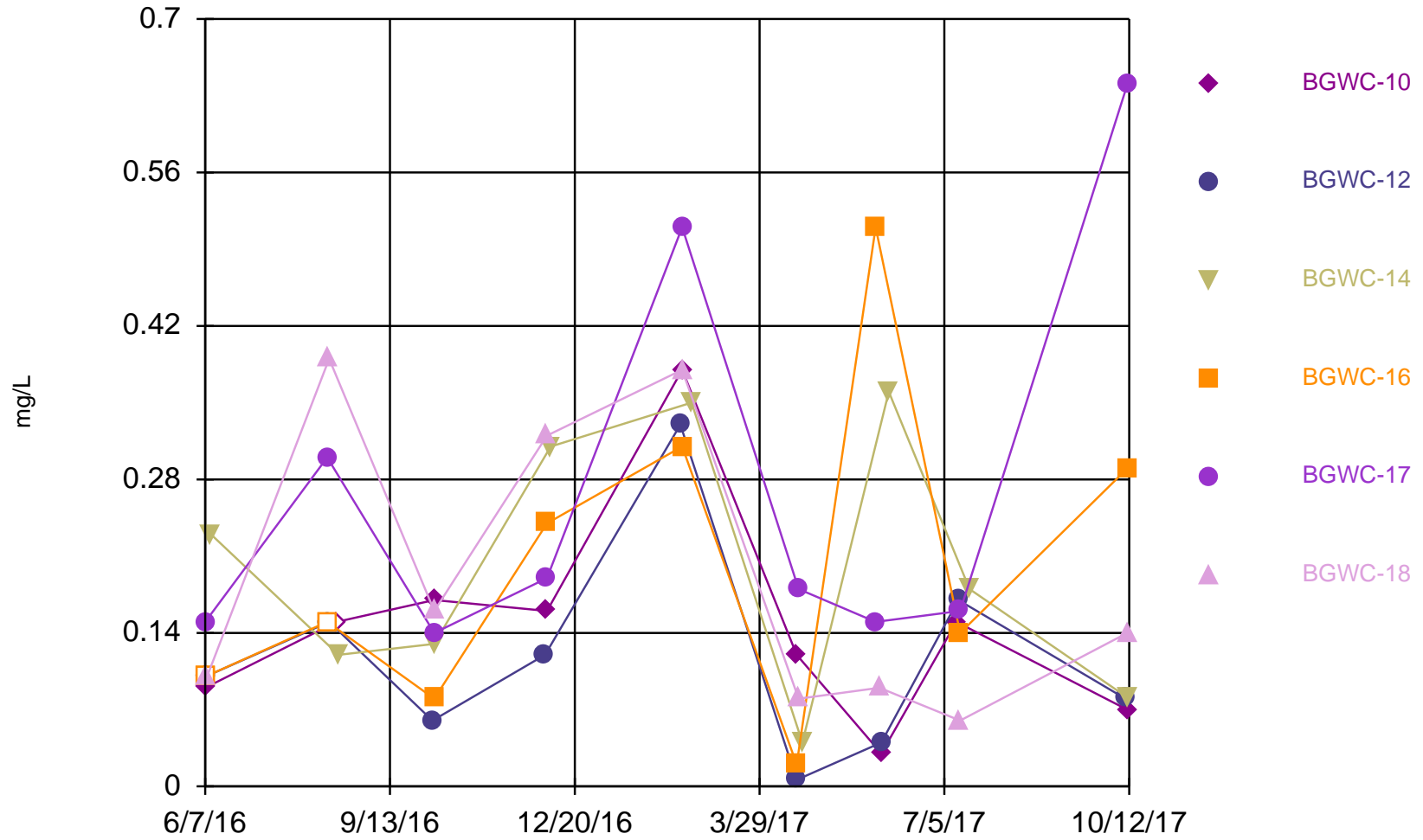


### Time Series



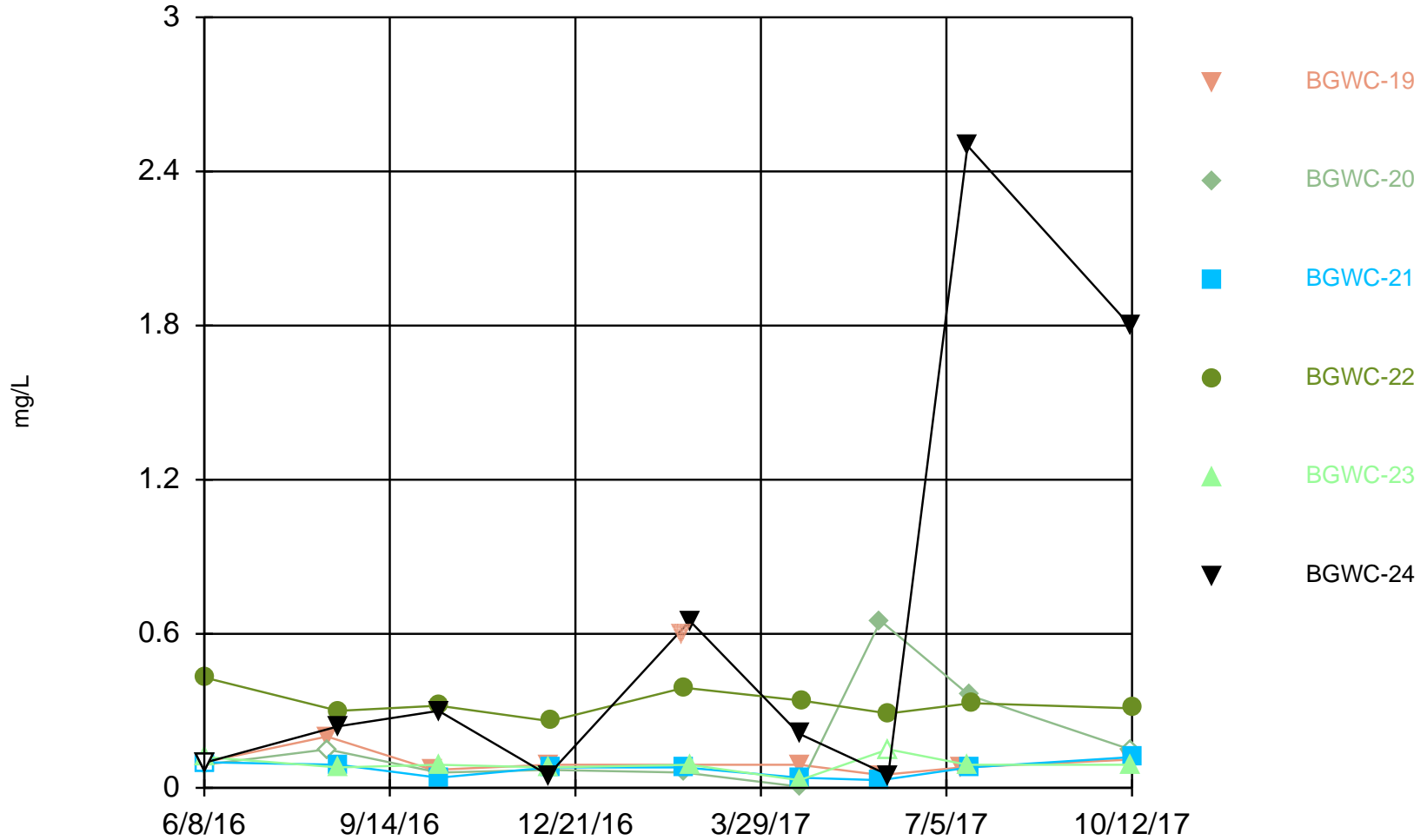
Constituent: Fluoride Analysis Run 1/25/2018 4:13 PM View: BGWA-2, BGWA-29 only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



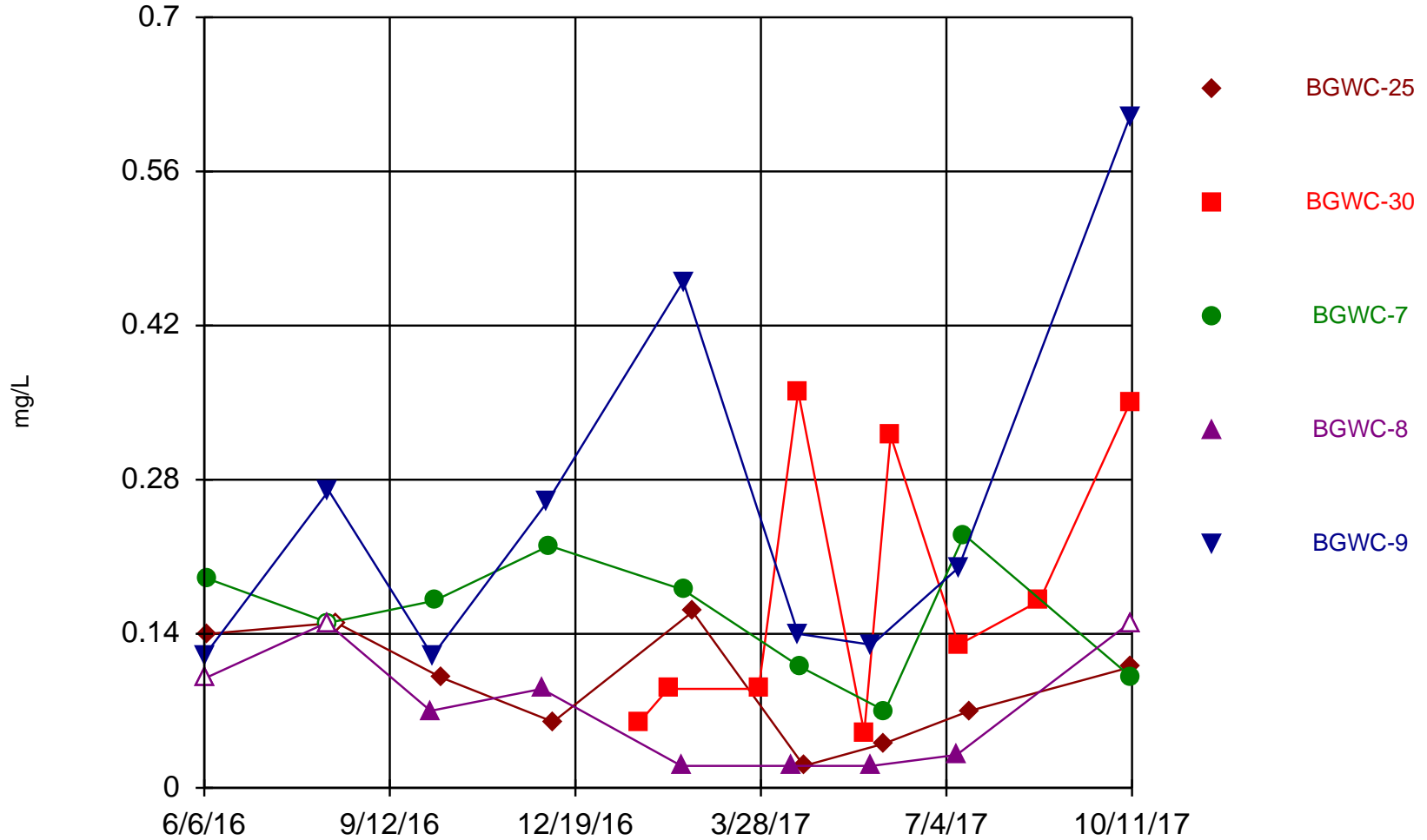
Constituent: Fluoride Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



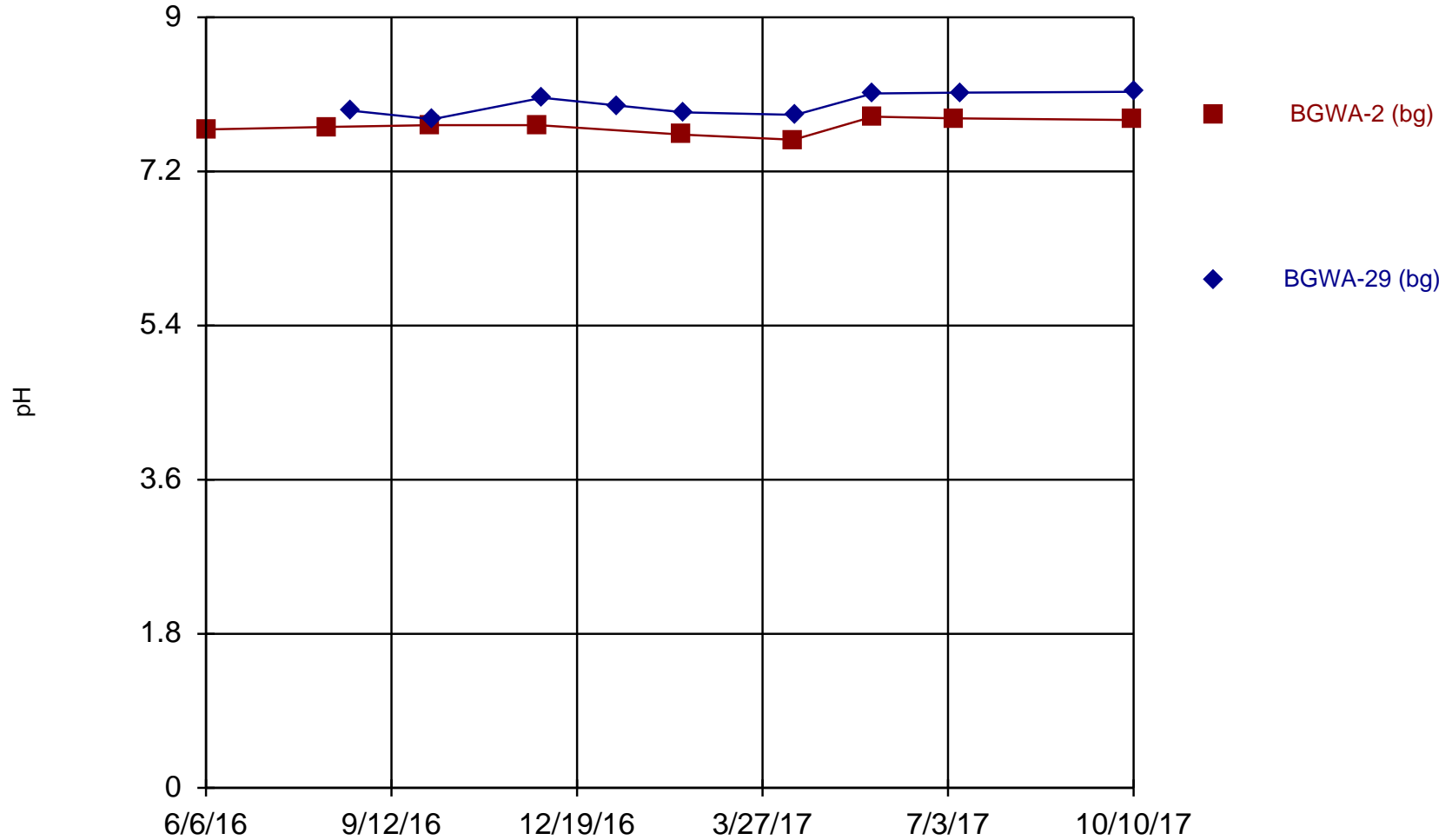
Constituent: Fluoride Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



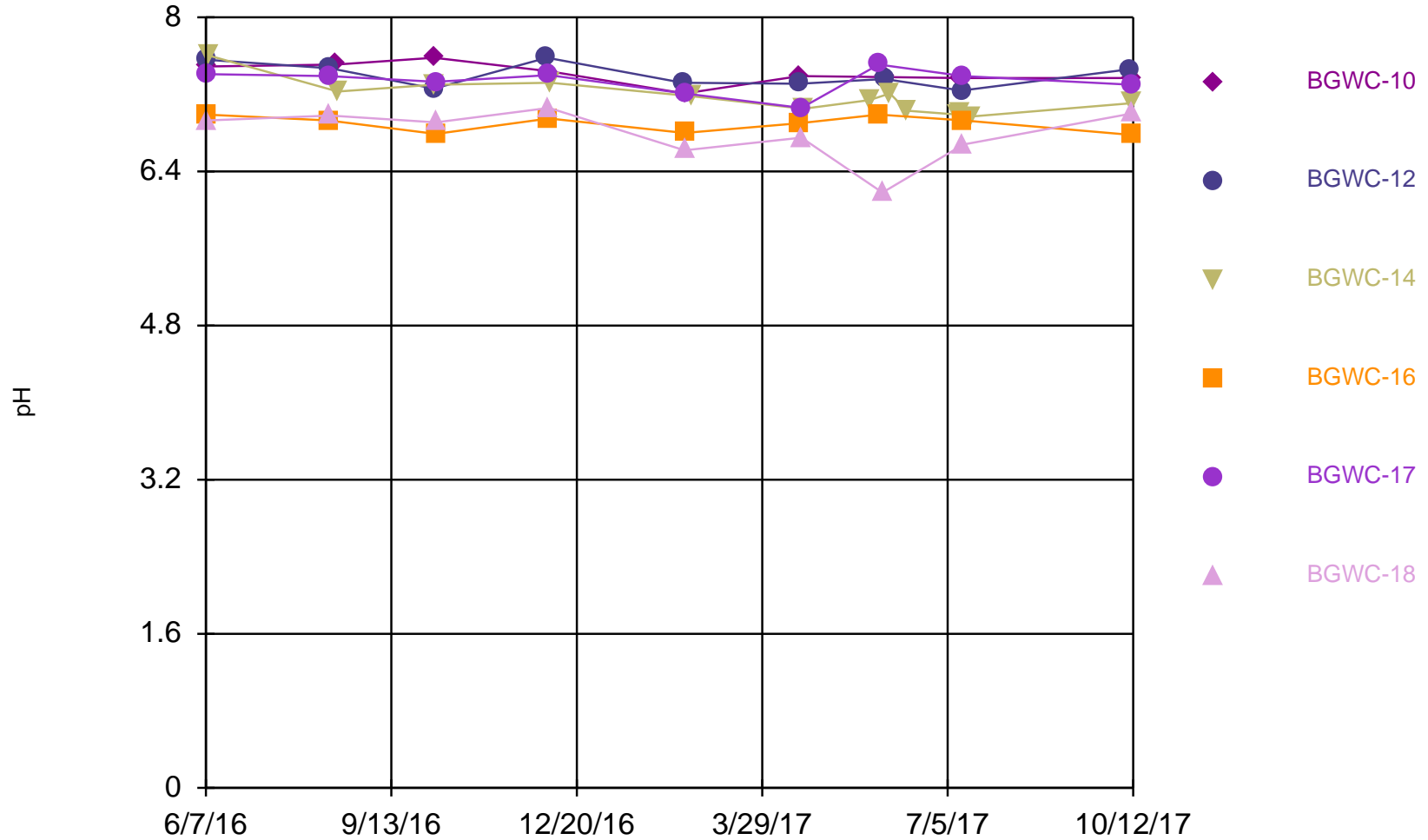
Constituent: Fluoride Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



Constituent: pH Analysis Run 1/25/2018 4:13 PM View: BGWA-2, BGWA-29 only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

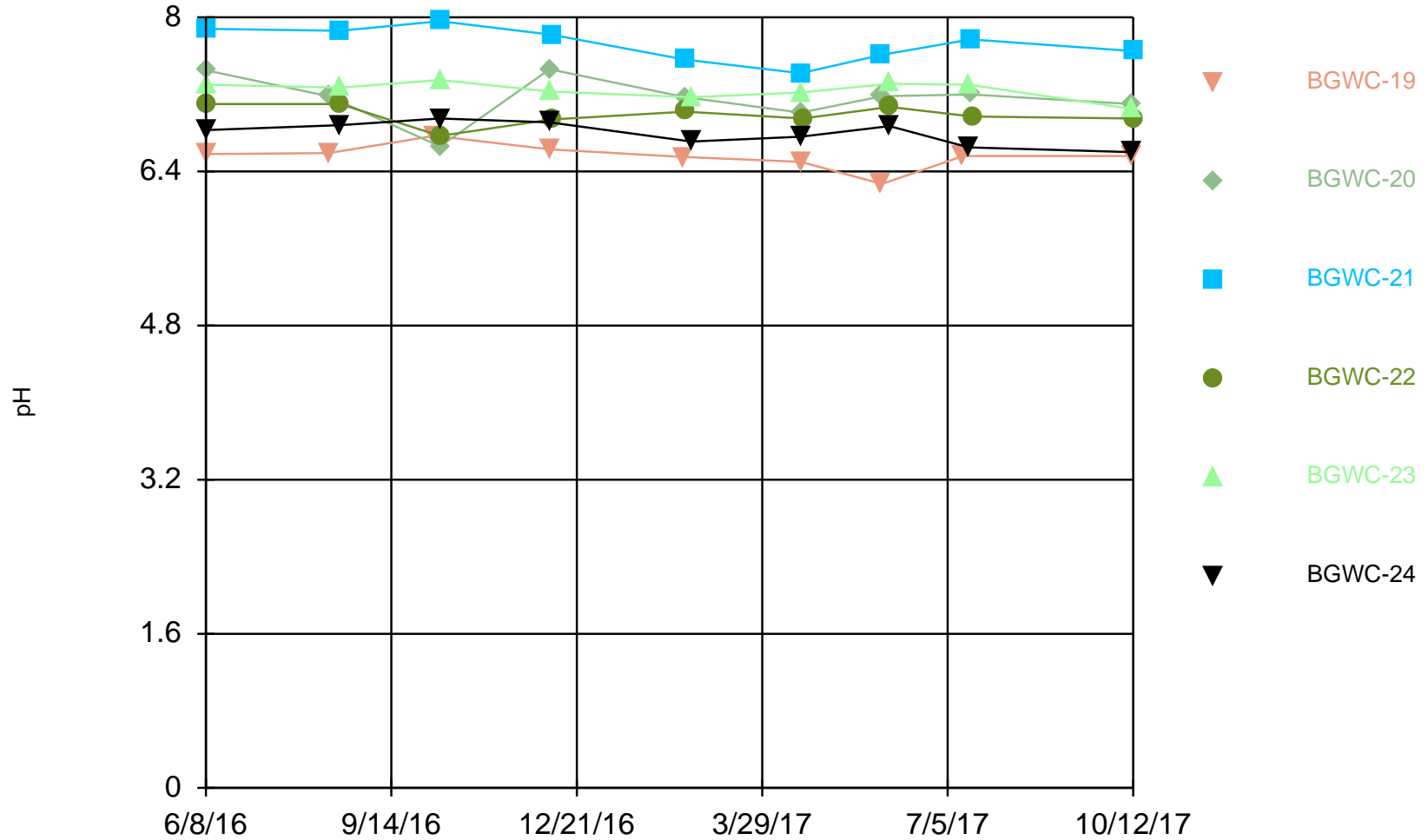
### Time Series



Constituent: pH Analysis Run 1/25/2018 4:15 PM View: Compliance only

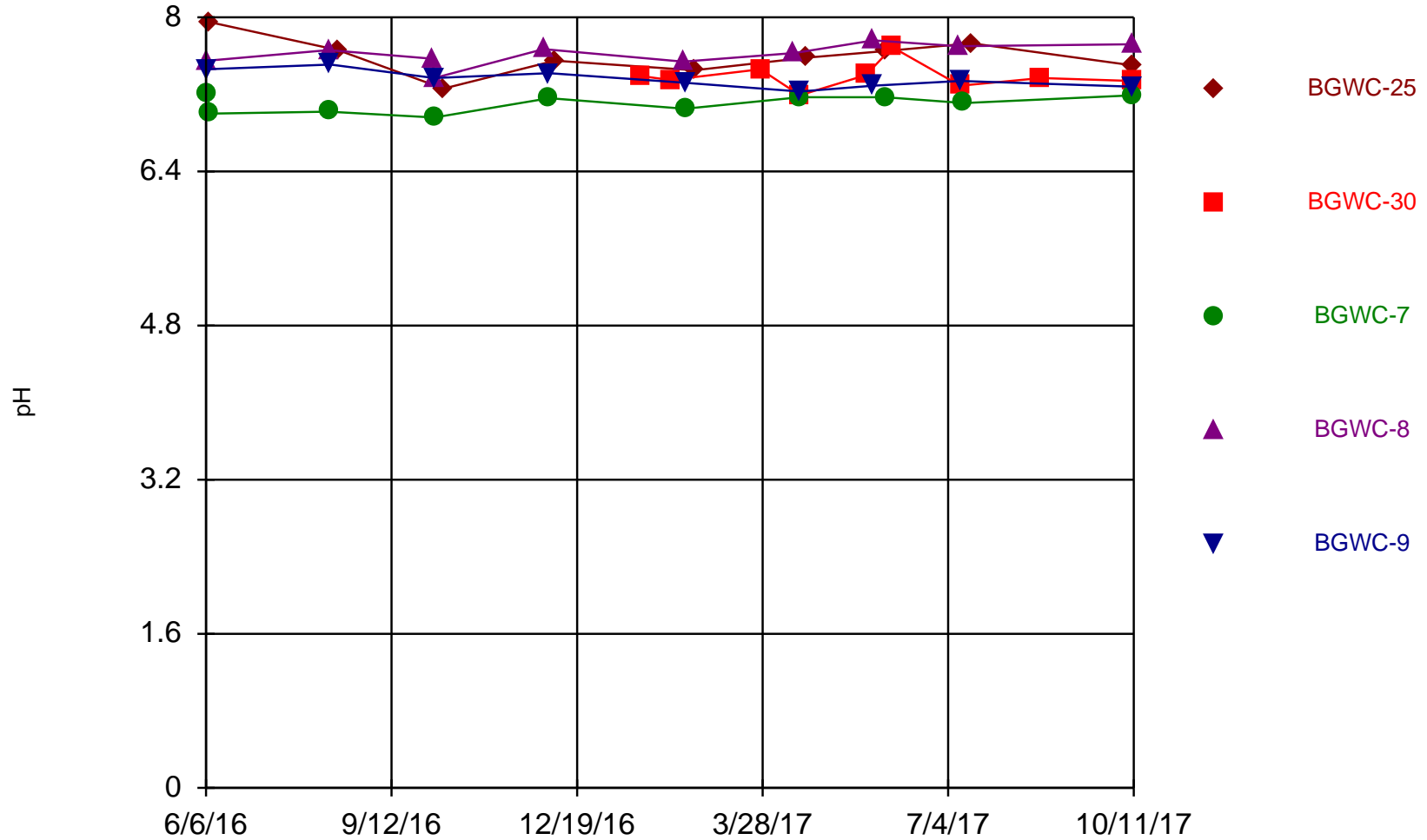
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



Constituent: pH Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

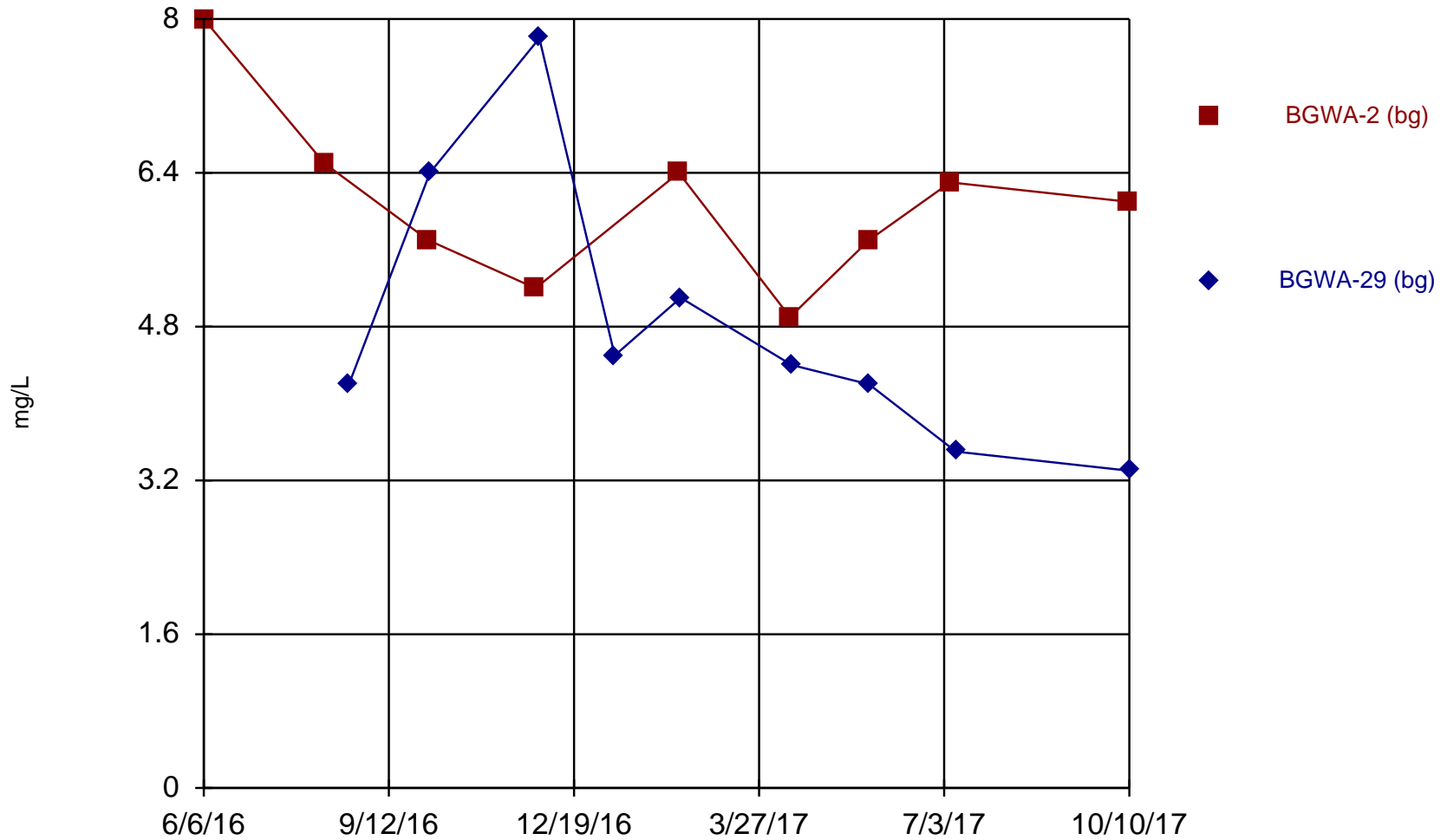
### Time Series



Constituent: pH Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

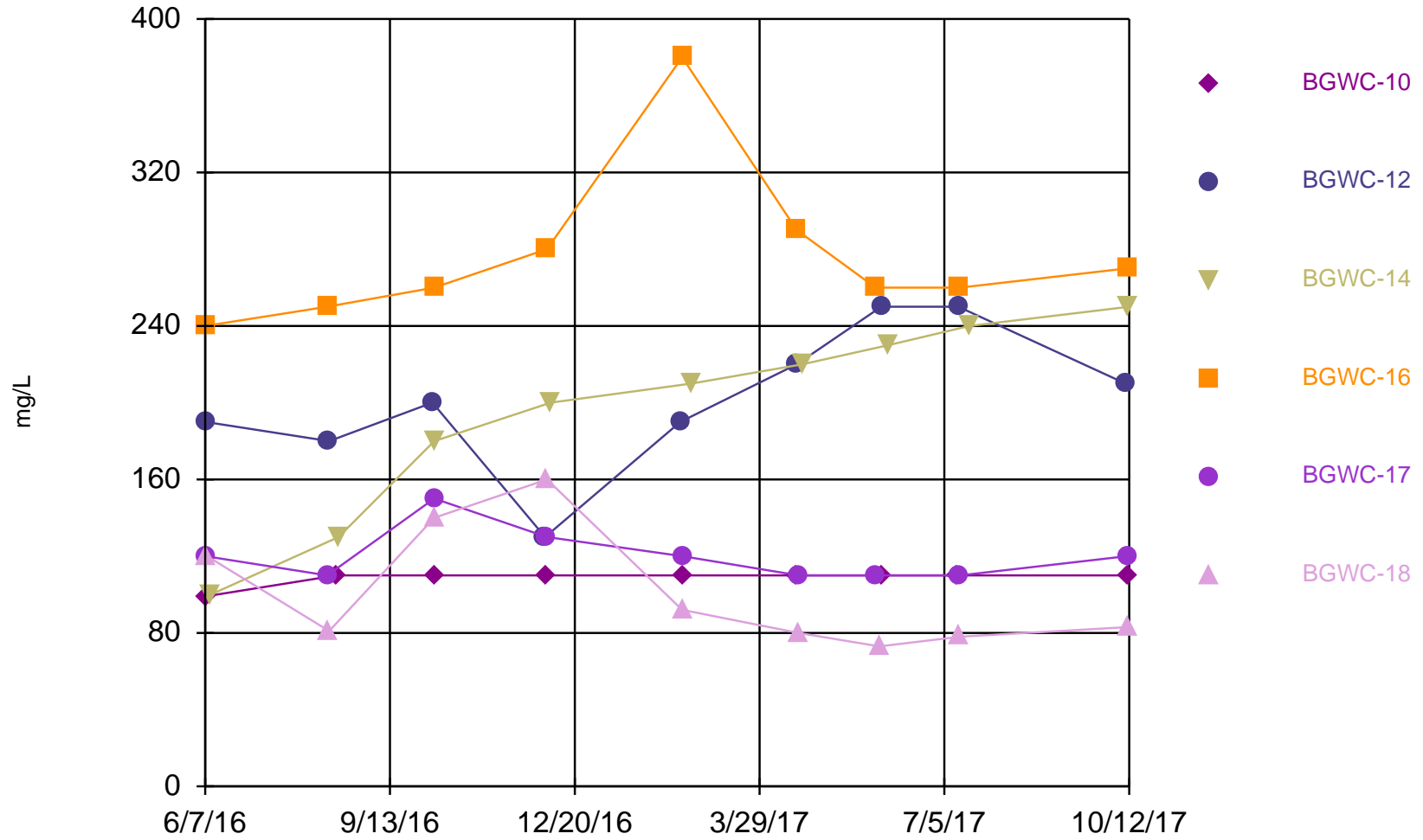


### Time Series



Constituent: Sulfate Analysis Run 1/25/2018 4:13 PM View: BGWA-2, BGWA-29 only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

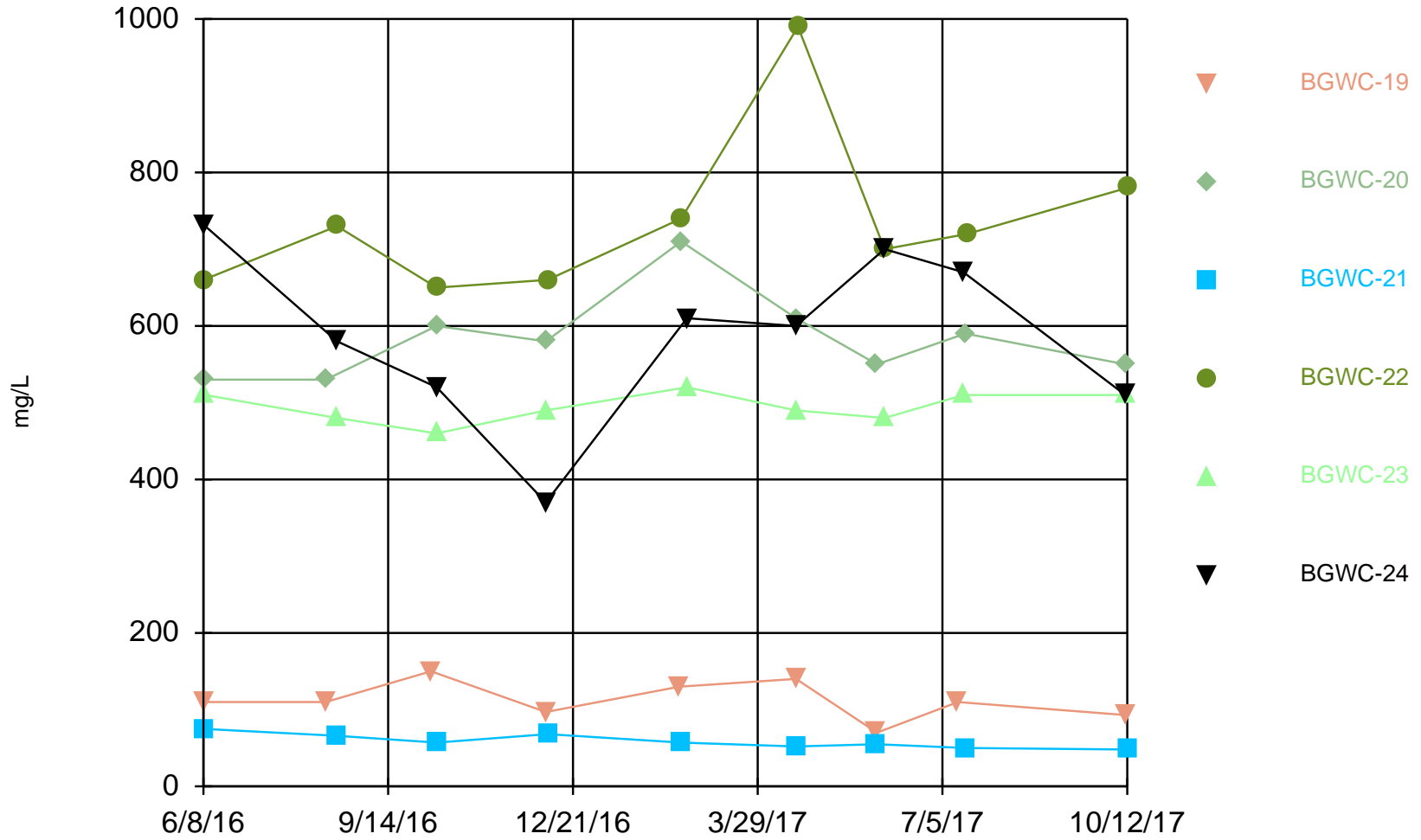
### Time Series



Constituent: Sulfate Analysis Run 1/25/2018 4:15 PM View: Compliance only

Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

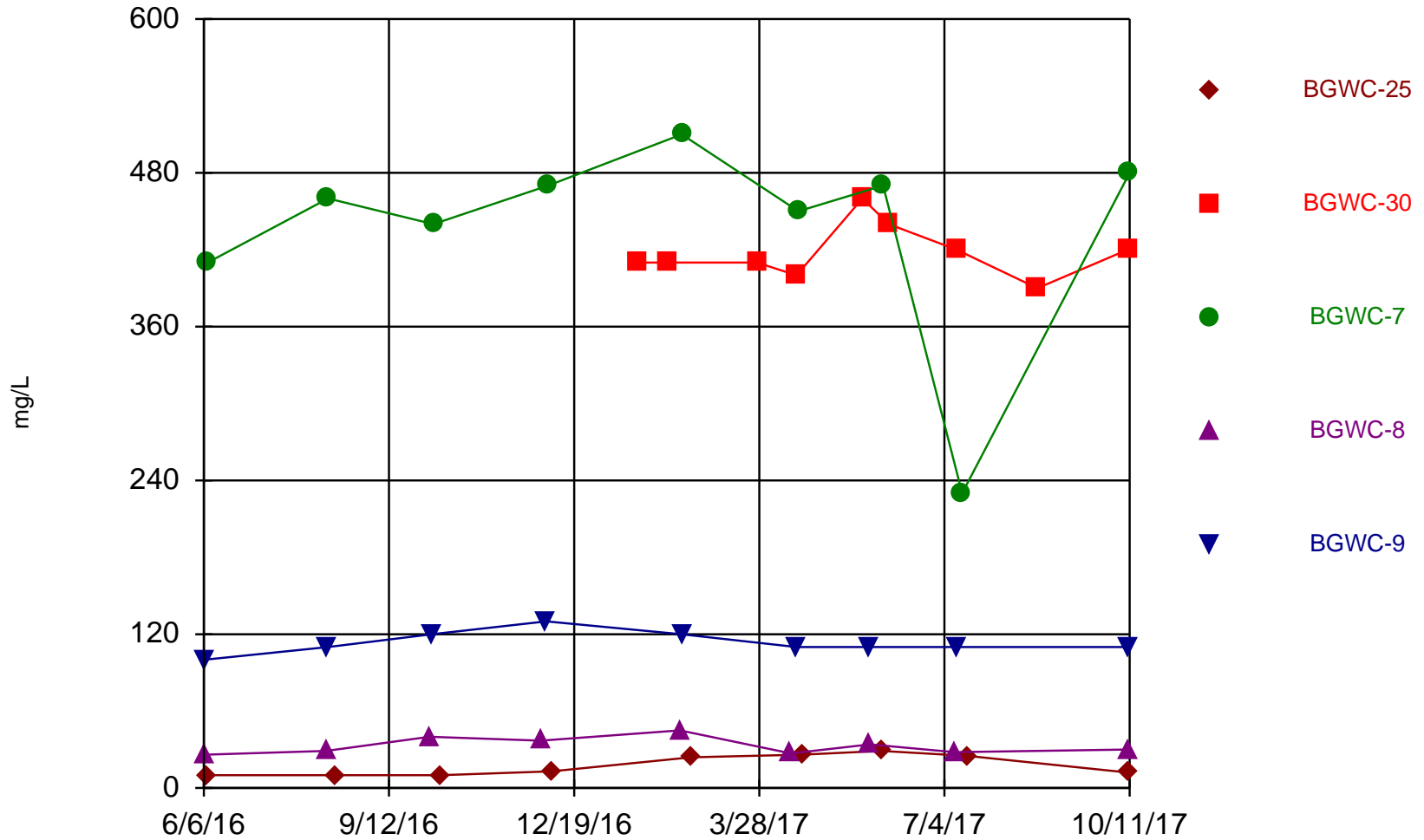
### Time Series



Constituent: Sulfate Analysis Run 1/25/2018 4:15 PM View: Compliance only

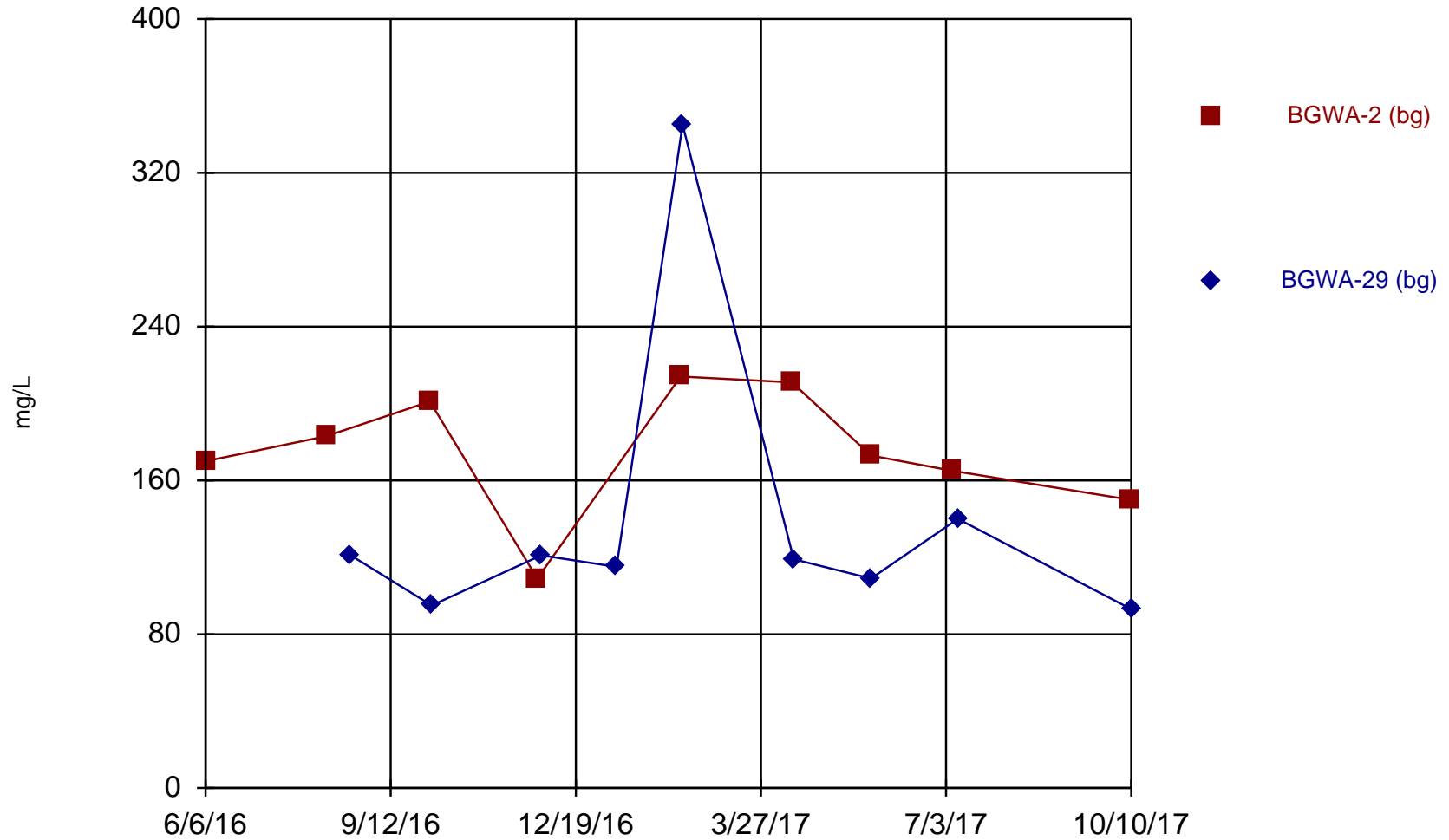
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



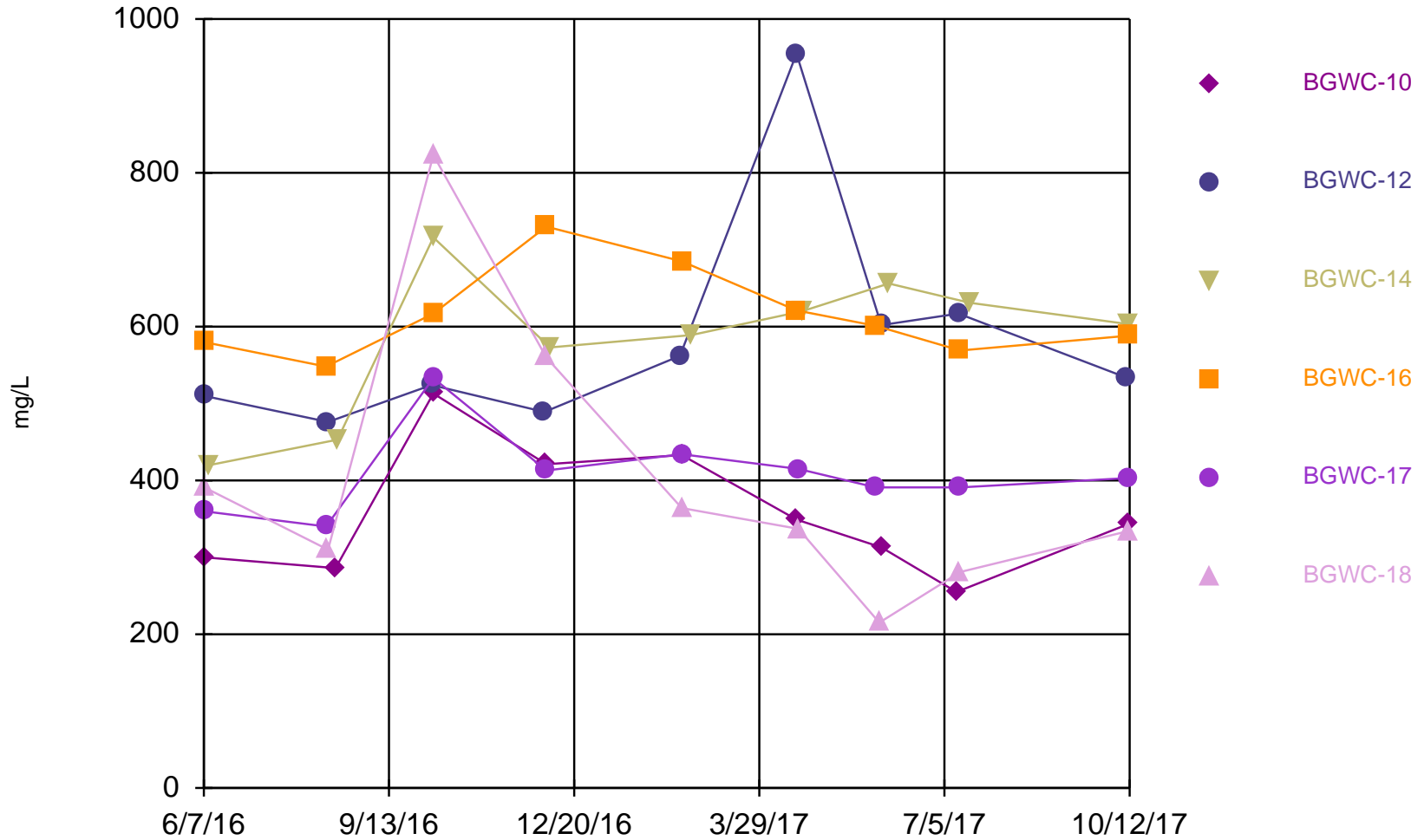
Constituent: Sulfate Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



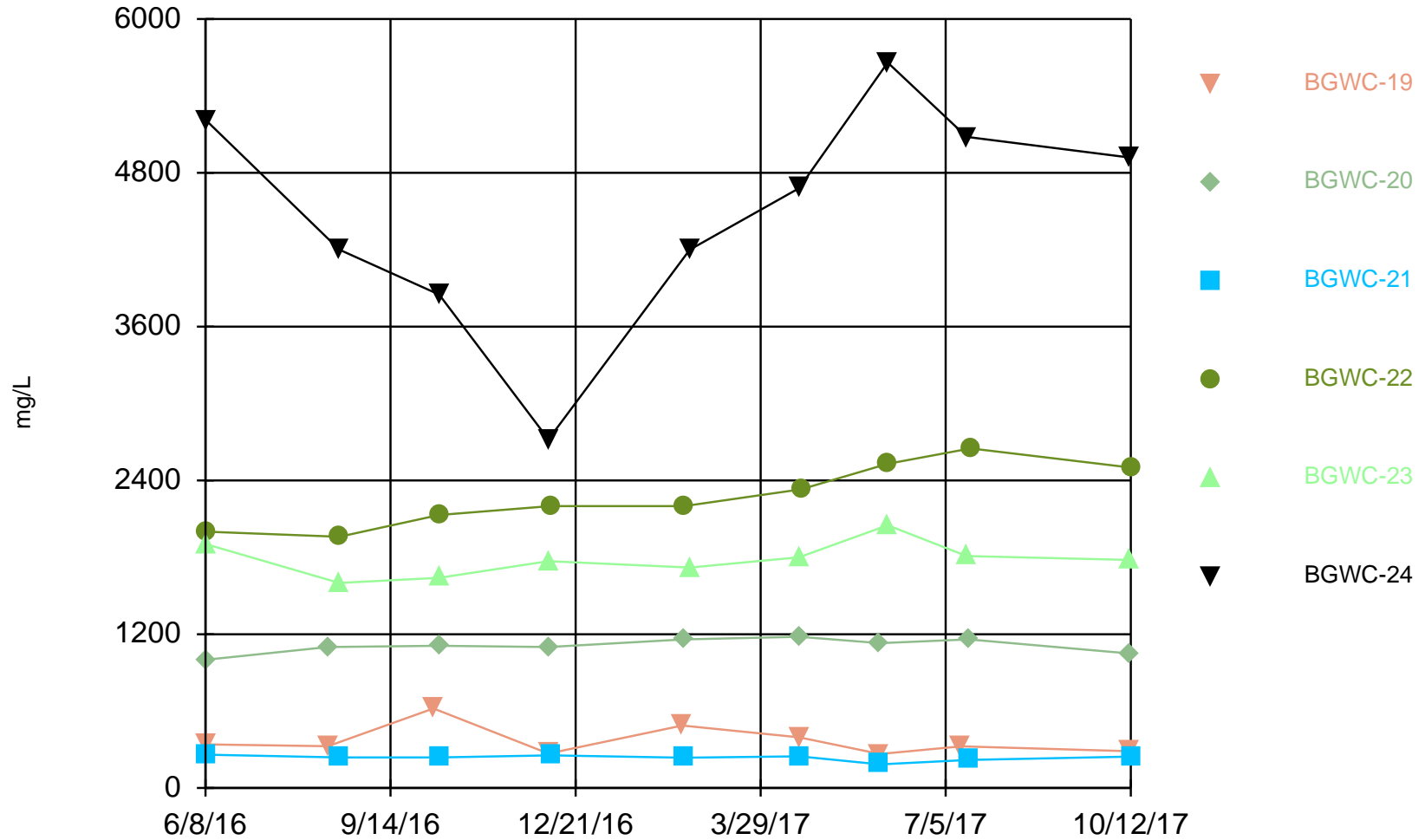
Constituent: Total Dissolved Solids Analysis Run 1/25/2018 4:13 PM View: BGWA-2, BGWA-29 only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



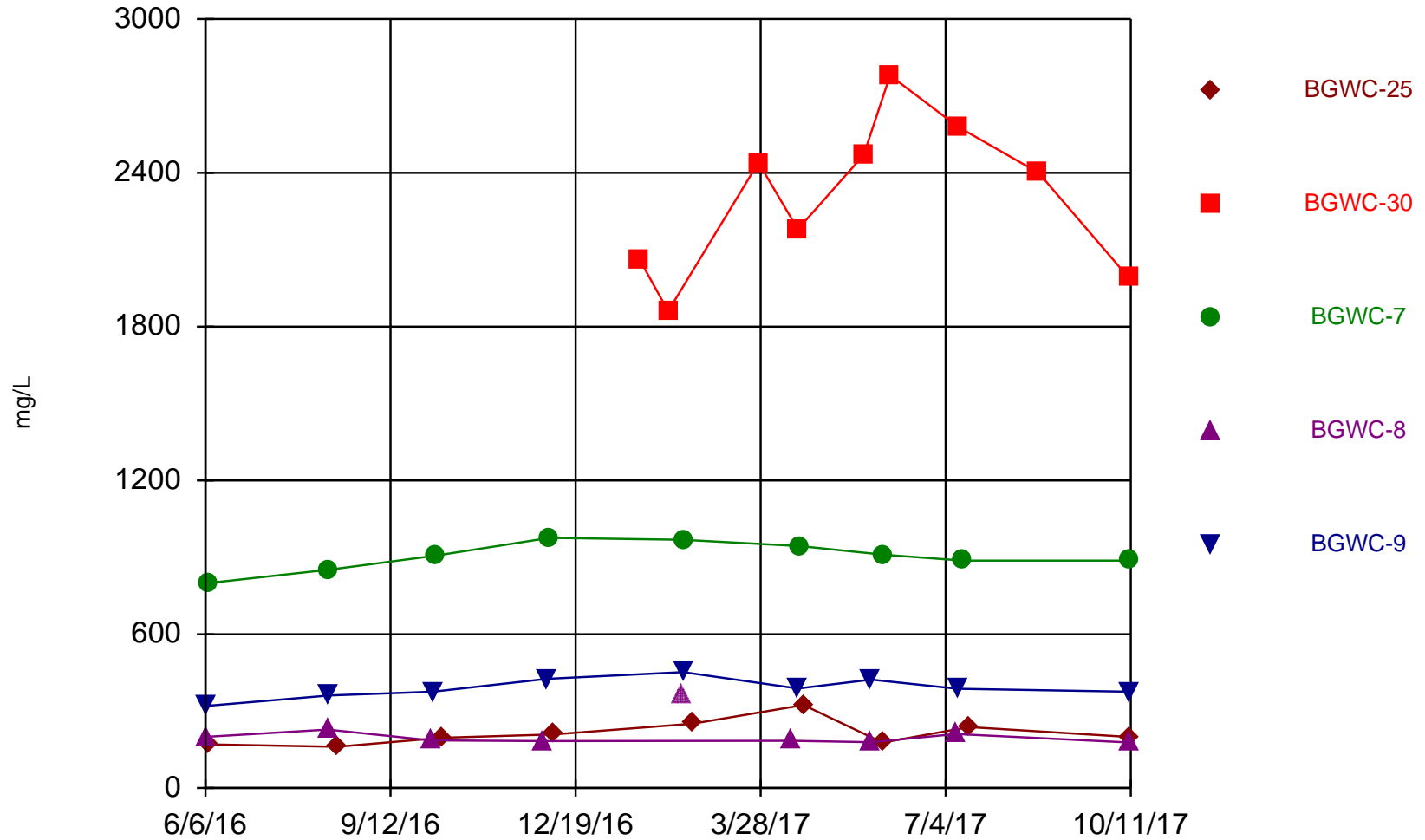
Constituent: Total Dissolved Solids Analysis Run 1/25/2018 4:15 PM View: Compliance only  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



Constituent: Total Dissolved Solids    Analysis Run 1/25/2018 4:15 PM    View: Compliance only  
Plant Bowen    Client: Southern Company    Data: Bowen Ash Pond Groundwater Monitoring

### Time Series



Constituent: Total Dissolved Solids    Analysis Run 1/25/2018 4:15 PM    View: Compliance only  
Plant Bowen    Client: Southern Company    Data: Bowen Ash Pond Groundwater Monitoring



# Outlier Analysis

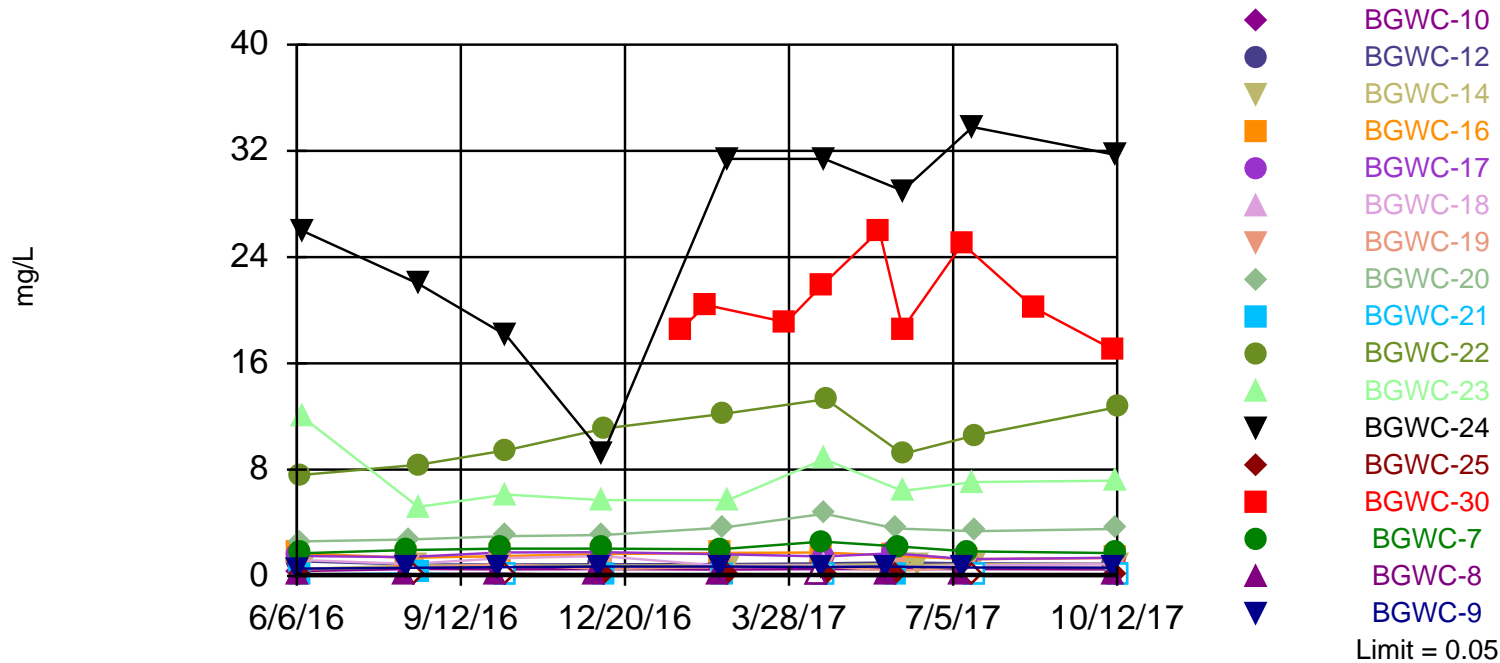
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring Printed 1/25/2018, 4:11 PM

<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Distribution</u>	<u>Normality Test</u>
Boron (mg/L)	BGWA-2,BGWA-29	No	n/a	n/a w/combined bg	NP (nrm)	NaN	18	0.01903	0.009555	unknown	ShapiroWilk
Calcium (mg/L)	BGWA-2,BGWA-29	No	n/a	n/a w/combined bg	NP (nrm)	NaN	18	26.14	8.323	unknown	ShapiroWilk
Chloride (mg/L)	BGWA-2,BGWA-29	No	n/a	n/a w/combined bg	NP	NaN	18	2.156	0.6528	ln(x)	ShapiroWilk
Fluoride (mg/L)	BGWA-2,BGWA-29	No	n/a	n/a w/combined bg	NP	NaN	18	0.08917	0.04647	normal	ShapiroWilk
pH (pH)	BGWA-2,BGWA-29	No	n/a	n/a w/combined bg	NP	NaN	18	7.856	0.1681	ln(x)	ShapiroWilk
Sulfate (mg/L)	BGWA-2,BGWA-29	No	n/a	n/a w/combined bg	NP	NaN	18	5.456	1.334	x^(1/3)	ShapiroWilk
Total Dissolved Solids (mg/L)	BGWA-2,BGWA-29	No	n/a	n/a w/combined bg	NP	NaN	18	157.4	61.02	ln(x)	ShapiroWilk

Hollow symbols indicate censored values.

Exceeds Limit: BGWC-10, BGWC-12,  
BGWC-14. BGWC-16. BGWC-17. BGWC-18

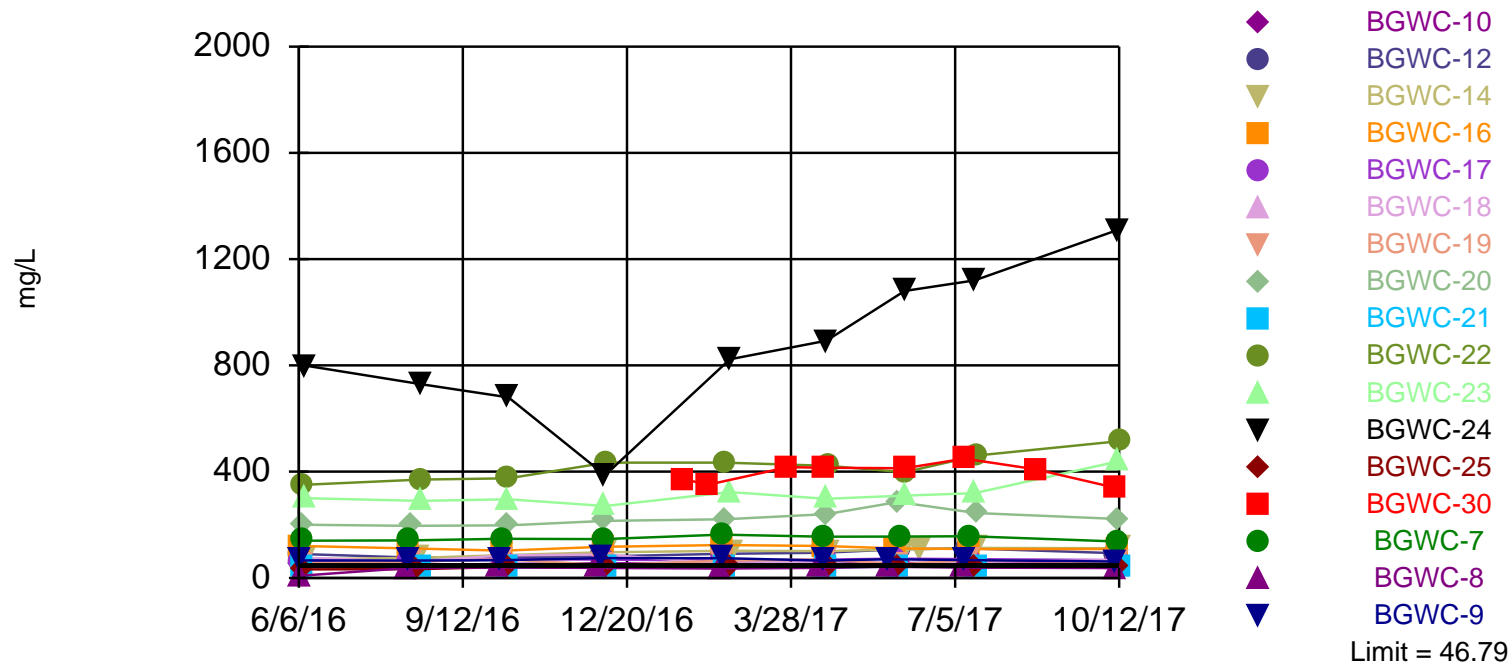
Prediction Limit  
Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 18 background values. 66.67% NDs. Annual per-constituent alpha = 0.1315. Individual comparison alpha = 0.004137 (1 of 2). Comparing 17 points to limit.

Exceeds Limit: BGWC-10, BGWC-12,  
BGWC-14. BGWC-16. BGWC-17. BGWC-18

Prediction Limit  
Interwell Parametric

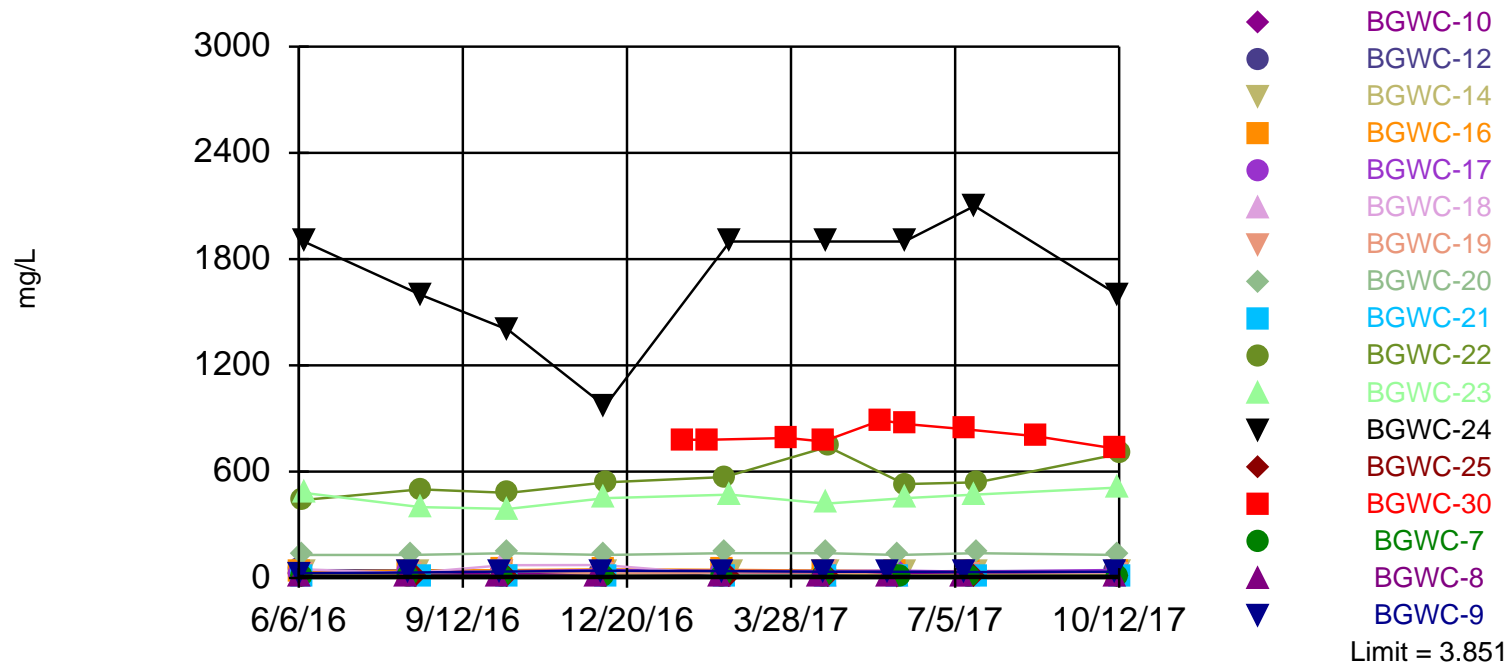


Background Data Summary: Mean=26.14, Std. Dev.=8.323, n=18. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8898, critical = 0.858. Kappa = 2.481 (c=7, w=17, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0004426. Comparing 17 points to limit.

Constituent: Calcium Analysis Run 1/25/2018 4:09 PM View: BGWA-2, BGWA-29, Compliance  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

Exceeds Limit: BGWC-10, BGWC-12,  
BGWC-14. BGWC-16. BGWC-17. BGWC-18

Prediction Limit  
Interwell Parametric

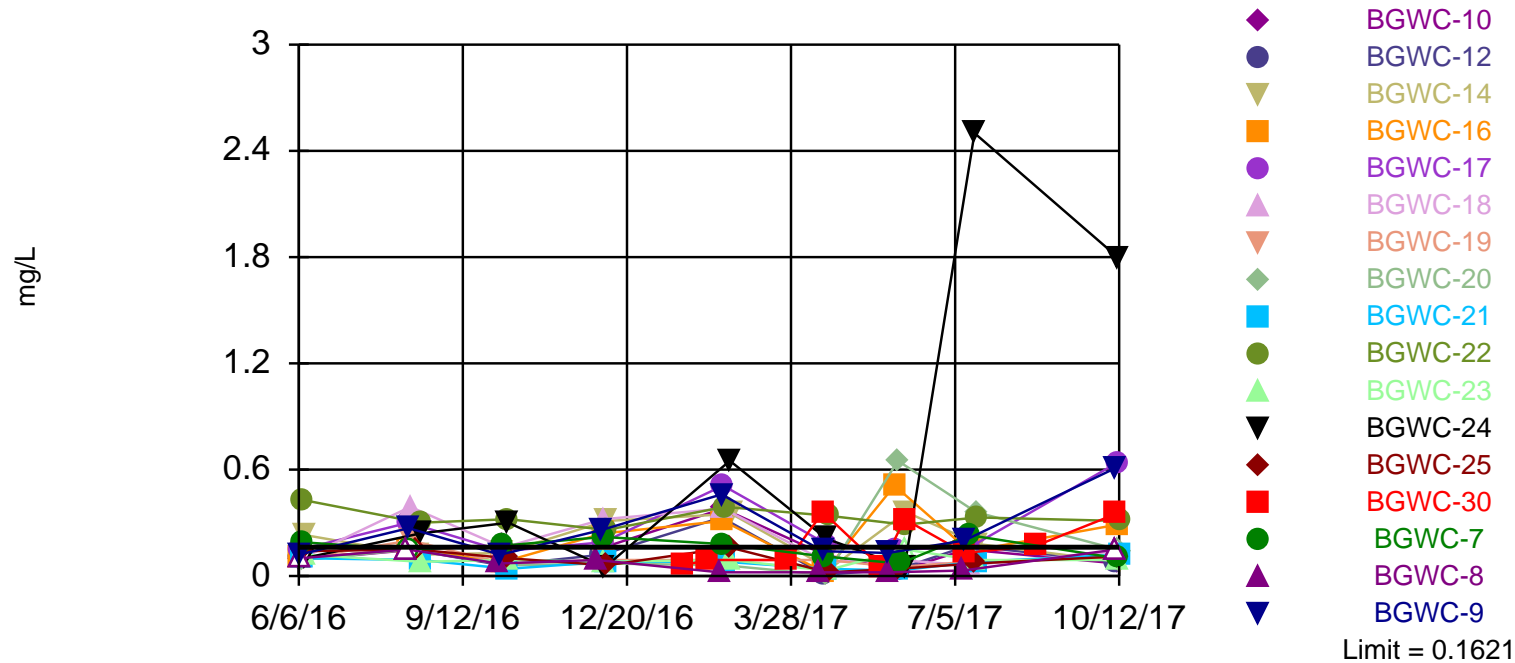


Background Data Summary (based on square root transformation): Mean=1.455, Std. Dev.=0.2046, n=18. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8782, critical = 0.858. Kappa = 2.481 (c=7, w=17, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0004426. Comparing 17 points to limit.

Hollow symbols indicate censored values.

Exceeds Limit: BGWC-17, BGWC-22,  
BGWC-24. BGWC-30. BGWC-9

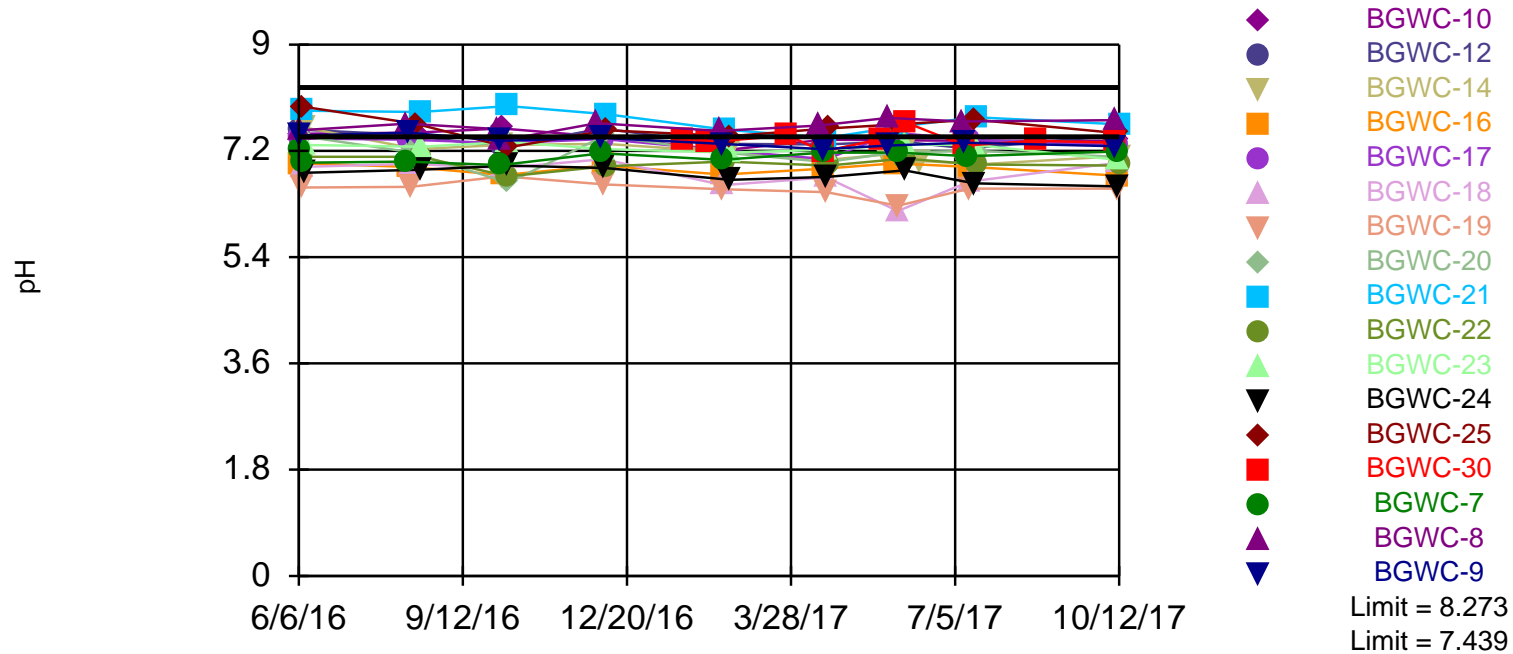
Prediction Limit  
Interwell Parametric



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.05724, Std. Dev.=0.04229, n=18, 16.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9316, critical = 0.858. Kappa = 2.481 (c=7, w=17, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0004426. Comparing 17 points to limit.

Exceeds Limits: BGWC-10, BGWC-14,  
BGWC-16. BGWC-17. BGWC-18. BGWC-19

Prediction Limit  
Interwell Parametric

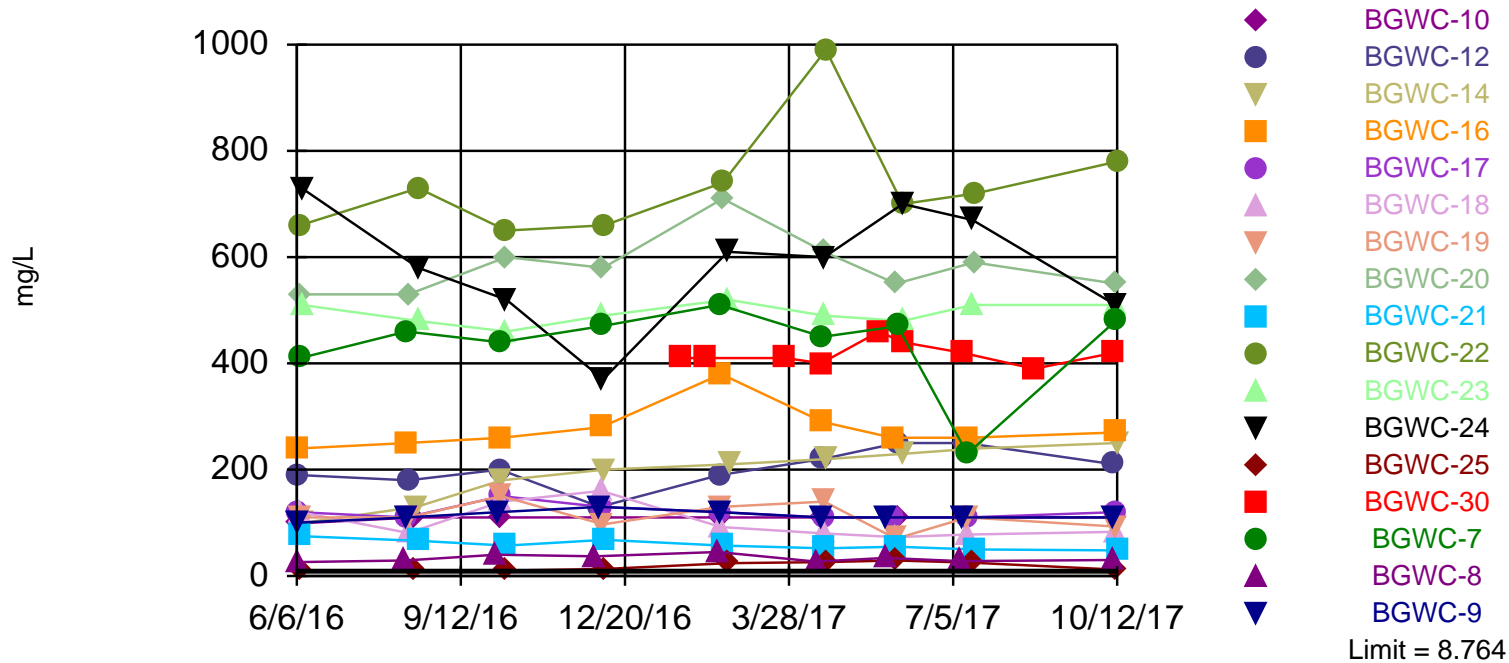


Background Data Summary: Mean=7.856, Std. Dev.=0.1681, n=18. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9518, critical = 0.858. Kappa = 2.481 (c=7, w=17, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0002213. Comparing 17 points to limit.

Constituent: pH Analysis Run 1/25/2018 4:09 PM View: BGWA-2, BGWA-29, Compliance  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

Exceeds Limit: BGWC-10, BGWC-12,  
BGWC-14. BGWC-16. BGWC-17. BGWC-18

Prediction Limit  
Interwell Parametric

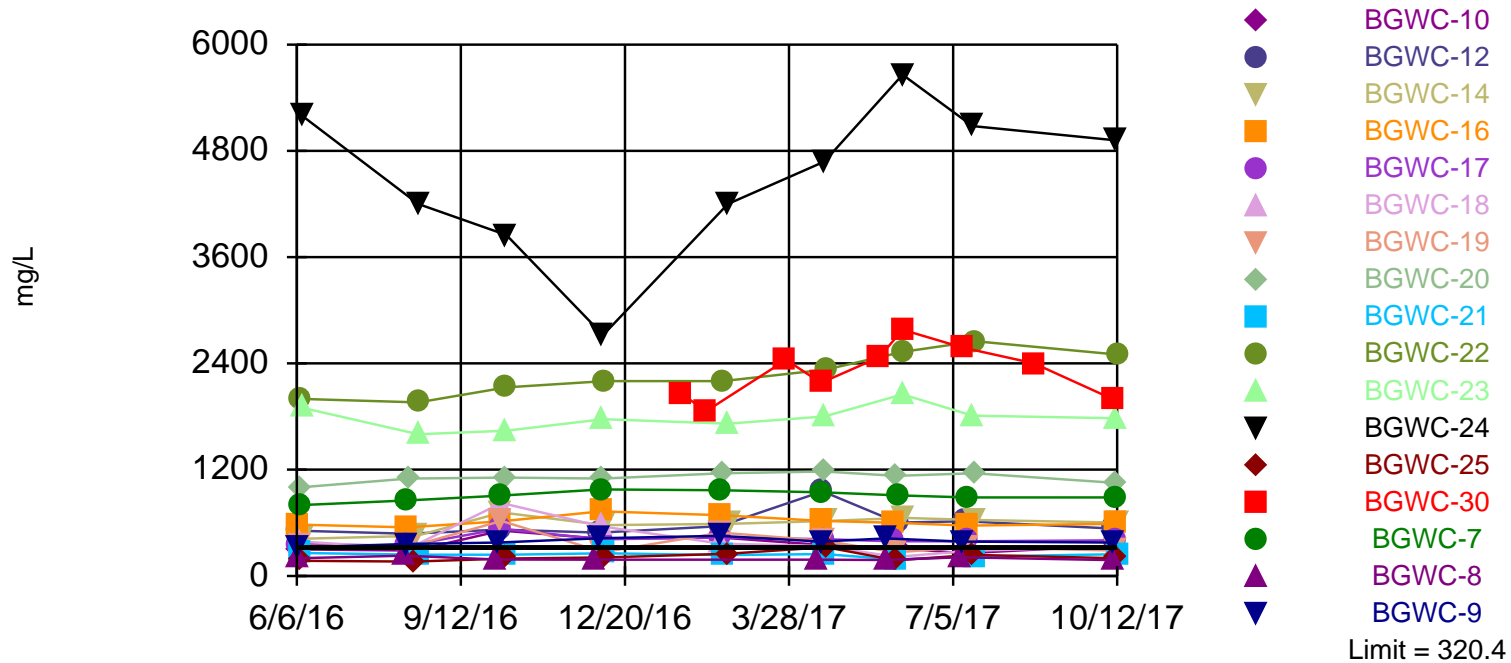


Background Data Summary: Mean=5.456, Std. Dev.=1.334, n=18. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.964, critical = 0.858. Kappa = 2.481 (c=7, w=17, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0004426. Comparing 17 points to limit.

Constituent: Sulfate Analysis Run 1/25/2018 4:09 PM View: BGWA-2, BGWA-29, Compliance  
Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring

Exceeds Limit: BGWC-10, BGWC-12,  
BGWC-14. BGWC-16. BGWC-17. BGWC-18

Prediction Limit  
Interwell Parametric



Background Data Summary (based on square root transformation): Mean=12.36, Std. Dev.=2.233, n=18. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8997, critical = 0.858. Kappa = 2.481 (c=7, w=17, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0004426. Comparing 17 points to limit.



# Prediction Limit

Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring Printed 1/25/2018, 4:11 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	BGWC-10	0.05	n/a	10/11/2017	0.486	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-12	0.05	n/a	10/10/2017	0.908	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-14	0.05	n/a	10/12/2017	0.897	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-16	0.05	n/a	10/11/2017	1.36	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-17	0.05	n/a	10/11/2017	1.37	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-18	0.05	n/a	10/11/2017	0.889	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-19	0.05	n/a	10/11/2017	0.594	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-20	0.05	n/a	10/11/2017	3.54	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-22	0.05	n/a	10/12/2017	12.7	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-23	0.05	n/a	10/11/2017	7.18	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-24	0.05	n/a	10/11/2017	31.7	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-30	0.05	n/a	10/10/2017	17	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-7	0.05	n/a	10/11/2017	1.72	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-8	0.05	n/a	10/10/2017	0.0515	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Boron (mg/L)	BGWC-9	0.05	n/a	10/10/2017	0.619	Yes	18	66.67	n/a	n/a	0.004137	NP Inter (NDs) 1 of 2
Calcium (mg/L)	BGWC-10	46.79	n/a	10/11/2017	55.7	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-12	46.79	n/a	10/10/2017	93	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-14	46.79	n/a	10/12/2017	112	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-16	46.79	n/a	10/11/2017	109	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-17	46.79	n/a	10/11/2017	67.3	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-18	46.79	n/a	10/11/2017	67	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-19	46.79	n/a	10/11/2017	57.3	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-20	46.79	n/a	10/11/2017	222	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-22	46.79	n/a	10/12/2017	515	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-23	46.79	n/a	10/11/2017	438	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-24	46.79	n/a	10/11/2017	1310	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-30	46.79	n/a	10/10/2017	339	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-7	46.79	n/a	10/11/2017	137	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Calcium (mg/L)	BGWC-9	46.79	n/a	10/10/2017	61.7	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-10	3.851	n/a	10/11/2017	24	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-12	3.851	n/a	10/10/2017	38	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-14	3.851	n/a	10/12/2017	37	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-16	3.851	n/a	10/11/2017	36	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-17	3.851	n/a	10/11/2017	45	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-18	3.851	n/a	10/11/2017	24	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-19	3.851	n/a	10/11/2017	19	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-20	3.851	n/a	10/11/2017	130	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-21	3.851	n/a	10/12/2017	4.8	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-22	3.851	n/a	10/12/2017	700	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-23	3.851	n/a	10/11/2017	510	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-24	3.851	n/a	10/11/2017	1600	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-25	3.851	n/a	10/11/2017	4.1	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-30	3.851	n/a	10/10/2017	730	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-7	3.851	n/a	10/11/2017	12	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Chloride (mg/L)	BGWC-9	3.851	n/a	10/10/2017	35	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Fluoride (mg/L)	BGWC-17	0.1621	n/a	10/11/2017	0.64	Yes	18	16.67	Kaplan-Meier	No	0.0004426	Param Inter 1 of 2
Fluoride (mg/L)	BGWC-22	0.1621	n/a	10/12/2017	0.31	Yes	18	16.67	Kaplan-Meier	No	0.0004426	Param Inter 1 of 2
Fluoride (mg/L)	BGWC-24	0.1621	n/a	10/11/2017	1.8	Yes	18	16.67	Kaplan-Meier	No	0.0004426	Param Inter 1 of 2
Fluoride (mg/L)	BGWC-30	0.1621	n/a	10/10/2017	0.35	Yes	18	16.67	Kaplan-Meier	No	0.0004426	Param Inter 1 of 2
Fluoride (mg/L)	BGWC-9	0.1621	n/a	10/10/2017	0.61	Yes	18	16.67	Kaplan-Meier	No	0.0004426	Param Inter 1 of 2

## Prediction Limit

Plant Bowen Client: Southern Company Data: Bowen Ash Pond Groundwater Monitoring Printed 1/25/2018, 4:11 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	ND Adj.	Transform	Alpha	Method
pH (pH)	BGWC-10	8.273	7.439	10/11/2017	7.37	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-14	8.273	7.439	10/12/2017	7.11	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-16	8.273	7.439	10/11/2017	6.78	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-17	8.273	7.439	10/11/2017	7.3	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-18	8.273	7.439	10/11/2017	7	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-19	8.273	7.439	10/11/2017	6.56	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-20	8.273	7.439	10/11/2017	7.1	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-22	8.273	7.439	10/12/2017	6.95	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-23	8.273	7.439	10/11/2017	7.05	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-24	8.273	7.439	10/11/2017	6.6	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-30	8.273	7.439	10/10/2017	7.34	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-7	8.273	7.439	10/11/2017	7.19	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
pH (pH)	BGWC-9	8.273	7.439	10/10/2017	7.28	Yes	18	0	None	No	0.0002213	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-10	8.764	n/a	10/11/2017	110	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-12	8.764	n/a	10/10/2017	210	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-14	8.764	n/a	10/12/2017	250	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-16	8.764	n/a	10/11/2017	270	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-17	8.764	n/a	10/11/2017	120	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-18	8.764	n/a	10/11/2017	83	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-19	8.764	n/a	10/11/2017	93	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-20	8.764	n/a	10/11/2017	550	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-21	8.764	n/a	10/12/2017	48	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-22	8.764	n/a	10/12/2017	780	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-23	8.764	n/a	10/11/2017	510	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-24	8.764	n/a	10/11/2017	510	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-25	8.764	n/a	10/11/2017	12	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-30	8.764	n/a	10/10/2017	420	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-7	8.764	n/a	10/11/2017	480	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-8	8.764	n/a	10/10/2017	30	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Sulfate (mg/L)	BGWC-9	8.764	n/a	10/10/2017	110	Yes	18	0	None	No	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-10	320.4	n/a	10/11/2017	343	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-12	320.4	n/a	10/10/2017	534	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-14	320.4	n/a	10/12/2017	603	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-16	320.4	n/a	10/11/2017	588	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-17	320.4	n/a	10/11/2017	403	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-18	320.4	n/a	10/11/2017	334	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-20	320.4	n/a	10/11/2017	1050	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-22	320.4	n/a	10/12/2017	2500	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-23	320.4	n/a	10/11/2017	1780	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-24	320.4	n/a	10/11/2017	4920	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-30	320.4	n/a	10/10/2017	1990	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-7	320.4	n/a	10/11/2017	887	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	BGWC-9	320.4	n/a	10/10/2017	376	Yes	18	0	None	sqrt(x)	0.0004426	Param Inter 1 of 2